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Doc #	DocType	Doc Info	Classification	Pages	Date	Restriction
07	memo	Komer to Bundy	S	1	12/23/64	A
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14	ltr	Seaborg to Harriman	C	2	12/64	A
15	memo	Kratzer to Thomas	C	3	12/16/64	A
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Collection Title National Security File, Files of Charles E. Johnson**Folder Title** "NUCLEAR - South African Research Reactor"**Box Number** 042

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4/14/2009


Initials

Smith
april
file

Cy to Komer

OUTGOING TELEGRAM Department of State

INDICATE: ☐ COLLECT
☐ CHARGE TO

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87-S

Origin
SCI

ACTION: AmEmbassy PRETORIA 1037

Info:

INFO: AmEmbassy VIENNA 1765

SS

REF Embtel 797

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VIENNA FOR IAEA

FYI: As result conversations with SAG Voramin December 22

and 23 re potential impact present critical stage Congo problem of immediate delivery fuel for Safari I, Dept and AEC representatives yesterday visited Sole in New York to discuss on ad referendum basis proposal which it hoped would constitute mutually satisfactory solution to common problem. At conclusion meeting, participants agreed refer following points to respective governments:

1. Within 60 days US will deliver contracted amount of enriched uranium necessary make Pelindaba Reactor critical. Further, US will give every consideration making delivery in less than 60 days if this should be possible.

2. [US will at same time place under contract our best estimate of additional nuclear fuels needed for Pelindaba Reactor for duration ~~XXXXXXXXXXXXXX~~ of current US-South Africa atomic energy agreement (that is until mid-1967). This provision was identified by

South

Drafted by:

SCI:JPTrevithick:AFE:PHooper:dkd:ans

Telegraphic transmission and

M - Gov. W. Averell Harriman

Clearances:

L - Mr. Meeker (subs.)

S/S -

Mr. Hilliker

SCI - Mr. Kretzmann (subs.)

AF -

Mr. Westerfield, Jr. (subs.)

USIA - Mr. Lewis (info)

IO/UNP -

Miss Brown (info)

G/PM - Mr. Kitchen

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BUNDY SMITH
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Dec 24 3 50 PM '64

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South Africans as irreducible minimum of what would be required to enable South Africa to agree to transfer safeguards to IAEA. US representatives agreed to refer this question to their Government and respond as soon as possible during week of December 27.]

3. US and South Africa will exercise their best efforts to develop and place before next meeting of IAEA Board of Governors (on February 23, 1965) a trilateral safeguards agreement for Pelindaba Reactor and its fuel. In event it proves impossible to ~~complete~~ complete these arrangements in time for consideration by Board of Governors at February meeting, two Governments will make public fact that they have agreed to place Pelindaba Reactor under IAEA safeguards as soon as possible and that steps toward this end are underway.

4. US will seek to confirm above points with South African Government during week beginning December 27 and hopefully no later than December 29 in order that South Africa may give full consideration to these proposals on urgent basis.

Above points under urgent consideration in Dept and AEC with view advising SAG firm US position early in week December 27. In meantime, matter should not RPT not be discussed with SAG. Sole also returned yesterday to Pretoria. END FYI

GP-3

RUSK

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INCOMING TELEGRAM *Department of State*

85

~~CONFIDENTIAL~~

Action

Control: 18999
Rec'd: December 26, 1964
2:56 P.M.

SCI

FROM: Pretoria

Info

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ACTION: Secstate 822, PRIORITY

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INFO: Vienna 4

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AF

DATE: December 26, 7 P.M.

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NOFORN

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VIENNA FOR IAEA

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PASS AEC AND DEFENSE

NSA

AEC

Re Department telegram 1037 and Embassy telegram 797.

NASA

WHB

RMR

By coincidence Miles saw Von Hirschberg, Head of DFA Scientific Liaison Section, December 24 when latter had just come from delivering to Roux, Managing Director AEB, substance Muller-Sole communication re new conditions allegedly imposed by USG on supply enriched uranium for Pelindaba. Visibly upset Von Hirschberg informed Miles that Harriman had sent for Muller on 23 and delivered ultimatum to effect SAG must accept IAEA safeguards in order obtain fuel and that Sole had been given similar ultimatum by USG REPS in New York. He stated Muller and Sole were returning SA on 25 for conferences. This information passed on friendly basis and included comment described as personal rather than official to effect that it now clear "even our best friends the Americans have now taken to dishonoring contractual agreements apparently out of fear of the Afro-Asian bloc." Von Hirschberg asked why we were so sensitive to pressure of African States when we could afford to ignore their rantings. Miles explained that USG under far greater pressure from the world hostile to SAG than SAG seemed realize and that we strove to prevent development of a new US polarity on racial lines.

—BUNDY-SMITH
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—COOPER
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—SAUNDERS
—SAYRE
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E.O. 13292, Sec. 3.4

By dm/s, NARA, Date 3-26-05

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/Miles
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-2- 822, December 26, 7 P.M., from Pretoria.

Miles added that Embassy had no information on subject but that he assumed new condition proposed outside of terms existing agreement were not so much ultimatum as practical measures providing defensible position for US in UN when fuel supplied. Miles recounted pressure generated by the neutrino experiment as a case in point.

Von Hirschberg's comments are of importance as they come from a DFA official who has always been friendly and cooperative even during recent weeks when SA military officials have been less so. For instance he has so far assured us continued use of airfield at Walvis Bay which is becoming more and more essential for Gemini program. By "dishonoring contractual agreements" we assume he interprets our insistence on IAEA safeguards however reasonable as a violation of agreement of July 8, 1957 if we make this a requirement for furnishing the fuel. Department should keep in mind in this connection that we were initiators of this agreement under our atoms for peace program. He no doubt had in mind secondly our announced refusal, following Governor Stevenson's statements of August 2 and December 4, 1963, to continue to give "prompt and sympathetic attention to reasonable requests for purchases of military equipment for defense against external aggression" without giving six months notice of termination of tracking station agreement. When we add to this our recent refusal grant visa to Lt. General Hiemstra and Department's apparent refusal (According word received from Pentagon) to agree to even two training slots to SA army, it seems somewhat ironic that we have consistently refused to cooperate with SAG in military and scientific fields which are fields in which we ourselves most need their cooperation.

While understanding problems SA racial policy poses for Department I hope that reason for our present negative attitude is not desire to appease extremist African states as compensation for our attacks on them over Congo issue. To us here this would seem most unwise at very time when SAG is terminating use of 90 day clause, when Parliament is about to meet and so soon

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/after

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-3- 822, December 26, 7 P.M., from Pretoria.

after Muller has assured Secretary of SAG desire to find reasonable and peaceful solution to their difficult racial problem.

