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Doc #	DocType	Doc Info	Classification	Pages	Date	Restriction
~~01a~~	~~report~~	~~"The Indian Nuclear Weapons Problem"~~ [Duplicate of #12a, NSF, CEJ, "Indian Nuclear Problem", Box 33] open 6/15/12	~~S~~	~~6~~	~~[5/66]~~	~~A~~
~~03~~	~~airgram~~	~~New Delhi A-970~~ Open 1/30/18 per RAC 1/18	~~C~~	~~5~~	~~4/19/66~~	~~A~~
~~04~~	~~memo~~	~~C. Johnson to Rostow~~ open 9/15/11 NLJ 09-248	~~S~~	~~2~~	~~5/2/66~~	~~A~~
05	memo	Keeny to Rostow [Sanitized per RAC, 8/02]	S	1	4/29/66	A
06	memo	Intelligence Report ~~[Sanitized per RAC, 8/01]~~ more info released 12/7/12 per NLJ/RAC 12-258	S	26	4/66	A
13	memo	Ramey to Bundy	C	2	11/19/65	A
~~14~~	~~report~~	~~IRG/NEA 66-3~~ Open 1/30/18 per RAC 1/18	~~S~~	~~2~~	~~3/24/66~~	~~A~~
15a	memo	Kratzer to C. Johnson [Duplicate of #17]	C	1	3/18/66	A
17	letter	Kratzer to C. Johnson [Duplicate of #15a]	C	1	3/18/66	A
~~20~~	~~memo~~	~~Rusk to the President~~ open 6/15/12	~~TC~~	~~2~~	~~3/16/66~~	~~A~~

Collection Title National Security File, Files of Charles E. Johnson
Folder Title "NUCLEAR - Indian Nuclear Matters"

Box Number 34

Restriction Codes
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Doc #	DocType	Doc Info	Classification	Pages	Date	Restriction
20a	report	"Possible Assurances and Nuclear..."	TS	12	[3/66]	A
		open 1/30/18 per RAC 1/18				
21	cable	Deptel 1878 to New Delhi	C	5	4/4/66	A
		open 1/30/18 per RAC 1/18				
24	memo	Keeny to Bundy	C	9	2/11/66	A
		open 3/14/14				
25	memo	Keeny to Bundy	S-	2	5/8/65	A
27	report	NIE open 6/09	S	6	10/21/65	A
29	memo	Kratzer to C. Johnson	C	1	3/19/65	A
		[Duplicate of #32 & 33]				
		open 7/15/14 per NLJ/RAC 12-259				
32	letter	Kratzer to C. Johnson	S	1	3/19/65	A
		[Duplicate of #29 & 33]				
		open 7/15/14 per NLJ/RAC 12-259				
32a	letter	Chairman to Bhabha	PCI	6	[3/65]	A
		[Duplicate of #33a]				
		open 7/15/14 per NLJ/RAC 12-259				
32b	report	"Principal Provisions"	PCI	2	[3/66]	A
		open 7/15/14 per NLJ/RAC 12-259				
32c	report	re: AEC facilities	PCI	3	[3/66]	A
		open 7/15/14 per NLJ/RAC 12-259				

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Doc #	DocType	Doc Info	Classification	Pages	Date	Restriction
~~33~~	~~letter~~	~~Kretzer to C. Johnson~~	~~C~~	~~1~~	~~3/19/65~~	~~A~~
		[Duplicate of #29 & 32]				
		Open 7/15/14 per NLJ/RAC 12-259				
~~33a~~	~~letter~~	~~Chairman to Bhabha~~	~~PCI~~	~~6~~	~~[3/65]~~	~~A~~
		[Duplicate of #32a]				
		Open 7/15/14 per NLJ/RAC 12-259				
~~52a~~	~~memo~~	~~Thomas to Drew~~	~~C~~	~~5~~	~~6/8/63~~	~~A~~
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Doc #	DocType	Doc Info	Classification	Pages	Date	Restriction
01	memo	Hughes to SecState, INR-16	S	5	5/14/64	A

Collection Title National Security File, Files of Charles E. Johnson
Folder Title "NUCLEAR - Indian Nuclear Weapons Development"

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Initials

Indian Nuclear Matters

1

DEPARTMENT OF STATE
Acting Counselor and Chairman
Policy Planning Council
Washington

May 31, 1966

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MEMORANDUM FOR:

State Department: NEA - Mr. Schneider
G/PM - Mr. Garthoff
ACDA - Mr. Fisher
DOD - Mr. Yarmolinsky
Mr. Wyle
JCS - General Goodpaster
NSC Staff - Mr. Keeny
Mr. Wriggins

1. The package which we were asked to prepare as a possible basis for NSC discussion Thursday, June 9, will consist of:

a. The paper on "Possible Assurances and Nuclear Support Arrangements for India", transmitted to the President by Secretary Rusk's memorandum of March 3, 1966, in the form previously cleared by interested Departments and agencies except that the recommendations are not included. (This paper is not attached, since copies are already available to all addressees).

b. A summary discussion of current issues, based on the discussion at the Planning Group meeting of May 26, and keyed to Ambassador Bowles' telegram of May 22 (New Delhi's LIMDIS 3204), as has been requested. (This paper is attached.)

2. We will need to get any suggested changes on the attachment no later than Thursday noon, and hopefully before then. A final draft will be circulated Friday or Saturday, which we hope can be signed by the Secretaries of State and Defense for transmittal to the President.

Henry Owen

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THE INDIAN NUCLEAR WEAPONS PROBLEM: CURRENT ISSUES

1. The Situation. In the wake of the third Chinese Communist nuclear test, domestic pressures for India to embark on a nuclear weapons effort have mounted sharply. Government leaders are continuing to hold the line against such a course. However, it is unlikely that a decision will be postponed for more than a few years.

2. Ambassador Bowles' Alternatives. Ambassador Bowles outlines three possible ways of trying to avert an Indian nuclear program:

a. A unilateral US guarantee; India, he indicates, is not ready to accept this.

b. A worldwide agreement involving a comprehensive test ban, a limitation on nuclear stockpiles, and a joint US-UK-Soviet guarantee against nuclear blackmail. The Ambassador comments that he gathers the Soviets are not prepared to proceed along this line.

c. US help to India in building a "limited deterrent defensive system."

There is not much to add to the discussion of the first two alternatives in the attached memorandum of March 3 from

Secretary Rusk to the President. The third alternative is considered below, and in the attachment.

3. Limited Defense Program. Ambassador Bowles recommends the following steps to increase India's ability to defend itself against Chinese nuclear attack:

a. Installation of an effective early warning and control system and other measures for defense against manned bombers; and expansion of joint US-Indian efforts to detect ChiCom nuclear and missile capabilities. Comment: Steps along these lines might be considered; however, unless accompanied by other arrangements, they would not get at the question of the future ChiCom missile threat.

b. Scientific US-Indian consultation regarding ballistic missile defense. Comment: This might whet India's appetite for defenses it could not afford and which we could not, in any event, make available in the foreseeable future. Since such studies would necessarily focus on ChiCom missile attack capabilities, the net result could be a heightening of India's interest in acquiring a national deterrent force.

c. Secret studies of "integrated" air defense against ChiCom manned bomber and missile attack, possibly including an Indian conventional bomber force which could be used

against ChiCom launching sites. Comment: Exploration of the utility of a conventional disarming strike against ChiCom attack capabilities could well serve primarily to convince the Indians of the futility of sole reliance on conventional weapons and manned bombers in the nuclear-missile age. It might thus intensify their nuclear desires.

d. Use of the contacts envisaged in this program quietly to persuade the Indians of our willingness and ability to back them up in case of Chinese pressure or attack. Comment: If these "quiet assurances" went beyond what we are now saying, the question arises as to what their form and substance should be. This poses difficult problems for both the US and India:

- For the US, the problem is twofold: (i) What would the US, in fact, do if the Chinese Communists were to mount (or threaten imminently to mount) a nuclear attack on India? (ii) If our interest in Indian independence in preventing Communist expansion, and in maintaining some reasonable semblance of world order would move us to stand by India in this circumstance, how can this prospect now be dramatized, so as to affect Indian nuclear intentions,

without further narrowing our freedom of action or involving us in undue Congressional difficulties?

- For India, the problem is how such US assurances, even under a UN umbrella, could be reconciled with the conflicting needs for secrecy and for political impact. Very private discussions and perhaps even secret contingency planning might fit in with non-alignment; they would not -- by that same token -- meet political concerns outside the Government, which is where most of the pressure for India's going nuclear comes from. It may well be, therefore, that an optimum approach in this field cannot be devised, even if all obstacles on the US side should somehow be overcome, so long as India holds to non-alignment.

e. An educational effort to convince India's leaders and people of the prohibitively high cost of "going nuclear." Comment: Data on costs and on the difficulties of acquiring a credible and reliable deterrent force have been forwarded to Ambassador Bowles for use in contacts with India's leaders. Additional data will be supplied which India's leaders may use publicly to support their announced policy against "going nuclear." As a related matter, the question of excessive defense expenditures has been raised with Indian Planning

Minister Mehta and will be pursued with Mehta and other Indian officials. Points being emphasized are:

- The need for a reasonable limit on (and reduction of) defense expenditures as an essential prerequisite of economic development.

- Our intention not to place ourselves in the future in the position of fueling an arms race in the sub-continent.

- The fact that defense expenditures will be taken into account in determining future aid levels.

Although such points are being advanced in the context of India's present economic state, dual emphasis on the cost of "going nuclear" and on the need to hold down defense expenditures can be expected to encourage India's leaders to hold the line against nuclear weapons. At the same time, unless ways can be found of meeting India's security needs, this approach is not likely to deter an Indian nuclear weapons program indefinitely.

4. Possibility of a "Peaceful" Explosion. There is one other immediate issue worth noting at this time:

There is support in India for a peaceful (PLOWSHARE) explosion to demonstrate India's technical capabilities. Such a "peaceful" Indian explosion would, however, be widely viewed (in Pakistan and elsewhere) as the beginning of an Indian nuclear weapons program and, from the technical standpoint, would amount to that. The Committee of Principals is, therefore, considering steps to make clear to India that a "peaceful" nuclear explosive development would be considered as equivalent to a nuclear weapons development, -- and thus as a violation of "peaceful" undertakings accepted in securing nuclear reactors.

5. Conclusion. The actions which this memorandum recommends or indicates we are now carrying out will, at best, buy time. They will not provide the "dramatic alternative" without which, the attached paper suggests, India will probably decide to become a nuclear power in the next few years. The search for other possible courses of action will, therefore, need to be continued -- as will the question of how the US should react if India is clearly about to choose, or chooses, the nuclear road.

FG.

File with my memo on the Indian nuclear capability. VY

(13)

DEPARTMENT OF STATE

AIRGRAM

FSE 13 INDIA
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A-970 NO. | CONFIDENTIAL | HANDLING INDICATOR

TO : Department of State 1966 APR 22 AM 8 21

INFO : GENEVA, KARACHI, OTTAWA, USUN, CINCMEAFSA, LONDON
RM/AA ANALYSIS & DISTRIBUTION BRANCH

FROM : Amembassy, NEW DELHI DATE: April 19, 1966

SUBJECT : Canadian-Indian Nuclear Relations: Visit to India of J. L. Grey, President, Atomic Energy Commission, Ltd.

REF : Embassy's Airgram A-805, March 4, 1966

[redacted]

Summary

The Canadians are quite concerned about developments at the site of the first Rajasthan Reactor. They fear that the present pattern of mismanagement and delays will significantly increase construction time, total cost, and foreign exchange cost of the project. The Canadians do not believe that the new heavy water plant will be built on schedule and they are willing and presumably will be able to sell heavy water to the Indians for the First Rajasthan Reactor.

Mr. Grey informed the Indian Atomic Energy Commission that Canada would extend assistance for the Second Rajasthan Reactor only if the project was under the same safeguards as the First Rajasthan Reactor. The Canadians have been informed by the Acting Head of the Atomic Energy Commission that this body is recommending to the GOI that it accept the Canadian conditions.

Mr. Grey informed the High Commission that he is convinced that the GOI is not now clandestinely building a nuclear device nor does he think they are planning to do so. He believes, however, that the Indians very much like being in a position of saying to the world that they could do it.

End Summary

Group 3
Downgraded at 12-year intervals,
not automatically declassified.

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FORM 4-62 DS-323

Drafted by: PE/EX:NAVNotes:wjv

Contents and Classification Approved by: PE/EX:Galen L. Stone GLS

Clearances:

PE/SCI:DLMiller - AMB/R:DDuBee - MINPE:LWeiss - Charge:JNGreene,Jr.

1. Richard V. Gorham, First Secretary of the Canadian High Commission, discussed the recent visit of J. L. GREY, President, Atomic Energy Commission (Ltd.), to India during the last week of March, in great detail with Embassy officers. The following comments are a summary of these conversations which covered a variety of topics. Mr. Gorham emphasized that Mr. Grey is a very forthright person who speaks bluntly and to the point.

2. Purpose

The primary purpose of the visit of Mr. Grey was to allow him to hold discussions with the GOI on the following three topics:

A. The First Rajasthan Reactor (RAPP I)
B. New Indian Heavy Water Plant
C. The Second Rajasthan Reactor (RAPP II)

Mr. Grey visited Trombay and Delhi during his stay and had discussions with the appropriate GOI officials, including the members of the Indian Atomic Energy Commission (AEC) and H. N. SETHNA, Chief of the Atomic Energy Establishment at Trombay.

3. First Rajasthan Reactor (RAPP I)

A. The Canadians are quite disturbed about developments at the site of the RAPP I where construction began about one year ago. At the present time, the Canadians estimate that in twelve months the Indians have fallen four months behind schedule. (The Indians maintain that they are only six weeks behind schedule but the Canadians do not accept their position.)

B. A major reason for the delay in construction is the bad management at the site. Mr. Grey described the GOI project manager as a "washout" who is unable to organize and direct the work. In addition to the manager's general incompetence, Mr. Grey pointed out that he drinks too much and has succeeded in demoralizing his staff. Grey raised this matter with the Indian AEC when he met with this group as a body, but the Canadians are not optimistic that the manager will be replaced; even if he was replaced there is no assurance that his replacement would be any more capable. A major problem in this respect is the insistence of the GOI that any senior government bureaucrat can administer anything, regardless of the fact that technical knowledge is required for this particular project. (It was noted that this is a major principle of the Indian civil service tradition which the Indians would not modify easily.)

C. In addition, the Indians now find that they are unable to produce a considerable number of items domestically that they had previously maintained they could produce, contrary to the advice of the Canadians. This has resulted in the unexpected requirement for the Canadians to produce these items on a crash basis which adds to the previously estimated foreign exchange costs and also serves to delay the construction of the project. There are also serious problems with respect to the inability of the Indian domestic producers to meet delivery dates for items programmed for the project.

D. In brief, the Canadians are quite concerned that the present pattern of mismanagement and delays will significantly increase construction time, total cost and foreign exchange costs of the RAPP I. As mentioned in A, above, the project has already fallen considerably behind the planned construction schedule. In addition, the foreign exchange cost has already increased in twelve months about $5 million (from $38 million to $43 million). These increased costs are attributed equally to price increases in Canada and Indian miscalculations which resulted in the transfer of items from in-country to Canadian procurement.

4. Heavy Water

The GOI had originally planned to provide the heavy water for the RAPP I which hopefully is scheduled to be in operation about 1970 from a new heavy water plant which was to have been ready by that time. Grey noted that, although the new plant had been sanctioned by the GOI, he does not believe it will be built on schedule, due in part to the foreign exchange shortage. Grey mentioned, in this respect, that the GOI is currently having internal discussions concerning the desirability of delaying the construction of the new plant until the completion of the RAPP I. One suggestion is to construct the plant next to the RAPP I and use it as the source of power for heavy water production. At any rate, Grey does not believe the heavy water plant will be built on the original schedule, necessitating foreign procurement. The Canadians are willing and presumably will be able to sell heavy water to the Indians for the RAPP I.

5. Second Rajasthan Reactor (RAPP II).

A. Mr. Grey met with the entire AEC to discuss the RAPP II. He told this body unequivocally that the GOI cannot obtain assistance from Canada for the RAPP II without accepting firm safeguards. He pointed out in this respect that the GOC considered the RAPP II and the RAPP I as an integral package for safeguards purposes. He added that he assumed the GOI had considered the possibilities of obtaining assistance elsewhere for this project and the GOI realized the delay

and heavy added costs, including foreign exchange, that such a course of action would entail. Grey also informed the AEC that although theoretically the GOI could use the plans of the RAPP I to build the RAPP II, either by itself or with non-Canadian assistance, "you would be crazy as hell" to try to do this due to the assured adverse reaction of the GOC which would have an impact on other Canadian-Indo cooperative activities (according to Gorham, Grey meant Canadian economic aid to India). Grey also stated to the AEC that "Dr. Bhabha was a nut on safeguards" for reasons that the GOC could never really understand. Finally, he told the AEC that the GOI had to make up its mind quickly if it wants Canadian assistance for the RAPP II under these conditions since the Canadian AEC (Ltd.) soon had to firm up its future production schedule. Grey reported to the High Commission after this meeting that he thought all of the AEC members seemed impressed and in general agreement with his presentation.

B. The evening of the same day that he met with the AEC, Grey was informed by Dharma Vira, Cabinet Secretary and Acting Head of the AEC, that the AEC had decided to recommend to the GOI that it accept the Canadian conditions for participation in the RAPP II. Dharma Vira thought that a favorable Cabinet decision would be forthcoming in the next six-eight weeks.

Comment

Gorham noted that the Canadians viewed the latest developments as a "remarkable change" in Indian attitudes on the subject of safeguards for the RAPP II. The Canadians believe that this change reflects a serious examination during the past few weeks of alternatives open to the GOI and particularly since Dharma Vira's previous remarks on the subject (see A-805, March 4, 1966). He added that the High Commission believes that the change was motivated by the "practical considerations" involved and the absence of Dr. Bhabha. With respect to Bhabha, Gorham noted that even when he was the guiding force behind previous negotiations the GOI had always given in on the safeguards issue, although the process took more time. He thought the key in this present situation was that the Canadians had taken a firm position and it was obvious to the Indians that the Canadians would stick to their guns.

6. Indian Nuclear Device

A. Grey informed the High Commission that, as a result of his experiences in India, he is convinced that the GOI is not now clandestinely building a nuclear device nor are they planning to do so. He does believe, however, that the Indians very much like being in a position of saying to the world that they could do it. He added in this respect that with Dr. Bhabha at the helm it was quite possible that the GOI

could have built a nuclear device within 18 months of a political decision to do so. He had his doubts, however, about the ability of the GOI to build such a device in any reasonable period of time without Bhabha because of his unique combination of authority and outstanding talents.

B. In discussing this general subject in theoretical terms, Grey pointed out to the High Commission that the RAPP I and RAPP II reactors were not really good for producing weapons grade plutonium. He mentioned that natural uranium should be irradiated 600 - 1000 megawatt days for the production of truly optimum fissionable plutonium. The RAPP reactors were designed to irradiate natural uranium for 9,000 megawatt days which, due to the high burn rate, produced a highly unstable and impure plutonium. He commented that it was possible to pull fuel out at the optimum time, but this would run fuel costs up considerably, i.e., ten times. (The High Commission thinks, therefore, that this would make it highly unlikely that RAPP I and II would be the source of fissionable material for any large-scale future Indian nuclear weapons program.)

7. Madras Reactor

The High Commission took the occasion to discuss with Mr. Grey the possibility of French collaboration with the Indians to build the planned Madras reactor. In this respect, they reminded him that the GOI had a rather long standing request for technical assistance (amounting to $6 million) from Canada to help build this reactor. Although Grey was not familiar with the details of the Indian request, he stated that it would be highly unlikely for Canada to give technical assistance to the Indians to build a reactor which was purchased from France, particularly since Canada and France were in competition for selling atomic power plants and undoubtedly there are certain secrecy features that India should not disclose to France regarding the Canadian plant. The High Commission has never received a reply from Ottawa on the Indian request and assumes that it will just lie dormant until the future of the Madras reactor is more certain.

For the Charge d'Affaires ad interim

Galen L. Stone
Counselor for Political
Economic Affairs/External

~~SECRET~~

May 2, 1966

MEMORANDUM FOR MR. W. W. ROSTOW

SUBJECT: French Assistance to an Indian Nuclear Weapons Program

Walt --

This is a footnote to Spurgeon's memorandum to you of April 29, with which I agree.

There is another straw in the wind as to Indian plans in the form of a report of Indian conversations with the Canadians last February concerning Canadian assistance to the Indians on the fourth Indian power reactor. The Indians have strongly requested that the reactor be built without any safeguards and have indicated that they might reject Canadian assistance if the Canadians insist on safeguards. As you know, the Indians have only one large reactor in operation at the present time -- the Canadian-Indian reactor (CIR), a research reactor, at Trombay. Three other reactors are under construction -- two with U. S. assistance at Tarapur and one other Canadian reactor at Rajasthan. Indications are that Canada will continue to insist on adequate safeguards for the fourth reactor.

