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AGREEMENT FOR COOPERATION BETWEEN THE UNITED STATES OF AMERICA AND THE REPUBLIC OF SOUTH AFRICA CONCERNING PEACEFUL USES OF NUCLEAR ENERGY

MESSAGE

FROM

THE PRESIDENT OF THE UNITED STATES

TRANSMITTING

THE TEXT OF A PROPOSED AGREEMENT FOR COOPERATION BETWEEN THE UNITED STATES OF AMERICA AND THE REPUBLIC OF SOUTH AFRICA CONCERNING PEACEFUL USES OF NUCLEAR ENERGY, WITH ACCOMPANYING ANNEX AND AGREED MINUTE, PURSUANT TO 42 U.S.C. 2153 (b) AND (d)

SEPTEMBER 29, 1995.—Message and accompanying papers referred to the Committee on International Relations and ordered to be printed

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U.S. GOVERNMENT PRINTING OFFICE
99–011 WASHINGTON : 1995

To the Congress of the United States:

I am pleased to transmit to the Congress, pursuant to sections 123 b. and 123 d. of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2153(b), (d)), the text of a proposed Agreement for Cooperation Between the United States of America and the Republic of South Africa Concerning Peaceful Uses of Nuclear Energy, with accompanying annex and agreed minute. I am also pleased to transmit my written approval, authorization, and determination concerning the agreement, and the memorandum of the Director of the United States Arms Control and Disarmament Agency with the Nuclear Proliferation Assessment Statement concerning the agreement. The joint memorandum submitted to me by the Acting Secretary of State and the Secretary of Energy, which includes a summary of the provisions of the agreement and various other attachments, including agency views, is also enclosed.

The proposed agreement with the Republic of South Africa has been negotiated in accordance with the Atomic Energy Act of 1954, as amended by the Nuclear Non-Proliferation Act of 1978 (NNPA) and as otherwise amended. In my judgment, the proposed agreement meets all statutory requirements and will advance the nonproliferation and other foreign policy interests of the United States. It provides a comprehensive framework for peaceful nuclear cooperation between the United States and South Africa under appropriate conditions and controls reflecting a strong common commitment to nuclear non-proliferation goals.

The proposed new agreement will replace an existing U.S.-South Africa agreement for peaceful nuclear cooperation that entered into force on August 22, 1957, and by its terms would expire on August 22, 2007. The United States suspended cooperation with South Africa under the 1957 agreement in the 1970's because of evidence that South Africa was embarked on a nuclear weapons program. Moreover, following passage of the NNPA in 1978, South Africa did not satisfy a provision of section 128 of the Atomic Energy Act (added by the NNPA) that requires full-scope IAEA safeguards in non-nuclear weapon states such as South Africa as a condition for continued significant U.S. nuclear exports.

In July 1991 South Africa, in a momentous policy reversal, acceded to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and promptly entered into a full-scope safeguards agreement with the IAEA as required by the Treaty. South Africa has been fully cooperative with the IAEA in carrying out its safeguards responsibilities.

Further, in March 1993 South Africa took the dramatic and candid step of revealing the existence of its past nuclear weapons program and reported that it has dismantled all of its six nuclear devices prior to its accession to the NPT. It also invited the IAEA to inspect its formerly nuclear weapons-related facilities to dem-

onstrate the openness of its nuclear program and its genuine commitment to non-proliferation.

South Africa has also taken a number of additional important non-proliferation steps. In July 1993 it put into effect a law banning all weapons of mass destruction. In April 1995 it became a member of the Nuclear Suppliers Groups (NSG), formally committing itself to abide by the NSG's stringent guidelines for nuclear exports. At the 1995 NPT Review and Extension Conference it played a decisive role in the achievement of indefinite NPT extension—a top U.S. foreign policy and national security goal.

These steps are strong and compelling evidence that South Africa is now firmly committed to stopping the spread of weapons of mass destruction and to conducting its nuclear program for peaceful purposes only.

In view of South Africa's fundamental reorientation of its nuclear program, the United States proposes to enter into a new agreement for peaceful nuclear cooperation with South Africa. Although cooperation could have been resumed under the 1957 agreement, both we and South Africa believe that it is preferable to have a new agreement completely satisfying, as the proposed new agreement does, the current legal and policy criteria of both sides, and that reflects, among other things:

Additional international non-proliferation commitments entered into by the parties since 1974, when the old agreement was last amended, including, for South Africa, its adherence to the Treaty on the Non-Proliferation of Nuclear Weapons;

Reciprocity in the application of the terms and conditions of cooperation between the parties; and

An updating of terms and conditions to take account of intervening changes in the respective domestic legal and regulatory frameworks of the parties in the area of peaceful nuclear cooperation.

For the United States, the proposed new agreement also represents an additional instance of compliance with section 404(a) of the NNPA, which calls for an effort to renegotiate existing agreements for cooperation to include the more stringent requirements established by the NNPA.

The proposed new agreement with South Africa permits the transfer of technology, material, equipment (including reactors), and components for nuclear research and nuclear power production. It provides for U.S. consent rights to retransfers, enrichment, and reprocessing as required by U.S. law. It does not permit transfers of any sensitive nuclear technology, restricted data, or sensitive nuclear facilities or major critical components thereof. In the event of termination, key conditions and controls continue with respect to material and equipment subject to the agreement.

From the United States perspective the proposed new agreement improves on the 1957 agreement by the addition of a number of important provisions. These include the provisions for full-scope safeguard; perpetuity of safeguards; a ban on "peaceful" nuclear explosives; a right to require the return of exported nuclear items in certain circumstances; a guarantee of adequate physical security; and a consent right to enrichment of nuclear material subject to the agreement.

I have considered the views and recommendations of the interested agencies in reviewing the proposed agreement and have determined that its performance will promote, and will not constitute an unreasonable risk to, the common defense and security. Accordingly, I have approved the agreement and authorized its execution and urge that the Congress give it favorable consideration.

Because this agreement meets all applicable requirements of the Atomic Energy Act, as amended, for agreements for peaceful nuclear cooperation, I am transmitting it to the Congress without exempting it from any requirement contained in section 123 a. of that Act. This transmission shall constitute a submittal for purposes of both sections 123 b. and 123 d. of the Atomic Energy Act. The Administration is prepared to begin immediately the consultations with the Senate Foreign Relations and House International Relations Committees as provided in section 123 b. Upon completion of the 30-day continuous session period provided for in section 123 b., the 60-day continuous session period provided for in section 123 d. shall commence.

WILLIAM J. CLINTON.

THE WHITE HOUSE, *September 29, 1995.*

AGREEMENT FOR COOPERATION BETWEEN
THE UNITED STATES OF AMERICA AND
THE REPUBLIC OF SOUTH AFRICA
CONCERNING PEACEFUL USES OF NUCLEAR ENERGY

The Government of the United States of America and the Government of the Republic of South Africa;

Mindful of their respective obligations under the Treaty on the Non-Proliferation of Nuclear Weapons ("NPT") to which both the United States of America ("United States") and the Republic of South Africa ("South Africa") are parties;

Reaffirming their commitment to ensuring that the international development and use of nuclear energy for peaceful purposes are carried out under arrangements which will to the maximum possible extent further the objectives of the NPT;

Affirming their support of the objectives of the International Atomic Energy Agency ("IAEA") and their desire to promote universal adherence to the NPT;

Desiring to cooperate in the development, use and control of peaceful uses of nuclear energy; and

Mindful that peaceful nuclear activities must be undertaken with a view to protecting the international environment from radioactive, chemical and thermal contamination;

Have agreed as follows:

(5)

Article I - Definitions

For the purposes of this Agreement:

(A) "Byproduct material" means any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material;

(B) "Component" means a component part of equipment or other item so designated by agreement of the parties;

(C) "Equipment" means any reactor, other than one designed or used primarily for the formation of plutonium or uranium 233, or any other item so designated by agreement of the parties;

(D) "High enriched uranium" means uranium enriched to twenty percent or greater in the isotope 235;

(E) "Low enriched uranium" means uranium enriched to less than twenty percent in the isotope 235;

(F) "Major critical component" means any part or group of parts essential to the operation of a sensitive nuclear facility;

(G) "Material" means source material and special nuclear material, moderator material, or any other such substance so designated by agreement of the parties;

(H) "Moderator material" means heavy water or graphite or beryllium of a purity suitable for use in a reactor to slow down high velocity neutrons and increase the likelihood of fission, or any other such material so designated by agreement of the parties;

(I) "Parties" means the Government of the United States of America and the Government of the Republic of South Africa;

(J) "Peaceful purposes" include the use of information, material, equipment and components in such fields as research, power generation, medicine, agriculture and industry but do not include use in, research on or development of any nuclear explosive device, or any military purpose;

(K) "Person" means any individual or any entity subject to the jurisdiction of either party but does not include the parties to this Agreement;

(L) "Reactor" means any apparatus, other than a nuclear weapon or other nuclear explosive device, in which a self-sustaining fission chain reaction is maintained by utilizing uranium, plutonium or thorium or any combination thereof;

(M) "Restricted data" means all data concerning (1) design, manufacture or utilization of nuclear weapons, (2) the production of special nuclear material, or (3) the use of special nuclear material in the production of energy, but shall not include data of a party which it has declassified or removed from the category of restricted data;

(N) "Sensitive nuclear facility" means any facility designed or used primarily for uranium enrichment, reprocessing of nuclear fuel, heavy water production, or fabrication of nuclear fuel containing plutonium;

(O) "Sensitive nuclear technology" means any information (including information incorporated in equipment or an important component) which is not in the public domain and which is important to the design, construction, fabrication, operation or maintenance of any sensitive nuclear facility, or other such information which may be so designated by agreement of the parties; but shall not include restricted data;

(P) "Source material" means (1) uranium, thorium, or any other material so designated by agreement of the parties, or (2) ores containing one or more of the foregoing materials in such concentration as the parties may agree from time to time;

(Q) "Special nuclear material" means (1) plutonium, uranium 233, or uranium enriched in the isotope 235, or (2) any other material so designated by agreement of the parties.

Article 2 - Scope of Cooperation

1. The parties shall cooperate in the use of nuclear energy for peaceful purposes in accordance with the provisions of this Agreement and their applicable treaties, national laws, regulations and license requirements.

2. Transfer of information, material, equipment and components under this Agreement may be undertaken directly between the parties or through authorized persons. Such transfers shall be subject to this Agreement and to such additional terms and conditions as may be agreed by the parties.

Article 3 - Transfer of Information

1. Information concerning the use of nuclear energy for peaceful purposes may be transferred. Transfers of information may be accomplished through various means, including reports, data banks, computer programs, conferences, visits, and assignments of staff to facilities. Fields which may be covered include, but shall not be limited to, the following:

(A) Development, design, construction, operation, maintenance and use of reactors, and reactor experiments.

(B) The use of material in physical and biological research, medicine, agriculture and industry;

(C) Fuel cycle studies of ways to meet future world-wide civil nuclear needs, including multilateral approaches to guaranteeing nuclear fuel supply and appropriate techniques for management of nuclear wastes;

(D) Safeguards and physical protection;

(E) Health, safety and environmental considerations related to the foregoing; and

(F) Assessing the role nuclear power may play in national energy plans.

2. This Agreement does not require the transfer of any information which the parties are not permitted by law to transfer.

3. Restricted data shall not be transferred under this Agreement.

4. Sensitive nuclear technology shall not be transferred under this Agreement unless provided for by an amendment to this Agreement.