Department should keep in mind that if we do not succeed in reaching agreement with SAG on supply of atomic fuel we now face definite possibility of their taking retaliatory action against our use of station 13 and of their harbors and airfields in connection with our tracking program. Furthermore unless we deal honorably with SAG we are bound to lessen what influence we may still have in trying to persuade them to accept ICJ decision on SWA. I therefore urge we make every effort to reach early and mutually satisfactory solution on supply of fuel for Pelindaba to which we have a clear moral commitment.

GP-3.

SATTERTHWAITE

JJF/10

NOTE: PASSED DEFENSE 5:30 P.M.

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monitor

OUTGOING TELEGRAM Department of State

INDICATE: ☐ COLLECT
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ACTION: Amembassy PRETORIA 1085

PRIORITY

JAN 6 5 54 PM '65

INFO: Amembassy VIENNA, IAEA 1805

REF: Embtels 844 and 852

U.S. prepared place under firm supply contract actual fuel requirements for Safari I from start-up to end current agreement in mid-1967. USAEC estimate in but Deptel 1062 based on information available Washington/can be re-examined and revised if SAG able demonstrate need for greater quantity.

As Sole aware, request for firm contract low enriched fuel for power reactor experiments and requirement for additional heavy water not rpt not discussed in New York, although Sole had confirmed these requirements during Washington visit December 14, reported memcon same date, copies air-pouched Embassy. Request for 600 lbs two percent enriched uranium now under consideration in USG and awaiting decision on it could only have effect deferral of resolution of re-search reactor supply question. Would therefore expect SAG give us their response to proposal in Deptel 1062 prior to entering into further discussions on two percent material / heavy water or any other additional items. Embassy may note that New York proposals related immediate problem fuel elements Safari reactor and not meant be all-inclusive. Early adoption IAEA safeguards, however, would extend to and facilitate any other transactions under existing bilateral agreement.

Drafted by:

SCI:JP^{rev}ithick:dkd: 1/6/65

Clearances:

Telegraphic transmission and

classification approved by:

SCI - Charles W. Thomas

AEC - Mr. Kratzer (draft)
AFE - Mr. Hooper (draft)
UNP - Miss Brown (informed)
L - Mr. Reis

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FORM 8-63 DS-322

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E.O. 13292, Sec. 3.4

B. clm/y NARA, Date 3-26-09

Page 2 of telegram to Amembassy PRETORIA INFO: VIENNA

SA Minister Botha called at Dept today at his request to confirm requirements low-enrichment uranium and heavy water reported reftels. Dept officers summarized US response per this message and told Botha we transmitting this position to Embassy for discussion with Sole. Botha said would also immediately cable position to FONMIN.

GP-4

END

RUSK

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INCOMING TELEGRAM *Department of State*

43

Action
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Control: 3696
Rec'd: January 7, 1965
8:46 a.m.

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~~THOMSON~~

FROM: Pretoria

ACTION: Secstate 857 Priority

INFO: Vienna 8

DATE: January 7, 2 p.m.

Reference: EMBTEL 844, DEPTELs 1062, 1085.

Text aide memoire received from SAG January 6 superfluous words deleted:

Begin Quote.

With reference aide memoire left by Ambassador Satterthwaite January 4, relating to fuel required for Safari I reactor at Pelindaba, reply as follows:

1. In terms article XII of agreement (as amended) for cooperation between Government of Republic of SA and Government of USA concerning civil uses atomic energy, SAG accepts the proposal of USG for transfer to IAEA of responsibility for administration of safeguards provided for article X of agreement. While SAG will cooperate to full extent required in these arrangements, the onus for securing approval of agency for this transfer remains entirely responsibility of Government of US. Should agency for any reason not agree to transfer, administration of safeguards will remain responsibility of Government of US in terms of mutual cooperation agreement.

2. Foregoing does not in any way affect USG's responsibility to SAG for execution of contract concluded for delivery of enriched uranium fuel elements required for use in research reactor Safari I, purchased from US and already

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By chm/ly NARA, Date 3-27-09

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-2- 857, January 7, 2 p.m., From: Pretoria

erected and for which payment has been effected. Since reactor is now ready go into operation and has already been paid for, SAG must request immediate delivery of fuel elements required for first core loading, irrespective of whether administration of safeguards is to be responsibility of USG in terms of the mutual cooperation agreement or the responsibility of agency in terms of SAG's agreement to the transfer of the administration of safeguards to the agency.

3. SAG accepts that USG, through the AEC of the US, is prepared assure continued supply of nuclear materials required for operation of Safari I reactor and for execution of other research projects falling within provisions of mutual cooperation agreement, up to date of expiry of agreement August 22, 1967. So far as SAG can foresee these requirements at present juncture, will comprise.

(A) Delivery additional fuel for Safari I reactor (over and above first core loading) amounting 9.25 kilograms 90 percent enriched U 235. Details of operating schedule on which this estimate is based are being prepared and will be forwarded first opportunity;

(B) 600 Kilograms two percent enriched uranium which has already been ordered for use in connection with reactor concept under study by SA AEB;

(C) Three to five tons heavy water in addition to five tons already in possession of SA AEB.

4. SAG would have no objection to immediate announcement by USG that with agreement of SAG arrangements are in train to obtain formal approval of board of governors of IAEA, at its next meeting to be held 23 February 1965, for transfer to agency administration of safeguards provided in mutual cooperation agreement (as amended) concerning civil uses

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-3- 857, January 7, 2 p.m., From: Pretoria

of atomic energy between Government of Republic of SA and Government of USA.

5. SAG agrees not to make public announcement of, or otherwise publicize, arrival of first fuel shipment. It will, however, be appreciated that sooner or later it will become public knowledge that reactor is in operation, fact which SAG could not possibly deny.

6. SAG assumes USG will be prepared negotiate extension of existing mutual cooperation agreement at appropriate time.

7. SAG would appreciate USG's confirmation of understandings set forth above. End Quote.

Comments follow separate telegram.

GP-3.

SATTERTHWAITE

MRJ/9

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~~SECRET~~

December 23, 1964

MEMORANDUM FOR MR. BUNDY

SUBJECT: South African Reactor Fuel Problem

Mac --

It looks as though this problem is under control. Harriman has talked with Foreign Minister Muller and plans to talk further with him this afternoon along the following lines:

(1) For obvious reasons we wish to delay shipment a reasonable time -- about two to three months -- but we will honor our contractual obligation to supply the fuel.

(2) We expect the publicity on our shipment will be minimized.

(3) We wish to apply IAEA safeguards to the South African nuclear program and we would like to do this even before the present agreement expires in 1967. (The present agreement provides that IAEA controls will be accepted at the end of the agreement or the agreement will not be extended.)

Harriman seems confident that Muller will go along with at least the first two points, which will get us past our immediate political problem.

Harriman had also been considering the possibility of having the UK supply the enriched uranium. Following a meeting this morning, he has discarded this idea.

This note covers both Bob's activities and mine.