The Trombay reactor now in operation is theoretically under Canadian safeguards but the status is somewhat doubtful in view of the fact that Canada placed safeguards on the first uranium fuel load for the reactor. Subsequently the Indians supplied the fuel and the present loading and the reactor itself are not subject to safeguards, although the agreement under which the reactor was built specifies that the reactor would be used only for peaceful purposes. This reactor can produce enough plutonium for one or two nuclear weapons a year if the Indians decide to make weapons.

The French flirtation could be very tempting to the Indians because of the well-known French opposition to safeguards. The French could offer the Indians both technical assistance for the construction of unsafeguarded natural uranium reactors that would produce plutonium and ultimately/provide nuclear weapons technology. It is doubtful if the French would extend financial assistance to the Indians. At the moment it is also

doubtful if the French would undertake to provide the Indians with U-235 for either power production or for production of sophisticated nuclear weapons because the French U-235 supply from their Pierrelatte gaseous diffusion plant will not even be enough to satisfy French demands.

I agree with Spurgeon that it will be extremely important to keep a close watch on any Indian negotiations with the French who are a non-existent link in the anti-proliferation chain.

Charles E. Johnson

cc: Spurgeon M. Keeny
H. H. Saunders

5

[redacted]

April 29, 1966

MEMORANDUM FOR MR. ROSTOW

Subject: French Assistance to an Indian Nuclear Weapons Program

Walt --

As I indicated in my memorandum of April 8, calling the reports of French assistance to an Indian nuclear weapons program to your attention, I consider this potentially a very serious problem. Although CIA is probably correct in their assessment, reflected in the attached memoranda from Godfrey and Chamberlain, that the French are not actually giving the Indians any assistance in their nuclear weapons program (see Hal Saunder's earlier memo also attached), I don't think we can rule out the possibility that at least informal arrangements of this type may already exist. Looking to the future, I think there is a real possibility of this kind of development even if the present report is unfounded.

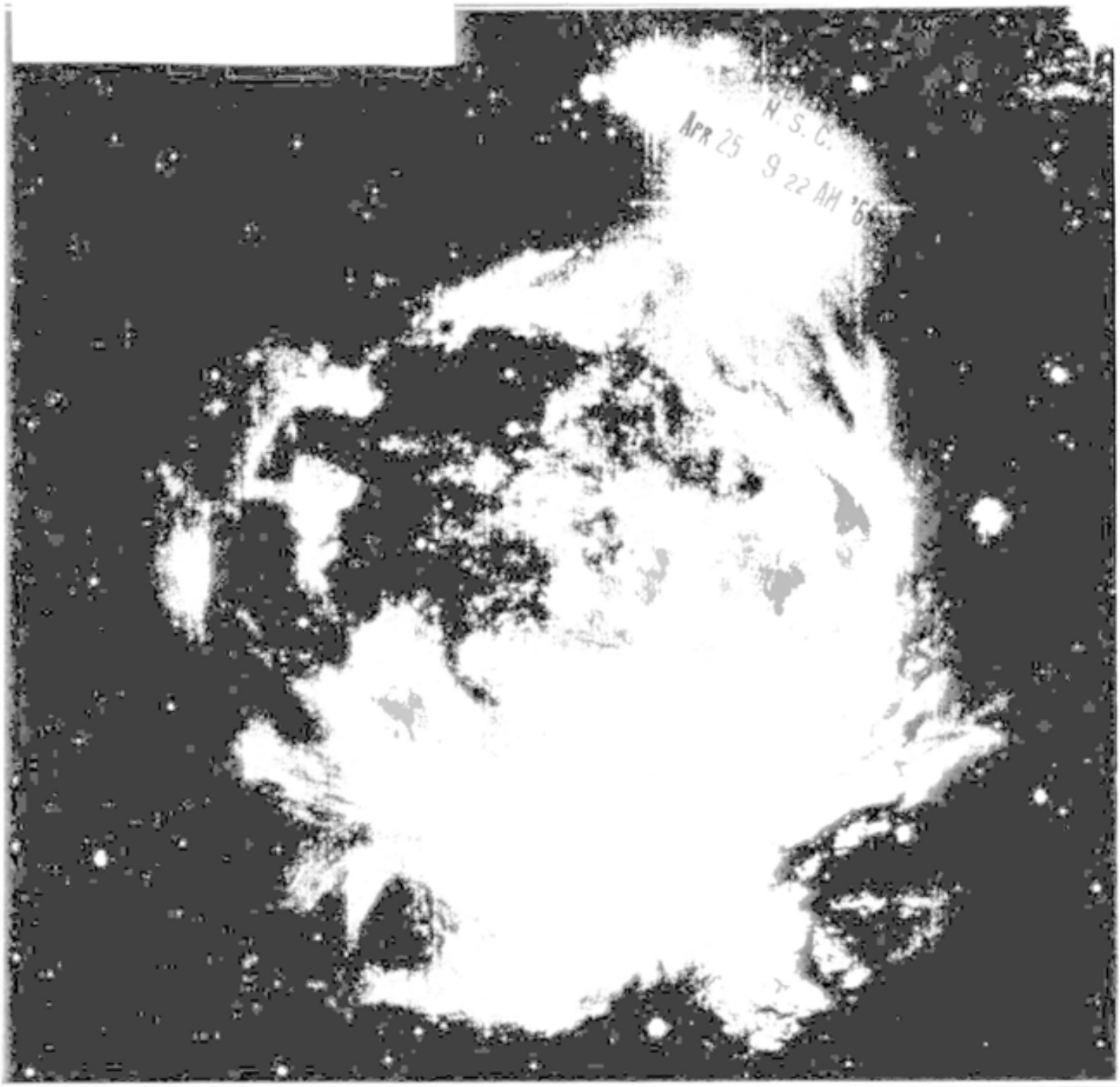
The most immediate problem is to develop our intelligence on this subject. I believe the rather intense interest in the attached reports has probably focused enough attention on the subject to assure that the intelligence community will follow it up.

If we get any better confirmation that there may really be Frenc-Indian collaboration on nuclear weapons development, I believe there should be a high-level diplomatic approach to the Indians to make clear to them that we would look with grave displeasure on such actions on their part and would have to reconsider our assistance to them in various fields if it continued.

Spurgeon Keeny

Atts.:
Memo 4/23 fm EDGodfrey to WWRostow
att'g [redacted] 25X1A
Cy memo 4/11 fm DFChamberlain to SMKeeny
Cy memo 4/15 fm HSaunders to WWRostow

cc: CEJohnson
HSaunders



SCIENTIFIC INTELLIGENCE DIGEST

Directorate of Science and Technology — *Office of Scientific Intelligence*

OSI-SD/66-4
April 1966

☐ ~~SECRET~~

4

NO FOREIGN DISSEM

[redacted]

Interpretations of intelligence information in this publication represent immediate views which are subject to modification in the light of further information or analysis. Any questions or comments relating to items herein or requests for reprints of individual articles may be addressed to the Current Intelligence Section of the Office of Scientific Intelligence, code 143, extension 5206.

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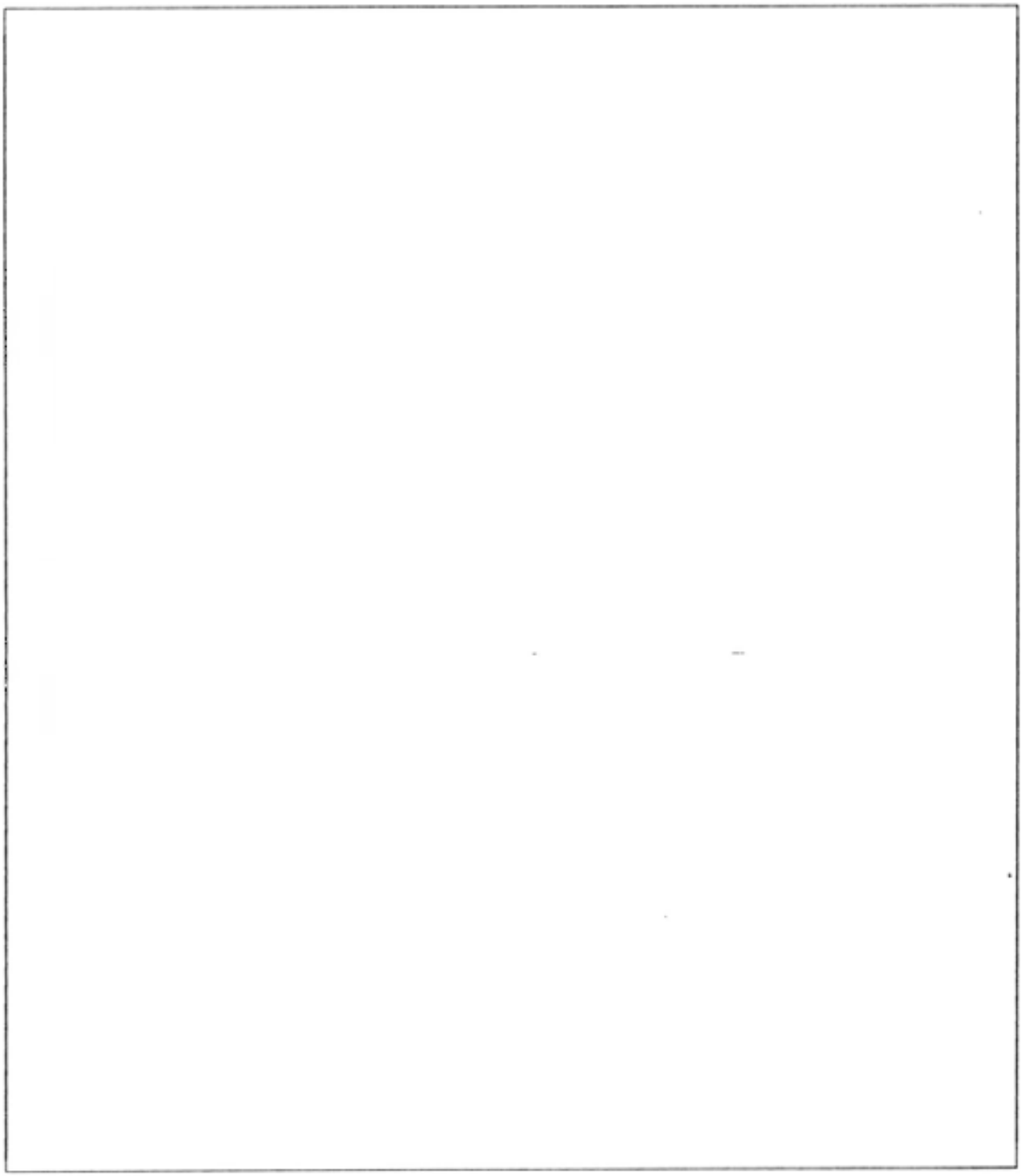
GRAPHICS

[redacted]



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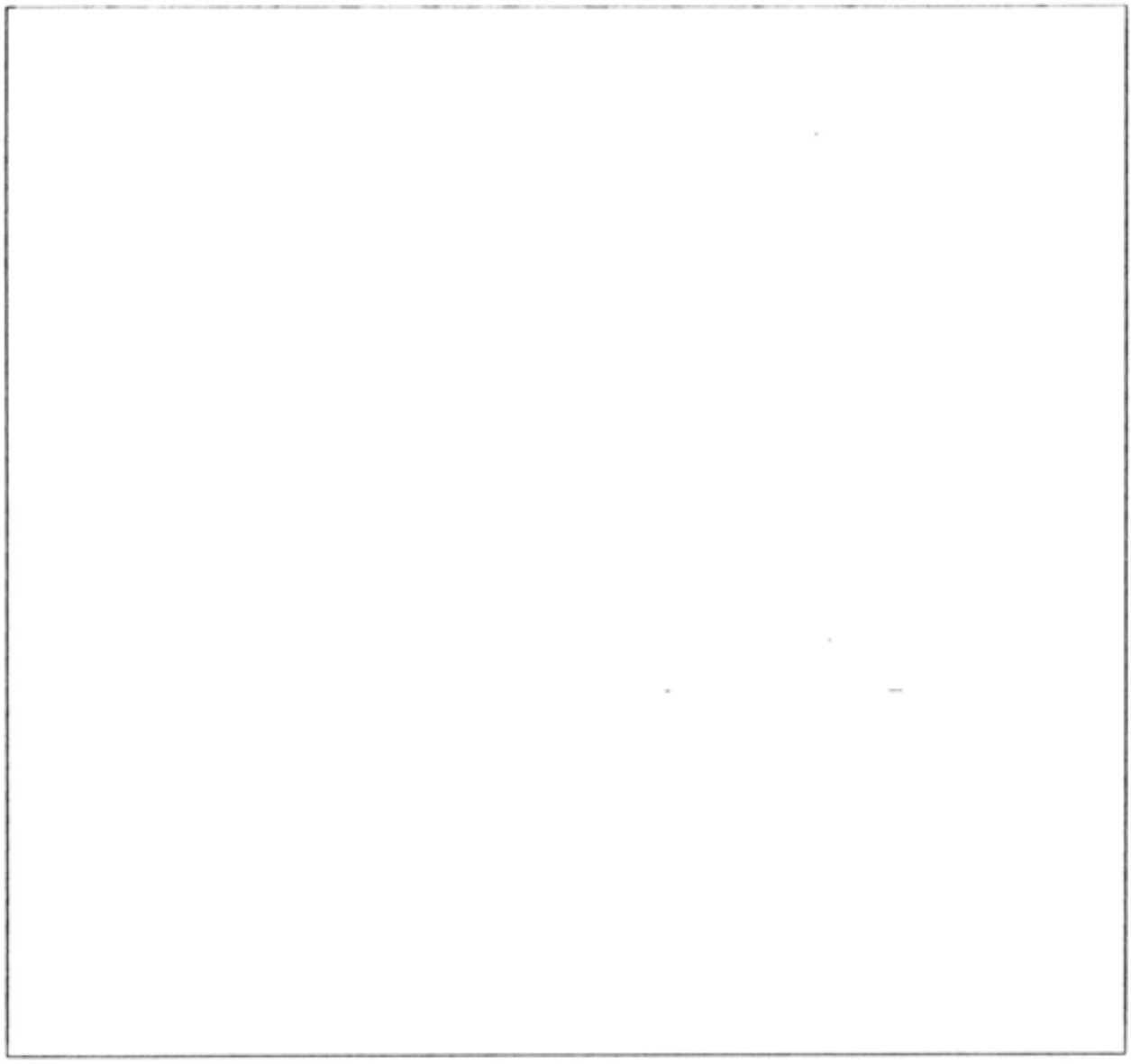

STATUS REPORT OF FOREIGN EPIDEMIOLOGICAL ACTIVITY DURING MARCH 1966

Life Sciences Division
OSI/CIA

HIGHLIGHTS

The Brazilian Health Ministry announced that an outbreak of yellow fever which started in Parana is rapidly spreading towards the frontier region of Argentina. Ministry officials in Argentina appealed for emergency supplies of vaccine to cope with the disease in flood-ravaged north Argentina.

A smallpox epidemic sweeping two districts in East Pakistan has killed approximately 1300 persons during the last three weeks of March. The areas most seriously affected are the Jessore and Khulna districts. Authorities stated that only 50 percent of the population in the areas were vaccinated. Reportedly, panic was spreading and no end of the epidemic was in sight.

A recurrence of the cholera epidemic in the Middle East is expected, due to the pilgrimage to Mecca (March 23 - April 21). Unconfirmed reports indicate the presence of this disease in Saudi Arabia, but on March 30 the Saudi Arabian Embassy announced that no cholera epidemic now exists there. The Turkish Government is under attack for allowing a Turkish pilgrimage through the cholera-infected areas. The Government denies that a cholera danger exists but are requiring pilgrims bound for Mecca to be vaccinated.

In South Vietnam, cholera-plague season has reached its peak. It is anticipated that the incidence of new cases will decrease gradually. Preventive measures have been responsible for reducing the incidence of recent years.

The USSR has donated 2.5 million doses of smallpox vaccine to Zambia. The Cameroons also have received a Soviet gift of diphtheria-tetanus vaccine. The latter vaccine was criticized as being of inferior quality.

Foot and mouth disease outbreaks in the Near East and parts of Europe continue to be reported. Seven Turkish provinces have been affected and the disease has spread to the Greek border. The first case of foot and mouth disease in Sweden since 1960 has been reported near Lund (southern Sweden). In Hungary, the disease is described as "completely out of control" and is spreading into adjoining countries, especially Yugoslavia and Czechoslovakia. In the Soviet Union,

the disease is prevalent but gradually is being brought under control.

Epidemics of hemorrhagic septicemia and brucellosis have affected about 60 percent of the hog farms in Camaguey Province, Cuba.

Human diseases of intelligence significance and plant and animal diseases reported during the month are shown in figures 1 and 2, respectively; a map is shown in figure 3.

The incidence of cholera in South Vietnam (1964-1966) is summarized in figure 4. The number of reported cases shows a sharp downward trend.

In Africa, smallpox continues to be poorly controlled and numerous epidemics have been reported during 1965 (figure 5). (~~CONFIDENTIAL~~).

Human Diseases Reported

March 1966

REGIONS	Smallpox	Cholera	Plague	Yellow Fever	Malaria	Flu	Polio
AFRICA	○		○	○	○		
CHINA		○	○		○		
CUBA							
EUROPE							
FAR EAST	⊕	⊗	⊗		○		
INDIA	⊗	⊗	○		○		
NEAR EAST	○	⊗			⊕		
SOUTH AMERICA	○		⊗	⊕	○	↑	
USSR							
VIETNAM		⊕	⊕		○		

Signifies no official reporting

○ *Denotes endemic condition*

X *Denotes disease reported*

↑ *Denotes significant increase*

~~CONFIDENTIAL~~

53690 4-66 CIA

~~CONFIDENTIAL~~

Figure 2

Animal and Plant Diseases Reported

March 1966

REGIONS	Animal Diseases: Foot-and-Mouth Disease	Anthrax	African Swine Fever	Rabies	Rinderpest	Hog Cholera	African Horse Sickness	Hemorrhagic Septicemia	Contagious Bovine Pleuro-pneumonia	Plant Diseases: Wheat Rust	Rice Blast
AFRICA	○	○	○	○	○	○	○	○	○	○	○
CHINA	○	○		○	○	○		○	○	○	○
CUBA	○	○		○		○		↑			○
EUROPE	↑	○	○	○		○				○	○
FAR EAST	○	○		○	○	○	○	○			○
INDIA	○	○		○	○	○		○		○	○
NEAR EAST	↑	○		○		○		○		○	○
SOUTH AMERICA	○	○		○		○				○	○
USSR	↑	○		○	○	○		○	○	○	○
VIETNAM	○	○		○	○	○		○			○

Signifies no official reporting

○ *Denotes endemic condition*

x *Denotes disease reported*

↑ *Denotes significant increase*

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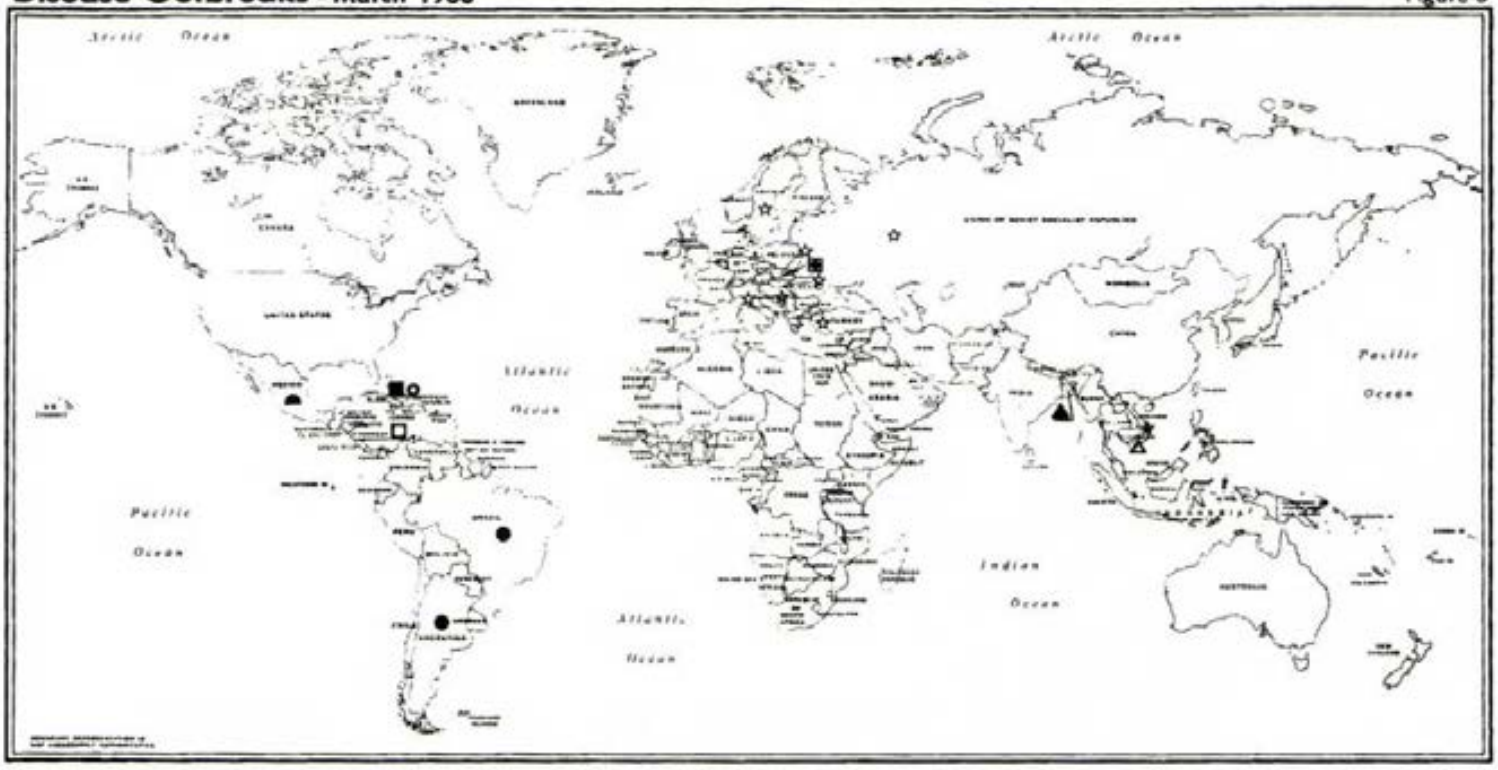
Disease Outbreaks - March 1966