Article 4 - Transfer of Material, Byproduct Material, Equipment and Components

1. Material, byproduct material, equipment and components may be transferred for applications consistent with this Agreement. Sensitive nuclear facilities and major critical components shall not be transferred under this Agreement.

2. Low enriched uranium may be transferred for use as fuel in reactor experiments and in reactors, for conversion or fabrication, or for such other purposes as may be agreed by the parties.

3. The quantity of special nuclear material transferred under this Agreement shall not at any time be in excess of that quantity the parties agree is necessary for any of the following purposes: use in reactor experiments or the loading of reactors, the efficient and continuous conduct of such reactor experiments or operation of such reactors, and the accomplishment of other purposes as may be agreed by the parties.

4. Small quantities of special nuclear material may be transferred for use as samples, standards, detectors, targets and for such other purposes as the parties may agree. Transfers pursuant to this paragraph shall not be subject to the quantity limitations in paragraph 3.

5. The United States shall endeavor to take such actions as are necessary and feasible to ensure a reliable supply of nuclear fuel to South Africa, including the export of material on a timely basis and the availability of the capacity to carry out this undertaking during the period of this Agreement.

Article 5 - Storage and Retransfers

1. Plutonium and uranium 233 (except as contained in irradiated fuel elements), and high enriched uranium, transferred pursuant to this Agreement or used in or produced through the use of material or equipment so transferred shall only be stored in a facility to which the parties agree.

2. Material, equipment and components transferred pursuant to this Agreement and any special nuclear material produced through the use of any such material or equipment shall not be transferred to unauthorized persons or, unless the parties agree, beyond the recipient party's territorial jurisdiction.

Article 6 - Reprocessing and Enrichment

1. Material transferred pursuant to this Agreement and material used in or produced through the use of material or equipment so transferred shall not be reprocessed unless the parties agree.

2. Plutonium, uranium 233, high enriched uranium and irradiated source or special nuclear material, transferred

pursuant to this Agreement or used in or produced through the use of material or equipment so transferred, shall not be altered in form or content, except by irradiation or further irradiation, unless the parties agree.

3. Uranium transferred pursuant to this Agreement or used in any equipment so transferred shall not be enriched after transfer unless the parties agree.

Article 7 - Physical Protection

1. Adequate physical protection shall be maintained with respect to source or special nuclear material and equipment transferred pursuant to this Agreement and special nuclear material used in or produced through the use of material or equipment so transferred.

2. The parties agree to the levels for the application of physical protection set forth in the Annex to this Agreement, which may be modified by mutual consent of the parties without amending this Agreement. The parties shall maintain adequate physical protection measures in accordance with these levels. These measures shall as a minimum provide protection comparable

to the recommendations set forth in IAEA Document INFCIRC/225/Revision 2 concerning the physical protection of nuclear material, or in any revision of that document agreed to by the parties.

3. The adequacy of physical protection measures maintained pursuant to this Article shall be subject to review and consultations by the parties periodically and whenever either party is of the view that revised measures may be required to maintain adequate physical protection.

4. Each party shall identify those agencies or authorities having responsibility for ensuring that levels of physical protection are adequately met and having responsibility for coordinating response and recovery operations in the event of unauthorized use or handling of material subject to this Article. Each party shall also designate points of contact within its national authorities to cooperate on matters of out-of-country transportation and other matters of mutual concern.

5. The provisions of this Article shall be implemented in such a manner as to avoid undue interference in the parties' nuclear activities and so as to be consistent with prudent management practices required for the economic and safe conduct of their nuclear programs.

Article 8 - No Explosive or Military Application

Material, byproduct material, equipment and components transferred pursuant to this Agreement and material and byproduct material used in or produced through the use of any material, equipment or components so transferred shall not be used for any nuclear explosive device, for research on or development of any nuclear explosive device, or for any military purpose.

Article 9 - Safeguards

1. Cooperation under this Agreement shall require the application of IAEA safeguards with respect to all nuclear activities within the territory of South Africa, under its jurisdiction or carried out under its control anywhere. Implementation of a Safeguards Agreement pursuant to Article III (4) of the NPT shall be considered to fulfill this requirement.

2. Source or special nuclear material transferred to South Africa pursuant to this Agreement and any source or special nuclear material used in or produced through the use of

material, equipment or components so transferred shall be subject to safeguards in accordance with the agreement between South Africa and the IAEA for the application of safeguards in connection with the NPT, signed on 16 September 1991.

3. Source or special nuclear material transferred to the United States pursuant to this Agreement and any source or special nuclear material used in or produced through the use of any material, equipment or components so transferred shall be subject to the agreement between the United States of America and the IAEA for the application of safeguards in the United States of America, done at Vienna 18 November 1977, entered into force on 9 December 1980.

4. If either party becomes aware of circumstances which demonstrate that the IAEA for any reason is not or will not be applying safeguards in accordance with the agreement as provided for in paragraph 2 or paragraph 3, to ensure effective continuity of safeguards the parties shall immediately enter into arrangements with the IAEA or between themselves which conform with IAEA safeguards principles and procedures and with the coverage required by that paragraph and which provide assurance equivalent to that intended to be secured by the system they replace.

5. Each party shall take such measures as are necessary to maintain and facilitate the application of safeguards provided for under this Article.

6. Each party shall establish and maintain a system of accounting for and control of source and special nuclear material transferred pursuant to this Agreement and source and special nuclear material used in or produced through the use of any material, equipment or components so transferred. The procedures for this system shall be comparable to those set forth in IAEA Document TNFCIRC/153 (Corrected), or in any revision of that document agreed to by the parties.

7. Upon the request of either party, the other party shall report or permit the IAEA to report to the requesting party on the status of all inventories of source and special nuclear material subject to this Agreement.

8. The provisions of this Article shall be implemented in such a manner as to avoid undue interference in the parties' nuclear activities and so as to be consistent with prudent management practices required for the economic and safe conduct of their nuclear programs.

Article 10 - Multiple Supplier Controls

If any agreement between either party and another nation or group of nations provides such other nation or group of nations rights equivalent to any or all of those set forth under Article 5 or 6 with respect to material, equipment or components subject to this Agreement, the parties may, upon request of either of them, agree that the implementation of any such rights will be accomplished by such other nation or group of nations.

Article 11 - Cessation of Cooperation

1. If either party at any time following entry into force of this Agreement:

(A) does not comply with the provisions of Article 5, 6, 7, 8, or 9 or;

(B) terminates, abrogates or materially violates a safeguards agreement with the IAEA;

the other party shall have the rights to cease further cooperation under this Agreement and to require the return of

any material, equipment and components transferred under this Agreement and any special nuclear material produced through their use.

2. If South Africa at any time following entry into force of this Agreement detonates a nuclear explosive device, the United States shall have the same rights as specified in paragraph 1.

3. If the United States at any time following entry into force of this Agreement detonates a nuclear explosive device which contains nuclear material of South African origin or derived from South African source material transferred to the United States under this Agreement, South Africa shall have the same rights as specified in paragraph 1.

4. If either party exercises its rights under this Article to require the return of any material, equipment or components, it shall, after removal from the territory of the other party, reimburse the other party for the fair market value of such material, equipment or components. Fair market value for purposes of this Agreement shall be determined by negotiation between the parties.

Article 12 - Consultations and Environmental Protection

1. The parties undertake to consult at the request of either party regarding the implementation of this Agreement and the development of further cooperation in the field of peaceful uses of nuclear energy.

2. The parties shall consult, with regard to activities under this Agreement, to identify the international environmental implications arising from such activities and shall cooperate in protecting the international environment from radioactive, chemical or thermal contamination arising from peaceful nuclear activities under this Agreement and in related matters of health and safety.

Article 13 - Entry Into Force, Duration, and Amendment

1. This Agreement replaces the previous Agreement for Peaceful Nuclear Cooperation between the United States and South Africa signed 8 July 1957, as subsequently amended, which shall terminate upon the entry into force of this Agreement. Cooperation initiated under the previous Agreement shall continue in accordance with the provisions of this Agreement. The provisions of this Agreement shall apply to material and

equipment subject to the previous Agreement. This Agreement shall enter into force on the date on which the parties exchange diplomatic notes informing each other that they have completed all applicable requirements for its entry into force, and shall remain in force for a period of 25 years. This term may be extended for such additional periods as may be agreed between the parties in accordance with their applicable requirements. This Agreement may be terminated at any time by either party on one year's written notice to the other party.

2. Notwithstanding the suspension, termination or expiration of this Agreement or any cooperation hereunder for any reason, Articles 5, 6, 7, 8, 9 and 11 shall continue in effect so long as any material, equipment or components subject to these articles remains in the territory of the party concerned or under its jurisdiction or control anywhere, or until such time as the parties agree that such material, equipment or components are no longer usable for any nuclear activity relevant from the point of view of safeguards.

3. The parties shall, at the request of either party, consult on amendments to this Agreement. All amendments shall require the agreement in writing of both parties.

ANNEX

Pursuant to paragraph 2 of Article 7, the agreed levels of physical protection to be ensured by the competent national authorities in the use, storage and transportation of the materials listed in the attached table shall as a minimum include protection characteristics as below.

Category III

Use and storage within an area to which access is controlled.

Transportation under special precautions including prior arrangements among sender, recipient and carrier, and prior agreement between entities subject to the jurisdiction and regulation of supplier and recipient states, respectively, in case of international transport specifying time, place and procedures for transferring transport responsibility.

Category II

Use and storage within a protected area to which access is controlled, i.e., an area under constant surveillance by guards or electronic devices, surrounded by a physical barrier with a limited number of points of entry under appropriate control, or any area with an equivalent level of physical protection.

IN WITNESS WHEREOF the undersigned, being duly authorized, have signed this Agreement.

DONE at PRETORIA, this TWENTY-FIFTH day of AUGUST, 1995, in two originals in the English language.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

FOR THE GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICA:

Transportation under special precautions including prior arrangements among sender, recipient and carrier, and prior agreement between entities subject to the jurisdiction and regulation of supplier and recipient states, respectively, in case of international transport, specifying time, place and procedures for transferring transport responsibility.

Category I

Material in this category shall be protected with highly reliable systems against unauthorized use as follows:

Use and storage within a highly protected area, i.e., a protected area as defined for category II above, to which, in addition, access is restricted to persons whose trustworthiness has been determined, and which is under surveillance by guards who are in close communication with appropriate response forces. Specific measures taken in this context should have as their objective the detection and prevention of any assault, unauthorized access or unauthorized removal of material.

Transportation under special precautions as identified above for transportation of categories II and III materials and, in addition, under constant surveillance by escorts and under conditions which assure close communication with appropriate response forces.

TABLE: CATEGORIZATION OF NUCLEAR MATERIAL

Material	Form	Category I	Category II	Category III[c/]
1. Plutonium[a/]	Unirradiated[b/]	2 kg or more	Less than 2 kg but more than 500 g	500 g or less but more than 15 g
2. Uranium-235	Unirradiated[b/]			
	- uranium enriched to 20% ^{235}U or more	5 kg or more	Less than 5 kg but more than 1 kg	1 kg or less but more than 15 g
	- uranium enriched to 10% ^{235}U but less than 20%		10 kg or more	Less than 10 kg but more than 1 kg
	- uranium enriched above natural, but less than 10% ^{235}U			10 kg or more
3. Uranium-233	Unirradiated[b/]	2 kg or more	Less than 2 kg but more than 500 g	500 g or less but more than 15 g
4. Irradiated fuel			Depleted or natural uranium, thorium or low-enriched fuel (less than 10% fissile content)[d/e/]	

a/ All plutonium except that with isotopic concentration exceeding 80% in plutonium-238.

b/ Material not irradiated in a reactor or material irradiated in a reactor but with a radiation level equal to or less than 100 rads/hour at one metre unshielded.

c/ Quantities not falling in Category III and natural uranium should be protected in accordance with prudent management practice.

d/ Although this level of protection is recommended, it would be open to States, upon evaluation of the specific circumstances, to assign a different category of physical protection.

e/ Other fuel which by virtue of its original fissile material content is classified as Category I and II before irradiation may be reduced one category level while the radiation level from the fuel exceeds 100 rads/hour at one metre unshielded.