Charles E. Johnson

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E.O. 13292, Sec. 3.4
By *dbm/8* NARA, Date *3-26-09*

~~Mr. Johnson~~

Mr. Komer

State's background
+ article papers.

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AF - Governor Williams
Mr. Fredericks

December 17, 1964

AFE - Peter Hooper

Fuel for South African Nuclear Reactor

In addition to support which will come from USIA, we have just received this additional backing for our side of this question from L - Len Meeker.

In brief, he contests the AEC-SCI view that delay in fuel delivery would clearly constitute abrogation of our bilateral agreement or the related contract with South Africa. He advocates delaying fuel delivery until South Africa accepts IAEA controls.

COMMENT

1. AEC-SCI will argue that: (1) SAC has already been told by them categorically that there is no connection between fuel delay and IAEA, and (2) SAC would obtain fuel from UK and retaliate in other directions injurious to future US controls and cooperation, rather than unconditionally accept IAEA controls, a proposition which the SAC Atomic Energy Board has already rejected.

2. The L memo does not mention the urgent need for political and strategic review of US-SA nuclear relations. Negotiation over the IAEA question might allow time for such a study. In any event, so long as we stand pat against trading any future commitments for IAEA (in other words relate IAEA only to the duration of our current commitment to 1967), the Meeker proposal would not be inconsistent with our position on the urgent need for an over-all policy review and is otherwise very helpful.

Attachment:

Mr. Meeker's memo to Gov. Harriman,
12-16-64

cc: AFE - PD

J. H. H.

AF:AFE:PHooper:ams 12-17-64

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E.O. 13292, Sec. 3.4
By *clm/f* NARA, Date 3-76-09

11a

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MEMORANDUM

December 16, 1964

TO: M - Governor Harriman

THROUGH: S/S
G - Ambassador Thompson

FROM: L - Leonard C. Macker

SUBJECT: Release of Reactor Fuel Elements for Delivery to South Africa

While appreciating the force of the arguments for proceeding at this time with the delivery of enriched uranium for the South African research reactor, I do not believe that some further delay would expose the United States to telling charges of breach of international obligation. In addition, I think we should require South Africa to agree to the substitution of IAEA for US safeguards before we make delivery of this nuclear material.

1. The memorandum accompanying Mr. Kretzmann's recommendation to you states that "Failure to deliver this fuel, to the supply of which we are so firmly committed, would be a violation of an international agreement and a contract and would undoubtedly bring into question around the world the good faith and credit of the U.S. Government which is based on our long record of meeting international commitments." It is not absolutely clear that the US has an unqualified obligation to South Africa to deliver the uranium. The agreement between the two governments provides that nuclear material will be provided by the United States "in such quantities as may be agreed in accordance with the terms, conditions and delivery schedules set forth in contracts". The Atomic Energy Commission subsequently entered into a contract with South Africa for the leasing of enriched uranium. Article II(c) of the contract states that acceptance of an order from South Africa constitutes a "commitment" by the Commission to lease nuclear material "subject to the terms of the said order and of this Lease". Article XIV of the Lease contract provides: "The Commission will make reasonable efforts to deliver material at the time or times stated in orders for material subject to this lease, but neither the Government, the Commission, nor persons acting on behalf of the Commission shall be subject to any liability for any failure to do so."

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E.O. 13292, Sec. 3.4
By dmf, NARA, Date 3-26-09

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Article XIV may have been intended to cover instances of technical difficulty related to manufacture or shipping. However, it is possible to argue that the Article also covers other circumstances beyond the Commission's control -- such as a political decision by the US Government not to proceed with delivery on schedule. Thus, I think the issue of US obligation to deliver the enriched uranium to South Africa is not an open-and-shut question.

Moreover, we have already delayed delivery of the enriched uranium for 11 months. A further delay, if it came to the notice of other governments, would be understood in the context of South Africa's relationships to the rest of the world and would not endanger the good faith and credit of the United States in living up to its international engagements.

2. The US has been seeking to extend the coverage of IAEA safeguards. We are now embarking on a more intensive campaign to this end. It would seem both reasonable and appropriate to press South Africa to accept IAEA safeguards for the operations of the Safari I reactor before we proceed with delivery of the nuclear material for it. Such application of the Agency's safeguards is foreseen in Article XII of the Atomic Energy Agreement of 1957 between the US and South Africa. Under that provision, the parties agree to consult on the application of IAEA safeguards.

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12

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AF - Governor Williams
Mr. Fredericks

December 16, 1964

AFE - Peter Hooper

Price for South African Adherence to IAEA -
INFORMATION MEMORANDUM.

The following points, being spelled out in greater detail in an SCI memcon, were made here yesterday by Mr. Donald Sole, senior official of the South African Department of Foreign Affairs. They represented DFA estimates of what it would take to persuade the South African Atomic Energy Board to accept International Atomic Energy Agency controls over the US-supported aspects of the SAG nuclear program.

- 1) SAG would want an additional ten-year commitment by the US (1967-1977) to supply enriched uranium and other fuels in increased quantities.
- 2) SAG would insist on specific US guarantees of delivery over and above normal agreement.
- 3) SAG would wish maximum possible advance deliveries and provisions for stock-piling (never done by AEC). Insistence upon this might fall away, if US delivery guarantees for period were iron-clad.
- 4) SAG would consider "experimental" period of four years under IAEA. It has confidence in current chairman, but fears that future chairman might nominate inspectors SAG could not accept for political reasons (e.g. Africans). SAG would want US support in seeking formula guaranteeing them against possibility having to reject any nominated IAEA inspectors. (Sole was told US commitments and IAEA Agreements were linked and covered same period).
- 5) SAG would wish to limit inspections to Pelindaba reactor, because non-US inspectors might reveal commercial secrets their other research, i.e., sodium-graphite cooled reactors. (Sole was told this impossible).

6) SAG would

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E.O. 13292, Sec. 3.4
By chm/s NARA, Date 2-27-09

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- 2 -

6) SAG would wish commit US to enrich South African uranium in AEC toll-enrichment program beginning 1969. This would be for SAG use and also resale. (Sola was told resale arrangement possible only for specific third country projects which clearly in US interest.)

7) SAG concerned lest IAEA might not continue in future to pay for inspections.

8) SAG could not accept arbitration provision under which President of International Court of Justice would name arbitrator in disputes, so long as South West Africa case sub-judice.

9) SAG would probably want to construct power reactor 1970-72 and might want to ask us for fuel for it.