Figure 3



HUMAN DISEASES ★Cholera ▲Smallpox △Plague ▣Paratyphoid □Typhoid Fever ●Yellow Fever ▲Influenza

ANIMAL DISEASES ☆Foot-and-Mouth Disease ■Hemorrhagic Septicemia ○Brucellosis

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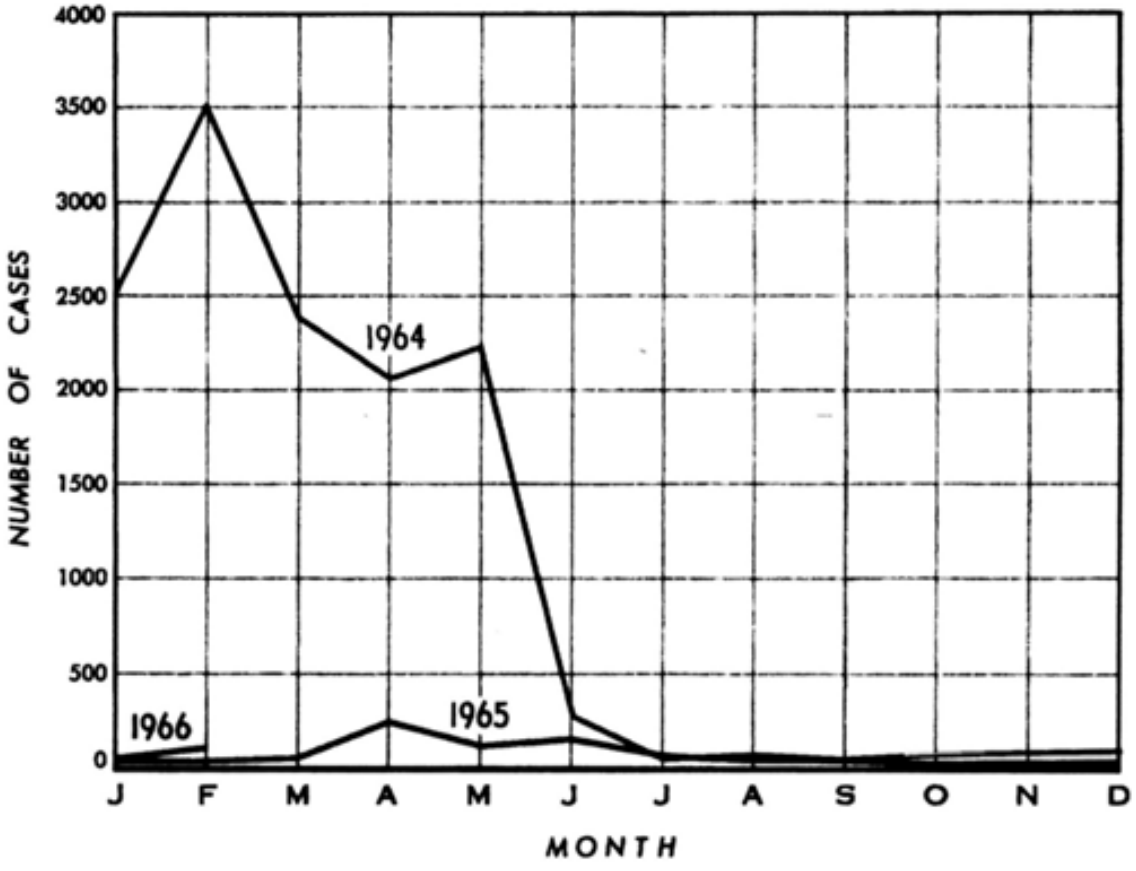
Figure 4

Incidence of Cholera Reported in South Vietnam*
1964-66



*Not final data; subject to revision.

53693 4-66

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Figure 5

AFRICA

Countries Reporting Smallpox in 1965

53694 4-66

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SOVIET SHORTAGES OF COMPUTER PERIPHERAL EQUIPMENT HINDER DATA PROCESSING IN SOVIET ECONOMIC PLANNING

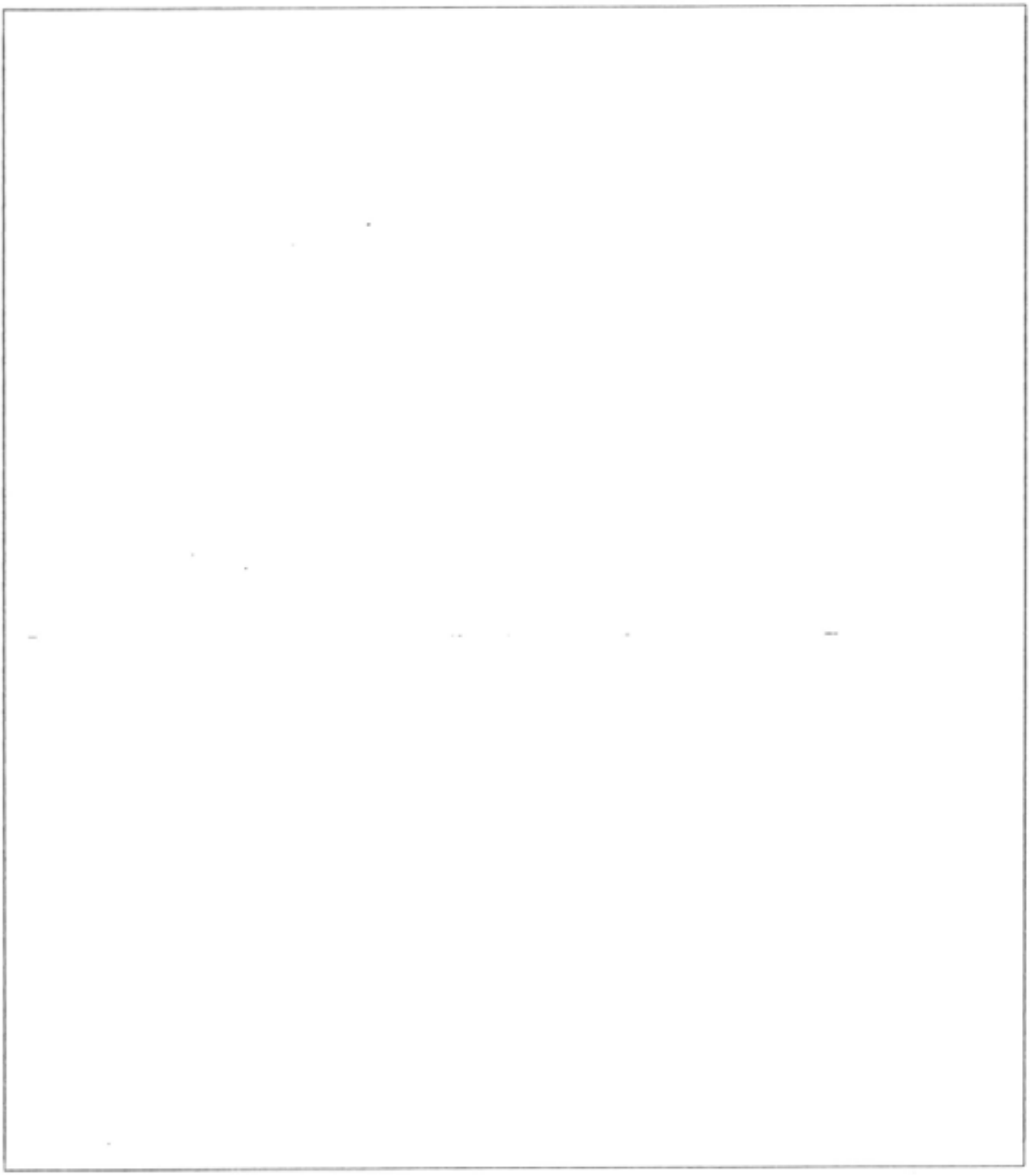
[redacted]
General Sciences Division
OSI/CIA

Recent statements by A. A. Dorodnitsyn, a leading Soviet computer specialist, on Soviet capabilities for overcoming the lag in computer processing of economic data appear to be overly optimistic.

In discussing critical Soviet shortages of input-output and other peripheral equipment for use in computer processing of economic data, Dorodnitsyn attributed the Soviet backwardness in this area to a five-year lag behind the West in starting computer development, and to the Soviet failure to emphasize the use of computers for economic data processing as well as for scientific problem solving applications. His remarks are generally consistent with intelligence estimates. He did not mention, however, the substantial Soviet lag in providing computers with large, rapid access internal stores, another characteristic needed in computers for large data processing tasks.

Dorodnitsyn further contended that the most expeditious and economical approach to overcoming shortages of computer peripheral equipment is to purchase licenses for Soviet production of Western devices and to import some Western-made devices. Although the the Soviet bloc has imported some high-quality Western peripheral equipment, recent Soviet production models that have been examined are not of comparable quality. Dorodnitsyn's belief that it would be expeditious for the Soviets to produce under Western license is considered erroneous because of the time that would be required to raise Soviet quality control and industrial craftsmanship to a level comparable to that of the West.

Dorodnitsyn believes that a total of 10^{16} operations are required to calculate an optimal annual national economic balance. His suggestion that 4000 computers might be enough to perform the required operation within practical time limitations appears overly optimistic. 4000 advanced computers each capable of performing a million operations a second -- which the Soviets do not currently have -- could perform 10^{16} operations in 700 hours of faultless operation. However, a substantial number of the computers must operate simultaneously in a network and a small number of inoperable computers would greatly extend the time required to complete the necessary operations. Based on the present state of computer reliability, a year probably would not suffice to obtain the required amount of faultless or near-faultless operating time for many computers in a network. (CONFIDENTIAL)



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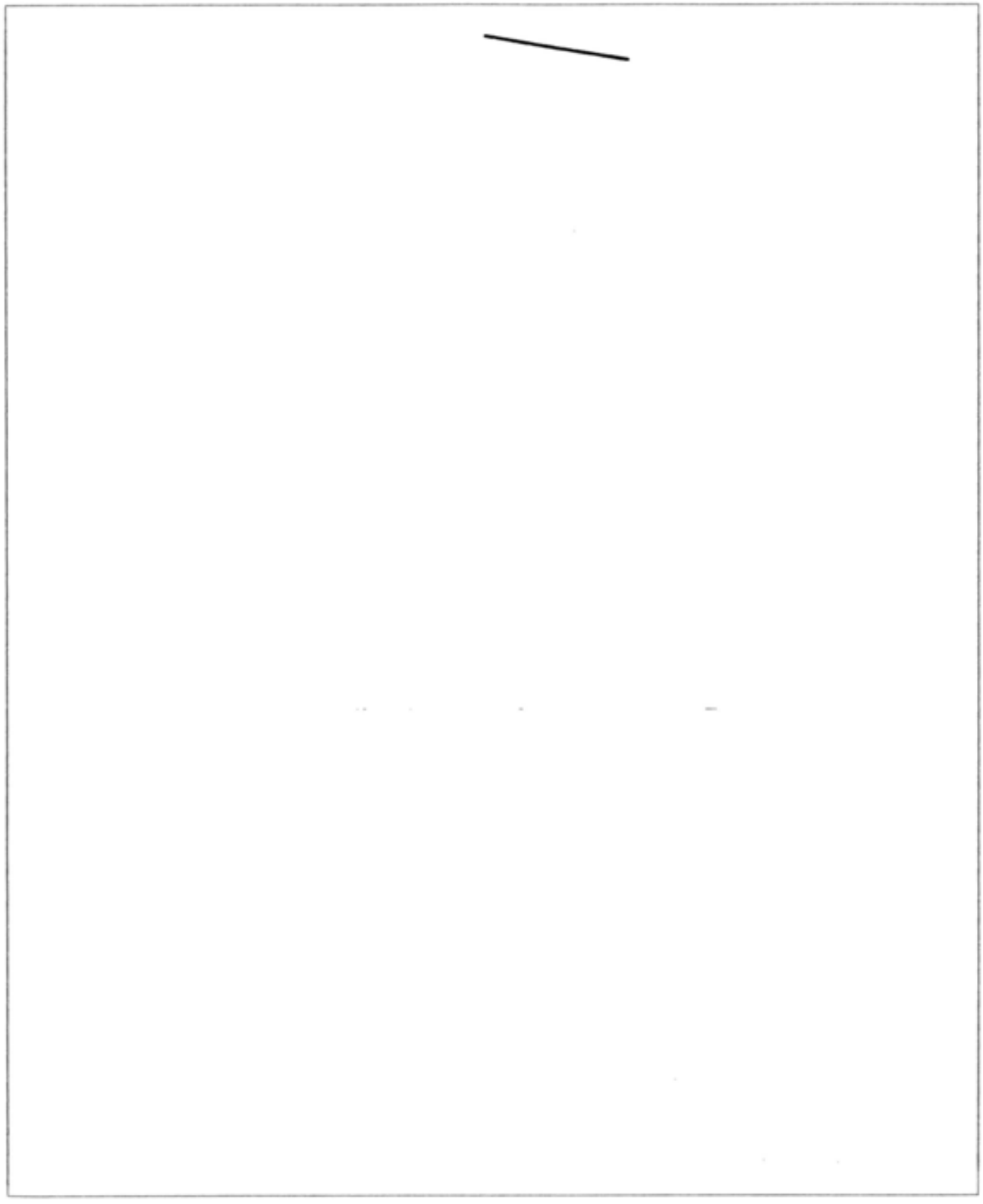
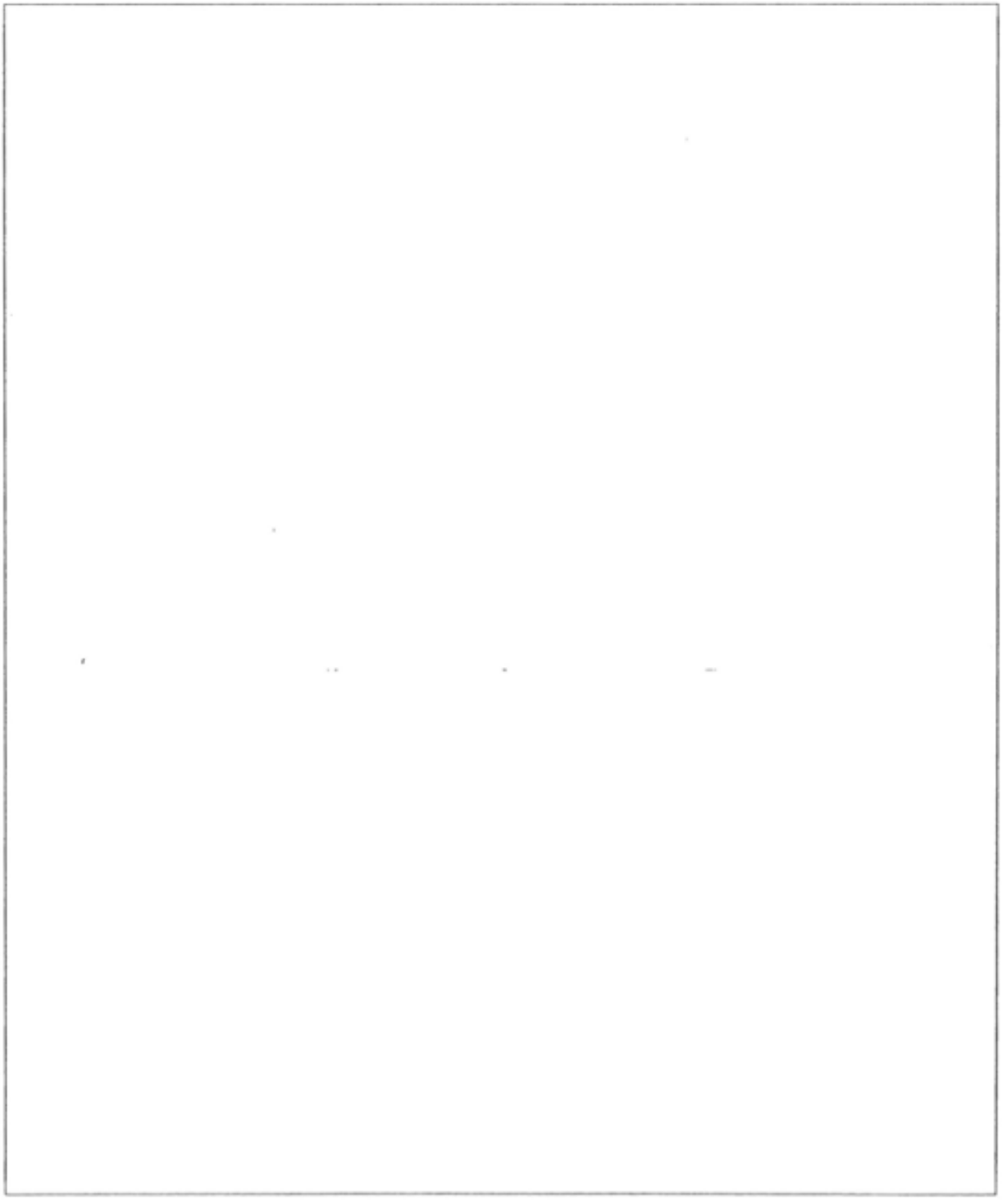


SECRET

61643 Figure 2. Course of Vasiliy Golovnin, January-February 1966



THE SOVIET SUPERSONIC TRANSPORT PROGRAM

[redacted]
Defensive Systems Division
OSI/CIA

SUMMARY AND CONCLUSIONS

The Soviets are building the TU-144, a Mach 2.35, 121-passenger supersonic transport (SST) that is scheduled to enter the prototype test phase in late 1967 or early 1968 and air line operation by 1971. After almost three years of near silence on their SST program, the Soviets commenced a propaganda campaign beginning with the Paris Air Show in 1965, indicating their confidence in achieving another "propaganda first" with the TU-144. There are also indications that a Mach 3 follow-on transport is being studied, but no indication that the program has advanced beyond the study phase.

DISCUSSION

A model of the Soviet supersonic transport aircraft, the TU-144, was formally presented at the Paris Air Show in June 1965. Soviet interest in an SST was first detected [redacted] the USSR would soon have a transport plane that would fly through the sound barrier. At that time the program was probably a feasibility study brought about by the French, British, and U.S. SST proposals being publicized in the Western press. By 1962 Soviet press articles carried sketches of an SST obviously derived from the Bounder bomber prototype. Although not an economical commercial design, the Bounder airframe was readily available and could have been developed on a time scale favorable to the Soviets for propaganda purposes. However, the Soviets have become interested in penetrating the world commercial aircraft market, and the Bounder conversion, even if it gained the initial propaganda advantage, would not be competitive with Western designs on an economic basis. Therefore, design studies for possibly two all new SST designs were initiated to back up the Bounder SST. When it became apparent that the Anglo-French Concorde and the U.S. SST programs would not be in operation before the 1970 time period, the Soviets apparently dropped the Bounder conversion concept and concentrated on a completely new design.

The TU-144 model displayed at Paris closely resembled the configuration

selected for the Anglo-French Concorde. It has a slender, ogive delta wing, no separate horizontal tail surfaces, and a long slender fuselage with a droopable nose section for increased pilot visibility on take-off and landing. The most obvious difference between the TU-144 and the Concorde is the engine installation. Rather than pairs of engines in short pods under the wing, the TU-144 has all four engines in a single pod with a long inlet duct mounted under the fuselage.

No physical dimensions of the SST were presented at the air show or in the succeeding press releases, The engine was estimated to be about 60 inches in diameter. Soviet engineers stated it was a by-pass type and that it developed 28,000 lbs. thrust dry and 38,000 lbs. thrust with afterburning. They claimed that 1100 hours of bench test running had been completed and later, at a party and after consuming "great quantities" of alcohol, the Soviets hinted that they had had some flight time on the engine.