AGREED MINUTE

During the negotiation of the Agreement for Cooperation between the United States of America and the Republic of South Africa Concerning Peaceful Uses of Nuclear Energy ("Agreement") signed today, the following understandings, which shall be an integral part of the Agreement, were reached.

Coverage of Agreement

Material, equipment and components transferred from the territory of one party to the territory of the other party, whether directly or through a third country, will be regarded as having been transferred pursuant to the Agreement only if, prior to transfer, the appropriate government authority of the recipient party confirms in writing to the appropriate government authority of the supplier party that such material, equipment or components will be subject to the Agreement.

For the purposes of implementing the rights specified in Articles 5 and 6 with respect to special nuclear material produced through the use of nuclear material transferred pursuant to the Agreement and not used in or produced through

the use of equipment transferred pursuant to the Agreement, such rights shall in practice be applied to that proportion of special nuclear material produced which represents the ratio of transferred material used in the production of the special nuclear material to the total amount of material so used, and similarly for subsequent generations.

With reference to Article 8 it is understood that "military purpose" does not include power to a military base drawn from the civil power network or production of radioisotopes to be used for diagnosis or therapeutic purposes in a military hospital.

Safeguards

If either party becomes aware of circumstances referred to in paragraph 4 of Article 9, either party shall have the rights listed below, which rights shall be suspended if both parties agree that the need to exercise such rights is being satisfied by the application of IAEA safeguards under arrangements pursuant to paragraph 4 of Article 9:

(1) To review in a timely fashion the design of any equipment transferred pursuant to the Agreement, or of any facility which is to use, fabricate, process, or store any source or special

nuclear material so transferred or any special nuclear material used in or produced through the use of such material or equipment;

(2) To require the maintenance and production of records and of relevant reports for the purpose of assisting in ensuring accountability for material transferred pursuant to the Agreement and any source material or special nuclear material used in or produced through the use of any material, equipment or components so transferred; and

(3) To designate personnel, in consultation with the other party, who shall have access to all places and data necessary to account for the material in paragraph 2, to inspect any equipment or facility referred to in paragraph 1, and to install any devices and make such independent measurements as may be deemed necessary to account for such material. Such personnel shall, if either party so requests, be accompanied by personnel designated by the other party.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

FOR THE GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICA:

THE WHITE HOUSE

WASHINGTON

August 14, 1995

Presidential Determination
No. 95-37

MEMORANDUM FOR THE SECRETARY OF STATE
THE SECRETARY OF ENERGY

SUBJECT: Presidential Determination on the Proposed Agreement for Cooperation Between the United States of America and the Republic of South Africa Concerning Peaceful Uses of Nuclear Energy

I have considered the proposed Agreement for Cooperation Between the United States of America and the Republic of South Africa Concerning Peaceful Uses of Nuclear Energy, along with the views, recommendations, and statements of the interested agencies.

I have determined that the performance of the Agreement will promote, and will not constitute an unreasonable risk to, the common defense and security. Pursuant to section 123 b. of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2153(b)), I hereby approve the proposed agreement and authorize you to arrange for its execution.

The Secretary of State is authorized and directed to publish this determination in the Federal Register.

William J. Clinton

UNITED STATES ARMS CONTROL AND DISARMAMENT AGENCY
Washington, D.C. 20451

THE DIRECTOR

AUG 4 1995

MEMORANDUM FOR THE PRESIDENT

SUBJECT: Nuclear Proliferation Assessment Statement for the Proposed Agreement for Cooperation Between the United States of America and the Government of the Republic of South Africa Concerning Peaceful Uses of Nuclear Energy

Pursuant to Section 123 a. of the Atomic Energy Act of 1954, as amended, I am submitting to you an unclassified Nuclear Proliferation Assessment Statement with respect to the proposed Agreement for Cooperation Between the Government of the United States and the Republic of South Africa.

After setting forth background on South Africa's nuclear program and policies (Part I), this statement describes how each of the applicable legal requirements are met (Part II). Part III of the statement discusses nonproliferation policy issues and Part IV presents my conclusions.

I have concluded that the proposed Agreement meets the applicable statutory requirements. Further, I have reached a favorable assessment of the adequacy of the safeguards and other control mechanisms and the peaceful use assurances contained in the proposed Agreement to ensure that any assistance furnished thereunder will not be used to further any military or nuclear explosive purpose.

John D. Holum

Attachment:
As stated

NUCLEAR PROLIFERATION ASSESSMENT STATEMENT

Pursuant to Section 123(a) of the
Atomic Energy Act of 1954, as amended,
With Respect to the Proposed
Agreement for Cooperation Between the United States of America
and the Republic of South Africa
Concerning Peaceful Uses of Nuclear Energy

This Nuclear Proliferation Assessment Statement relates to the proposed Agreement for Cooperation between the United States of America and the Republic of South Africa concerning Peaceful Uses of Nuclear Energy. This agreement for cooperation (which is hereinafter called the "proposed Agreement") is concurrently being submitted to the President for his authorization for execution.

Section 123(a) of the Atomic Energy Act of 1954, as amended ("Atomic Energy Act"), provides that a Nuclear Proliferation Assessment Statement shall "analyze the consistency of the text of the proposed agreement for cooperation with all the requirements of this Act, with specific attention to whether the proposed Agreement is consistent with each of the criteria set forth in this subsection" and address the "adequacy of the safeguards and other control mechanisms and the peaceful use assurances contained in the agreement for cooperation to ensure that any assistance furnished thereunder will not be used to further any military or nuclear explosive purpose." With this statutory mandate in mind, this assessment statement begins with background on the nuclear program and policies of South Africa (Part I); describes the nature and scope of cooperation contemplated in the proposed Agreement (Part II A), and reviews the applicable substantive requirements of the Nuclear Non-Proliferation Act (NNPA) and the Atomic Energy Act and how they are met by the proposed Agreement (Part II B); discusses other nonproliferation policy issues pertinent to this case (Part III); and then sets forth the assessment, conclusions, views and recommendations of the United States Arms Control and Disarmament Agency, as contemplated by Section 123(a) of the Atomic Energy Act (Part IV).

I. BACKGROUND

A. Nuclear Program of the Republic of South Africa

South Africa has the most extensive nuclear infrastructure in Africa, with two French-built power reactors; a U.S.-built research reactor; uranium mining, fuel conversion and fabrication plants; research laboratories; low- and (decommissioned) high-level uranium enrichment facilities; waste depositories; and highly-trained scientific and engineering personnel. Former President DeKlerk revealed in March 1993 that, as had long been suspected, some portion of South Africa's nuclear program had been geared to manufacturing nuclear explosive devices. He stated that South Africa's total complement of six nuclear devices had been dismantled before South Africa's assumption of NPT obligations in July 1991. A significant stock of weapons-grade uranium remains in-country under IAEA safeguards.

i) Nuclear Energy, Research and Development

South Africa established the Atomic Energy Board (AEB) in 1948 to control the production and sale of uranium, most of which was sold to the U.S. and U.K. for their respective nuclear weapons programs. In 1959, a National Nuclear Research Center (NNRC) was approved by Parliament; construction began two years later at Pelindaba, near Pretoria. ("Pelindaba" is a Zulu word meaning, "end of discussion.") The Center initially pursued research to support a national program of the peaceful applications of nuclear energy, focussing on the indigenous development of power reactors and uranium enrichment. The Center also performed R&D on the medicinal applications of radiation and radioisotopes. To support this latter objective, South Africa purchased a 5 MW (later upgraded to 20 MW) HEU-fueled research reactor (SAFARI I) through the 1957 US-RSA Agreement for Nuclear Cooperation. SAFARI I began operations under a facility-specific IAEA safeguards agreement in 1965. A smaller, indigenously-constructed research reactor (SAFARI II) was commissioned in 1967 and supplied with low-enriched uranium (LEU) fuel and heavy water by the United States; SAFARI II was later decommissioned.

The AEB effort to develop a natural-uranium, heavy water-moderated, sodium-cooled power reactor was ultimately abandoned in 1969, owing to resource constraints. Instead, the NNRC concentrated on developing a uranium enrichment capability to capitalize on South Africa's abundant uranium resources in what was widely forecast to be an expanding global market for uranium and enriched-uranium fuel for nuclear power reactors. A unique enrichment process was developed using high-velocity uranium-bearing gas injected

tangentially into stationary tubes to create a vortex; this "Helikon" process centrifugally separated and drew off a portion of the lighter fissionable U_{235} atoms from the heavier U_{238}, thus providing a uranium product enriched in U_{235}.

In 1970, the South African Government (SAG) approved construction of an industrial-scale "pilot" uranium enrichment plant with the capacity to produce highly-enriched uranium (HEU) of over 90% U_{235}. Initial operation of the "Y Plant" began in 1977. The Y Plant produced HEU (both weapons-grade for the nuclear devices and 45%-enriched fuel for SAFARI I), some 3.25% U_{235} LEU for the Koeberg power reactors. With the exception of a period in 1979 to 1981 (when a massive chemical reaction in the process line shut the plant down), the plant operated until its decommissioning in February 1990. Under IAEA supervision, this plant is being dismantled.

A considerably larger "semi-commercial" enrichment plant, using the same Helikon technology and designed to produce 3.25% LEU for the reactor program, began operation at Pelindaba in 1988. Given the glut of uranium and LEU on the world market, this plant could not produce enriched uranium at internationally competitive prices, and is being decommissioned because of its high operating costs. The Atomic Energy Corporation (AEC), the successor to the Atomic Energy Board, is seeking to develop a molecular laser isotope separation (MLIS) process to produce LEU competitively. It is still too early to determine, however, whether the MLIS program will be successful in this objective.

In 1976, the Electricity Supply Commission of South Africa (ESKOM) contracted with France's Framatome to purchase two 922 MWe pressurized, light-water-cooled and -moderated power reactors for a site near Cape Town on the Atlantic shore. Koeberg I was commissioned in 1984; its sister, Koeberg II, in 1985. South Africa manufactures its own fuel elements for the SAFARI research and Koeberg power reactors at Pelindaba. (Indigenous fuel fabrication for these reactors was undertaken after U.S. cessation of fuel exports to the SAG in the mid-1970's, owing to U.S. concerns over South African nuclear activities that could support nuclear weapons development and SAG apartheid policies.) Indigenous uranium, mined and milled at other sites, is converted to hexaflouride gas for enrichment in the Helikon modules. HEU enriched to 45% U_{235} is fashioned into plates for SAFARI. LEU of 3.25%, produced either at the Y Plant or Semi-Commercial Plant, is converted to fuel pellets, which are then inserted into zircalloy rods. The zircalloy rods are also manufactured at Pelindaba from imported zircalloy stock; South African-processed zirconium is insufficiently pure for fuel rod use. The AEC also maintains a hot cell laboratory for post-irradiation examination of fuel elements, recovery and processing of radioisotopes produced by the SAFARI reactor, and scientific research.