Comment:

Seems clear SAG is using the IAEA move as a means to get us solidly committed in expanding nuclear co-operation over the next twelve years. This would be a steep price indeed to pay for interim SAG acceptance of IAEA controls. It confirms the need for a thorough re-investigation of the political, strategic and scientific factors of future US-SA relations in this field before any new commitments are made.

cc. M - Mr. Chapin
AFZ - Mr. MacKnight

PD

AF:AFZ:PHooper:sv
12/16/64

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DEPARTMENT OF STATE
OFFICE OF INTERNATIONAL SCIENTIFIC AFFAIRS

December 14, 1964

~~CONFIDENTIAL~~

MEMORANDUM TO: M - Governor Harriman
THROUGH: S/AL - Ambassador Thompson
THROUGH: S/S
FROM: SCI - Edwin M. J. Kretzmann, Acting Director
SUBJECT: South Africa, Release of Fuel Elements for
Nuclear Reactor - ACTION MEMORANDUM

DISCUSSION

1. The South African Embassy has advised the Atomic Energy Commission that its research and test reactor, designed and constructed by the American firm Allis Chalmers under the terms of the U.S. - South African Agreement for Cooperation, is nearing completion. The Embassy has therefore officially requested that the fuel elements, containing approximately 4.5 kgs. of 90 per cent enriched U-235 and covered by a firm lease contract entered into with the AEC on April 4, 1963, be released for immediate air shipment to permit the initial start up of the reactor in mid-January 1965.

2. These fuel elements have been in storage awaiting shipment since the end of August. At the request of Mr. Bundy's office in the White House, however, the AEC has delayed releasing the elements, using administrative reasons as the excuse to the South Africans. The matter has now become urgent, and the AEC does not believe it can any longer delay issuing the necessary export authorization without admitting that the delay is other than administrative. The AEC has therefore requested the Department's concurrence to the immediate release of the fuel.

3. SCI strongly concurs in the AEC request. Any further delay in the release of this fuel, which is guaranteed by a binding commitment under an Agreement for Cooperation and a firm lease contract, will, in the absence of adequate explanation to the South Africans, be interpreted as an unilateral breach of an international obligation. Such action would have serious adverse effects on the international reputation of the U.S. as a government that meets its international

commitments

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E.O. 13292, Sec. 3.4
By cbm/ly NARA, Date 3-27-09

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commitments and also on important U.S. national security and commercial objectives. SCI's rationale is set forth at length in the memorandum attached as Tab A, particularly Paragraph 2.

4. There will be no public announcement of this shipment by the U.S. Government, and the South Africans will be requested not to announce its receipt. Nevertheless, if in spite of these precautions, the transaction becomes public knowledge, some criticism can be expected in the United Nations. The bogey of nuclear weapons might be raised and the U.S. could be criticized for providing assistance to the development of South African science and industry. A detailed background paper has therefore been prepared for use by our posts in Africa and by our Mission to the U.N. in rebutting such criticism. This background paper emphasizes the fact that U.S. cooperation with South Africa in the atomic energy field is subject to full safeguards controls to prevent the diversion of U.S. materials and equipment to non-peaceful purposes.

RECOMMENDATION

That you approve the attached letter (Tab B) to Mr. Bundy, recommending that the AEC be authorized to release the subject fuel elements for immediate shipment.

APPROVED _____

DISAPPROVED _____

Clearances: AF -
G/PM -
IO -

Attachments:

Tab A - SCI: Background Memorandum on South African Fuel Transaction

Tab B - Draft Letter to Mr. Bundy

SCI:JPTrevithick:dkd:12/14/64

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Draft Letter to Mr. Bundy

Tab B

The Atomic Energy Commission has advised the Department that the South African Embassy has requested that the fuel elements for the Safari I Reactor be released for immediate air shipment to permit the initial start up of the reactor to be carried out in mid-January 1965. You will recall that the AEC was requested by your office some time ago to hold up this shipment for the time being.

After due consideration of all the difficult problems involved, the Department has concluded that further delay in the release of this fuel, which is guaranteed by a binding commitment under an Agreement for Cooperation and a firm lease contract, will, in the absence of adequate explanation to the South Africans, be interpreted as a unilateral breach of an international obligation. Such action would have serious adverse effects on the international reputation of the United States as a government that meets its international commitments and also on important U.S. national security and commercial objectives.

I hope you agree that in the light of the above the fuel should now be released for shipment to South Africa. I understand that the Atomic Energy Commission concurs in the Department's recommendation.

12-7-64
17
LIMITED OFFICIAL USE

DRAFT AIRGRAM

TO: ALL AFRICAN POSTS
VIENNA (US MISSION TO IAEA)
USUN

FROM: DEPARTMENT OF STATE

SUBJECT: SOUTH AFRICAN ATOMIC ENERGY PROGRAM: US COOPERATION

Fuel elements manufactured in the United States for the South African Atomic Energy Board (SAAEB) will be shipped to the National Research Centre at Pelindaba, South Africa in a few weeks. They were manufactured by Babcock and Wilcox Company, Lynchburg, Virginia, for a materials testing and research reactor designed for the SAAEB by the Allis-Chalmers Corporation. The contracts for the manufacture of the reactor and the provision by the Atomic Energy Commission of the special nuclear materials (highly enriched U-235) used in the fuel elements are in accordance with the U.S.-South African 10-year bilateral agreement for cooperation in civil uses of atomic energy. This agreement was concluded in 1957 under the U.S. Atoms for Peace Program.

The reactor, designated South African Fundamental Atomic Reactor Installation (SAFARI I) is a research reactor, specially designed for the basic research and engineering tests required for the design and development of power reactors by the SAAEB. The research reactor will also be used to produce isotopes for medical, agricultural and industrial applications.

The reactor plant and the building in which it will be housed have been completed for some time. The reactor core will be assembled, and the reactor will achieve initial criticality early in 1965, shortly after the fuel elements are delivered. Formal dedication of the reactor is scheduled for July.

SAAEB's plans

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LIMITED OFFICIAL USE

-2-

SAAEB's plans for the National Nuclear Research Centre and the contract with Allis-Chalmers have been well known for several years. The South African government has published and distributed widely two brochures describing its installation at Pelindaba. The South African program has been openly discussed in international forums over the past several years. Details of Safari I are fully described in the Directory of Nuclear Reactors, Vol. V., published in July, 1964, by the International Atomic Energy Agency (IAEA), which includes South Africa and fifteen other African nations in its membership.

There can be no doubt that ^{SAFARI I} ~~the reactor~~ is designed to serve peaceful uses and that the entire installation at Pelindaba is designed to serve peaceful purposes, ^{notably} ~~such as~~, the development of ^a ~~reactors~~ ^{plant} for the production of electric power.

Nevertheless, it is possible that malinformed or maliciously misinformed propaganda may, at the time of the reactor's dedication in July or earlier, seek to stimulate highly critical public commentary on U.S. cooperation with South Africa's atomic energy program. Matters are not helped by the unfortunate fact that the South Africans, for reasons as innocent as they were bureaucratically obtuse, coined the name Pelindaba for the installation's site. The discussions leading to the South African government's decision in 1959 to participate in the very expensive world-wide effort to develop economically feasible power reactors had been lengthy, so the SAAEB derived the name for its site from two Bantu words "pelile indaba", meaning "the discussions are finished."