During 1963-64 P. V. Dementyev, head of the Ministry of Aviation, and A. N. Tupolev, the designer, a straight jet and a by-pass engine had been considered, the by-pass was preferred, but economic reasons might dictate otherwise. Thus it appears that the TU-144 will have the Kuznetsov by-pass engine rather than the straight jet engine by Tumanskey reported previously.

A limited amount of technical data, both on the structure and the aerodynamics, The entire structure is being designed for a fatigue life of 30,000 hours. The fuselage structure is of integrally milled panels containing the window openings. Window spacing reportedly is about twice that on the Concorde. The wing is conventional structure designed around a box spar. The leading edge of the wing will be titanium. Two separate inertial navigation systems are being studied and the air conditioning system is being tested in a 45-meter long heated chamber. An old aircraft fuselage, specially outfitted, is being used for the SST tests. Aerodynamically, the Soviets claim to have achieved a minimum drag configuration and quoted lift/drag ratios of 13 to 14 in subsonic cruise and 7 to 8 in supersonic cruise. They stated that 20 to 25 wing models had been tested before the final selection was made.

The performance data for the TU-144 as announced by the Soviets at the Paris Air Show are as follows:

Gross take-off weight	130 metric tons (286,000 lbs.)
Range	6500 km (3500 n.m.)
Cruise speed	2500 km/hr (Mach 2.35)
Cruise altitude	20 km (65,000 ft.)
Passenger capacity	121 tourist or 108 mixed class

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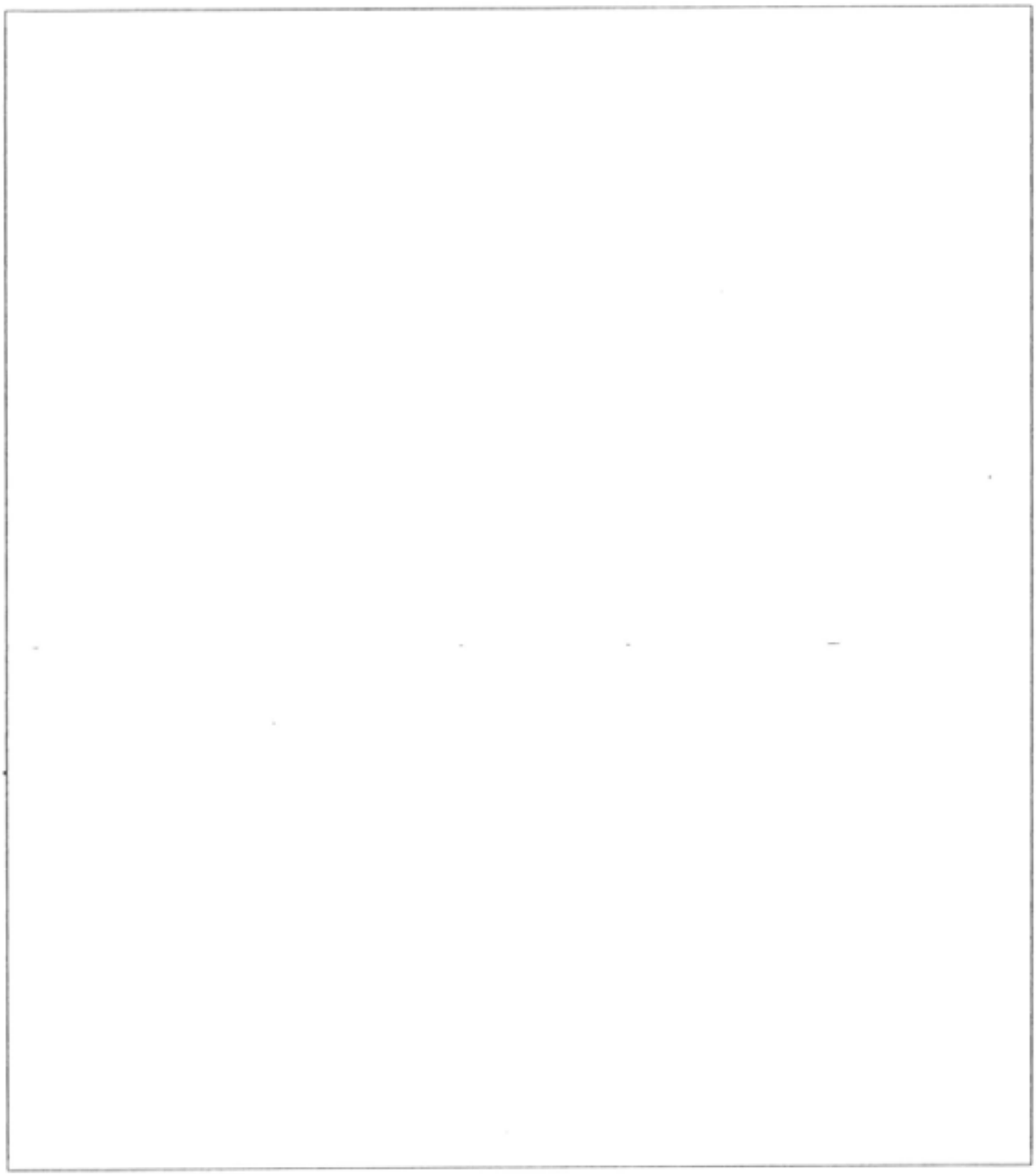
It is likely that the announced performance is unrealistic and parrots Concorde performance figures to avoid an unfavorable comparison.

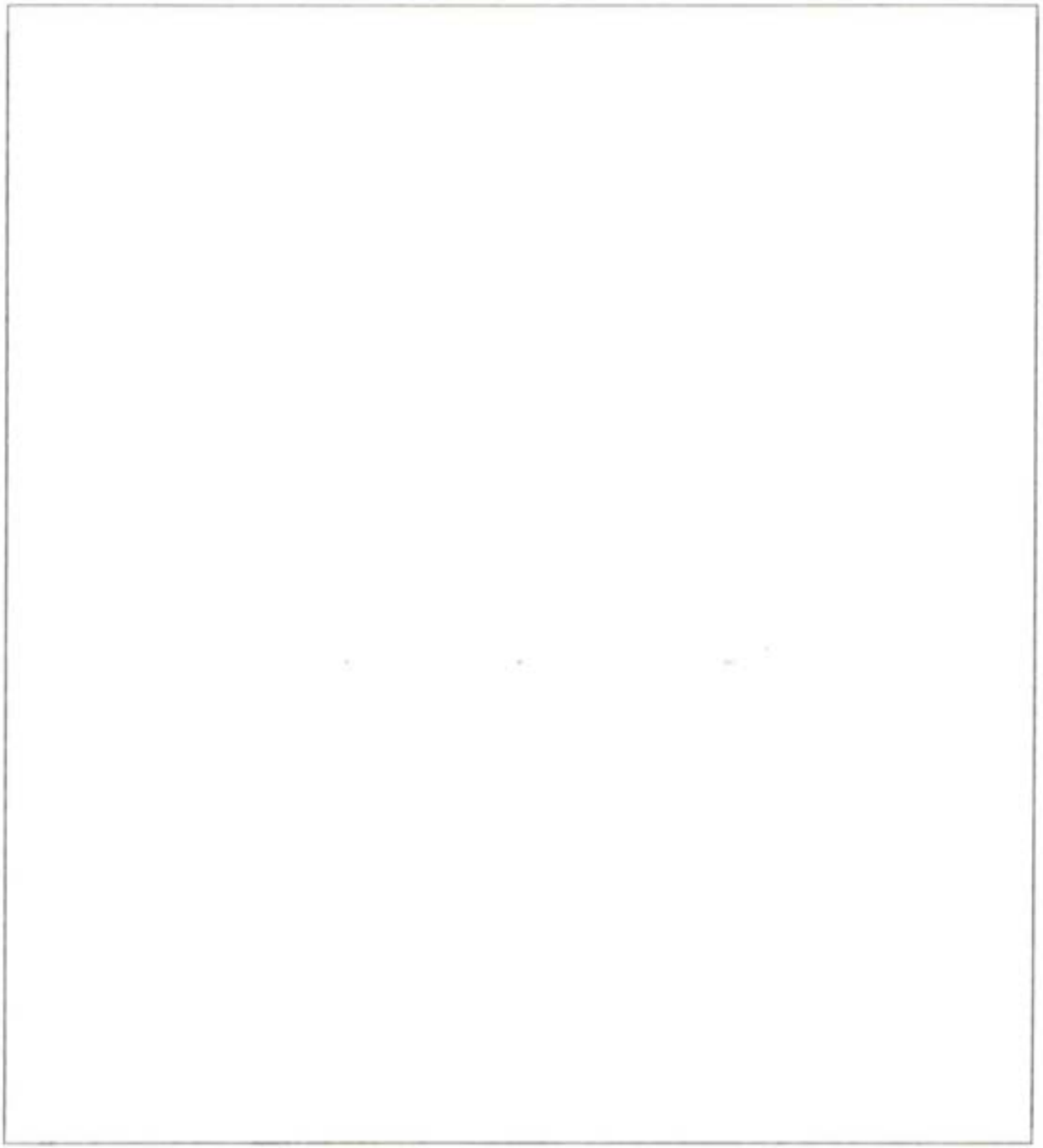
that the TU-144 had been designed for the Moscow-New Delhi run -- about 2300 miles. Range calculations based on reported lift/drag ratio, cruise speed and weights, and an assumed value of specific fuel consumption yield a range of 2300 to 2500 n.m. Even this range may be optimistic because the values used probably represent design goals that will not be fully achieved in the early life of the TU-144.

Soviet aircraft structural methods, while sound, have never taken full advantage of the weight saving techniques used in the West. Consequently their airframe weight has been a higher percentage of gross weight than that for comparable Western aircraft. It is calculated that the gross weight of the TU-144 will approximate 315,000 pounds if present design parameters remain unchanged, and that initially a maximum range of about 2500 n.m. will be achieved at a reduced payload of 80 passengers or about 1800 n.m. with 120 passengers.

The Soviets have indicated in recent statements that the TU-144 will be the first SST in service in the world. At the same time they are saying only a small number, perhaps 10 to 20, will be needed on Aeroflot routes. While it is true that supersonic transports are practical only for routes of 1000 miles or longer, 10 to 20 SSTs appear to be far too few for Aeroflots potential needs.

S. V. Il'yushin is undertaking a design study for a Mach 3 follow-on transport. If these reports are valid, the study would provide the guidelines for the research and development required to build the Mach 3 transport and could suggest the reason for the small number of TU-144 SSTs being considered. Aeroflot may prefer the higher speed transport and not be making a large commitment on the TU-144 until definite information is in hand on the performance, cost, and availability of the follow-on transport. ~~(SECRET) (NO FOREIGN DISSEM)~~





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INDIAN NUCLEAR PLANS

V. T. Cooney
Nuclear Energy Division
OSI/CIA

The Indian nuclear policy at this time is to refrain from embarking on a nuclear weapons program, although the policy could be changed quickly. In fact, the Indians reportedly are conducting a limited amount of research devoted to reducing the time it would take to develop a weapon once a decision is made.

At present the only sizable reactor operating in India is the Canada-India Reactor (CIR), a research reactor at Trombay. Three other reactors under construction are the two U.S.-supplied reactors for the Tarapur Atomic Power Project and the Canadian-supplied reactor for the Rajasthan Atomic Power Project (RAPP I).

a Canadian aid team was in New Delhi during February to discuss financing the planned second power reactor at the Rajasthan Atomic Power Project (RAPP II). Indian officials unanimously reaffirmed their desire to proceed with the project and with the planned Madras nuclear power project as well.

India hoped that Canada would not insist on safeguards for RAPP II. He added that India would have to reconsider the project and might be forced to delay it until India could undertake it on its own. In this respect, Dharma Vira commented that India was most reluctant to tie-up its future nuclear reactors with safeguards since such a development would not be consistent with the possible future requirements of Indian national security. However, it is expected that Canada will continue to insist on adequate safeguard for RAPP II.

India always has been reluctant to accept safeguards, but requires foreign assistance in both financing and constructing large nuclear reactors. The only Indian reactor capable of producing plutonium for a nuclear weapons program (1 or 2 weapons per year) at the present time is the 40 megawatt (MW) CIR research reactor at Trombay. While Canada placed safeguards on the uranium it supplied for the first fuel load of this reactor, subsequent Indian-supplied loadings and the reactor itself are not subject to safeguards. However, the

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agreement between India and Canada for its construction contained a clause that the reactor would be used only for peaceful purposes. Both the U.S.-supplied reactors for the 380 MW (electric) Tarapur Atomic Power Project and the first 200 MW (electric) Canadian-supplied reactor of the Rajasthan Atomic Power Project (RAPP I), which now are under construction, are subject to safeguards.

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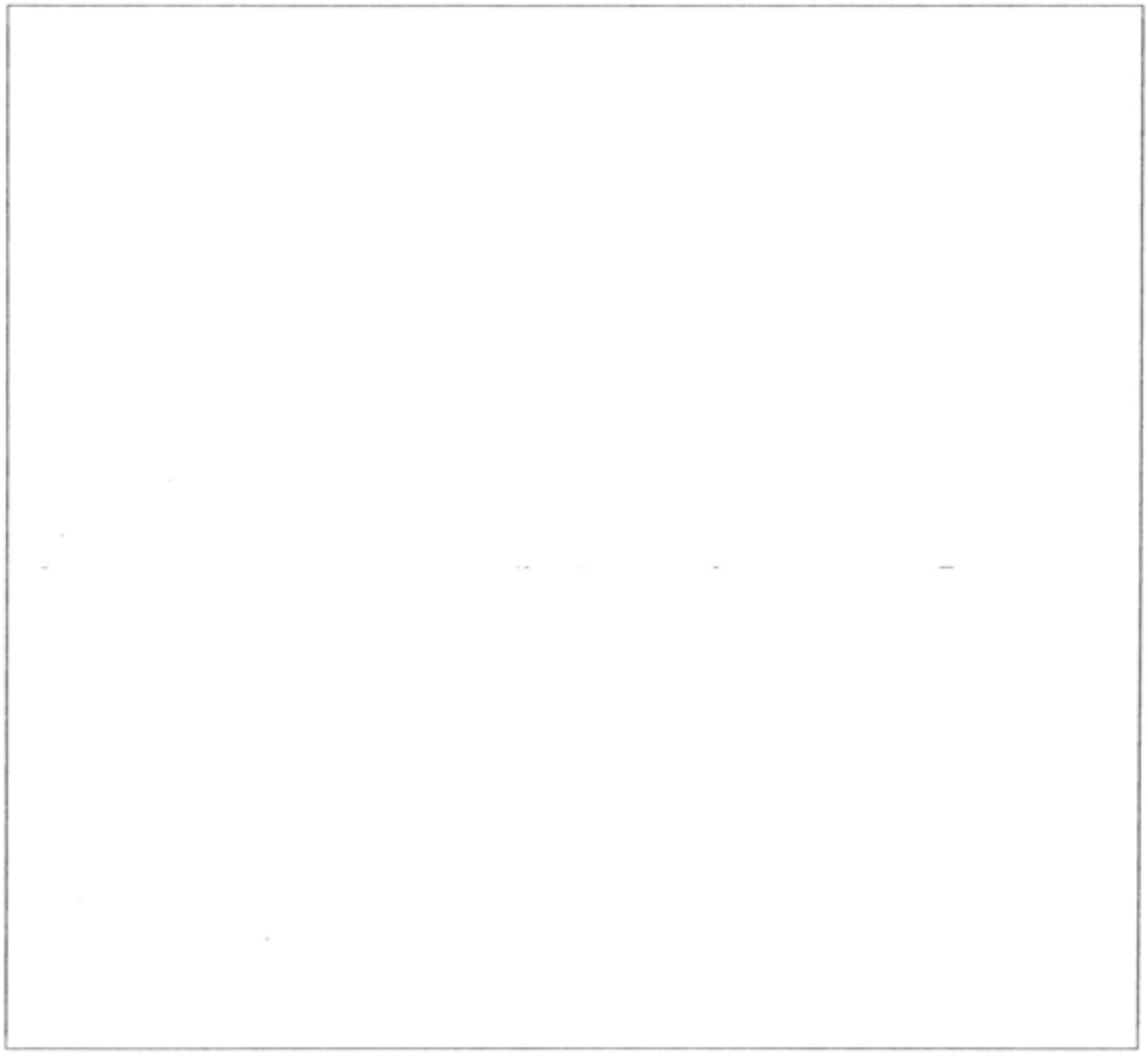

Pres. Johnson

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CONTROLLED DISSEM

SNIE 31-1-65
21 October 1965

7

SPECIAL

NATIONAL INTELLIGENCE ESTIMATE

NUMBER 31-1-65

Supersedes Memorandum to Holders of

NIE 4-2-64 and NIE 31-64

India's Nuclear Weapons Policy

Submitted by the
DIRECTOR OF CENTRAL INTELLIGENCE
Concurred in by the
UNITED STATES INTELLIGENCE BOARD
As indicated overleaf
21 OCTOBER 1965

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CONTROLLED DISSEM

The following intelligence organizations participated in the preparation of this estimate:

The Central Intelligence Agency and the intelligence organizations of the Departments of State, Defense, AEC, and NSA.

Concurring:

Director of Intelligence and Research, Department of State

Director, Defense Intelligence Agency

The Atomic Energy Commission Representative to the USIB

Director of the National Security Agency

Abstaining:

The Assistant to the Director, Federal Bureau of Investigation, the subject being outside of his jurisdiction.

~~SECRET~~

SPECIAL

NATIONAL INTELLIGENCE ESTIMATE

NUMBER 31-1-65

India's Nuclear Weapons Policy

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INDIA'S NUCLEAR WEAPONS POLICY

THE PROBLEM

To estimate India's nuclear weapons policy over the next few years.

CONCLUSIONS

A. India has the capability to develop nuclear weapons. It probably already has sufficient plutonium for a first device, and could explode it about a year after a decision to develop one. (*Paras. 1-3*)

B. The proponents of a nuclear weapons program have been strengthened by the Indo-Pakistani war, but the main political result has been a strengthening of Prime Minister Shastri's position. We believe that he does not now wish to start a program and that he is capable of making this decision stick for the time being. (*Paras. 4-14*)

C. However, we do not believe that India will hold to this policy indefinitely. All things considered, we believe that within the next few years India probably will detonate a nuclear device and proceed to develop nuclear weapons. (*Paras. 15-20*)

DISCUSSION

Technical Capabilities

1. India has everything necessary to produce the plutonium for a modest weapons program, from extensive uranium ore reserves through a plutonium separation plant. It is expanding some of its facilities and striving to build up its domestic capabilities to reduce and eventually eliminate its dependence on foreign suppliers. The country plans to complete three sizable nuclear power stations in the next several years; two are already under construction with Canadian and US assistance. However, the reactors for the currently planned power program are to be under safeguards designed to ensure peaceful uses. The Canada-India Reactor (CIR)—one of India's three research reactors—is capable of producing annually enough plutonium for one or two weapons in the 20 KT range. There are no safeguards on either the uranium or heavy water now used in this reactor, although when Canada furnished the reactor India agreed to use it only for peaceful purposes.

2. India probably already has on hand enough plutonium for a nuclear device. The CIR has been operated, at least through mid-1965, in a manner which favors the output of plutonium suitable for weapons, though this plutonium is also useful for other purposes. The plutonium separation plant has processed the fuel irradiated in the CIR. A plant for the production of plutonium metal from the output of the separation plant is scheduled for completion in 1966; in the meantime, this task probably has been performed by a pilot facility which has enough capacity to process the plutonium the CIR can produce. The Indians maintain that their entire nuclear program is directed to peaceful uses; they say they want plutonium for research on fast breeder reactors which they hope to develop to exploit their extensive thorium reserves. Nevertheless, it is clear that the facilities and the manner of operating them make it possible for New Delhi to move promptly into a weapons program.

3. If Indian leaders decided in late 1964 or early 1965 to develop nuclear weapons, we believe that India could conduct its first test within a few months. To do so, however, work on weapons design and technology would have to be well advanced, and a testing site would have to be established soon. We have no evidence that such activities are well advanced. However, early work applicable to weapons technology and design has probably started. Such work is easy to conceal and difficult to identify. India has expanded the electronic facilities at its nuclear establishment considerably and may have begun to set up a high explosives test facility, though both developments could be intended for other purposes than production of nuclear weapons. If work applicable to weapons design and technology is in its early stages, as we believe probable, India would be able to test its first device in the second half of 1966. India signed the 1963 partial test ban treaty, but has areas where it could test underground. A weapon deliverable by the Indian Air Force's Canberra light bombers

could probably be produced about two years after the first test; India could produce about a dozen weapons in the 20 KT range by 1970. Production could then increase rapidly if India used the plutonium produced in the power reactors now scheduled.

Pressures for a Weapons Program

4. Pressures for a nuclear weapons program began to build up in India after the first Chinese test late in 1964. Elements of the press and the scientific community, as well as some politicians, called for India to make the bomb. Shastri and other top leaders opposed these pressures and reaffirmed India's intention not to develop nuclear weapons. The leaders had considerable difficulty, however, in gaining formal Congress Party support for this position, and the Indian Government has acknowledged that this policy is subject to change.