Low and medium-level radioactive wastes from the various activities at Pelindaba have been stored at Pelindaba at a site named Radiation Hill. A much larger facility for handling Koeberg spent fuel and other wastes has been built at Vaalputs in northwest South Africa.

ii) Nuclear Explosive Program

In March 1971, South Africa's Minister of Mines approved a recommendation made two years earlier by a committee of the AEB to investigate the peaceful applications of nuclear explosives in South Africa. (Such applications were considered by several states during this period, including the United States and the former Soviet Union, both of which conducted active peaceful use test programs.) Prime Minister Vorster in 1974 redefined the objectives of the nascent explosive research and development program to include a limited nuclear deterrent. The AEC (the successor agency to the AEB) developed computer codes, built a criticality test facility, and experimented with conventional propellants suitable for a gun-type design. In mid-1977, the first gun-type prototype device was constructed by the AEC; this device was to be "cold-tested" without an HEU core for mechanical and electronic qualification.

Concurrently with this effort, two nuclear test shafts were drilled in the Kalahari desert. These shafts were discovered in 1977 by the Soviet Union, before the Y Plant had produced sufficient material for an explosive HEU core. Shortly thereafter, the U.S. and other nations pressured the SAG not to conduct any nuclear test. The test sites were subsequently abandoned for ten years.

Responding both to a perception of a worsening security situation in Angola and to the diplomatic pressure from the West and USSR to forgo any testing activity, President Botha decided in 1978 to institute a nuclear deterrent strategy. Unlike the deterrent strategies of the West and the USSR, the South African strategy apparently did not envisage the actual use of a nuclear device against enemy troops or population centers. Instead, it was a "political" bomb of last resort. In the event that a conventional war with Angola and other southern African states were to go badly for South Africa, the SAG would reveal the existence of the devices to Western governments (particularly the US) to encourage the West to intervene politically or militarily in South Africa's defense. Should Western nations be unmoved by this revelation, public acknowledgment and/or an underground test would then be employed to shock the Southern African states and the West to press for cessation of hostilities.

In September 1979, a U.S. satellite registered an optical flash somewhere in the South Atlantic that many have speculated may have been a nuclear test by South Africa. However, there has never been conclusive evidence that the observed phenomenon was indeed a nuclear test. There is also no conclusive evidence that, if the observed phenomena was a test, South Africa was involved in it. Indeed, it is unlikely that the South African nuclear weapon program was sufficiently advanced at that time, or had sufficient quality of fissile material available, to test a device that would have matched the characteristics of the observed phenomenon.

Construction of the non-nuclear components of the second device--the first to be fitted with a fissile core and the first of the six total fissile devices--was completed in 1978, but the device was not provided with an HEU fissile core until November 1979. This device, and responsibility for the entire program, was transferred to the state-owned National Armaments

Corporation (ARMSCOR) at facilities approximately 15 km from Pelindaba. The AEC was henceforth limited to providing HEU for the remaining devices and conducting theoretical and developmental work in nuclear weapons technology, including studies of implosion and thermonuclear designs, and the separation of lithium-6 for the production of tritium (H_3) for possible future weapons use.

In 1985, the SAG decided to limit the program to production of seven gun-type devices, to halt all work on a possible plutonium device, and to continue development work on implosion and advanced device technology. Construction of devices at ARMSCOR proceeded at a rather leisurely pace. The first prototype "deliverable" device (the second constructed with a fissile core) was completed in 1982, but the first "production" device was not finished until 1987, owing to safety and security engineering improvements. In all, six of seven planned devices were actually constructed, with the HEU core and components of the seventh device in the process of manufacture.

In November 1989, the newly-installed President DeKlerk decided to terminate and dismantle the nuclear weapons program. Dismantlement began in July 1990; by September 1991 all HEU had been melted down and returned to AEC custody at Pelindaba. The components for the devices were broken apart or destroyed and the design plans shredded by the time DeKlerk revealed the program in March 1993. The IAEA was invited to inspect the components, former HEU cores, and facilities associated with the nuclear weapons effort to confirm the program had been terminated. The IAEA, on the basis of its inspections and analysis of records of the nuclear programs operations, has concluded that the HEU provided by the AEC to ARMSCOR for the weapons program had been returned to the AEC and was subject to Agency safeguards at the time of entry into force of the safeguards agreement on September 16, 1991. In consultation with and under the supervision of the IAEA, the Kalahari test shafts were destroyed in July 1993. Finally, the facilities involved were dismantled or converted to non-weapon uses.

B. Nuclear Cooperation with the United States

As reviewed in the previous section, nuclear cooperation with South Africa goes back almost to the beginning of the U.S. nuclear weapon program. Under the auspices of the Combined Development Agency, The United States purchased as much as 3,000 tons of South African uranium annually for its weapons program until the late sixties. The U.S. concluded an Agreement for the Civil Uses of Atomic Energy with the SAG in 1957, under which the SAFARI I reactor and its initial HEU fuel load were provided to South Africa. The agreement was subsequently renewed and amended in 1962 and 1974 to permit additional SAFARI fuel shipments and to extend the Agreement's life to the year 2007.

The United States also contracted in 1974 to provide LEU fuel for the two nuclear power plants that the SAG purchased from the French firm Framatome; fuel shipments were to begin in 1981. However, the U.S. suspended all shipments of HEU fuel to SAFARI I in 1975, owing to increasing concerns over South Africa's nuclear-related activities and refusal to accede

to the NPT and accept full-scope safeguards. The U.S. also suspended the power reactor fuel contracts, even though the SAG had paid $7 million for U.S. enrichment services and provided the US with natural uranium stock for enrichment. South African uranium enriched by DOE was not allowed by the U.S. to be shipped to Framatome for fabrication for Koeberg fuel assemblies, owing to the legal restrictions of the U.S. Nuclear Nonproliferation Act (NNPA) of 1978. Ultimately, South Africa was able to provide Framatome with enriched uranium from other sources for fabrication.

There has been no significant U.S. nuclear cooperation or export of equipment or material to South Africa since the late-1970's. However, the USG and the SAG have held discussions in the last two years regarding the possibility of resuming cooperative activities. AEC officials have expressed interest in exporting nuclear technologies and equipment to the United States.

In September 1992, SAG officials announced that they were interested in selling "excess" HEU that was not required for their commercial and research needs to a nuclear weapon state (NWS) such as the United States. However, the SAG subsequently reevaluated the commercial potential of radioisotope production by the SAFARI reactor, and projected that they would need all of their HEU stockpile for the commercial operation of the reactor for the next twenty years. The United States' Argonne National Laboratory and the South African AEC are currently engaged in a joint study on the possibility of reducing the enrichment level of fuel for the SAFARI reactor from HEU to 20% LEU. If such conversion can meet SAG conditions--no net cost to South Africa, no interruption of commercial contracts, and no limitation of the neutron flux available for use--then the SAG might again have "excess" HEU for sale. In keeping with U.S. policy to reduce HEU stockpiles throughout the world, the United States would seek the export of the HEU to a NWS for safe disposition.

In September 1994, the U.S. Nuclear Regulatory Commission signed a 5-year arrangement with the South African Council for Nuclear Safety for the exchange of technical information and cooperation in nuclear safety matters.

C. Nuclear Nonproliferation Policy of South Africa

South Africa has taken great strides in the last several years to integrate itself into the international nuclear nonproliferation regime. South Africa is the first state in history to renounce its arsenal of nuclear explosives and completely disarm in order to join the global nuclear nonproliferation regime as a non-nuclear weapon state. As noted earlier, South Africa acceded to the NPT in July 1991 (after dismantling its secret nuclear explosive program), brought into force a full-scope IAEA safeguards agreement nine weeks later, permitted unprecedented access by IAEA inspectors to its peaceful and nuclear explosive-related facilities, and joined the NPT Exporters Committee ("Zangger Committee") and the Nuclear Suppliers Group (NSG) to control exports of nuclear and dual-use equipment and materials.

In 1993, South Africa enacted two Acts to control the export and import of all nuclear, chemical, biological, missile and nuclear dual-use items. The revised Nuclear Energy Act of 1993 restricts exports of source material, special nuclear material, restricted material or nuclear-related equipment or material to (a) nuclear weapon state under the condition the export shall be used only for peaceful purposes, and (b) to non-nuclear weapon states (NNWS) that have in force comprehensive international safeguards on all their nuclear activities. This latter condition is equivalent to the obligations assumed by members of the Nuclear Suppliers Group (NSG) not to export such equipment or materials except to NNWS with full-scope IAEA safeguards.

The Nuclear Energy Act also decreed that the Atomic Energy Commission would act as the national authority for the implementation of the 1991 IAEA safeguards agreement. Except with the written authority of the Minister for Mineral and Energy Affairs, no other entity but the AEC has the statutory authority to import, manufacture, acquire, possess, use or dispose of source, special, or restricted nuclear material; nuclear fuel; uranium hexaflouride; or nuclear related equipment and material. The Act also expanded the responsibilities and powers for the Council for Nuclear Safety, and established penalties for failure to comply with the Act's strictures on control and reporting of nuclear material; possession, export or import of material and equipment; or unauthorized disclosure of sensitive information. On April 16, 1994, Regulation 740 was promulgated, listing controlled items pursuant to the Act, including restricted material (beryllium, hafnium, zirconium); source and special nuclear material (including natural and depleted uranium, thorium, and transuranium elements); and nuclear-related equipment and material (including equipment for reprocessing, enrichment, and heavy-water plants).

The Non-Proliferation of Weapons of Mass Destruction Act of June 1993 established the Council of Non-Proliferation of Weapons of Mass Destruction to control, register, and inspect the import, export, re-export, transit and end-use of controlled nuclear-related dual-use, chemical, biological, and space/missile goods. A Declaration of certain dual-use nuclear material and equipment and related technology items pursuant to this act has been published and is now in effect. This declaration mirrors the Part II dual-use list of the Nuclear Suppliers Group, in which South Africa became a full member in March 1995.

The depth of South Africa's commitment to the NPT and the global nonproliferation regime was underscored by the efforts of South African officials at the NPT Review and Extension Conference in April. The SAG announcement of support at the beginning of the Conference for the indefinite extension of the NPT had a powerful impact on the opinions of other Non-Aligned States; indeed, South Africa's support helped to prevent NAM agreement on a resolution advocating a limited and conditional NPT extension at the NAM Conference in Bandung that occurred simultaneous with the NPT Conference. The SAG also tabled a document of Principles and Objectives on Nonproliferation and Disarmament that provided the basis to bridge the interests and concerns of the Western and Developing states, leading ultimately to the final package of Conference decisions that included indefinite NPT extension. Without South Africa's contribution, the achievement of the indefinite extension of the NPT without conditions--a prime U.S. foreign policy goal--would have been far more difficult.