LIMITED OFFICIAL USE

South Africa

LIMITED OFFICIAL USE

-3-

South Africa, one of the world's leading suppliers of uranium and a founding member of the IAEA, must be encouraged to continue playing a cooperative role in the development of its own nuclear resources. Thus far, ~~xxx~~ South African efforts have been limited to supplying the free world with nuclear raw materials and to cooperating in the international, non-political program of developing nuclear power for peaceful purposes. To refuse to cooperate with South Africa in this program would mean giving up the considerable influence the United States and the IAEA can now exercise over the *and South Africa's disposition of its ample nuclear raw materials.* South African program of nuclear development.

Moreover, it is of vital importance that unrelated political considerations not be allowed to impede the drive for international control of nuclear energy, of which the Atoms for Peace Program is an essential part.

The United States has no intention of abrogating its agreements under this program -- whether they be with South Africa or with any other of the 91 nations with which it is now cooperating, either bilaterally or by virtue of membership in the IAEA.

It would be most unfortunate if irresponsible and misinformed propaganda with regard to US-South African cooperation were to be used to weaken the world-wide effort to achieve international control and development of nuclear energy for peaceful purposes, which, thus, far, has continued to make progress in spite of the political differences among the participating nations.

This airgram provides addressee posts with useful information concerning the South African program and the US role, to permit them to answer promptly and unequivocally any suggestion, public or otherwise, that the South African installation has other than peaceful scientific uses

LIMITED OFFICIAL USE

and to counter

LIMITED OFFICIAL USE

-4-

and to counter with evidence that the program undertaken in South Africa is in pursuance of internationally accepted policies and standards of cooperation in the peaceful development of nuclear energy.

As appropriate the addressee posts should emphasize the following points:

1. The US-South African agreement is similar to those entered into with many other countries and, in fact, available to any nation willing to abide by the safeguards spelled out in this agreement or by the IAEA.

2. The United States has made no financial contribution to the South African program. The reactor has been purchased by South Africa, and its fuel is leased from the USAEC on the same terms and conditions applicable to domestic and similar foreign transactions.

3. The reactor is designed specifically for basic research and materials testing and the production of isotopes as stated in the Directory of Nuclear Reactors published by the IAEA. It is located in a facility designed to support such activities. Its design is not suited to the production of fissionable material by the ^{irradiation} ~~enrichment~~ of source material.

4. The diversion of the special nuclear material provided by the AEC to other uses would involve the destruction of the fuel elements, an action which would be impossible to conceal, and which would be, in any event,

sheer nonsense. Moreover, after irradiation, it would require a radio-chemical complex which does not exist in South Africa.

5. This reactor and its fuel are subject to full safeguards by the United States. This means that all maintenance and operating records will be reviewed by the United States, which will also make on-the-spot physical inspections of the reactor and its fuel to confirm that the

LIMITED OFFICIAL USE

special

LIMITED OFFICIAL USE

-5-

special nuclear materials and the reactor have not been diverted from peaceful uses.

6. Long before the agreement expires, in 1967, the South African Government and the United States Government expect to turn over the administration of these safeguards to the IAEA.

7. South Africa is a founding member of the IAEA and sits on its Board of Governors. To maintain her present role in the organization, South Africa must and will adhere strictly to her international undertakings, including her signature of the Test Ban Treaty.

8. South Africa is one of the world's leading suppliers of uranium. The South African development of these resources has thus far been characterized by responsible participation in the world-wide effort to bring nuclear energy under true international control. Continuation of this cooperation should be encouraged, if only to insure against a change in South African policy in this regard.

9. South Africa is at present and for the foreseeable future the only nation in Africa which has the scientific and technological capability necessary to develop reactors suitable to African needs to produce electric power in areas where other forms of power are unobtainable. Present political and sociological differences notwithstanding, it is in the long-range interests of Africa as a whole to encourage South Africa's program.

Attachments:

1. The U.S. Atoms for Peace Program.
2. U.S. Bilateral Agreements under the Atoms for Peace Program.
3. The IAEA.
4. US-South African Cooperation *in Atomic Energy*.
5. Pelindaba, ~~and~~ Safari I, and the U.S. role.

AF:AF/P:RJPeltier:
mlb:12/7/64

CLEARANCES: AFE -

SCI -

AF -

NK IO -

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THE WHITE HOUSE
WASHINGTONNote for file

Bundy told RK to
make State hold it
up - even if we had
to abrogate.

File passed to RK
12/21 per Mc B request.



12/21

Pending

19

12/7

Told Hooper we
want a rec. —
Telecom

14

12/5/64 20

CEJ:

We need a full recommendation now,
as far as possible.

McG. B.

~~CONFIDENTIAL~~

December 3, 1964

MEMORANDUM FOR MR. BUNDY

SUBJECT: Nuclear Fuel for South African Reactor

Bill Brubeck and I think you should be brought up to date on the status of the proposed shipment of nuclear fuel elements for the South African research reactor.

(1) In August we requested AEC through John Palfrey to delay until December the fuel shipments or any other public event connected with the research reactor that might cause publicity.

(2) The South Africans have complied with all of the administrative requirements we have imposed on them and AEC and the Science Adviser's office in the State Department now feel that we can no longer rely on "administrative delays" to avoid carrying out our agreement. (The South Africans have a substantial investment involved, and there is a "good faith" issue in our performance.)

(3) Although the African Bureau is very nervous about the certain adverse public reaction that will ensue throughout Black Africa when news of the fuel shipment comes out, it is doubtful that the Department, and especially the 7th floor, is prepared to recommend abrogation of the agreement on purely political grounds.

(4) Brubeck and I have told the South African desk (Peter Hooper) that the State Department must take the responsibility for initiating a policy recommendation on this matter if it is to be delayed for reasons other than the nuclear spread review. AEC has cooperated fully, but has just about exhausted its possibilities of delaying shipments. At best, the Gilpatric policy review would only buy a short period -- at most two months or so -- at the end of which time the Department would still be faced with the same political problem, unless it were decided to block the South African reactor for nuclear policy reasons.

(5) The Department is now developing a recommendation that supposedly should reach the White House about next Wednesday -- if the Secretary proves willing to take a position.

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DECLASSIFIED
E.O. 13526, Sec. 3.4
NARA, Date 3-27-09
6m/y

~~CONFIDENTIAL~~

-2-

(6) The amount of material involved for the initial loading is 4.31 kilograms of uranium, 90% enriched in U-235 -- ultimately about 12 kilograms will be provided. The agreement also provides for the transfer to South Africa of 20% uranium for reserves and power reactors without specifying the amount thereof.

(7) The basic question is -- Should we freeze the South African program pending the final results of the Gilpatric study or decide it now on its merits? Should we, in either case, ask State for a political recommendation independent of the peaceful uses question, but based on the effects in Black Africa when the news of the reactor becomes public?