5. The war with Pakistan, and particularly Communist China's threatened intervenion in the fighting, have given considerable impetus to those Indians who favor developing nuclear weapons. Several opposition parties have called for the government to reverse its position; 85 members of Parliament—including some members of the Congress Party—have done the same; and various influential people throughout India have begun to put pressure on the government on the issue. Public sentiment is now such that the proponents of nuclear weapons may even outnumber opponents, and senior Congress Party leadership constitutes the main obstacle to a policy reversal. To some extent this sentiment reflects an emotional surge, generated by the war, which will probably decline in time. But we think that the war has permanently strengthened the voices of those who argue that India's security will be better protected by greater reliance on its own military strength than upon other powers and world opinion.

6. Those who favor nuclear weapons argue that Indian prestige will suffer unless India has the bomb, and that, without nuclear weapons, India will not be regarded as a great power. Equally appealing is the simple claim that an India without nuclear weapons will be unable to stand up to a nuclear-armed China, particularly a decade or so hence when Peking will probably have a considerable nuclear arsenal. This argument is likely to have growing appeal as further Chinese tests occur. Finally, proponents of the bomb note that Communist China has suffered no setbacks as a result of developing a nuclear capability, and indeed its status as a world power has been enhanced.

7. At the same time, the Indian Government has had little success in finding non-nuclear ways to deal with the threat which Chinese nuclear developments pose to its prestige and security. It has been unable to find any scientific spectacular that would match the Chinese explosions. Nor have guarantees satisfactory to India been forthcoming from the nuclear powers that they would come to India's assistance in the event of a nuclear attack by Communist China. Indian interest was centered on the possibility of a joint US-USSR guarantee, because it would be consistent with the country's nonalignment policy. However, Moscow's response has not been encouraging. Its passivity following Peking's ulti-

matum during the recent conflict with Pakistan, the suspension of US military aid to India and US failure to prevent Pakistan's use of US weapons against India, are all cited as proof that India cannot depend upon outside powers for protection in the great variety of contingencies it will face. India probably believes that the difficulties of securing a joint guarantee now are even more formidable than they were a year ago, and the confidence it is willing to place in formal assurances has also deteriorated. For these reasons, New Delhi recently has shown little interest in security guarantees. On the subject of nonproliferation, India has taken a rather stiff stand, insisting that before nonnuclear powers agree not to proliferate, the present nuclear powers must undertake some nuclear disarmament measures. Finally, India is probably discouraged about the possibility of insuring its security through a comprehensive test ban treaty.

Opposition to a Weapons Program

8. On the other hand, opponents of a nuclear weapons program argue that, during the recent crisis, India was able to deal with both Pakistan and Communist China simultaneously with conventional arms, and that what is needed is added strength of this sort. They believe that a reversal of Nehru's traditional position after all India has said about the evils of nuclear weapons would damage its international prestige. Moreover, they apparently feel that if India develops nuclear weapons, other countries (including Pakistan) will be more inclined to seek such weapons, either through their own efforts or from other countries. Indian leaders also are likely to continue to stress the evil nature of atomic weapons and the threat they pose for the world. Such considerations still are important in India, though they are declining as the legacy of Gandhi and Nehru fades. Some opponents of the bomb are convinced that the cost of a meaningful weapons system will be prohibitive; some believe that, should China attack India with nuclear weapons, the US and perhaps even the USSR would inevitably become involved.

9. India's policy probably is influenced to some extent by the views of the country's military leaders. While our information on their attitudes is limited, they apparently are not now pressing for nuclear weapons. They seem to favor the use of available funds to build up India's conventional military strength. Indian military thought, long dominated by the army, concentrates heavily on defending the country's borders rather than on strategic capabilities. Indian military leaders probably do not yet see a pressing need for nuclear weapons for border defense. As China's nuclear arsenal grows and its delivery capability improves, the attitudes of the military leaders seem likely to change. However, their arguments provide Shastri with powerful support for his present policy, though he has not yet made public use of them.

Economic Considerations

10. The economic burden involved in developing a few simple fission weapons would not be great. The cost of a modest weapons program (up to the testing

of a first device) would be $30-40 million; indeed, if some work has already been done on weapons technology it could be considerably less.* Thereafter, the additional costs would be only $20-30 million a year for 1-2 weapons annually. A considerably larger program—some 10-15 weapons a year—in the early 1970s would require an investment of $50-60 million; thereafter the annual cost would be about $60 million a year. Only a small part of these costs would be in foreign exchange.

11. The costs of a delivery system would be in addition to the above nuclear expenses; they would be mainly in foreign exchange. To develop a meaningful nuclear deterrent to Communist China, given the distance of major Chinese targets, India would at least have to procure longer range bombers than the Canberras now in its inventory. The Soviet Badger has been sold to non-Communist countries for approximately $1.5 million per unit; it has a combat radius sufficient to reach many important areas in China. India probably believes it could acquire medium jet bombers from the USSR—or from the West—despite the political problems this could pose for the suppliers. A fleet of 20 medium jet bombers would cost about $30 million; if costs could be spread over several years, the expense of acquiring and operating these planes would be about $20 million a year. A similar number of heavy jet bombers, if obtainable, would probably cost three or four times as much.

12. India has so far done only limited work in missile technology. However, if New Delhi came to feel a need for missiles, it might, during the next ten years, be able to produce or purchase a missile delivery system suitable to deliver against Chinese targets the warheads it could manufacture.

13. Thus India would have to spend about $80-120 million a year to produce 10-15 bombs annually and to acquire and operate a small jet bomber force. The costs of producing or purchasing a missile delivery system would probably be greater, though we cannot say by how much. Given the country's present and prospective economic difficulties, these expenditures—particularly the sizable foreign exchange costs of a delivery system—will be an important inhibition. However, India has increased its defense budget fourfold—to nearly $2 billion annually—in the last eight years rather than seek accommodation with Pakistan and Communist China, and we doubt that concern over costs will be the overriding factor in the Indian decision.

The Indian Decision

14. The case for nuclear weapons has been strengthened by the war with Pakistan. However, the main political result of the conflict has been a strengthening of Shastri's position. We believe that he does not at present wish to develop

* Indian expenditures on its nuclear energy program from 1954 through 1965 will total about $300 million. 1965 expenditures will be about $85 million. Expenditures are expected to average about $100 million a year for the next five years, largely in connection with the construction of power stations. Expenditures of this magnitude would represent approximately 0.2 percent of estimated gross national product.

nuclear weapons, and that he is capable of making such a decision stick for the time being—at least so long as he continues to have the support of the key leaders of the Congress Party in this stand. His immediate course of action will probably be to keep India's diplomatic and technical options open. During this period, he will weigh the assurances, inducements, and pressures that are forthcoming from the great powers. He will almost certainly avoid commitments to international agreements which might curtail India's options, and he will support technical efforts to shorten the time between an affirmative decision and the detonation of a first device.

15. The major influence on Indian opinion will be the pace and scope of the Chinese nuclear program. As Chinese testing proceeds, we expect growing pressure in India for a weapons program. A renewal of the war—with China again supporting Pakistan—might cause New Delhi to opt for the bomb. In any event, the attractions of becoming a nuclear power in order to increase India's prestige and bargaining position in international affairs will also grow.

16. In considering the advantages of developing nuclear weapons against continued postponement of a decision, New Delhi will be concerned about the prospects for international support—especially foreign aid. The Indians probably would calculate that, despite the USSR's opposition to nuclear proliferation, Moscow would be unlikely to cut off aid to influence India's nuclear weapons policy. While New Delhi must allow for curtailment or the possible termination of US aid under certain circumstances, it probably considers that in the face of continuing Soviet aid, the West would feel obliged sooner or later to follow suit. If the US were already withholding aid in an effort to force concessions on Kashmir, threats of further penalties designed to deter India from making the bomb might not be very persuasive. Indeed, such threatened penalties might strengthen nationalist elements in the country who favor a "go-it-alone" policy on defense, and thus increase the chances of an early affirmative decision.

17. New Delhi is unlikely to accede to any non-proliferation treaty which fails to restrict Communist China's further development of nuclear weapons, and we see no chance that Peking will accept such restrictions. Indeed, if the US and the USSR sponsored a non-proliferation treaty that did not include China, the issue of whether or not India should sign might bring to a head the national debate on nuclear weapons and lead to a reversal of India's present policy. A comprehensive test ban agreement—even without China—would be more difficult for India to reject, particularly one endorsed by the US, the USSR, and the majority of the non-nuclear nations. However, India would count on an escape clause to preserve its options.

18. If India decided to proceed to construct a device and test it underground, it might claim that it was merely exploring the potentialities of nuclear explosions for peaceful purposes—an Indian Plowshare program. By this means it could obtain the prestige of having produced a nuclear device while maintaining it had neither proliferated nuclear weapons nor violated its agreement with Canada to use the CIR only for peaceful purposes. New Delhi would not expect

this claim to be fully credited, but might believe that it would give Canada, the US and other countries an opportunity to continue assistance, even in the nuclear field.

19. The Shastri government is probably predisposed to postpone a decision. India might continue to postpone a decision for a time in return for a continued high level of US economic aid, a renewal of military assistance, and a foregoing of pressure on the Kashmir issue. Other factors that might influence India to hold to its present policy include a combination of severe domestic economic difficulties, meaningful international progress in the field of disarmament, and some Indian progress in securing outside guarantees.

20. However, we do not believe that such factors would result in India holding to its present policy indefinitely. All things considered, we believe that within the next few years New Delhi probably will detonate a nuclear device and proceed to produce nuclear weapons. It is unlikely that we would immediately learn of an Indian decision to proceed with a weapons program, but we probably would have advance indications of the first detonation.

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AEC

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

8

No. J-125
Tel. 973-3335 or
973-3446

FOR IMMEDIATE RELEASE
(Tuesday, May 17, 1966)

U.S. AND INDIA SIGN LONG-TERM SALES CONTRACT FOR SUPPLYING TARAPUR REACTORS WITH ENRICHED URANIUM

The Governments of India and the United States today signed a long-term sales contract in New Delhi to supply enriched uranium fuel for the twin 190 electric megawatt reactors at the Tarapur power station, which is under construction on the west coast of India.

Ambassador Chester Bowles signed the contract for the United States and Dharma Vira, Secretary of India's Department of Atomic Energy, signed for the Indian Government. This is the first long-term fuel sales contract to be concluded by the United States outside of Western Europe.

The contract provides for the sale by the USAEC to India of approximately $100 million worth of enriched uranium over a 25 year period for use in the Tarapur boiling water power reactors. These reactors are due to achieve criticality in 1968.

In 1948, India embarked on an ambitious and well-balanced program for using nuclear energy in civil applications, including the fields of medicine, agriculture and industry. This program today is among the world's largest and most comprehensive atomic energy programs devoted exclusively to the civil uses of atomic energy. The Tarapur station is one of the major power reactor projects under construction.

The Tarapur contract is a part of the AEC's limited deferred payment program, under which payments for the initial in-reactor inventory plus spare replacement fuel elements may be deferred until June 30, 1973, while payments for accrued interest and additional amounts of enriched uranium are made on a current basis. The fuel is sold under

(more)

the same schedule of charges as that for private users of enriched uranium in the United States. These charges permit full recovery by the U.S. Government of the costs of producing the materials, including amortization of the AEC's uranium enriching facilities at Oak Ridge, Tennessee, Paducah, Kentucky and Portsmouth, Ohio.

U.S. uranium distribution abroad is subject to safeguards established to assure its use solely for such peaceful purposes as those in India. The Agreement for Cooperation between the U.S. and India, under which enriched uranium is sold, provides for such safeguards. India and the United States have agreed in principle that, at a suitable time, the International Atomic Energy Agency will be requested to enter into a trilateral arrangement for the implementation of safeguards provided in the agreement for cooperation.

The first three fuel sale contracts of this general type, which have been concluded with the Euratom Supply Agency, provide enriched uranium for two power reactors in Italy, SENN and SELNI, and one in France, SENA. The fuel under contract for these four projects is valued in excess of $250 million at AEC's current enriched uranium prices. The Tarapur contract, like its predecessors, is evidence of U.S. willingness to provide assurance of long-term availability of U.S. power reactor fuel.

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5/17/66

FILE COPY

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INCOMING TELEGRAM *Department of State*

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FOR LAISE FROM AMBASSADOR

IN REGARD TO THE ANNOUNCEMENTS OF TRANSFER OF SS ANTON BRUN AND FUEL CONTRACT FOR TARAPUR POWER PLANT I BELIEVE IT WOULD BE MOST EFFECTIVE TO MAKE THE ANNOUNCEMENTS HERE IN DELHI AS SOON AS POSSIBLE

IT WOULD BE PARTICULARLY USEFUL AND TIMELY TO DO SO JUST BEFORE VISIT OF NATIONAL SCIENCE FOUNDATION TEAM HERE MAY 1 AND DEPARTURE OF ZAHEER FOR US ON MAY 4 SINCE THESE WILL UNDERSCORE OUR ROLE IN SCIENTIFIC AND EDUCATIONAL FIELDS: IT WOULD NOT BE ADVISABLE TO DO SO DURING NSF VISIT HERE SINCE THIS FOSTERS THE FEELING THAT U.S.

PAGE TWO RUSBAE 1405 [redacted]
DELEGATIONS COMING TO INDIA SHOULD BRING SOMETHING WITH THEM. SIMILARLY, TO WAIT TO TURN OVER ANTON BRUN UNTIL ZAHEER IS IN U.S. MAY GIVE APPEARANCE THAT ZAHEER HAD TO MAKE TRIP IN ORDER TO EFFECT TRANSFER. BOWLES
BT

[redacted]

THE WHITE HOUSE

WASHINGTON

April 11, 1966

MEMORANDUM FOR THE CHAIRMAN,
U. S. ATOMIC ENERGY COMMISSION

SUBJECT: Tarapur Fuel Supply Contract

This is to withdraw any further White House objection to the conclusion of the pending credit contract with the Government of India for the initial supply of fuel for the nuclear power plant being built at Tarapur, India under AID financing.

The Interdepartmental Regional Group for Near East and South Asia at its meeting on March 23, 1966, urged the desirability of such action and I am pleased to concur in that judgment.

W W Rostow

Walt W. Rostow

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April 8, 1966

MEMORANDUM FOR MR. WALT W. ROSTOW

SUBJECT: Tarapur Fuel Supply Contract

Walt --

As you probably know, Bob Komer held up the execution of this contract for several months in the belief that it would underline our concern about proliferation. Recently, as the result of needling by AEC and State, Bob agreed that we should withdraw any further objection and authorise the AEC to go ahead with the agreement ten days or so following Mrs. Gandhi's visit.

I have drafted the attached memorandum which you may wish to hand Dr. Seaborg on Monday. I have made the memorandum for your signature and have omitted any reference to the President because I am not at all sure that Mac or Bob ever specifically mentioned this Tarapur contract to the President although I am sure they felt certain of the ground in delaying its execution.

Charles E. Johnson

Cy Entire pkg RWKomer - Saunders
Bromley Smith

✓ CC: CEJohnson

12

April 11, 1966

MEMORANDUM FOR THE CHAIRMAN,
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/s/

Walt W. Rostow

Copy to BKS
Copy to CE[illegible]

1. File IRG/NEA
2. Gandhi visit

SECRET

IRG/NEA 66-3
March 24, 1966

14

INTERDEPARTMENTAL REGIONAL GROUP
FOR NEAR EAST AND SOUTH ASIA

Record of Agreements - IRG/NEA Meeting, March 23, 1966

The meeting of March 23 was devoted to India. It was:

Agreed that it should be recommended to the Secretary of State to send a Memorandum to the President, prior to the arrival of Prime Minister Gandhi in Washington on March 28, proposing a course of action on economic aid. It would propose that, if Mrs. Gandhi indicated that India was prepared to act on a variety of self-help steps (including some import liberalization, exchange reform, and incentives to private enterprise, in addition to higher priority to agriculture), the President indicate to her that the United States would be willing to provide a total aid package on the order of one-half billion dollars in U.S. FY 1967, in addition to food assistance. The bargain could be effected through subsequent but early discussions between Indian representatives and the World Bank and the International Monetary Fund. The U.S. contribution for FY 1967 would include some $385 million of AID funds, loans from the Export-Import Bank, and the U.S. share of an Indian debt roll-over.

Agreed that it would be desirable to hold out to India the prospect of some later, further increase in U.S. economic aid, if such an increase proved to be necessary to support an Indian program based on sound self-help concepts and actions.

Agreed that any U.S. agreement to participate in a roll-over of the Indian debt will have to be checked out with appropriate Members of Congress.

Agreed that it would be desirable to make an early new allocation of PL-480 grain for India, as well as an allocation of 327,000 bales of cotton as India has requested.

Agreed that it would be desirable to conclude a pending credit contract, under AEC legislation and financing, for the initial supply of fuel for the nuclear power plant being built at Tarapur, India under AID financing.

Agreed

SECRET

Agreed that, if Congressional soundings prove favorable, it be recommended that the President announce during Mrs. Gandhi's visit his decision, subject to the formal approval of both governments, to endow the establishment of a Binational Foundation to promote science and education, including activities in the field of agriculture, in India. The endowment would amount to $300 million in Indian rupees, out of the excess holdings of U.S.-owned rupees now reserved for United States Government use.

Agreed that a paper on Economic Aid Options, outlining further early economic aid actions which the President might wish to consider, should be incorporated among the background papers in the President's briefing book for Mrs. Gandhi's visit.

Members present:

Executive Chairman: Amb. Hare
AID: Mr. Macomber
CIA: Mr. Critchfield
DOD: Mr. Hoopes
JCS: Brig. Gen. Sibley
NSC: Mr. Komer
USIA: Mr. Carter

Agriculture: Mrs. Jacobson
State (NEA): Mr. Handley
State (SOA): Miss Laise
Staff Director: Mr. Sober

Sidney Sober
Staff Director

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NATIONAL SECURITY COUNCIL

[redacted] March 22, 1966

NOTE FOR MR. ROBERT W. KOMER

Bob --

Here is a note that I received from Kratzer in regard to the Tarapur fuel matter. You will note that State (at least Don Zook) would like to sign the contract without fanfare as soon as possible and not have it tied to Mrs. Ghandi's visit. You will probably be hearing from State on this if you have not already done so.

I told Kratzer we felt that it might be best to let the matter lie until after the visit is over and then dispose of it. He said that at this point AEC defers to State's policy judgment.

Charles E. Johnson

Let's stick with this!
RWK

[redacted]

[redacted] March 22, 1966

NOTE FOR MR. ROBERT W. KOMER

Bob --

Here is a note that I received from Kratzer in regard to the Tarapur fuel matter. You will note that State (at least Don Zook) would like to sign the contract without fanfare as soon as possible and not have it tied to Mrs. Ghandi's visit. You will probably be hearing from State on this if you have not already done so.

I told Kratzer we felt that it might be best to let the matter lie until after the visit is over and then dispose of it. . He said that at this point AEC defers to State's policy judgment.

Charles E. Johnson

[redacted]

[redacted]

January 17, 1966

NOTE FOR MR. ROBERT KOMER

Bob --

Kratzer needled me this afternoon about the Tarapur fuel agreement, wondering if it couldn't be broken loose immediately in view of the fact that it is not being saved for the visit basket. He pointed out that the strike at Tarapur is still continuing and has been quite violent -- 10 or more have been killed and violence is continuing. The strike is led by a left-wing organization and obviously motivated in part by anti-Americanism because the project is identified as a major US-Indian cooperative enterprise. He believes, and I agree, that we probably should go ahead with the fuel agreement just to indicate our continued support of this project in the face of the political agitation.

Charles E. Johnson

[redacted]

[redacted]

Charles Johnson 19

[redacted]

Mac - January 3, 1966

I think Tarapur matter is under control. Had a good chat with Palfrey and explained why I saw merit in waiting just another few weeks till Shastri came. This would remind the Indians of our concern about proliferation.

John saw the point. Apparently his only real reason for urgency is that AEC is getting repeated calls from the Indian Embassy. I agreed that if AEC is really hurting I'd ask LBJ, and John in turn agreed that he'd only press the matter if there was in fact real urgency. Since GE now will go ahead and make the fuel elements even though the contract has not been signed, there seems little good reason not to wait another month. This would also give LBJ something to release post-Shastri.

RWK

cc: C. Johnson
S. Keeny

[redacted]

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1-Komer 3/16
2-Rostow

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March 16, 1966

send cy to C. Johnson and Keeny

~~TOP SECRET~~
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MEMORANDUM FOR THE PRESIDENT

Subject: Possible Assurances and Nuclear Support Arrangements for India

India may, at any time, decide to embark on a nuclear weapons program. While we do not expect such a decision soon, barring major unexpected changes in the situation the US Intelligence Board estimates that on balance India probably will do so within the next few years. I concur in this assessment. At the same time, it remains in the interests of the United States to curb nuclear proliferation, and an Indian decision to manufacture nuclear weapons would increase the probability that other countries would also decide to do so.