South Africa has also been an active participant in the drafting of an African Nuclear Weapons Free Zone (ANWFZ) Treaty. The denuclearization of the African continent has been a goal of the Organization of African Unity and has been the subject of annual U.N. General Assembly resolutions for three decades, an effort that the United States has long supported. Crafting a Treaty, however, did not begin until South Africa--the most significant nuclear power on the continent and therefore a key participant in the treaty if the zone were to be credible--acceded to the NPT in 1991. The SAG has declared on numerous occasions that it fully supports the creation of an African NWFZ and the current treaty draft. It is noteworthy that the current text includes an article on the declaration, dismantlement, and inspection of a nuclear weapons capability. This stricture, along with the current text's insistence on full-scope IAEA safeguards, would represent another legal obligation on South Africa, once the SAG brings the Treaty into force, to transparency and safeguards on its nuclear activities. (The final text of the Treaty was approved by the OAU in June 1995, and should be open for signature sometime in 1996 in Cairo.)

South Africa has also provided a specialist to serve on the IAEA's Standing Advisory Group on Safeguards Implementation (SAGSI), the group charged with advising the IAEA Director-General on the creation and implementation of more effective safeguards procedures.

It is important to take note of the organizational and financial changes to South Africa's nuclear-related programs since 1990 as a measure of the SAG's turn away from the military applications of the atom. The DeKlerk government reorganized the AEC into an almost-wholly commercial operation, with a drastic cutback in government funding. The AEC is now under significant pressure to generate profits from commercial nuclear and non-nuclear high-technology applications. Many commercially non-viable projects have been terminated; AEC personnel have been reduced from 8,000 in 1986 to approximately 3,000 employees. (While some former employees have, according to press reports, threatened to reveal sensitive information about the nuclear weapon program unless their pensions were increased, there is no evidence to suggest that any such revelation, or transfer of information or technology to other states, has occurred.) If the MLIS enrichment effort does not show promise to produce enriched uranium at a profit--in a global market already awash in uranium products--the effort could be terminated altogether. The Semi-Commercial LEU plant is already slated to be shut down.

The South African example is a powerful precedent in expanding and consolidating the nuclear nonproliferation regime in regions of proliferation concern as South Asia and the Middle East.

II. COMPLIANCE WITH STATUTORY REQUIREMENTS

As will be shown below, the proposed Agreement meets the applicable requirements of the Atomic Energy Act of 1954, as amended (hereinafter the Act), and the Nuclear Non-Proliferation Act of 1978 (hereinafter the NNPA). Section 123(a) of the Act, as amended by

Section 401 of the NNPA, requires new or amended agreements for cooperation to include the terms, conditions, duration, nature, and scope of the cooperation.

The nature and scope of the cooperation authorized by the proposed Agreement, as well as types of cooperation excluded therefrom or permissible only by amendment thereto, are described in Section A below.

The most pertinent terms and conditions of the cooperation authorized by the proposed Agreement are discussed in Sections B, C, D, and E below.

The duration of the proposed Agreement is thirty years from the date of its entry into force, extendable by agreement of the parties and terminable at any time by either party on one year's written notice to the other party.

A. Nature and Scope of Cooperation

(1) Permitted Cooperation

Article 2 of the proposed Agreement describes in general terms the kinds of cooperative activity envisaged: the use of nuclear energy for peaceful purposes and the transfer of information, material, equipment and components. Such cooperation is to be in accordance with the proposed Agreement and the applicable treaties, national laws, regulations and license requirements of the parties. Article 4, Paragraph 1, of the proposed Agreement provides that material (including, among other items, low enriched uranium in quantities upon which the parties have agreed and natural uranium, but not including any other special nuclear material such as plutonium or high enriched uranium), equipment, and components may be transferred for applications consistent with the proposed Agreement. Paragraph 4 of that Article, however, provides that small quantities of special nuclear material, such as plutonium and high enriched uranium, may be transferred for use as samples, standards, detectors, targets and for such other purposes as the parties may agree. Article 4, Paragraph 5, of the proposed Agreement sets forth the commitment of the United States to endeavor to ensure a reliable supply of nuclear fuel to the Republic of South Africa.

Article 8 of the proposed Agreement requires that material, equipment, and components transferred pursuant to the proposed Agreement, as well as material used in or produced through the use of any material, equipment, or components so transferred, shall not be used for any nuclear explosive device, for research on or development of any nuclear explosive device, or for any military purpose. Article 9 of the proposed Agreement provides that cooperation under the proposed Agreement shall require the application of IAEA safeguards with respect to all nuclear activities within the territory of the Republic of South Africa, under its jurisdiction or carried out under its control anywhere, while stipulating that this requirement shall be deemed fulfilled by implementation of a Safeguards Agreement pursuant to Article III (4) of the NPT.

(2) Types of Cooperation Not Authorized

The proposed Agreement excludes certain types of cooperation from its scope and provides that amendment of the proposed Agreement would be required for certain other types of cooperation. Thus:

Article 3, Paragraph 3, of the proposed Agreement provides that restricted data, as defined in Article 1(M) of the proposed Agreement, shall not be transferred under the proposed Agreement. (In addition, Article 3, Paragraph 2, provides that neither party is required to transfer any information which it is not permitted to transfer.)

Article 3, Paragraph 4, of the proposed Agreement provides that sensitive nuclear technology, as defined in Article 1(O) of the proposed Agreement, shall not be transferred under this agreement unless provided for by an amendment to this agreement.

Article 4, Paragraph 1, of the proposed Agreement provides that neither party shall transfer sensitive nuclear facilities, as defined in Article 1(P) of the proposed Agreement, and major critical components thereof, as defined in Article 1(F), unless the agreement is amended to permit such transfer.

B. Specific Requirements for Agreements for Cooperation

Section 123(a) of the Atomic Energy Act sets forth nine specific requirements which must be met in an agreement for cooperation. These are set forth below, with a description and explanation of the provisions of the proposed Agreement which address each requirement.

(1) Safeguards and their Duration

Subparagraph (1) of Section 123(a) of the Act requires:

> a guaranty by the cooperating party that safeguards as set forth in the agreement for cooperation will be maintained with respect to all nuclear materials and equipment transferred pursuant thereto, and with respect to all special nuclear material used in or produced through the use of such nuclear materials and equipment, so long as the material or equipment remains under the jurisdiction or control of the cooperating party, irrespective of the duration of other provisions in the agreement or whether the agreement is terminated or suspended for any reason...

This provision is designed to require the application of safeguards with respect to items subject to the proposed Agreement and to provide protection against any termination of such safeguards. Article 9 of the proposed Agreement and the Agreed Minute appended to the proposed Agreement satisfy this requirement.

Article 9, Paragraph 2, of the proposed Agreement provides that "source or special nuclear material transferred to the Republic of South Africa pursuant to this agreement and any source or special nuclear material used in or produced through the use of material, equipment or components so transferred shall be subject to safeguards in accordance with the agreement between the Republic of South Africa and the IAEA for the application of safeguards in connection with the NPT, signed on Vienna 16 September 1991."

Article 9, Paragraph 4, of the proposed Agreement provides further assurance of the continued applicability of safeguards by requiring that "if either party becomes aware of circumstances which demonstrate that the IAEA for any reason is not or will not be applying safeguards in accordance with the agreement as provided for in paragraph 2 or paragraph 3...[set forth above], to ensure effective continuity of safeguards the parties shall consult and immediately enter into arrangements with the IAEA or between themselves which conform with IAEA safeguards principles and procedures, which provide assurance equivalent to that intended to be secured by the system they replace."

Also, the "Safeguards" paragraph of the Agreed Minute appended to the proposed Agreement provides that "if either party becomes aware of circumstances referred to in paragraph 4 of Article 9, either party shall have the rights listed below, which rights shall be suspended if both parties agree that the need to exercise such rights is being satisfied by the application of IAEA safeguards under arrangements pursuant to paragraph 4 of Article 9:

> (1) to review in a timely fashion the design of any equipment transferred pursuant to the Agreement, or of any facility which is to use, fabricate, process, or store any source or special nuclear material so transferred or any special nuclear material used in or produced through the use of such material or equipment;
>
> (2) to require the maintenance and production of records and of relevant reports for the purpose of assisting in ensuring accountability for material transferred pursuant to the Agreement and any source material or special nuclear material used in or produced through the use of any material, equipment or components so transferred; and
>
> (3) to designate personnel, in consultation with the other party, who shall have access to all places and data necessary to account for the material in paragraph 2, to inspect any equipment or facility referred to in paragraph 1, and to install any devices and make such independent measurements as may be deemed necessary to account for such material. Such personnel shall, if either party so requests, be accompanied by personnel designated by the other party.

Article 9, Paragraph 5, of the proposed Agreement reinforces all of this by providing that "each party shall take such measures as are necessary to maintain and facilitate the application of safeguards provided for under this Article."

With respect to continuation of safeguards, Article 13, Paragraph 2, of the proposed Agreement states that "notwithstanding the suspension, termination or expiration of this

agreement or any cessation of cooperation hereunder for any reason, Articles 5, 6, 7, 8, 9 and 11 shall continue in effect so long as any material, equipment or components subject to these Articles remains in the territory of the party concerned or under its jurisdiction or control anywhere, or until such time as the parties agree that such material, equipment, or components are no longer usable for any nuclear activity relevant from the point of view of safeguards."

Article 9, Paragraphs 6 and 7, also require each Party to maintain an accounting and control system for source and special nuclear material and to provide, or allow the IAEA to provide upon request of the other Party, status reports on inventories of source and special nuclear material subject to the proposed Agreement.

(2) Full-Scope Safeguards

Subparagraph (2) of Section 123(a) of the Act requires:

> in the case of non-nuclear-weapon states, a requirement, as a condition of continued United States nuclear supply under the agreement for cooperation, that IAEA safeguards be maintained with respect to all nuclear materials in all peaceful nuclear activities within the territory of such state, under its jurisdiction, or carried out under its control anywhere...

Article 9, Paragraph 1, of the proposed Agreement meets this requirement by providing that cooperation under the proposed Agreement shall require the application of IAEA safeguards "with respect to all nuclear activities within the territory of South Africa, under its jurisdiction or carried out under its control anywhere. Implementation of a Safeguards Agreement pursuant to Article III (4) of the NPT shall be considered to fulfill this requirement."

(3) No Military or Explosive Use

Subparagraph (3) of Section 123(a) of the Act requires:

> ...a guaranty by the cooperating party that no nuclear materials and equipment or sensitive nuclear technology to be transferred pursuant to such agreement, and no special nuclear material produced through the use of any nuclear materials and equipment or sensitive nuclear technology transferred pursuant to such agreement, will be used for any nuclear explosive device, or for research on or development of any nuclear explosive device, or for any other military purpose...

Article 8 and Article 3, Paragraph 4, of the proposed Agreement, respectively, satisfy this requirement by requiring that:

> Material, equipment and components transferred pursuant to this agreement and material used in or produced through the use of any material, equipment or components

so transferred shall not be used for any nuclear explosive device, for research on or development of any nuclear explosive device, or for any military purpose.

Sensitive nuclear technology shall not be transferred under this agreement unless provided for by an amendment to this agreement.

(4) Right of Return

Subparagraph (4) of Section 123(a) of the Act requires:

...a stipulation that the United States shall have the right to require the return of any nuclear materials and equipment transferred pursuant thereto and any special nuclear material produced through the use thereof if the cooperating party detonates a nuclear explosive device or terminates or abrogates an agreement providing for IAEA safeguards...

Article 11 of the proposed Agreement meets this requirement by providing:

1. If either party at any time following entry into force of this agreement...

> (B) terminates, abrogates or materially violates a safeguards agreement with the IAEA; the other party shall have the rights to cease further cooperation under this agreement and to require the return of any material, equipment and components transferred under this agreement and any special nuclear material produced through their use.