Charles E. Johnson

we need a full recommendation now.

my B

as far as possible

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

December 3, 1964

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E.O. 13526, Dec 3, 64
By chm/ly, NARA, Date 3-27-09

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-2-

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Charles E. Johnson

Cy to
W. Brubaker
S. Henry

~~CONFIDENTIAL~~

23

NATIONAL SECURITY COUNCIL

12/3/64

NOTE FOR MR. BRUBECK

Bill --

Please feel free to revise this in any way you think best. I think we should send this to Bundy this afternoon.

Charles E. Johnson

*Chuck - Let me
know if these changes
give you trouble -
W/B*

12/3/64

NOTE FOR MR. BRUBECK

Bill --

Please feel free to revise this in any way you think best. I think we should send this to Bundy this afternoon.

Charles E. Johnson

DRAFT 12/3/64

~~CONFIDENTIAL~~

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(1) In August we requested AEC through John Palfrey to delay the fuel shipments or any other public event connected with the research reactor that might cause publicity until December.

(2) The South Africans have complied with all of the administrative requirements we have imposed on them and AEC and the Science Adviser's office in the State Department now feel that we can no longer rely on "administrative delays" to avoid carrying out our agreement.

(3) The State Department appears to be divided as to whether it wishes to continue to withhold the fuel shipment as a straight political decision. The African Bureau is very nervous about the certain adverse public reaction that will ensue throughout Black Africa when news of the fuel shipment came out.

(4) ^{Brubeck}~~Brubeck~~ and I have told the South African desk (Peter Hooper) that the State Department must take the responsibility for initiating a policy recommendation on this matter. AEC has

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E.O. 13292, Sec. 3.4
By *com/s* NARA, Date *3-27-04*

~~CONFIDENTIAL~~

-2-

cooperated fully, but has just about exhausted its possibilities of delaying shipments. Moreover, the fact of the Gilpatric policy review should not be used alone to ~~with~~hold the shipments. At best, the policy review would only buy a short period -- at most the two months or so --/end of which time the Department would still be faced with the same political problem.

(5) The Department is now developing a recommendation that should reach the White House about next Wednesday.

(6) The amount of material involved for the initial loading is 4.31 kilograms of uranium, 90% enriched in U-235 -- ultimately about 12 kilograms will be provided. The agreement also provides for the transfer to South Africa of 20% uranium for reserves and power reactors without specifying the amount thereof.

Charles E. Johnson

~~CONFIDENTIAL~~

11/12

Todd Kratzer
pup
to hold it up.

✓

25
NATIONAL SECURITY COUNCIL

October 2, 1964

TO: MR. CHARLES JOHNSON

Chuck -

Are you sure this is under
control?

10/5

Bill Brubeck

Myron Kratzer said "yes".
Held W.B. *crj*

26

DEPARTMENT OF STATE
BUREAU OF AFRICAN AFFAIRS

TO: Mr. William Brubeck
The White House

from



Jesse M. MacKnight

October 1, 1964

~~CONFIDENTIAL~~

SHIPMENT OF NUCLEAR FUEL FOR SOUTH AFRICAN REACTOR

I understand from Peter Hooper that you agreed earlier to have action taken from the White House to have the fuel for the South African nuclear reactor held up for shipment until early November. Mr. Thomas, of the Office of International Scientific Affairs, has given me the text of a recent exchange of letters between the AEC and the South African Scientific Attache. In this exchange the AEC gives no indication to the South African Attache that it is not ready immediately to proceed with the shipment, although this is not explicitly stated. In view of the importance that we attach to a delay of the shipment, I wonder whether it might be possible for you to check with the AEC to make sure that a message to delay the shipment has reached appropriate responsible officials.

Enclosures:

- Copy of Letter to the AEC From the South African Embassy, Dated August 25, 1964.
- Copy of Letter to the South African Scientific Attache From Mr. Hoyle of the AEC, Dated September 16, 1964.

Concurrence:

SCI - Mr. Thomas

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DECLASSIFIED
E.O. 13292, Sec. 3.4
By chm/s, NARA, Date 3-27-09

Our Ref: 6/3/1

August 25, 1964

266

The United States Atomic Energy Commission,
WASHINGTON 25, D.C.
United States of America.

Gentlemen,

NUCLEAR FUEL FOR SHIPMENT TO THE REPUBLIC
OF SOUTH AFRICA

I have the honour to refer to the Treaty of Co-operation in the Peaceful Uses of Atomic Energy entered into jointly some time ago between the United States of America and the Republic of South Africa, and to inform you that the construction of the nuclear research reactor, SAFARI 1, at Pelindaba, South Africa, has now reached such a stage that the insertion of the nuclear fuel rods into the reactor core should be possible within about two or three months from the present time.

The South African Atomic Energy Board has been informed by its United States contractors for the fabrication of the fuel elements, Messrs. Allis-Chalmers of Bethesda, Maryland, that fabrication is now complete and that the fuel elements are accordingly ready for shipment to South Africa.

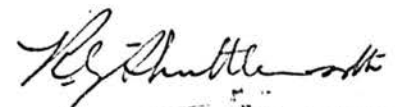
I have the honour, therefore, to request that you advise me of any information and data required by the Commission and of any other requirements that the Commission may have, prior to and in order to make possible the transfer of accountability for the nuclear fuel content of the fuel elements to the South African Government in terms of the Treaty.

It would also be greatly appreciated if the Commission could advise the South African Atomic Energy Board through the undersigned as to what the requirements of the United States Government are, if any, in regard to indemnification and insurance against nuclear risk during transportation of the fuel elements, after these have been released to the responsibility of the South African Atomic Energy Board, within the United States. In this respect it is also required to know whether insurance against such risks by a South African firm of underwriters would be acceptable in the United States of America.

Thanking you,

I remain,

Respectfully yours,



R.G. Shuttleworth
Scientific Attaché

ACTION

2111

SEP 16 1964

26c

JS
307

Mr. R. G. Shuttleworth
Scientific Attache
Embassy of South Africa
3101 Massachusetts Avenue, N.W.
Washington 8, D.C.

Dear Mr. Shuttleworth:

This is in response to your recent letter regarding shipment of nuclear fuel elements for the SAFARI-1 research reactor located at Pelindaba, South Africa.

Under our export procedures, we require, prior to shipment, certification of material analysis, details of shipment, specific quantities of special nuclear material involved and your Government's acceptance of this shipment, in the manner outlined in the "United States Atomic Energy Commission Tentative Export Procedures" issued by the Materials Branch, Division of International Affairs, revised February 1964, copy attached.