I believe that we should, therefore, attempt to head off an Indian decision to produce nuclear weapons. To do so, we might in time have to be more responsive to Indian security needs, preferably in some way that will minimize our own commitment. However, we must recognize that this response would almost certainly involve an increased and more specific US commitment in the subcontinent and would entail important costs in terms of probable reactions of other states. The enclosed staff study reviews briefly our efforts to deal with this problem, defines the issue and sets forth the broad alternatives, and outlines some illustrative arrangements that could be considered if it is eventually decided to offer some form of nuclear sharing to India. I do not propose that you should now decide upon any one of these alternatives. These alternatives, including the possible nuclear sharing arrangements, are intended merely to illustrate for your background the possible general lines of action which may have to be considered.

I propose that when Mrs. Gandhi comes to Washington you let her know that we are sympathetic to her policy of using nuclear energy for peaceful purposes only, and to her efforts to give priority to India's economic needs and development.

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I believe you should indicate that you agree that nuclear powers should try to work out some arrangements to safeguard the security interests of non-nuclear powers. As she is aware, we have raised the matter privately with the Soviet Union, and it has also been a subject of continuing discussion at Geneva.

I believe you should also say that in any case if a growing Chinese Communist nuclear capability should ever pose a serious threat to India, you hope she would frankly discuss the question with us so that we could examine together possible means to meet that threat without nuclear proliferation and without Indian assumption of the heavy economic and other burdens of a nuclear weapons program.

Implicit in the over-all question of assurances to India is the basic issue of what degree of nuclear support the United States is willing to proffer to non-nuclear nations. In this connection I recommend that you not offer India any bilateral nuclear assurances at this time.

You might also wish to tell Mrs. Gandhi that we are prepared to make available to her periodically (as we did for Prime Minister Shastri) intelligence on the Chinese Communist nuclear capability.

Secretary McNamara and Mr. Foster concur in this recommendation. (The Joint Chiefs of Staff would prefer not to offer India at this time any nuclear assurances beyond those given by you in October, 1964.) We would of course wish to continue to examine other possible arrangements outlined in the enclosed study. We will continue to study these alternatives.

/S/ DEAN RUSK

Dean Rusk

Enclosure:
Possible Assurances and Nuclear
Support Arrangements for India

~~TOP SECRET~~
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POSSIBLE ASSURANCES AND NUCLEAR SUPPORT ARRANGEMENTS FOR INDIA

The Problem

India may, at any time, decide to embark on a nuclear weapons program. It remains, however, in the United States' interest that nuclear proliferation cease, and an Indian decision would increase the probability that other countries would also decide to follow the nuclear path. However, we must recognize that a decision to support India with a more specific guarantee or nuclear sharing arrangement would almost certainly involve an increased and more specific US commitment in the subcontinent and would entail important costs in terms of probable reactions of other states.

The status of Indian capability to produce nuclear weapons, and the latest Intelligence Community estimate on the likelihood that India will decide to manufacture nuclear weapons, is summarized in the following two paragraphs cited from NIE 4-66, The Likelihood of Further Nuclear Proliferation, approved by USIB on January 20, 1966:

> India has the capability to produce nuclear weapons, and we believe could test a first device within a year of a decision. To do so in the near future, India would have to use plutonium from the CIR reactor, which now has heavy water supplied by the US as a moderator, and would violate its agreements with Canada and the US. India's adherence to the partial test ban treaty would still permit underground tests. The key leaders of the Congress Party supported Prime Minister Shastri's publicly announced policy of not producing nuclear weapons, and we believe that, irrespective of who is the next prime minister, this policy will not be reversed in the near future. Any Indian leader would be reluctant to disregard US pressures against proliferation, particularly at a time when India is so dependent on the US to help alleviate India's critical food situation. Until such time as the new prime minister consolidates his power and the current critical food situation is alleviated, major policy alterations are unlikely. Furthermore, given India's present and prospective economic difficulties, the costs of more than a token nuclear weapons program, and particularly of a delivery system, would be an important limitation.

On the other hand, India's decision would be based as much on factors of prestige and strengthening its bargaining position as on the idea of establishing a realistic deterrent, and pressures in India to develop nuclear weapons for these purposes are likely to grow in the future. Considerations of national security are also likely to become increasingly important in India's deliberations. China's growing nuclear strength and the specter of Pakistani-Chinese cooperation against India will make it more difficult for the major powers to restrain India or to offer guarantees which the Indians would accept as adequate to their security needs. On balance, we believe that within the next few years India probably will detonate a nuclear device and proceed to produce weapons.

Background on US Policy

A comprehensive report on the problem of preventing nuclear proliferation in India was issued to the Committee of Principals on October 14, 1964--the day preceding the first Chinese Communist nuclear test.

The report recommended: (1) high level consultations with Indian leaders to strengthen their resolve not to enter on a nuclear weapons program; (2) exploring areas of scientific assistance to help India demonstrate its scientific prestige in ways other than by producing a nuclear device; (3) cooperation with India, and others, in the General Assembly and Geneva disarmament talks on anti-proliferation measures, seeking to encourage Indian leadership in that field; (4) consultations with other governments (particularly the UK and Japan) in an attempt to coordinate efforts to influence Indian policy away from a nuclear weapons program; and (5) providing security assurances to India.

In the year and a quarter since, we have pursued all these lines. Without reviewing our efforts in detail, we should note: (1) your general assurances of October 16 and 18, 1964, following the first Chinese test (reinforced in India both by Ambassador Bowles, and by Ambassador Harriman on his visit of March, 1965); (2) discussion of scientific cooperation, in particular on visits to India by Dr. Jerome Wiesner and AEC Commissioner John Palfrey in January and February, 1965, and by Dr. Homi Bhabha to Washington in March and an agreement on US-Indian cooperation in research on certain aspects of peaceful uses of

nuclear energy; and (3) a useful dialogue was established with Indian leaders.

By the Spring of 1965, the Indians had made clear that they believed the nuclear powers had a responsibility for devising adequate security guarantees for the non-nuclear states. We discussed a possible UN General Assembly resolution embodying such guarantees with Shastri just prior to his visit to Moscow in May, 1965, so that he might explore the question with the Russians. The Soviets, however, parried the idea with the alternative of declarations by the nuclear powers not to be first to use nuclear weapons. During the past ten months the Indians (and several other potential nuclear powers, in particular Sweden and Japan) have publicly taken the position that, in order to have a viable program to prevent nuclear proliferation, not only must the nuclear powers provide adequate assurances, but also that they must undertake a serious beginning to their own nuclear disarmament.

The Changing Issue

In Indian thinking over the past year, the factors of scientific prestige and disarmament image have become much less prominent, and questions of national security and international political power have moved to the fore in consideration of the nuclear problem. Not only the Chinese Communist development of nuclear weapons, but also the recent war with Pakistan, have served to highlight circumstances where many Indians see a need to rely chiefly on themselves. Indeed, while we had previously recognized that over time considerations of scientific prestige and peaceful posture would diminish in significance, and questions of security against China would grow, we may not have appreciated fully the accelerating rate at which questions of Indian political weight in Asia would also assume increasing importance.

Accordingly, the question of security assurances (and possible concrete nuclear support arrangements to back them up) has become somewhat more immediate. These questions are complicated by Indian aspirations to increase their international power and prestige. To the extent that their aspirations for nuclear weapons may increase in intensity, the probability of India accepting a guarantee from or nuclear sharing arrangement with another state declines. It is too early to tell if and how Mrs. Gandhi's own views will affect this trend. We doubt that the recent death of Dr. Homi Bhabha, head of the Indian nuclear energy establishment and an advocate of Indian nuclear weapons, will have a significant effect on India's future policy.

Assurances

The Indians have taken the position that, in connection with possible non-proliferation undertakings by the potential non-nuclear states, the nuclear powers have a "responsibility" for security guarantees. Moreover, they hold that such assurances or guarantees should be worked out by the nuclear powers. They insist only that such assurances are due, that they must be made by both the US and USSR, and that they would have to cover (and be acceptable to) the non-nuclear states as a whole, and not just India. They are aware that the Soviet Union is not presently interested in joining the US in such assurances. They are also aware of, and indeed probably have an exaggerated impression of, US willingness to advance such assurances against a nuclear attack. They have backed away from earlier active advocacy of such assurances.

We recently sounded out the Russians and were told that the Soviet Union considers the question of assurances "premature," and that the matter might be reconsidered after conclusion of a non-proliferation treaty.

Subsequently, Kosygin sent a message to the Geneva Disarmament Conference in which he proposed including in a non-proliferation treaty an article "prohibiting the use of nuclear weapons against non-nuclear powers, signatories to the treaty, which have no nuclear weapons on their territory." This proposal is, of course, unacceptable. It diverts the question of assurances from providing guarantees to non-nuclear states, to restrictive "non-use" restrictions on nuclear powers and restrictive obligations on non-nuclear states not to permit nuclear weapons to be stationed on their territory in their own defense. At the same time, the Kosygin proposal has publicly raised the question of assurances, and in pointing out the shortcomings of the Russian approach, we wish to move forward with positive indication of our readiness to support effective assurances to states undertaking not to acquire their own nuclear weapons. We would prefer to handle the assurances question by an appropriate UN General Assembly resolution; we may, however, at some time have to consider the possibility of a treaty provision. In the meantime, we intend at Geneva to seek to head off extensive public discussion of specific assurance formulations by taking the position that we will be in a better position to assess the best approach to this matter when more progress has been made toward resolving other key issues involved in a non-proliferation treaty.

Alternatives

Assuming that the United States does not want to assist India to get its own nuclear weapons, and does not wish to stand aside passively, there are seven alternative courses of action which the United States might, at some time, pursue in an effort to keep India from deciding to produce its own nuclear weapons. At least at present, several of them are clearly not feasible, and several others are not desirable in view of their adverse effects on other American objectives or US security interests. Nonetheless, the full gamut runs as follows:

(1) Non-Proliferation Treaty and Comprehensive Test Ban.

a. Non-Proliferation Treaty. The United States is at present continuing its effort to reach agreement on a non-proliferation treaty, as its first priority arms control measure. While such a treaty would inhibit proliferation, it is not clear whether agreement can be achieved. Should India adhere to a non-proliferation treaty, it is possible that she would later withdraw if she felt her national interests required such an action.

b. Comprehensive Test Ban Treaty. The United States continues to support an adequate verified comprehensive test ban treaty. Such a treaty would have a major impact on proliferation, both political and technical. However, the principal effect would be political. A nation which agreed not to conduct any nuclear tests would not lightly withdraw from this obligation. While only testing would be prohibited, and a nation could develop and stockpile weapons without withdrawing from the treaty, this possibility seems unlikely. A comprehensive test ban would have an impact on an Indian decision to acquire nuclear weapons. However, the Soviet Union continues to reject inspection. Because of their estimate of the over-all adverse impact on US national security, the Joint Chiefs of Staff are opposed to a comprehensive test ban.

(2) American Pressure and Threats. We could threaten to cut off economic assistance, and withdraw all assurances of political and military aid, if India decided to develop its own nuclear weapons. Such drastic action would probably impel the Indians to look at once to their own devices to meet their security, and probably also to turn to the Soviet Union. It would greatly reduce American influence and enhance Soviet influence in India,

and would saddle the Indians with heavy economic and political strains which would threaten the viability of India as a democratic state and Asian counterweight to China. On the other hand, less drastic use of aid, as one of a number of levers, might effectively influence an Indian decision against building nuclear weapons without forcing India to appeal to the USSR. We could reinforce this point by also emphasizing to the Indians that a decision to acquire nuclear weapons would cost perhaps several times more than the direct costs for nuclear warhead development and production. It seems clear that, within the limits suggested above, US aid can be used as a lever to deter or delay an Indian decision to build its own nuclear capability.

(3) A US-Indian Alliance. A formal military alliance would seem to offer the best means of engaging the American deterrent in India's defense. It is, however, not certain that we would want to assume this commitment. It is also only hypothetical at this time, since the Indians wish to retain their non-aligned status. It would, of course, also involve a complete US break with Pakistan and the likelihood of a Pakistan-Chinese Communist alliance.

(4) A Nuclear Power Guarantee. The Indians would welcome a joint US-USSR guarantee to all non-nuclear states. (The UK would certainly join, but this is of secondary importance to the Indians; France, and of course China, would not.) The Soviet Union, however, has made clear that it does not wish (at least at present) to join the United States in any such assurances, much less a joint guarantee obviously directed against China. If the situation should so change that the USSR were ready to join with us in such joint assurances, that would probably at least help to defer Indian decision to acquire its own nuclear weapons.

(5) A Public US Call for Nuclear Guarantees. Congressman Holifield has proposed privately that if the USSR is unwilling to join us in giving assurances, we should nonetheless publicly declare US readiness to join with the other nuclear powers in guaranteeing all non-nuclear states against nuclear attack and let the onus fall on the USSR for failing to agree. This ploy would, however, be attacked by the Soviet Union and China,

and probably ignored or rejected by France. The Indians would regard such a move as distinctly undesirable and from their point of view unhelpful. Moreover, by demonstrating the inability of the nuclear powers to provide joint assurances it would probably tend to persuade many in India (and perhaps elsewhere) that they would indeed have to rely on themselves, and thus might well make nuclear proliferation more rather than less likely. Also, the Soviets would probably simply reaffirm their counter-proposal for the nuclear powers to pledge never to use nuclear weapons against a non-nuclear state not having nuclear weapons on its territory.

(6) A Reinforced Unilateral US Guarantee. We could, of course, reinforce your assurances of October, 1964, by a stronger statement regarding assistance to the non-nuclear victim of any Chinese nuclear attack. This would, in effect, be a unilateral assumption of alliance commitments to India, Burma, and others (as well as to our Asian Allies). Being a unilateral declaration of intent, it would of course be revocable at any time, and for that reason it is doubtful if such a pledge would satisfy Indian concerns; at present it is not needed, but if Indian alarm rises it may not be enough. If the United States coupled with this public stand a private approach to the Indians describing our nuclear deployments directed at China, and readiness to enter joint contingency planning, this alternative might offer at least an interim solution to the problem. And as India's security concern becomes greater, if joint US-USSR assurances are not possible, she may come to be more interested in private unilateral US assurances. Apart from the question of whether it should be kept secret, it is doubtful that joint Indian-US contingency planning could be kept secret. In addition, to have any hope of satisfying the Indians, a guarantee would have to be quite specific; yet such specificity would bind the United States to involve itself in a nuclear conflict under at least partially unforeseen circumstances, and without the ability to control India's actions. No such guarantee should be discussed with the Indians at this time.

(7) Nuclear Sharing. Finally, the United States might offer to assist India in acquiring the capability to deter or retaliate to a Chinese nuclear attack with its own delivery means, using American nuclear warheads which would be made available to India at the time of a Chinese attack. The advantages in comparison with a strictly unilateral US guarantee would include a less direct military commitment for the US (in the sense that the Indians, not the US, would strike Chinese targets), and yet from the Indian standpoint a more tangible US commitment to give essential assistance. This alternative is discussed more fully below.

Nuclear Sharing Arrangements

The Secretary of Defense and the Joint Chiefs of Staff do not believe a nuclear sharing arrangement would do more than delay an Indian pro-nuclear decision. While this may well be true, there may come a time when such delay would be well worth seeking to achieve. The Director of the Arms Control and Disarmament Agency does not consider a nuclear sharing arrangement desirable. In conjunction with Defense and the Joint Chiefs of Staff, we have been looking at contingency planning for the possibility that a US (or US-UK) nuclear sharing or supporting arrangement might some time be a necessary, and desirable, quid pro quo for a firm Indian obligation not to manufacture its own nuclear warheads. This possibility faces three immediate difficulties: (1) India's desire to remain non-aligned, at least formally and vis-a-vis the US-USSR conflict; (2) the dilemma of fashioning a nuclear sharing arrangement that would provide India enough, but from the US standpoint not too much, of a nuclear role; and (3) the impact on others--Pakistan, Japan and other US Asian allies, and the UK role East of Suez--of such an arrangement.

The UK has expressed an interest in such arrangements, in which they have indicated they would wish to participate; so far we have deferred several UK approaches for consultation on this question pending our own further consideration of the problem.

If we were to assist the Indians in establishing a shared nuclear deterrent force, the over-all US commitment to India might--or might not--be greater than without such an arrangement. Apart from commitment to provide nuclear warheads to India, we might have a general moral commitment to help India in other ways, but this would not necessarily

be a formal binding commitment to aid India in whatever other ways were necessary (e.g., air defense, on the ground, in the air). On the other hand, we would tend to be drawn into other aspects of Indian defense, e.g., into providing air defenses in order to ensure survivability of the deterrent delivery forces, and in turn into assisting in creation of a survivable and effective command and control system. To prevent undue drain on Indian economic resources, much of the cost would have to be borne by the US. Moreover, while the costs of an initial system based on available bombers might not be large, follow-on missile systems would be costly.

The essence of a binding nuclear sharing arrangement would probably be (a) Indian acquisition, with our assistance, of a nuclear delivery capability, and (b) US provision of compatible nuclear warheads for the Indian delivery system, remaining under US custody (and probably not on Indian soil) until such time as the Chinese used nuclear weapons against India, when they would be released by the US to India for Indian delivery on Chinese targets. Such an arrangement would mean that: (a) to obtain our assistance in these arrangements, the Indian Government would be obliged to give us guarantees against developing a national nuclear capability; (b) nuclear warheads would remain in US custody until a Chinese attack occurred, thus preventing such things as Indian threats or decision to use them against Pakistan; (c) the actual delivery of such weapons against China would be by Indian bombers or missiles, thus possibly reducing the likelihood of "automatic" Soviet or Chinese retaliation against US forces and bases; (d) parallel arrangements could be offered to Pakistan; and (e) the UK could actively participate (but would not have to retain its own national nuclear weapons).

Some very preliminary investigation has been made of several illustrative possibilities. For example, warheads could be retained on a US (and/or UK) aircraft carrier from which Indian land-based attack bombers could have been trained to operate, or at some forward base (such as the RAF Butterworth Base at Malaya, or in the Indian Ocean Territory) from which they could be flown to Indian bomber bases. Canberra light jet bombers are one possible bomber; the Indian Air Force presently has 64 Canberra bombers which could be modified for nuclear weapons delivery. American B-47 bombers are another possibility. By the early 1970's it would, however, probably be necessary to employ an intermediate range missile delivery system, with the warheads either stocked in India under US custody or available to be flown in rapidly. A missile system would have to be either hardened or mobile in order to survive a Chinese

initial nuclear strike, and such a missile system would be expensive. Missile systems would have the advantages of being a better deterrent (more modern, and less vulnerable), and at the same time less "dual-capable," than bombers, though a mix of both might be optimum to deal with all desired targets.

There is a danger that the Indians might enter into a sharing arrangement, acquire valuable training and delivery systems, and at some later time conclude that their interests require them to abrogate the agreement. If India did so, the United States would have, in effect, financed and assisted in the development of India's nuclear force at the likely cost of alienating Pakistan, increasing FRG pressures for nuclear weapons, and being severely criticized by both friends and foes before world opinion.

It is not entirely clear what Chinese Communist targets would be selected; both the Indians and we would have direct interest in determining such targets. Presumably the Indians would wish their deterrent force to be aimed at some major Chinese cities, and at Chinese air (and later missile) bases threatening India. They might also wish to interfere with Chinese land attack routes into India with nuclear demolitions or other nuclear strikes, and to strike invading forces directly. In all, the force might initially involve bomber delivery systems, and later relatively invulnerable land-based MRBMs or IRBMs. As a rough guideline, we should allow for at least two warheads per target, with yields ranging up to the 50 KT bracket.

Any arrangement of this type based on a US promise to turn nuclear weapons over to the Indians while the US is at peace would require new Congressional enabling legislation.

The Secretary of Defense, the Joint Chiefs of Staff, and the Director, Arms Control and Disarmament Agency are opposed to discussion of nuclear sharing arrangements with India at this time, and I agree that we should not do so.

Effects on Our Allies

The reaction of Pakistan to such an offer to India would certainly be highly adverse. We believe that any offer we might make to India should be made also to Pakistan, and if Pakistan declined it (as, in fact, we believe likely) it would considerably deflate the basis for

Pakistan objection. It would not, however, do much to reduce Pakistani alarm and might well turn Pakistan to greater dependence on either the USSR or Communist China. The Pakistani would probably also mount a nuclear weapons program of their own if they had any prospect for the necessary foreign aid to sustain it.

Although less immediate, the possibly adverse effects on Japanese alliance ties with us should not be ignored. The protection of the American nuclear deterrent is the chief justification in Japan for the bilateral alliance and presence of US bases, and if this protection seemed to be available to a state not formally allied to the United States and without US bases on its territory many Japanese might wish to change their relationship. To a lesser extent, this consideration might be applicable in the Philippines and elsewhere in Asia. There might also be pressure from some Allies (including particularly the Republic of China) for "two-key" nuclear delivery systems.