2. If South Africa at any time following entry into force of this agreement detonates a nuclear explosive device, the United States of America shall have the same rights as specified in paragraph 1.

3. If the United States at any time following entry into force of this Agreement detonates a nuclear explosive device which contains nuclear material of South African origin or derived from South African source material transferred to the United States under this Agreement, South Africa shall have the same rights as specified in paragraph 1.

4. If either party exercises its rights under this Article to require the return of any material, equipment or components, it shall, after removal from the territory of the other party, reimburse the other party for the fair market value of such material, equipment or components. Fair market value for purposes of this Agreement shall be determined by negotiation between the parties.

(5) Retransfer

Subparagraph (5) of Section 123(a) of the Act requires:

> a guaranty by the cooperating party that any material or any Restricted Data transferred pursuant to the agreement for cooperation and...any production or utilization facility transferred pursuant to the agreement for cooperation or any special nuclear material produced through the use of any such facility or through the use of any material transferred pursuant to the agreement, will not be transferred to unauthorized persons or beyond the jurisdiction or control of the cooperating party without the consent of the United States.

Section 109 of the Act, as amended by Section 309 of the NNPA, requires that recipient nations also agree to obtain United States approval before retransferring any components, items and substances exported from the United States which the NRC has found to be of "significance for nuclear explosive purposes." The NRC has identified a series of such components, items and substances in regulations set forth in 10 CFR Part 110 which are subject to this retransfer requirement.

Article 5, Paragraph 2, and Article 3, Paragraph 3, of the proposed Agreement, respectively, satisfy the requirements of Sections 123(a) and 109 of the Act by providing that:

> Material, equipment and components transferred pursuant to this agreement and any special nuclear material produced through the use of any such material or equipment shall not be transferred to unauthorized persons or, unless the parties agree, beyond the recipient party's territorial jurisdiction.
>
> Restricted data shall not be transferred under this agreement.

The exercise of this particular United States control with respect to "special nuclear material produced through the use of nuclear material transferred pursuant to the proposed Agreement and not used in or produced through the use of equipment transferred pursuant to the proposed Agreement" is limited by the rule of proportionality set out under "Coverage of the Agreement" in the Agreed Minute appended to the proposed Agreement. That section confirms that the retransfer requirements of Article 5 shall be applied to "that proportion of special nuclear material produced which represents the ratio of transferred material used in the production of the special nuclear material to the total amount of material so used, and similarly for subsequent generations."

(6) Physical Security

Subparagraph (6) of Section 123a. of the Act requires:

> a guaranty by the cooperating party that adequate physical security will be maintained with respect to any nuclear material transferred pursuant to such agreement and with respect to any special nuclear material used in or produced through the use of any material, production facility, or utilization facility transferred pursuant to such agreement...

Article 7, Paragraph 1, of the proposed Agreement satisfies this requirement by requiring that:

> Adequate physical protection shall be maintained with respect to source or special nuclear material and equipment transferred pursuant to this agreement and special nuclear material used in or produced through the use of material or equipment so transferred.

With respect to the meaning of "adequate," Section 127 (3) of the Act provides that physical security measures shall be deemed adequate if they provide a level of protection equivalent to that required by regulations promulgated by the NRC establishing levels of physical protection. (See NNPA Section 304 (d); 10 CFR 110.43.)

Article 7, Paragraph 2, of the proposed Agreement satisfies this test by providing that:

> The parties agree to the levels for the application of physical protection set forth in the Annex to this agreement, which may be modified by mutual consent of the parties without amending this agreement. The parties shall maintain adequate physical protection measures in accordance with these levels. These measures shall as a minimum provide protection comparable to the recommendations set forth in IAEA Document INFCIRC/225/Revision 2 concerning the physical protection of nuclear material, or in any revision of that document agreed to by the parties.

(7) Reprocessing, Enrichment or Other Alteration

Subparagraph (7) of Section 123a. of the Act requires:

> ...a guaranty by the cooperating party that no material transferred pursuant to the agreement for cooperation and no material used in or produced through the use of any material, production facility, or utilization facility transferred pursuant to the agreement for cooperation will be reprocessed, enriched or (in the case of plutonium, uranium 233, or uranium enriched to greater than twenty percent in the isotope 235, or other nuclear materials which have been irradiated) otherwise altered in form or content without the prior approval of the United States...

Article 6 of the proposed Agreement satisfies these requirements by providing the following:

> 1. Material transferred pursuant to this agreement and material used in or produced through the use of material or equipment so transferred shall not be reprocessed unless the parties agree.
>
> 2. Plutonium, uranium 233, high enriched uranium and irradiated source or special nuclear material, transferred pursuant to this agreement or used in or produced through

the use of material or equipment so transferred, shall not be altered in form or content, except by irradiation or further irradiation, unless the parties agree.

3. Uranium transferred pursuant to this Agreement or used in any equipment so transferred shall not be enriched after transfer unless the parties agree.

The controls in Article 6 of the proposed Agreement are subject to the proportionality provision in the Agreed Minute appended to the proposed Agreement.

(8) Storage

Subparagraph (8) of Section 123a. of the Act requires:

...a guaranty by the cooperating party that no plutonium, no uranium 233, and no uranium enriched to greater than twenty percent in the isotope 235, transferred pursuant to the agreement for cooperation, or recovered from any source or special nuclear material so transferred or from any source or special nuclear material used in any production facility or utilization facility transferred pursuant to the agreement for cooperation, will be stored in any facility that has not been approved in advance by the United States...

Article 5, Paragraph 1, of the proposed Agreement fulfills this requirement by providing that:

Plutonium and uranium 233 (except as contained in irradiated fuel elements), and high enriched uranium, transferred pursuant to this agreement or used in or produced through the use of material or equipment so transferred shall only be stored in a facility to which the parties agree.

The storage control provided for in Article 5, Paragraph 1, of the proposed Agreement is subject to the proportionality provision in the Agreed Minute appended to the proposed Agreement.

(9) Sensitive Nuclear Technology

Subparagraph (9) of Section 123a. of the Act requires:

...a guaranty by the cooperating party that any special nuclear material, production facility, or utilization facility produced or constructed under the jurisdiction of the cooperating party by or through the use of any sensitive nuclear technology transferred pursuant to such agreement for cooperation will be subject to all the requirements specified in this subsection.

Article 3, Paragraph 4, of the proposed Agreement precludes transfers of sensitive nuclear technology unless provided for by an amendment to the proposed Agreement, thereby

rendering the above subparagraph inapplicable unless the proposed Agreement is amended to allow such transfers.

C. NNPA Section 402 -- Additional Requirements

Section 402(a) of the NNPA requires that:

> Except as specifically provided in any agreement for cooperation, no source or special nuclear material hereafter exported from the United States may be enriched after export without the prior approval of the United States for such enrichment...

As discussed earlier, Article 6, Paragraph 3, of the proposed Agreement satisfies this restriction by providing that "uranium transferred pursuant to this Agreement or used in any equipment so transferred shall not be enriched after transfer unless the parties agree."

Section 402(b) of the NNPA requires that:

> In addition to other requirements of law, no major critical component of any uranium enrichment, nuclear fuel reprocessing, or heavy water production facility shall be exported under any agreement for cooperation...unless such agreement for cooperation specifically designates such components as items to be exported pursuant to the agreement for cooperation.

Article 4, Paragraph 1, of the proposed Agreement requires that "...Sensitive nuclear facilities and major critical components thereof shall not be transferred under this agreement." Therefore, Section 402(b) would not apply to the proposed Agreement unless the latter was amended to allow the export of sensitive nuclear facilities and major critical components. The definition of "sensitive nuclear facility" in Article 1(N) of the proposed Agreement encompasses the facilities described in Section 402 (b) of the NNPA.

D. Section 129 of the Act -- Conduct Resulting in Termination of Nuclear Exports

Section 129 (added by Section 307 of the NNPA) prohibits exports of nuclear materials and equipment or sensitive nuclear technology to countries which engage in proscribed activities. The activities in Section 129 include weapons-development activities, detonation of a nuclear explosive device, violation or termination of safeguards or an agreement for cooperation with the United States, and certain assistance to a non-nuclear weapon state relevant to acquisition of nuclear weapons.

President DeKlerk's admission in March 1993 that South Africa constructed six nuclear devices raises the possibility of triggering Section 129. However, the relevant subsection (129(1)(d)) sets two conditions for triggering sanctions: (a) the state engaged in activities involving source or special nuclear material that had direct significance for the manufacture of

nuclear explosive devices (which South Africa has clearly done), and (b) the state has failed to take steps which, in the President's judgment, represent sufficient progress toward terminating such activities. South Africa's NPT adherence and advocacy for indefinite extension, prompt acceptance of full-scope IAEA safeguards, disclosure, dismantlement and destruction of its past nuclear weapons program, and full cooperation with the verification efforts of the IAEA--as well as the IAEA's satisfaction with the results of those efforts--does provide evidence that South Africa has taken steps toward termination of the activities proscribed by 129(1)(d).

It is clear that South Africa engaged in activities described in 129(1)(D); it is also clear that they have taken steps to terminate those activities. Whether these steps meet the requirement as representing sufficient progress toward termination of these activities is an issue that has been put before the President for his determination.

Section 129(1)(A) lists the detonation of a nuclear explosive device as an action that would trigger sanctions. There has long been speculation that an optical flash observed by a U.S. satellite in the South Atlantic in 1979 may have been a nuclear test by South Africa. However, there has never been conclusive evidence that the observed phenomenon was indeed a nuclear test. There is also no evidence that, if the observed phenomenon was a test, South Africa was involved in it. South Africa did construct a test site in the Kalahari desert in the mid-70's, but there is no evidence that the site was ever used for a nuclear explosive test. (That site has since been destroyed under IAEA supervision.)

Subsections (1)(b) and (1)(c) list termination, abrogation, or material violation of an IAEA safeguards agreement as grounds for triggering sanctions. There is no evidence that South Africa committed any of these acts. Finally, subsection (2)(b) cites as sanctionable any assistance, encouragement, or inducement of any non-nuclear-weapon state to:

> engage in activities involving source or special nuclear material and having direct significance for the manufacture or acquisition of nuclear explosive devices, and has failed to take steps which, in the President's judgment, represent sufficient progress toward terminating such assistance, encouragement, or inducement...

While there have been concerns about past South African activities relevant to this subsection, South Africa's accession to the NPT, acceptance of full-scope safeguards, membership of the Zangger Committee and membership in the Nuclear Suppliers Group, and institution of a comprehensive export control regime provides a basis to conclude that any such activities will not occur in the future. This issue has been put before the President for his determination.

E. Section 109 of the Act -- Components, Items, and Substances

Section 109 of the Act (as amended by Section 309 of the NNPA) empowers the NRC to designate certain component parts, items and substances which, because of their significance for nuclear explosive purposes, should be subject to its licensing authority. Such licenses would be granted only upon a finding that (a) IAEA safeguards will be applied to such

component, substance or item, (b) the component, substance or item will not be used for any nuclear explosive device or for research on or development of any nuclear explosive device, and (c) that no such component, substance or item will be retransferred without prior U.S. consent.

The NRC in its regulations (10 CFR Part 110) has identified certain reactor components and two substances -- heavy water and nuclear-grade graphite -- as subject to these criteria. In the case of the Republic of South Africa, the first two criteria are both met by reason of its status as an NPT party and because of the language in Articles 8 and 9 of the proposed Agreement. The third criterion (retransfer) can be met by having components and moderator material identified as being exported under the proposed Agreement, in which case Article 5, Paragraph 2, of the proposed Agreement would apply. Alternatively, the United States could seek separate assurances from the Republic of South Africa.