In response to your question on insurance and indemnification against nuclear risk during transportation, the United States Government has no specific requirements other than the provisions of Article XIII of the Multi-lease Agreement SA/ML/3. Regarding your question on the acceptability of South African underwriters in the United States of America, it has not been our practice to require insurance coverage in inter-governmental transactions and accordingly no question of qualification of underwriters arises. The undertaking of Article XIII itself is entirely satisfactory to us in regard to indemnification under that provision.

If you have any more questions regarding this matter, please do not hesitate to call on us.

Sincerely yours,

/s/ R. B. Hoyle

Dixon B. Hoyle, Assistant Director
for Technical Implementation
Division of International Affairs

OFFICE

Attachment:

SURNAME

Tentative Export Procedures

DATE

2111

~~CONFIDENTIAL~~

August 21, 1964

Memorandum of Conversation with Commissioner John Palfrey
at 10:00 a. m. on Friday, August 21, 1964

Commissioner Palfrey understands the problem posed by the South African research reactor and will let me know in a day or so what can be done to delay the fuel shipment or any other event that might cause publicity until December.



Charles E. Johnson

cc: McGeorge Bundy
William Brubeck

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DECLASSIFIED
E.O. 13292, Sec. 3.4
By dbm/mj NARA, Date 3-27-09

Mr. Chas. Johnson

27a

August 17, 1964

~~CONFIDENTIAL~~

MEMORANDUM FOR: MR. BUNDY

Under a long standing US-South African bilateral on peaceful uses of atomic energy, South Africa has imported an Allis-Chalmers experimental reactor which is due to go critical this winter. Under license already issued, a private US supplier will ship the fuel in the next several months. These events will be publicized in South Africa, which will unquestionably kick up a nice propaganda storm elsewhere about US nuclear cooperation with South Africa.

AEC apparently feels strongly enough about the integrity of its peaceful uses program that it would be very difficult to cancel the project at this late date. However, I propose to ask AEC to insure, quietly, that there is no fuel shipment or other cause for publicity until December.

Bill Brubeck

Approve _____

See me _____

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E.O. 13282, Sec. 3.4

Chm/ly NARA, Date 3-27-09

F.G. Sent 9/2
Send a copy to
Ermine Palfrey
"for our telecon."
CJ

AFE:PHooper:ijg 8/3/64
(Drafting Office and Officer)

~~CONFIDENTIAL~~
DEPARTMENT OF STATE

Memorandum of Conversation

DATE: July 22, 1964

SUBJECT: Nuclear Reactor for South Africa

PARTICIPANTS:

AEC - Mr. Dalton
SCI - Mr. Trevithick
SCI - Mr. Taft
L/AF - Mr. Schmitz
S/P - Mr. Duggan
AFE - Mr. MacKnight
AFE - Mr. Hooper

COPIES TO:

SCI - 3
AEC - 3
L/AF - 2
S/P - 2
AF - 2
AFE - 3
USIA - 3
AF/P - 2
AmEmbassy Pretoria - 2
White House - Mr. Brubeck - 2
M - 2
G/PM - 2
IO - 3

(34)

AE 6 S AFR

Purpose of Meeting

Mr. MacKnight explained that AFE had asked for a meeting on this subject because it had never been brought up in policy discussions on South Africa in the Department. Background available to AEC and SCI had not been brought out in discussions of or contributions to the National Policy Paper on South Africa or the Briefing Paper for the National Security Council which preceded NSAM 295 on South Africa. In brief most of us were "in the dark" on this problem. What we needed was a review of the facts and status of activities under the bilateral atomic energy agreement with South Africa. It had recently been called to our attention that a US-manufactured nuclear reactor was scheduled for installation and completion there in the near future. In comparison to the neutrino project, which occasioned a storm of criticism and ill-informed comment in the UN and elsewhere several months ago, the political and psychological problems attendant upon this one would be severe indeed. Therefore thorough consideration would be required by all offices and agencies concerned.

In response to this request Mr. Trevithick presented the outline memorandum entitled "Atomic Energy in South Africa", July 22, 1964, which is attached.

During.....

Group 3

Downgraded at 12 year intervals,
not automatically declassified.

~~CONFIDENTIAL~~

- 2 -

During the course of the conversation Mr. Dalton and Mr. Trevithick made the points which are summarized and related in the following:

1. US Agreement with South Africa

As indicated in the attached memo this is a bilateral agreement which entered into force in 1957, was renewed and amended in 1962, and which expires in 1967. Similar agreements are in force with some 35 countries at present, a list of which will be provided by AEC. Under the agreement we undertook to provide nuclear material for fuel, for research, test and power reactors and to authorize commercial sale of US manufactured reactors, equipment and material for peaceful uses and research. Periodic reports and physical inspections by AEC constitute US safeguard rights to assure observance by South Africa of its unconditional guarantee that materials and equipment under the agreement would be used only for peaceful purposes.

2. Status and Timing of Reactor Installation

AEC has issued a license under the US-SA Agreement to Allis-Chalmers for construction of a 20MW tank type materials testing and research reactor. The reactor will be installed at the National Nuclear Research Center of the South African Atomic Energy Board at Pelindaba near Pretoria. The buildings at this site are large, modern and imposing. The reactor is being constructed on site with completion date now scheduled for November, 1964. The construction schedule had been delayed several months through accidental damage to a key segment during production. It is expected that fuel delivery and rendering the reactor fully operable will take place during November-December this year. At present all of the component parts of the reactor have been delivered to South Africa. Only the fuel remains to be delivered.

3. Relation of Reactor to South African Nuclear Arms Potential

The reactor being provided South Africa would under indicated safeguards in no way directly contribute to South African nuclear arms potential. Given the scientific and uranium resources of the country, South Africa could over a period of years develop nuclear weapons in any event. Indirectly the use and experience of the reactor would

contribute.....

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

- 3 -

contribute to scientific resources upon which South Africa would draw if it chose at some future date to develop nuclear weapons. The reactor itself is not capable of producing nuclear weapons material. AEC will provide technical material explaining just why and how this is so.*

4. Possibilities of Postponing or Stopping Installation of Reactor

It would be contrary and detrimental to consistent international policy of our peaceful uses program to attempt delay of the reactor installation or reversal of decisions already made to provide South Africa with this equipment. AEC is satisfied with the reliability of agreed safeguards. In addition there is the further control of annual fuel replacement from AEC. The South African reactor would be incapable of producing its own fuel. Conceivably the license could be revoked or Allis-Chalmers persuaded to delay. However, this would involve breach of contract, if not of the bilateral government agreement itself. Moreover, Allis-Chalmers is already believed to be losing money on the project.

Of the fifty-odd AEC bilateral agreements, each of five-year duration, none has been terminated prematurely. Among the thirty-five currently active agreements only one other African country, Congo-Leo, has received or is scheduled to receive a reactor. This is a smaller research reactor which has been installed at Louvanium University. The AEC agreement in this case was originally with Belgium. When the reactor was presented to the Congo, the agreement was converted to an IAEA project agreement. AEC continues to provide fuel. A world-wide list of agreements and reactors supplied or being supplied is being compiled by AEC for possible use in combatting adverse reaction to the South African reactor.