The UK would probably be willing, even eager, to cooperate in a nuclear sharing or supporting arrangement for India. Australia would probably also cooperate, if we sought her support. However, apart from possibly providing basing and weapons storage facilities, there does not seem to be much they can offer. Flexibility might be decreased and coordination complicated by a multilateral arrangement. A collaborative arrangement might contribute to keeping the UK active East of Suez, but we might also come under pressure to take a larger financial, and other, role in meeting UK commitments in Malaysia.

The Alternative of India as a Nuclear Power

It is probable that, without a dramatic alternative, in a few years India will decide to become a nuclear power. If she does, the United States (and the USSR) will be less committed to Indian defense, and it is possible that an independent deterrent to Chinese nuclear power would develop. Against this possible advantage, there would be several important disadvantages, including: (a) Indian economic (and political) viability would be subject to the additional strains of an expensive nuclear deterrent force, the cost of which would probably continue to increase, (b) Indian conventional military power might be sacrificed, (c) Pakistan would be extremely disturbed and would almost certainly turn to the US, USSR, or Communist China for aid, and (d) the likelihood of further proliferation (e.g., Japan and Israel) would be increased, and nuclear pressures might be set in train in Germany. "Punitive" sanctions by the US, such as

cutting off economic aid, would only further alienate India and force her to turn to the USSR, and further undermine Indian stability and viability--which are first-rank American objectives, and would remain so even if India went nuclear. If India only sought a token nuclear capability, it would likely not even attain a deterrent to China and might become involved in a war--and again, we would not be able to wash our hands of the situation.

It is by no means clear that offer of a tangible nuclear sharing or support arrangement to India would head off an Indian decision to make its own nuclear weapons. It is, however, very unlikely that any other US action would have this result, and the importance of heading off such a decision warrants serious consideration of this approach.

Recommendation

The issue at present is whether: (a) there is need to offer the Indians new reinforced assurances at this time, and (b) we are in fact prepared to offer a commitment, and to propose any specific arrangements.

On balance, we do not believe that the need is so acute, or our consideration of alternatives sufficiently advanced, as to warrant your decision at this time to make a commitment of this kind to India.

At this point, it would appear that the following approach should be taken in discussions with Mrs. Gandhi:

First, I believe you should indicate that you agree that nuclear powers should try to work out some arrangement to safeguard the security interests of non-nuclear powers. As she is aware, we have raised the matter privately with the Soviet Union, and it has also been the subject of continuing discussion at Geneva.

Second, I believe you should also say that in any case, if a growing Chinese Communist nuclear capability should ever pose a serious threat to India, you hope she would frankly discuss the question with us so that we could examine together possible means to meet that threat without nuclear proliferation and without Indian assumption of the heavy economic and other burdens of a nuclear weapons program.

We do not recommend that you propose any specific arrangements at this time. We believe that possible lines of action should be kept in mind and further explored.

TELEGRAM Department of State

CONFIDENTIAL

ACTION: Amembassy NEW DELHI
Amembassy OTTAWA

INFO: US Mission GENEVA for DISDEL
USUN NEW YORK

SUBJECT: Indian Nuclear Policy

Apr 4 5 00 PM '66

1. We are concerned recent indications Indians may be considering development nuclear explosives for QTE peaceful UNQTE purposes. Development of any nuclear explosive device by India, even if really intended for non-military purpose, would be essentially indistinguishable from weapons development program and would necessarily produce information directly pertinent for such program. India's enemies would certainly go all out to convince world India was taking back door approach to weapons development, and they would have strong prima facie case. Effect on triggering further nuclear proliferation would be virtually same as from Indian decision build bomb.

2. Washington Post Nov 22, 1965, quoted Shastri that he was QTE currently studying UNQTE use of nuclear explosives for peaceful purposes such as building dams, canals, tunnels,

DECLASSIFIED
Authority NLJ-030R-31-1-5
By CTS, NARA, Date 1/14/1?

Drafted by:	Telegraphic transmission and classification approved by:
ACDA - E Rochlin	ACDA - William C. Foster

Clearances: ACDA - Mr. DePalma; ACDA - Mr. Gaybeal; ACDA/GC - Mr. Bunn; ACDA - Mr. Schneider; NEA - Mr. Peterson; G/PM - Mr. Garthoff; SCI - Mr. Zook; AEC - Mr. Labowitz; White House - Mr. Keeny

CONFIDENTIAL

etc. See also Delhi's A-197 and London's A-912. On Feb 24 in Geneva, Canadian deloff Beasley (protect source) privately told US that in Canadian-Indian nuclear bilateral negotiations now going on in New Delhi, Indians giving repeated indications their view that explosion of nuclear device for peaceful purposes not same as weapon and not violation of peaceful purposes provision of Canadian-Indian bilateral agreement.

3. Relevant Technical Background: US Plowshare program indicates nuclear explosives have non-military application in three categories: excavation, underground engineering, and scientific research. In latter two categories, nuclear explosion normally occurs deep underground and radioactive material does not RPT not escape into atmosphere. Such QTE contained UNQTE /explosions not RPT not prohibited by Limited Test Ban Treaty. Example described page 6, December 1965 issue QTE Nuclear India UNQTE published by GOI Bombay. For excavation applications, explosion occurs nearer surface but still underground and some radioactivity produced escapes to atmosphere. If properly designed, part which escapes only small part radioactivity produced. If such application

QTE causes radioactive debris to be present outside the territorial limits of the State under whose jurisdiction or control such explosion is conducted UNQTE, it is prohibited under the Limited Test Ban Treaty.

4. For underground engineering or scientific research applications a primitive fission explosive, which Indians may be capable of designing and building, could be used under the Limited Test Ban Treaty. However, any Indian claim that such crude fission explosives could be used for excavation applications would not RPT not likely be credible to knowledgeable observers because fissionable material so costly project would be uneconomic, and because such devices likely present health hazard. Only highly sophisticated thermonuclear explosives appear useful for excavation projects, and development these very far down the road for India.

5. In 8 August 1963 agreement with US for construction Tirapur reactor India undertook use reactor solely for peaceful purposes. India made similar commitment in March 1956 for use heavy water bought from US for CIR Trombay reactor. We understand India made similar commitments to Canada on CIR and Rajasthan reactors.

6. FOR NEW DELHI. Would appreciate Embassy estimate degree of GOI interest in study Shastri described (para 2 above), whether indigenous development peaceful nuclear explosive device ~~probably~~ contemplated, and best tactics head off such possible development. Would also appreciate fullest information available from Canadian High Commission on Canadian-Indian negotiations mentioned para 2. While we do not RPT not wish approach GOI at this time, would appreciate Embassy views on possible course of graduated steps along following lines.

a. Low-key inquiry to GOI, perhaps pegged to Shastri's November interview.

b. If Indians say they are considering developing nuclear explosives for peaceful purposes, we would make appropriate points from paras 1 and 4 above.

c. If necessary, we might indicate to GOI that if and when peaceful applications nuclear explosives that are permissible under Test Ban limitations prove technically and economically feasible, US prepared to consider making nuclear explosive services available to other countries (under

appropriate safeguards) at cost far below that at which they could develop and produce them for themselves. (We would make clear that technical and economic feasibility has not yet been demonstrated for most potential applications.)

7. FOR OTTAWA. Would appreciate any information available on Canadian-Indian negotiations mentioned para 2, and Canadian attitude re possible Indian use CIR reactor plutonium for peaceful nuclear explosives. However, latter question should not RPT not be put to GOC in such formal manner as to force adoption of GOC position prematurely.

GP-3 END

RUSK

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OFFICIAL USE ONLY January 12, 1966

Mac:

John Palfrey also talked to me briefly about Plowshare and India. His basic case is in the last para. on the first page. In essence, he argues that not to help the Indians in Plowshare ways would enhance their appetite to develop nuclear devices themselves. If we help them on the other hand, we can at the same time demonstrate that sophisticated, clean devices of the sort needed for peaceful explosion are so far beyond their own capabilities that it would dampen any enthusiasm for using such a program as a cover for proliferation.

I see some point in this argument but Spurgeon doesn't so am asking him to give you his own comment.

RWK

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Attach. Letter John Palfrey to McGB 1/10/66 giving his views on Plowshare and India.

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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

22a

JAN 10

Dear Mac:

You suggested I send you my views on Plowshare and India.

Following the first Chinese explosion, the Thompson Committee on non-proliferation recommended various non-military cooperative ventures with the Indians in the atomic field. Exploration of possible Plowshare ventures had been recommended by Weisner after his India trip in January 1965 and by the AEC, but was opposed by others. In the end, Plowshare was taken out of Seaborg's letter to Bhabha, which listed potential areas of India-U.S. atomic cooperation, following Bhabha's visit to the U.S. in February 1965. Bhabha has repeatedly urged that it be included.

The issue has been raised again in the course of the preparation of a comprehensive telegram to Ambassador Bowles on India and non-proliferation.

I'm perplexed by the logic of our present posture on Plowshare with India. We say we would consider an Indian Plowshare explosive development program as a weapons program (and therefore Indian use of plutonium from the Canadian reactor for Plowshare would be considered a violation of their civil use only guarantee.) Then we say at the same time we won't explore Plowshare possibilities with the Indians, in situations where we might ultimately provide our own explosive in a black box to help India build a canal or change the course of a river.

The objection is that such ventures would whet Indian appetites to build their own devices. My view is that our present refusal is more apt to rouse them to do it themselves. If we do cooperate, we can make clear that these explosives have to be particularly sophisticated clean devices that took us 20 years to develop. Also, if we do cooperate, it would make it more difficult for the Indians to use a Plowshare program of their own as a cover for a weapons program.

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Plowshare, using nuclear explosives for civil purposes does provide the prestige factor for the Indians to counter the impact of the Chicom explosion on the Asians. I believe Bhabha when he says the fact that the U.S. supplied the explosive wouldn't significantly diminish the impact on the Asians. To the Asians it would be the Indians who were moving the mountains or the rivers, instead of building the bombs which they are capable of doing.

Obviously, Plowshare cooperative ventures are some years away in terms of cratering technology, device development, and in terms of getting international agreement, in view of the limited test ban treaty. But we are much more likely to create an international interest in and support for Plowshare and lay the foundation for agreement (including agreement on the Panama Canal) if we are allowed to explore possibilities with the various countries which have expressed interest. At present, these would be merely technical studies without political commitments.

Sincerely,

(Signature)

John G. Palfrey
Commissioner

Honorable McGeorge Bundy
Special Assistant to the President
for National Security Affairs
The White House

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Plowshare file

MEMORANDUM

THE WHITE HOUSE

WASHINGTON

[redacted]

February 25, 1966

MEMORANDUM TO: Mr. Spurgeon Keeny

SUBJECT: Plowshare for India

I find myself in general agreement with the recommendations in your long memorandum on Plowshare for India, dated February 11, and I am glad to give my parting blessing to this point of view for such use as you and my successor choose to make of it.

McG. B.

cc: DFHornig
HSRowen
RWKomer
CEJohnson

[redacted]

Mr. C E. Johnson

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CONFIDENTIAL

February 11, 1966

MEMORANDUM FOR MR. BUNDY

Subject: Comments on Plowshare for India

At your request, I have reviewed the pros and cons of a cooperative exploratory Plowshare program with India as recommended by the AEC. Before discussing the merits of the case, I would note that Bhabha's death may have a significant impact on the problem. Bhabha was the focus of Indian interest in Plowshare and the individual to whom Seaborg and others had made various approaches on this subject. With Bhabha removed from the scene, I would imagine that any top-level Indian interest in this program will be dependent upon a strong U. S. initiative.

As presented by John Palfrey, the AEC argument for such a program consists of the following three basic points:

1. When coupled with the understanding that the necessary nuclear explosives (which took the U. S. more than twenty years to develop) would be supplied by the U. S., a cooperative U. S. -India Plowshare program would undercut Indian efforts to use Plowshare as a rationale for a weapons program.

2. Even though U. S. nuclear explosives were used, Plowshare projects would still provide a significant prestige program to help the Indians counter the impact on Asians of the CHICOM nuclear weapons program.

3. Indian participation in Plowshare would help obtain international acceptance of Plowshare and willingness to modify the Limited Test Ban Treaty in such a way as to permit the Panama Canal project.

I agree that these are all significant points. They must, however, be examined closely and considered in a broader context in order to determine their relevance to a specific decision on this program. In the following, I have attempted to put each of Palfrey's points in proper perspective and on the basis of this broader argument to recommend a specific course of action.

At the outset, I would note that Palfrey's argument is not new and that these same points have previously been weighed against other considerations by many people inside and outside of Government in evaluating proposals for cooperative Plowshare programs with other countries. For what it is worth, I believe that it is fair to say that in the past most of the people outside of the AEC who have considered this problem have concluded that the net effect of dramatising Plowshare would be to encourage nuclear proliferation by stimulating worldwide interest in nuclear explosives as a peaceful tool of economic development and by creating an acceptable class of nuclear explosive devices that would have all of the characteristics of nuclear weapons except the name. For example, the relevant recommendation from the Gilpatrick Panel report is attached (Tab A).

Turning to Palfrey's specific points, I agree that he makes a logical case when he states that a cooperative Plowshare program with India, involving the promise of advanced U.S. nuclear explosive devices, which it took the U.S. twenty years to develop, would be a force for non-proliferation in that it would tend to eliminate Plowshare as a cover or rationale for initiating a nuclear explosives program. I would, however, underline the fact that this argument has no logical force at all unless we commit ourselves to supply to the Indians nuclear devices for Plowshare in the future. Failure to make such a commitment would clearly increase the pressure in India for an independent nuclear explosives program. Even with such a commitment, Palfrey's argument suffers from the fact that it is based on the assumption that the Indian leadership is actually interested in Plowshare in itself and not as a cover for a nuclear weapons program. If this assumption is incorrect, our offer to supply devices would probably be lost in the noise and would not seriously undercut the domestic utility in India of Plowshare as a rationale to undertake a nuclear

explosives program. In this case, the argument that it would take the Indians many decades to develop comparable clean devices would of course be irrelevant.

Looking at the broader international implications of this policy, I find it difficult to see how we could advocate a Plowshare program, supported by U. S. devices, for India without extending the same offer on a more or less worldwide basis. Whatever the true viewpoint of the Indian leadership might be on this matter, I find it very optimistic to think there would not be countries that would find such a wave of enthusiasm for Plowshare as a convenient palliative for any domestic resistance to a national decision for a nuclear explosives program, notwithstanding any offers by the United States to be the supplier to the world of nuclear explosives for Plowshare.

Considering Palfrey's second point, Plowshare has frequently been mentioned as a possible prestige program by which the Indians might counter the psychological impact on the Asians of the CHICOM nuclear weapons program. I do not believe that this argument carries very much weight when subject to closer examination. In the first place, given the current state of technology and lack of study of specific Indian proposals, any economically significant Indian Plowshare program is many years (at an absolute minimum five to ten) in the future and therefore of little relevance to India in achieving a near term psychological impact within India and the rest of Asia. It is true that a "phoney" Plowshare program used as a cover for an Indian weapons program might be carried off sooner.

In the second place, I believe the AEC has exaggerated the value of Plowshare with U. S. devices as an Indian prestige item when the event finally occurs. I simply do not share Palfrey's belief in Bhabha's reported statement that an Indian Plowshare program with U. S. devices would have essentially the same impact on Asians as a fully home-grown Indian product.

In this connection, I would observe that, when there was a frantic search last year for prestige projects for India, I suggested that we sell or give them a complete set of rockets and associated ground equipment to launch an "Indian" satellite from India on a relatively

short time schedule. I was unable to find anyone in Washington who was willing to accept this as a plausible project since "everyone would know it was done by the United States." While I was never completely convinced by my totally unenthusiastic audience, I would submit that it would be much easier for the Indians to claim credit for such a project (since they would be able to develop their own payload and one would have to be reasonably sophisticated in this field to know what parts of the rest of the project were beyond their technical capabilities), than for a nuclear explosion, which by definition would have to have been a foreign activity since the Indians would presumably not be in the nuclear explosives business.

The final argument advanced by Palfrey is that cooperative Plowshare ventures with India would be helpful in laying the foundation for the international agreements on the conduct of Plowshare activities that would permit the building of a nuclear sea-level Panama Canal. Assuming that we really do want to modify the Limited Test Ban Treaty, I agree that Indian involvement in Plowshare would be helpful in this regard if the time phasing and type of project were correct. One obviously has to examine the projects and time schedules to see how helpful it is likely to turn out to be.

In the past, the AEC has taken the position that we would have to conduct at least one nuclear excavation in this country, subjecting our own people to the real or imagined associated hazards in order to establish the psychological environment to expect other people to accept such a program (specifically the Panama Canal) in their own countries. A number of "demonstration" projects that could be carried out on a relatively short time schedule have been suggested for this purpose. To conduct even these "demonstration" projects, we would have to find a way to amend or operate within the Test Ban, which would automatically provide a legal basis for undertaking the Panama Canal project.

If we decide to export this initial project from the U. S. to India, I think it is critical that it be a significant project of economic interest to the Indians. I do not believe that the Indians would really take very favorably to a "demonstration" project to establish the acceptability of programs that we are unable to conduct domestically.

As I have noted above, I would guess that it would be at least five to ten years and probably much longer before we could actually proceed with such practical projects in India. Moreover, it is by no means clear at this point that the Plowshare projects of particular significance to India would even involve excavation, thereby requiring the amendment or clarification of the Limited Test Ban, that would be of value in connection with the Panama Canal project. In summary, Indian involvement in a cooperative Plowshare excavation project would at most enlist Indian support in future U. S. efforts to amend the Limited Test Ban Treaty and would almost certainly not provide the precedent to establish the acceptability of this type of operation.

With regard to the Limited Test Ban Treaty problem, I would note that if we undertake underground Plowshare experiments in India without amendment to the Treaty and the explosions vent significantly, we as well as the Indians would stand in violation of the Treaty since Article I, Para. 2, of the Limited Test Ban Treaty states:

> "2. Each of the Parties to this Treaty undertakes furthermore to refrain from causing, encouraging, or in any way participating in, the carrying out of any nuclear weapon test explosion, or any other nuclear explosion, anywhere which would take place in any of the environments described, or have the effect referred to in paragraph 1 of this article."

As far as domestic India and Asian public opinion is concerned, I think it's safe to predict that any real or imagined problems that might result from such tests, whatever their legal status under the present or an amended Treaty, would be blamed on the United States and not the Indian Government since it would quickly be pointed out that we supplied the nuclear explosives and the technology.

The aspect of Plowshare for India which is seldom discussed is its significance for India and its relationship to our other economic programs for that country. While I am convinced that ultimately one will probably be able to identify Plowshare projects that could have major economic significance for India, no such projects to my knowledge have yet been identified and some of those suggested involve applications far less understood than excavation. I think

that one would be an optimist in the extreme to believe that any of these projects could be completed within the next decade. When Jerry Wiesner was in India, he was amazed at the real or feigned naiveté of Bhabha and other officials as to the possible economic benefits to India of Plowshare. He was anxious to have them briefed on the program, primarily to give them a more realistic understanding of the status and prospects of the program. Wiesner felt that the only idea that he heard discussed that was at all exciting for its potential significance to the Indian economy was the possibility of the underground storage of water by breaking up impervious substrata as a possible technique for radically changing the availability of water in areas that were arid for a large part of the year. I would note that this proposal along with most of the ideas for underground (as opposed to excavation) Plowshare projects is purely in the speculative stage.

When Plowshare projects of serious economic consequence are identified, the fact that they may be much cheaper than comparable projects with high explosives should not obscure the fact that they will be extremely expensive. Since we are seriously concerned about the economic development of India, I believe that the utility of these projects must be evaluated in the over-all content of our economic assistance to India. This cannot be done by the AEC acting alone.

Finally, I would like to emphasize that the interaction of Plowshare with a Comprehensive Test Ban represents a serious conflict in U. S. policy that has never been squarely faced. In our draft Comprehensive Test Ban Treaty we indicate a need for an annex setting forth the manner in which Plowshare experiments would be conducted. This annex has never been tabled and its contents have not been agreed upon within the U. S. Government. The proposed AEC version would not only essentially permit unlimited Plowshare explosions by majority vote but would even permit the unlimited development of nuclear explosive devices without controls on associated instrumentation. I believe this is clearly a non-negotiable proposal; and, if it were acceptable to the Soviets, I would oppose it as being contrary to the security interests of the U. S. since I believe it would permit an almost unlimited weapons program to be conducted under the guise of Plowshare.

It will not be easy, and may be impossible, to define an acceptable method of conducting Plowshare under a Comprehensive Test Ban. Therefore, the more we build up Plowshare domestically and in the eyes of the world, the more difficult it will be to come to grips with this conflict in policy if the Comprehensive Test Ban should ever become a serious subject of negotiation. I agree that Plowshare will probably eventually have major economic significance in one way or another; however, "eventually" is a long time, and I would prefer to face the mechanisms for dealing with this proposal after a Comprehensive Test Ban has been agreed upon rather than before.