The Atomic Energy Act does not require that such exports be transferred under an agreement for cooperation. However, they may be so transferred and thus be subject to all the relevant provisions of the agreement.

III. OTHER NONPROLIFERATION POLICY ISSUES

Any decision by the United States to engage in nuclear cooperation with a given nation involves a number of nonproliferation policy considerations in addition to the legal rights, guarantees, and safeguards contained in the applicable agreement for cooperation. These considerations could relate in a given case to such matters as scope and terms of the cooperation envisaged under such an agreement, the precedent-setting implications of particular provisions of such an agreement, the degree to which extending nuclear cooperation may foster other nonproliferation efforts, the general role of the state concerned in nonproliferation efforts, and a number of other issues. These issues will vary from case to case. This section of the assessment statement addresses policy issues of this kind that relate to the proposed Agreement.

A. Scope of Cooperation/Weapons-Usable Material

The scope of cooperation permitted by the proposed Agreement extends to the transfer of nuclear material, equipment (including reactors), and components for both nuclear research and nuclear power production. The proposed Agreement does not provide for transfers of any sensitive nuclear technology or facilities as defined by the NNPA. It provides for the transfer of potentially large quantities of low enriched uranium if the parties agree it is necessary for the purposes set forth in the agreement, although South Africa has the indigenous capability to provide for its uranium needs. However, only small quantities (i.e., grams) of plutonium or highly enriched uranium may be transferred for use as samples, standards, detectors, targets, and for other purposes as the parties may agree.

The proposed Agreement therefore does not contemplate the transfer of any material or equipment that would assist a nuclear-weapons development program. ACDA is satisfied with the scope of the proposed Agreement.

B. NPT Considerations

Preventing the further spread of nuclear weapons is a major US national security and foreign policy goal, and the NPT continues to play a unique and irreplaceable role in international efforts to erect legal and political barriers to such nuclear weapons proliferation.

South Africa has complied with both the letter and spirit of the NPT since its accession to the Treaty in July 1991. The SAG has cooperated fully with the IAEA in the latter's efforts to verify South Africa's nuclear inventory. Committed to full safeguards transparency, South Africa has permitted full and complete access to any facility that the IAEA wished to inspect, without regard as to whether the SAG was legally required to do so. South Africa also provided full access to operating records of its enrichment plants to assist the Agency's verification and inspection efforts.

Indeed, South Africa's accession and compliance has significantly strengthened the NPT regime. South Africa has demonstrated that the political and material benefits of NPT membership are great enough that South Africa abandoned an extant arsenal of the most powerful type of weaponry known to mankind. The SAG also set the powerful precedent that a "threshold" nuclear state can cross back over the nuclear threshold and be welcomed into the international community as a non-nuclear weapon state. South Africa has shown that the nuclear path does not inexorably lead in only one direction, toward the acquisition and perpetual maintenance of a nuclear arsenal. Indeed, South Africa has been an important voice in urging other states to join the NPT. South African nuclear officials have availed themselves of opportunities to communicate their positive experiences with the assumption of NPT safeguards obligations. Finally, at the 1995 NPT Review and Extension Conference, South Africa not only urged other states to join the NPT, but played a crucial role in leading the Conference to adoption of the indefinite extension of the NPT. South Africa's efforts in support for indefinite NPT extension was instrumental in achieving this vitally-important U.S. objective.

ACDA is confident that South Africa will continue to fulfill its NPT obligations. Indeed, South Africa will likely become an important voice in urging other states to join the NPT; South African nuclear officials have already availed themselves of opportunities to communicate their positive experiences with the assumption of NPT and safeguards obligations. Finally, the establishment of increased nuclear cooperation and commerce with South Africa as a result of its NPT membership will demonstrate to other non-Parties the political and material benefits of NPT membership.

C. Safeguards Considerations

The IAEA has stated that it is satisfied with South Africa's "extensive cooperation to the Agency in the implementation of safeguards" and the conduct of inspections. The IAEA Director General reported to the Board of Governors in September 1993 that the Agency had resolved earlier discrepancies regarding the production of HEU by the South African pilot enrichment plant. The Director General's report stated that it was reasonable to conclude that the plant's lifetime production capacity of HEU is consistent with the amounts declared in South Africa's initial inventory. Further, the Agency reported that their inspections indicate that it was reasonable to conclude that the amount of HEU produced is consistent with the declared scope of the SAG nuclear weapons program. The IAEA found no indication that any weapons components have not been destroyed or converted to peaceful uses. Finally, the IAEA also supervised the destruction of the two nuclear test shafts in the Kalahari.

Given the unprecedented freedom and cooperation that the SAG has granted to the IAEA in conducting its inspections and implementation of safeguards; the record of South African compliance with its past safeguards agreements; and the peaceful transfer of power to a post-apartheid government, ACDA is confident that the system of safeguards that has been implemented in South Africa will satisfy both the requirements for full-scope safeguards in the proposed Agreement for Cooperation and other U.S. statutory requirements for cooperation.

D. Other Considerations

When assessing nonproliferation factors in connection with a civil nuclear cooperation agreement, it is appropriate to go beyond the specific terms of such an agreement to consider a country's general commitment to nonproliferation.

ACDA believes that the scope and depth of the nuclear and other nonproliferation policies that the Government of South Africa has put into effect in the last four years demonstrate South Africa's firm commitment to responsible nonproliferation behavior. Foreign Minister Nzo in September 1994 declared his government's full commitment to nonproliferation and transparency, and his government's critical support for the indefinite extension of the NPT bears ample witness to this commitment.

Finally, ACDA concludes that conditions in South Africa do not now foster, and are unlikely in the foreseeable future to foster, a motivation to resume a clandestine nuclear weapon development program. Neither the political and security conditions that fostered perceptions of isolation and insecurity, nor the Government that contributed and responded to those conditions with a nuclear weapons capability, now exist in South Africa and seem unlikely to recur in the forseeable future.

This Agreement will increase the scope and intensity of interaction between USG and South African nuclear safety, export control, and materials control personnel at all levels. It will thereby increase the transparency of South African activities, routinize consultations and

cooperation across the full range of nuclear-related issues, and foster the transmission of U.S. nonproliferation norms, procedures and systems of regulation and control.

IV. Conclusion

On the basis of the analysis in this assessment statement and all pertinent information of which the Agency is aware, the United States Arms Control and Disarmament Agency has arrived at the following assessment, conclusions, views and recommendations:

1. The safeguards and other control mechanisms and the peaceful use assurances contained in the proposed Agreement are adequate to ensure that any assistance furnished thereunder will not be used to further any military or nuclear explosive purpose.

2. The proposed Agreement meets all the substantive requirements of the Atomic Energy Act and the NNPA.

3. Execution of the proposed Agreement would be compatible with the nonproliferation program, policy and objectives of the United States.

4. It is recommended that the President determine that the performance of the proposed Agreement will promote, and will not constitute an unreasonable risk to, the common defense and security; and that the President approve and authorize the execution of the proposed Agreement.

S/S 9514404

DEPARTMENT OF STATE
WASHINGTON
August 4, 1995

MEMORANDUM FOR: THE PRESIDENT

FROM: Peter Tarnoff, Acting
Hazel R. O'Leary

SUBJECT: Proposed Agreement for Cooperation Between the United States of America and the Republic of South Africa Concerning Peaceful Uses of Nuclear Energy

The United States and South Africa have recently completed negotiation of a proposed agreement for peaceful nuclear cooperation. This memorandum recommends that you sign the determination, approval and authorization at Attachment 1, which, pursuant to section 123 b. of the Atomic Energy Act of 1954, as amended, sets forth: (1) your approval of the proposed agreement; (2) your determination that performance of the proposed agreement will promote, and will not constitute an unreasonable risk to, the common defense and security; and (3) your authorization for execution of the agreement.

We further recommend that you take these steps only after you have made certain findings, pursuant to the Secretary of State's recommendations in a separate memorandum, regarding past South African nuclear activities in relation to section 129 of the U.S. Atomic Energy Act.

If you authorize execution of the agreement, it will be signed by representatives of the United States and South Africa. Afterward, in accordance with section 123 b. and d. of the Act, it will be submitted to both Houses of Congress. A draft letter of transmittal to the Congress is at Attachment 2 for your signature. (This letter will be held until after the agreement is signed.) The agreement must lie before Congress for 90 days of continuous session. Unless a joint resolution of disapproval is enacted, the agreement may thereafter be brought into force.

The text of the proposed agreement is at Attachment 3. It includes an agreed minute, which is an integral part of the agreement. A summary of its basic provisions is at Attachment 4. In essence, the proposed agreement provides a comprehensive framework for peaceful nuclear cooperation

between the United States and South Africa under appropriate conditions and controls reflecting a strong common commitment to nuclear non-proliferation. The agreement has an initial term of 25 years and may be extended thereafter by agreement of the parties in accordance with their applicable requirements.

The proposed agreement permits the transfer of technology, material (including low enriched uranium), equipment (including reactors), and components for both nuclear research and nuclear power purposes. It does not permit transfers of any sensitive nuclear technology or facilities. In our judgment the proposed agreement meets all requirements for new agreements for peaceful nuclear cooperation set forth in section 123 a. of the Atomic Energy Act of 1954, as amended by the Nuclear Non-Proliferation Act (NNPA) of 1978.

The agreed minute contains certain important understandings relating to implementation of the agreement, including provisions regarding the implementation of safeguards and U.S. fallback safeguards rights.

Section 407 of the NNPA directs that the United States seek to include in agreements for peaceful nuclear cooperation provisions for identifying environmental implications and protection of the international environment. In our view, Article 12 of the proposed agreement satisfies these provisions.

In accordance with the provisions of section 123 of the Atomic Energy Act, the proposed agreement was negotiated by the Department of State, with the technical assistance and concurrence of the Department of Energy and in consultation with the Arms Control and Disarmament Agency (ACDA). ACDA's views and recommendations and its Nuclear Proliferation Assessment Statement concerning the proposed agreement are being submitted to you separately by the Director of ACDA. The proposed agreement has also been reviewed by the members of the Nuclear Regulatory Commission. The NRC's views are being submitted to you separately in a letter from the Chairman.

The proposed agreement with South Africa would replace and update an existing agreement that entered into force in 1957. U.S. cooperation with South Africa under the 1957 agreement was suspended in the 1970s, owing to evidence that South Africa was embarked on a nuclear weapons program. Following passage of the NNPA in 1978, suspension of cooperation was also necessitated by South Africa's inability to satisfy a requirement of U.S. law that non-nuclear weapon state cooperating partners accept IAEA safeguards on all their nuclear activities ("full-scope safeguards") as a condition for continued significant U.S. nuclear supply.

In July 1991 South Africa, in a momentous policy reversal, acceded to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and promptly entered into a full-scope safeguards agreement with the IAEA as required by the Treaty. South Africa has been fully cooperative with the IAEA in carrying out its safeguards responsibilities.

Further, in March 1993 South Africa took the dramatic and candid step of revealing the existence of its past nuclear weapons program and reported that it had dismantled all of its six nuclear devices prior to its accession to the NPT. It also invited the IAEA to inspect its formerly nuclear weapons-related facilities to demonstrate the openness of its nuclear program and its genuine commitment to non-proliferation.