5. IAEA Considerations

Although South Africa holds a seat on the Board of Governors of the International Atomic Energy Agency (IAEA) and was a founding member, South African Government officials have indicated informally, according to Mr. Trevithick, that they do not want the US-South African bilateral

agreement.....

* Because of the importance of statements in this paragraph, AEC has been asked to provide more detailed comment on the entire subject.

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

- 4 -

agreement transferred to the IAEA. SCI will seek to find official record of this reported South African position. Were such a change to be made, IAEA safeguards, inspection and channels for supplying fuel would come into play for South Africa. It is current US Government policy to require a shift to IAEA controls prior to renewal of any existing bilateral agreements. Therefore we would make clear that in the case of South Africa we would insist upon such a change no later than 1967 when the South African bilateral agreement expires. The possibility of pressing South Africa to accept IAEA controls this year could be examined further.

Political and Public Affairs Problems

Following the foregoing exposition by AEC and SCI officials there ensued a discussion of the manifold and serious political and psychological problems attendant upon international awareness of the completion of this project. Mr. MacKnight and Mr. Hooper pointed out that the timing was most unfortunate. In the United Nations we were struggling to hold off consideration of applying sanctions to South Africa until 1965 when the ICJ decision on South West Africa is expected. Announcement of the nuclear reactor would come just as the UN sanctions study committee entered the most serious phase of its work -- that of reviewing substantive reports from member nations which are due on November 30. African reaction could be serious enough to cause an abrupt end of their cooperation in this study and resort to immediate demands for a Security Council resolution on sanctions against South Africa.

The news might also break at a crucial point in projected US-UK diplomatic representations to South Africa designed to persuade it to make plans for South West Africa enabling it to comply with an ICJ decision against apartheid in the Territory.

It was agreed that these and other considerations made it essential immediately to prepare a program of diplomatic and public information designed to allay suspicions and minimize opposition of African governments and peoples. At an appropriate stage AEC and Department officials might consult with Allis-Chalmers to enlist cooperation of the firm in playing down publicity. It was also agreed that the possibility of reducing international opposition by bringing the South African program under IAEA should be studied as a matter of priority.

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LIMITED OFFICIAL USE

July 22, 1964

ATOMIC ENERGY IN SOUTH AFRICA

I. Present Status of the Development of Atomic Energy in South Africa

- A. Existing industrial base, including reservoir of trained and skilled manpower, both scientific and technical.
- B. Production of uranium concentrates. South Africa is the third largest producer of U_3O_8 in the world, following after Canada and the U. S.

C. Pelindaba: National Nuclear Research Center of the South African Atomic Energy Board:

1. Location: 30 miles northwest of Johannesburg, 16 miles from Pretoria.

2. Facilities:

a. Reactor: SAFARI

Type: 20 MW, ORR tank type, light water cooled and moderated, materials testing and research reactor

Manufacturer: Allis-Chalmers, Milwaukee, Wisconsin

Cost: \$706,525.00 (as of 11/14/63)

Fuel: 4.31 kgs. Uranium (initial loading) to be obtained from the USAEC; 90% enriched in U-235

Lease: Lease agreement between the USAEC and the SAAEB signed and returned to USAEC 3/14/63; no request yet received from South Africa for shipment of the fuel elements which have been constructed by the Babcock and Wilcox Company, Lynchburg, Virginia.

Schedule: Construction of the reactor is scheduled to be completed November, 1964, and criticality is expected in late 1964 or early 1965; fuel delivery estimated to be in November-December, 1964.

LIMITED OFFICIAL USE

LIMITED OFFICIAL USE

-2-

- b. Associated Laboratories and facilities: Chemistry, Reactor Engineering, Metallurgy, Physics. All of these facilities are either completed or will be by the latter part of 1964.
- c. The installation of a 3 mev van de Graaff Accelerator was completed in March 1964.
- d. Radioactive Waste Treatment Plant: A contract was let this month for the design and construction of this plant by the Nuclear Chemical Plant, Limited of Great Britain.
- e. Pilot plant for production of nuclear grade uranium: Designed to produce 100 tons per annum, this plant was officially opened in March, 1961; produced its first ingot of high purity uranium metal a few months later. Although initial efforts were on production of metal, other forms have been produced since.

D. Research and Development Program:

- 1. Heavy Water Studies.
- 2. Improvement of existing uranium extraction plants - upgrading concentrates from present 90% purity to reduce intermediate processing steps.
- 3. Establishment of South Africa's uranium and thorium reserves and other minerals of importance in atomic energy programs: zirconium, beryllium, tantalum, niobium, lithium, helium.
- 4. Power reactor studies. The goal of this effort is to develop a power reactor design particularly suited to South African conditions. Studies and research to this end have been underway since 1961. Main features of the design: use of natural uranium as fuel, heavy water as moderator and sodium or lithium as coolant.
- 5. Radioisotopes application in medicine, industry and agriculture.

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-3-

II. U. S. Agreement for Cooperation with South Africa

- A. Original agreement signed July 8, 1957, entered into force August 22, 1957, expires 1967.
- B. Principal provisions:
 1. Broad exchange of information in entire, unclassified field of peaceful development of atomic energy.
 2. Provides basis for transfer to South Africa of special nuclear material for fuel for research, test, and power reactors. This material is limited to 20% enrichment, except that a portion can be made available in the form of highly enriched material for research or test reactors.
 3. Authorizes U.S. private persons to enter into commercial arrangements for the sale of equipment and materials to South Africa.
 4. South Africa unconditionally guarantees that materials and equipment transferred under the agreement will be used only for peaceful uses.
 5. U. S. has full safeguard rights to satisfy itself independently that the guarantee of peaceful uses is respected through (1) right to request routine and special reports (2) full access to the facilities to conduct physical inspections.
 6. Commitment to consult on utilizing IAEA services, particularly safeguards.

III. South Africa and the International Atomic Energy Agency

1. As a major producer of nuclear materials, South Africa was a member of the original group of twelve nations which met to draft the statute of the IAEA.
2. Since the beginning of the Agency's existence in 1957, South Africa has held a seat on the Board of Governors as "the member most advanced in the technology of atomic energy including the production of source material from the area Africa and the Middle East." Israel is the only member of the area concerned which could seriously challenge the South African seat on Statutory grounds. So far there has been no serious challenge on any grounds, although there have been some political attacks on South Africa in sessions of the Board of Governors and the General Conference.

LIMITED OFFICIAL USE

3. The principal South African personality in IAEA activities since the 12-nation negotiation on the Statute has been Mr. Donald B. Solo. Mr. Solo was Chairman of the Board of Governors for the year 1960.

IV. South Africa and the Western Suppliers Group