South Africa has also taken a number of additional important non-proliferation steps. In July 1993 it put into effect a law banning all weapons of mass destruction. In April 1995 it became a member of the Nuclear Suppliers Group (NSG), formally committing itself to abide by the NSG's stringent guidelines for nuclear exports. At the 1995 NPT Review and Extension Conference it played a decisive role in the achievement of indefinite NPT extension -- a top U.S. foreign policy and national security goal.

We regard all these steps as strong and convincing testimony to South Africa's firm commitment to stopping the spread of weapons of mass destruction and to conducting its nuclear program for peaceful purposes only. A more detailed discussion of these points is provided in ACDA's Nuclear Proliferation Assessment Statement.

It was against this background that we negotiated the proposed new agreement for peaceful nuclear cooperation. Although cooperation could have been resumed under the 1957 agreement, both we and South Africa believe that it is preferable to have a new agreement completely satisfying, as the proposed new agreement does, the current legal and policy criteria of both sides.

In our opinion, the proposed agreement meets all U.S. statutory requirements and will also serve U.S. non-proliferation and other foreign policy interests. We recommend, therefore, that you determine, pursuant to section 123 b. of the Atomic Energy Act of 1954, as amended, that performance of the agreement will promote, and will not constitute an unreasonable risk to, the common defense and security; and that you approve the agreement and authorize its execution.

RECOMMENDATION

That you sign the determination, approval and authorization at Attachment 1 and the transmittal to Congress at Attachment 2. (The transmittal will be held until the agreement itself is signed.)

ATTACHMENTS

1. Draft Determination, Approval and Authorization
2. Draft Transmittal to the Congress (To be held until after the Agreement is signed)
3. Proposed Agreement for Cooperation Between the United States of America and the Republic of South Africa Concerning Peaceful Uses of Nuclear Energy
4. Summary of Basic Provisions of the Agreement

U.S. - South Africa
Agreement for Peaceful Nuclear Cooperation

Summary of Basic Provisions

Article 1 contains definitions.

Article 2 sets forth the scope of cooperation in the use of nuclear energy for peaceful purposes. It provides that transfers of information, material, equipment and components may be undertaken subject to the agreement and to such additional terms and conditions as may be agreed by the parties. An agreed minute provides that material, equipment or components transferred between the parties for peaceful purposes will be regarded as having been transferred pursuant to the agreement only upon confirmation by the recipient party that such item or items are to be subject to the terms of the agreement.

Article 3 provides for the transfer of information in a variety of fields involving the peaceful uses of nuclear energy. Restricted data and sensitive nuclear technology may not be transferred under the agreement.

Article 4 provides the basic enabling framework for the transfer of material, equipment and components. With some stated exceptions, including small quantities for use as samples, standards, detectors, targets and such other purposes as may be agreed, transfers of special nuclear material will be limited to low enriched uranium, which may be transferred for use as fuel in reactors or reactor experiments, for conversion or fabrication or for such other purposes as may be agreed. No sensitive nuclear facilities or major critical components of such facilities may be transferred. This article further provides that the quantity of special nuclear material transferred shall not at any time be in excess of quantities that the parties agree are necessary for specified purposes. Transfers of small quantities of special nuclear material are not subject to this limitation.

Article 5 requires the parties' agreement (1) on facilities for the storage of plutonium and uranium 233 (except in irradiated fuel elements) or high enriched uranium transferred pursuant to the agreement or used in or produced through the use of material or equipment so transferred; and (2) for the

retransfer of any material, equipment or components so transferred and special nuclear material produced through the use of material or equipment so transferred. An agreed minute states that the consent rights specified in article 5 with respect to special nuclear material produced through the use of nuclear material transferred, and not used in or produced through the use of equipment transferred, shall in practice be applied to that proportion of produced special nuclear material which represents the ratio of transferred material used in its production to the total amount of material so used.

Article 6 requires the parties' agreement (1) for the reprocessing of material transferred pursuant to the agreement and material used in or produced through the use of any material or equipment so transferred; (2) for the alteration in form or content, except by irradiation or further irradiation, of plutonium, uranium 233, high enriched uranium or irradiated source or special nuclear material so transferred or produced; and (3) for the enrichment of uranium so transferred or used in any equipment so transferred. An agreed minute states that the consent rights specified in article 6 with respect to special nuclear material produced through the use of nuclear material transferred, and not used in or produced through the use of equipment transferred, shall in practice be applied to that proportion of produced special nuclear material which represents the ratio of transferred material used in its production to the total amount of material so used.

Article 7 requires each party to maintain adequate physical protection measures, in accordance with levels of protection set forth in the Annex to the agreement, with respect to all material and equipment subject to the agreement. The measures applied shall, as a minimum, provide protection comparable to that set forth in the current version of IAEA document INFCIRC/225 concerning the physical protection of nuclear material as agreed to by the parties. The Annex describes physical security levels applicable with respect to the use, storage and transport of nuclear materials classified as categories I (requiring the most stringent levels of protection), II and III. The parties agree to consult concerning the adequacy of these physical security measures and to identify agencies or authorities responsible for physical security. The provisions of this article shall be implemented in such a way as to avoid undue interference in the parties nuclear activities and to be consistent with prudent management.

Article 8 contains a guarantee by each party that no material, equipment or components subject to the agreement will be used for any nuclear explosive device, for research on or development of any nuclear explosive device, or for any military purpose.

Article 9 requires application of IAEA safeguards with respect to all nuclear activities within the territory of South Africa, under its jurisdiction or carried out under its control anywhere. This article further requires source or special nuclear material transferred pursuant to the Agreement and source or special nuclear material used in or produced through the use of material, equipment or components so transferred to be subject to the two parties' respective safeguards agreements with the IAEA. This article also contains provisions for fall-back safeguards. An agreed minute sets forth certain rights each party will have in the event IAEA safeguards are not being applied. Article 9 also requires each party to take measures to maintain and facilitate the application of safeguards. This article requires each party to maintain a material accounting and control system, the details of which shall be comparable to those set forth in IAEA document INFCIRC/153 (Corrected), or a revision of this document agreed to by the parties. Upon the request of either party, the other party shall report or permit the IAEA to report on the status of all inventories of material subject to the agreement. The article's provisions, finally, are to be implemented so as to avoid undue interference in the parties' nuclear activities and consistent with prudent management.

Article 10 provides that if an agreement between either party and another nation or group of nations provides such other nation or group of nations rights equivalent to any or all those set forth under articles 5 or 6 with respect to material, equipment or components subject to the agreement, the parties may, upon the request of either, agree that implementation of such rights will be accomplished by the other nation or group of nations.

Article 11 accords each party the right to cease cooperation and to require the return of any material, equipment or components transferred under the agreement and any special nuclear material produced through their use if the other party does not comply with article 5, 6, 7, 8, or 9, or terminates, abrogates or materially violates a safeguards agreement with the IAEA. The United States shall have the same right if South Africa detonates a nuclear explosive device. South Africa shall have the same right if the United States detonates a nuclear explosive device containing nuclear material of South African origin or derived from South African source material transferred under the agreement. In the event a return is required by one party, the other party shall be reimbursed for fair market value, as determined by negotiation between the parties.

Article 12 provides for consultations at the request of either party regarding the implementation of the agreement and the development of further cooperation in the peaceful uses of nuclear energy. It also provides that the parties shall consult on the environmental implications of activities under the agreement, and cooperate in protecting the international environment from radioactive, chemical or thermal contamination arising from such activities and in related matters of health and safety.

Article 13 provides for the agreement to replace the previous (1957) agreement, and for the provisions of the agreement to apply to material and equipment subject to the previous agreement. It also establishes a 25 year term for the agreement, which may be extended by agreement of the parties in accordance with their applicable requirements. In the event of termination or expiration of the agreement, articles 5, 6, 7, 8, 9 and 11 shall continue in effect so long as items subject to the agreement remain in the territory, under the jurisdiction or under the control of the party concerned, or until the parties agree that such items are no longer usable for any nuclear activity relevant from the point of view of safeguards. This article also provides for consultations on amendment of the agreement.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 9, 1995

The President
The White House
Washington, D.C. 20500

Dear Mr. President:

In accordance with the provisions of Section 123 of the Atomic Energy Act, as amended, the Nuclear Regulatory Commission has reviewed the proposed Agreement for Cooperation with South Africa forwarded by the Department of State on June 23, 1995. It is the view of the Commission that the proposed Agreement includes all the provisions required by Section 123 of the Atomic Energy Act, as amended. The Commission therefore recommends that you make the requisite statutory determination, approve the Agreement, and authorize its execution.

Respectively,

Shirley Ann Jackson

UNITED STATES ARMS CONTROL AND DISARMAMENT AGENCY
Washington, D.C. 20451

THE DIRECTOR

AUG 4 1995

MEMORANDUM FOR THE PRESIDENT

SUBJECT: Views and Recommendations Regarding the Proposed Agreement Between the Government of the United States of America and the Government of the Republic of South Africa on Cooperation in Peaceful Uses of Nuclear Energy

Pursuant to Section 123 a. of the Atomic Energy Act of 1954, as amended, I am submitting to you my views and recommendations with respect to the proposed Agreement for Cooperation between the United States and the Republic of South Africa. The U.S. Arms Control and Disarmament Agency (ACDA) was consulted throughout the negotiation of this proposed Agreement. The Nuclear Proliferation Assessment Statement required by the Act is being transmitted to you separately. Part II of this statement examines the proposed Agreement in detail to ascertain that the applicable statutory requirements are met. I have concluded that the proposed Agreement does meet all the relevant requirements of the Atomic Energy Act and the Nuclear Non-Proliferation Act of 1978 (NNPA).

South Africa has complied with both the letter and spirit of the NPT since its accession to the Treaty in July 1991. The SAG has cooperated fully with the IAEA in the latter's efforts to verify South Africa's nuclear inventory and the dismantlement of its nuclear weapons program, and has permitted full and complete access to any facility that the IAEA wished to inspect. South Africa's accession and compliance has significantly strengthened the NPT regime by setting the powerful precedent that a "threshold" nuclear state can cross back over the nuclear threshold and be welcomed into the international community as a non-nuclear weapon state. South Africa has shown that the nuclear path does not inexorably lead in only one direction, toward the acquisition and perpetual maintenance of a nuclear arsenal.

ACDA is confident that South Africa will continue to fulfill its NPT obligations, and will become an important voice in the global nuclear nonproliferation regime. Indeed, South Africa played a pivotal role in achieving the indefinite extension of the NPT at the Extension Conference in April by acting as a bridge between the interests and concerns of the Western and Developing nations. Moreover, the establishment of increased nuclear cooperation and

commerce with South Africa as a result of its NPT membership will demonstrate to other non-Parties the political and material benefits of the NPT.

The proposed Agreement does not provide for transfers of any sensitive nuclear technology or facilities as defined by the NNPA. It limits transfers of fuel to natural uranium or low enriched uranium, although it does provide for the transfer of small quantities of high enriched uranium and plutonium for use as samples, targets, standards, detectors, and for other purposes as the parties may agree. Given the nonproliferation policies in effect in South Africa--including the observance of full-scope safeguards--ACDA does not believe that any material or equipment transferred under the proposed Agreement will constitute a proliferation risk.

It is my judgment that execution of the proposed Agreement would be compatible with the nonproliferation program, policy and objectives of the United States. Therefore, I recommend that you determine that its performance will promote, and will not constitute an unreasonable risk to, the common defense and security, and that you approve and authorize the execution of the Agreement.

John D. Holum

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