CONCLUSIONS:

On the basis of the above considerations, I think it is clear that a cooperative U. S. -Indian Plowshare program would further complicate the already difficult worldwide problem of nuclear proliferation and that such a program is not very great value to Indian prestige or to our Panama Canal policy. Whatever its ultimate significance, this program certainly does not hold any short-term solutions for the Indian economic problems. At the same time, I believe that Palfrey is probably correct that a commitment on our part to make nuclear explosive devices available for a future Indian Plowshare program would serve our non-proliferation policy by undercutting a possible Indian argument that an independent nuclear explosives program was necessary for this purpose. Our non-proliferation policy would therefore be best served by simultaneously minimizing the short-term potential of Plowshare for India and by privately informing the top-level Indian leadership that we would be prepared to make nuclear explosives available with proper safeguards in the future, if important projects were identified and could be conducted under the then existing Test Ban Treaty arrangements.

In this light, I question whether the present Indian leadership will want to pursue the matter at all. If they should, we can certainly afford to undertake a low-key exploration of possible applications, provided it is done by a realistic group that is concerned with the economic needs of India and the psychological problems of conducting such a project there.

RECOMMENDATIONS:

In keeping with the above conclusion, I would recommend the following course of action:

1. No action should be taken with the Indians on this proposal prior to Mme. Ghandi's visit.

2. The proposal should not be brought up with Mme. Ghandi during her visit until her general attitude toward a possible Indian nuclear weapons program has become clear.

3. If Mme. Ghandi clearly rejects the possibility of an Indian nuclear weapons program and does not bring up Plowshare, we should not bring up Plowshare either.

4. If, on the other hand, Mme. Ghandi either admits the possibility of an Indian nuclear weapons program or mentions Plowshare, the President or the Secretary of State should note, in connection with a discussion of possible U. S. -Indian cooperative projects, that Dr. Bhabha had suggested Plowshare as a possible area for cooperation. At the time of that discussion, we should minimize the significance of this project to India at the present time, stating that the technology is still in an early stage of development and that such applications as may eventually be identified for India are at least a decade and probably much farther in the future. At the same time, we should indicate our willingness to explore possible applications if the Indians specifically request such a cooperative effort. We should also note that, if any significant applications are identified in the future and if the nuclear Test Ban Treaty permits, we would be prepared to make available either under AID programs or at cost appropriate nuclear explosive devices for these projects.

5. If the Indians then take up our offer to explore possible applications, these discussions should be conducted in a low key under the auspices of AID with appropriate advisory assistance from qualified engineers, economists, and AEC Plowshare experts.

6. If we are not prepared, however, to give reasonably formal assurances that we will in fact supply nuclear explosives for future Indian Plowshare programs, we should say nothing about Plowshare to the Indians unless the subject is specifically brought up by Mme. Ghandi and coupled with a request for assistance. In that case, we should explain why this project is not of economic or prestige value to India for the foreseeable future and why such projects may present serious problems under the Limited Test Ban Treaty and might be incompatible with a future Comprehensive Test Ban Treaty.

7. In no event should the AEC be authorized to pursue this subject separately with the Indians before or during Mme. Ghandi's forthcoming visit.

Spurgeon Keeny

cc: DFHornig
MSRowen
RWKenner
CJJohnson

Attachment - Tab A

TAB A

(TAB A)

~~SECRET~~

246

Excerpt from:

A REPORT TO THE PRESIDENT
BY
THE COMMITTEE ON NUCLEAR PROLIFERATION

(THE GILPATRICK PANEL)

dated January 21, 1965

- - - -

Page 20 - 5. b. (2) ...

While we recognize that the peaceful uses of nuclear explosives (Project Plowshare) may have long-term economic importance, we do not believe that that program should be allowed to jeopardize a comprehensive test ban treaty or to encourage interest in nuclear weapons. Undue emphasis on such programs tends to make nuclear explosives appear desirable, necessary and acceptable for countries presently considering undertaking nuclear weapons programs. In addition, attempts to incorporate provisions permitting such programs under a comprehensive test ban treaty may be difficult, if not impossible, without providing a loophole under which nuclear weapons could be developed. We should not, therefore, actively seek to interest other countries in such programs until we better understand their relationship to the comprehensive test ban and the general nuclear proliferation problem.

- - - -

~~SECRET~~

E4c

Palfrey's In-
coming Letter

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

24d

JAN 19

Dear Mac:

You suggested I send you my views on Plowshare and India.

Following the first Chinese explosion, the Thompson Committee on non-proliferation recommended various non-military cooperative ventures with the Indians in the atomic field. Exploration of possible Plowshare ventures had been recommended by Weisner after his India trip in January 1965 and by the AEC, but was opposed by others. In the end, Plowshare was taken out of Seaborg's letter to Bhabha, which listed potential areas of India-U.S. atomic cooperation, following Bhabha's visit to the U.S. in February 1965. Bhabha has repeatedly urged that it be included.

The issue has been raised again in the course of the preparation of a comprehensive telegram to Ambassador Bowles on India and non-proliferation.

I'm perplexed by the logic of our present posture on Plowshare with India. We say we would consider an Indian Plowshare explosive development program as a weapons program (and therefore Indian use of plutonium from the Canadian reactor for Plowshare would be considered a violation of their civil use only guarantee.) Then we say at the same time we won't explore Plowshare possibilities with the Indians, in situations where we might ultimately provide our own explosive in a black box to help India build a canal or change the course of a river.

The objection is that such ventures would whet Indian appetites to build their own devices. My view is that our present refusal is more apt to rouse them to do it themselves. If we do cooperate, we can make clear that these explosives have to be particularly sophisticated clean devices that took us 20 years to develop. Also, if we do cooperate, it would make it more difficult for the Indians to use a Plowshare program of their own as a cover for a weapons program.

OFFICIAL USE ONLY

Plowshare, using nuclear explosives for civil purposes does provide the prestige factor for the Indians to counter the impact of the Chicom explosion on the Asians. I believe Bhabha when he says the fact that the U.S. supplied the explosive wouldn't significantly diminish the impact on the Asians. To the Asians it would be the Indians who were moving the mountains or the rivers, instead of building the bombs which they are capable of doing.

Obviously, Plowshare cooperative ventures are some years away in terms of cratering technology, device development, and in terms of getting international agreement, in view of the limited test ban treaty. But we are much more likely to create an international interest in and support for Plowshare and lay the foundation for agreement (including agreement on the Panama Canal) if we are allowed to explore possibilities with the various countries which have expressed interest. At present, these would be merely technical studies without political commitments.

Sincerely,

John G. Palfrey
Commissioner

Honorable McGeorge Bundy
Special Assistant to the President
for National Security Affairs
The White House

26

SENDER WILL CHECK CLASSIFICATION TOP AND BOTTOM

	UNCLASSIFIED		CONFIDENTIAL		SECRET

CENTRAL INTELLIGENCE AGENCY

OFFICIAL ROUTING SLIP

TO	NAME AND ADDRESS	DATE	INITIALS
1	Mr. Charles E. Johnson		
2			
3			
4			
5			
6			

	ACTION		DIRECT REPLY		PREPARE REPLY
	APPROVAL		DISPATCH		RECOMMENDATION
	COMMENT		FILE		RETURN
	CONCURRENCE		INFORMATION		SIGNATURE

Remarks:

The complete agreement will be forwarded to you just as soon as it is received by us.

File: Put with the memo on Indian mec. Govt.
DJ

FOLD HERE TO RETURN TO SENDER

FROM: NAME, ADDRESS AND PHONE NO.	DATE
Donald F. Chamberlain x7113	22Oct65

	UNCLASSIFIED		CONFIDENTIAL		SECRET

FORM NO. 237 Use previous editions
2-61

(40)

U.S. GOVERNMENT PRINTING OFFICE : 1961 O—587282

ARTICLE III OF CIR AGREEMENT

"The Government of India will ensure that the reactor and any products resulting from its use will be employed for peaceful purposes only."

~~SECRET~~
CONTROLLED DISSEM

50 Mr. Johnson

NIE 11-14-65 ADVCON
21 October 1965

27

NATIONAL INTELLIGENCE ESTIMATE

CAPABILITIES OF SOVIET GENERAL PURPOSE FORCES

- Soviet Policy Toward the General Purpose Forces
- Soviet Theater Ground Forces
- Theater for Air and Missile Support
- Soviet Naval General Purpose Forces

NOTE: This is an advance copy of the conclusions of this estimate as approved by the United States Intelligence Board. The complete text will be circulated within five days of this issuance.

Central Intelligence Agency

~~SECRET~~
CONTROLLED DISSEM

Submitted by the

DIRECTOR OF CENTRAL INTELLIGENCE

The following intelligence organizations participated in the preparation of this estimate: The Central Intelligence Agency and the intelligence organizations of the Departments of State, Defense, AEC and NSA.

Concurred in by the

UNITED STATES INTELLIGENCE BOARD

on 21 October 1965. Concurring were the Director of Intelligence and Research, Department of State; the Director, Defense Intelligence Agency; the Atomic Energy Commission Representative to the USIB; and the Director of the National Security Agency. The Assistant to the Director, Federal Bureau of Investigation, abstained, the subject being outside of his jurisdiction.

CLASSIFICATION OF TITLE IS OFFICIAL USE ONLY WHEN USED SEPARATELY

~~S-E-C-R-E-T~~

CENTRAL INTELLIGENCE AGENCY

21 October 1965

SUBJECT: NIE 11-14-65: CAPABILITIES OF SOVIET GENERAL PURPOSE FORCES

THE PROBLEM

To estimate the strength and capabilities of Soviet general purpose forces through mid-1967, especially against the Central Region of NATO, and general trends in those forces over the next ten years.

CONCLUSIONS

A. The new Soviet political leaders appear to have modified Khrushchev's policy of curbing military costs at the expense of the general purpose forces. This change is probably attributable primarily to international tensions arising from the war in Vietnam, but it also reflects the increased influence of the ground force marshals.

B. Revisions in the force levels, organization, and deployment of the general purpose forces are virtually certain to occur in the course of the next ten years. The Soviets will probably improve the capabilities of their general purpose forces for non-nuclear war.

The provision of more advanced weapon systems will increase the military effectiveness of the general purpose forces, but will also increase their cost. Over the longer term we foresee some reductions in personnel strength designed to hold this increasing cost within limits acceptable to the Soviet leadership.

C. We estimate that the USSR now has about 108 line divisions which are capable of participating in the initial operations of a war. These divisions have virtually all of their equipment. Their peacetime manning levels range from at least 90 percent of war strength in the Soviet forces in Eastern Europe to about 60 percent in the interior of the USSR. We estimate that the USSR has an additional 31 cadre divisions manned at an average of about 20 percent of full strength. Our confidence in these figures is higher than last year as a consequence of more intensive study and new information.

D. The Soviets have significantly increased their tactical rocket and missile support in the past year. Further increases are likely, as well as the introduction of systems of improved range and mobility. We

believe that as the capabilities of tactical aircraft improve the numbers of aircraft in Tactical Aviation will gradually decline.*

E. During the past year there has been a marked increase in the tempo of Soviet naval activity; a larger number of units have operated at a distance from Soviet waters. We believe that Soviet naval capabilities for operations far from home bases will continue to increase over the next ten years with the introduction into the forces of more long-range submarines and support ships.

F. The USSR is seriously concerned about the Polaris threat to the homeland and has intensified efforts to improve its antisubmarine warfare capabilities. We estimate that, even so, the Soviet capability to detect, identify, and destroy submarines operating in the open seas will remain severely limited for the next several years.

---

* The ACS/Intelligence, USAF is unable to reconcile Conclusion B, which estimates a probable improvement in capabilities of Soviet general purpose forces for non-nuclear warfare, with this conclusion that there will be a further increase in tactical missiles which are cost-effective only with nuclear/CW warheads, but a reduction in Tactical Aviation, which has an iron bomb as well as a nuclear and air defense capability. He notes further that reduction of Tactical Aviation as predicted in each of the past several years has not materialized. He would substitute the following for the final sentence: "Barring a marked change in the overall structure and size of Soviet general purpose forces we believe that the numbers of aircraft in Tactical Aviation will remain about the same as at present, and introduction of new aircraft will provide improved capabilities."

G. The Soviets have shown increasing interest in airborne and amphibious capabilities in support of theater operations. Over the next ten years they will probably improve these capabilities and seek to develop some capability for distant limited military action.

H. The Soviets and their Warsaw Pact allies have 45 divisions and about 2,900 combat aircraft immediately available for employment against the Central Region of NATO. We believe, however, that if the Soviets planned to attack NATO they would reinforce these forces, if circumstances permitted, with additional ground and air forces from the western USSR.

Sent Package to Keeny
w/note

" Note Hal's comment. Have
you any problem? You
know [illegible] thinking"

File. 3/23

The letter
was killed.

[illegible] 4/19

~~CONFIDENTIAL~~

29

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

MAR 1 2 1965

Mr. Charles Johnson
Office of Special Assistant to the
President for National Security Affairs
The White House

Dear Mr. Johnson:

Following your conversation with Hal Bengelsdorf of this office, I am transmitting herewith for your review a proposed letter from Dr. Seaborg to Indian AEC Chairman Homi J. Bhabha summarizing Dr. Bhabha's discussions with the Commission during his visit to Washington from February 19 to February 23, 1965. As you know, these discussions were held as part of a general effort the United States is making to enhance the image of India's scientific capability and the principal items that we discussed concerned the prospects of closer U.S.-Indian cooperation in the field of the peaceful uses of atomic energy. The discussions were a follow-up on the meetings Commissioner Palfrey and I had with Dr. Bhabha during our visit in India January 21 to January 31, 1965.

I believe the letter is largely self-explanatory and, as Hal indicated to you over the phone, many of the proposed cooperative activities which we discussed with Dr. Bhabha are modest in scope and are a logical outgrowth of our already existing cooperative relationships with India. In other words, we probably would have gone ahead with a number of these activities in any case even had we not been urged to give special attention to India at this time.

The draft has been reviewed and cleared by the Department of State.

Following your review and signature by the Chairman, the letter will be sent by the State Department to Ambassador Bowles for appropriate delivery. The Ambassador has already been informed of the highlights of the discussion. You will note that the first visit exchange is to take place in April.

I would be happy to answer any questions you have on this matter or to discuss any of the items further.

Sincerely yours,

Myron B. Kratzer, Director
Division of International Affairs

Attachment:
Proposed Letter to Dr. Bhabha

~~CONFIDENTIAL~~

2359

30

NATIONAL SECURITY COUNCIL

~~to Chas Johnson~~

file This was
handled by
Kenny

[redacted]

31

March 22, 1965

Mr. C. Johnson:

Chuck: This looks OK to me, and State political bureau has cleared it. State's and our clear understanding is that these projects will be over and above the current economic aid program. Most of the things proposed here don't look expensive enough to disrupt the overriding economic effort. Bowles can keep this in context.

Assume you and Spurgeon are looking at the scientific policy angles.

Hal

Hal S.

[redacted]

~~CONFIDENTIAL~~

32

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

MAR 19 1965

Mr. Charles Johnson
Office of Special Assistant to the
President for National Security Affairs
The White House

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Sincerely yours,

Myron B. Kratzer

Myron B. Kratzer, Director
Division of International Affairs

Attachment:
Proposed Letter to Dr. Bhabha

2359

~~CONFIDENTIAL~~

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

Dear Dr. Bhabha:

We were very pleased to have the opportunity to meet with you during your recent visit to Washington to discuss the various prospects for more intensive cooperation between the United States and India in fields related to the peaceful uses of atomic energy. I believe we found ourselves in general agreement that there were several interesting and important areas of cooperation that warrant further exploration. In the following paragraphs I shall attempt to summarize the principal points that we discussed and the conclusions we came to regarding the appropriate next steps.

1. U.S.-Indian Exchange In The Field of Thorium Recycle. As a result of your meeting with Commissioner Ramey, it was agreed that we should take prompt steps to initiate an intensive exchange of information and personnel, in areas of technology related to thorium based fuel cycles. As a first step it was concluded that an Indian team will visit the United States in April for an overall orientation on the Commission's principal activities related to this field. We shall forward to you shortly a recommended detailed itinerary for the visit. At the end of its tour of the appropriate AEC facilities we understand that the Indian group will plan to visit the USAEC Headquarters to put into final form a letter agreement covering our proposed cooperative exchange in this area. An outline of the principal provisions that we would anticipate would be incorporated in such a letter agreement is appended to this letter. We would anticipate that both thermal and fast reactors of significance to the thorium cycle would be covered in the proposed exchange. One of the first activities we would be prepared to consider in terms of implementation would be the long-term assignment of a U.S. reactor specialist to Trombay to work on the critical experiments using the Zerlina reactor.

2. Joint Study Regarding How India Might Utilize Its Uranium And Thorium Resources Most Effectively. In the course of the meeting we agreed that it would be desirable to establish a joint working group, comprised of about five to six people, to study and prepare a report on the various approaches that the Government of India might take, in its future nuclear power program, so as to achieve the most effective use of India's reserves of thorium and uranium. It was agreed that, during the April team visit referred to in the preceding paragraph, general discussions on this subject will be held, and that around May or June the USAEC would send a team to Trombay to meet with your designees and undertake the initial phases of this investigation. Our representatives would plan to review with your people the long-term studies that already have been prepared by the Indian AEC in this area and they also would be prepared to make available to your scientists the results of the recent studies performed by the USAEC on advance converters. We would expect that both thermal and fast reactors would be considered in this evaluation.

3. Fast Reactor Exchange. We agreed that it would be desirable for the United States and India to consider the development of a more intensive exchange of information and people in the field of fast reactors. As already noted, our proposed co-operative long-term study regarding the effective utilization of India's thorium and uranium resources and our exchange on the thorium based fuel cycle will each include a consideration of fast as well as thermal reactors. I propose that after these two activities have been initiated we consider further what specific type of cooperative activity in the area of fast reactors would be most appropriate.

4. Maritime Reactors. During our conversations you expressed an interest in exploring the development of a joint project that might serve to assist India in establishing its own program in the field of nuclear maritime reactors. You explained that this area might be particularly promising in view of the relatively high cost of the oil now used to fuel Indian merchant ships. It also was observed that the successful execution of such a project in India, with heavy reliance on Indian scientific and engineering personnel, could serve to demonstrate India's impressive capabilities in the field of atomic energy. As we explained, the U.S. nuclear program in the maritime field is now undergoing an overall reevaluation and this necessarily will influence the extent of our ability

to cooperate with the Indian AEC at the present time. Within these limits, however, we would be pleased to discuss the various possibilities for joint cooperation in further detail and to furnish the Indian AEC with our views on the economic studies you already have performed on the relative merits of fossil fueled and nuclear fueled vessels. As an initial step, we have agreed that the Indian AEC will send a team to the United States at a time to be mutually agreed, as soon as these preliminary Indian studies have been completed.

5. Plowshare Program. In the course of our conversations you indicated that it was conceivable that the U.S. Plowshare Program might be able to make an important contribution, in time, to the solution of some of India's basic engineering problems. It was noted, for example, that nuclear devices might be employed to deepen the ship channel between Ceylon and India, or to shorten the water flow distance in the Hooghly River, which, in turn, would increase the water flow gradient and reduce the rate of silt deposition. It was observed that the latter application probably could be performed with wholly-contained nuclear devices. In order to permit the Government of India to assess the current status of the U.S. technology in this area, it was agreed that the Commission would send a U.S. team of experts to India, at a mutually agreed time, to (a) present some lectures to appropriate Indian scientists on the current status of the U.S. Plowshare Program (including the remaining experimental work that needs to be done), and (b) assist the Government of India in evaluating the possible role this technology might play in helping India solve some of its engineering problems. Following this visit, and at a time to be agreed, a team of Indian scientists might wish to visit the United States and hold further preliminary discussions with our scientists on the matter. We noted that these discussions would be held without any commitment to proceed further on the matter and that the actual performance by the United States of any Plowshare projects overseas (in India or elsewhere) would depend on the further development of the technology and the relevant political considerations at the time, including whatever implications the specific project involved had insofar as the Limited Test Ban Treaty is concerned.

6. Desalting. We expressed our willingness to furnish the Government of India with full information on the U.S. program in the field of desalting and to consider the possibility of a joint program in this area. You explained that the Indian studies in this field are still in a very preliminary stage and that, accordingly, this matter could be taken up more profitably as soon as these preliminary studies had been completed.

7. Assistance In The Design And Construction Of Particle Accelerator. In the course of the discussions you indicated that there was some interest in India in building, with heavy reliance on Indian personnel, either a 20-25 Mev Van de Graaff (tandem type) accelerator or a 50 Mev variable energy cyclotron. You inquired as to the possibility of obtaining the assistance of two or three U.S. scientists in helping the Indian group design and construct the machine that may be selected. We indicated that in terms of our own experience we felt it would be exceedingly difficult for India to construct a tandem Van de Graaff accelerator and that if such a machine was desired it probably could best be purchased from the High Voltage Engineering Company. I gather that this coincides with your own evaluation. It was noted, however, that several U.S. institutions had successfully built, as of late, variable energy cyclotrons. Accordingly, as a first step and to assist India in its further study and evaluation of this alternative, it was concluded that you would send a team to this country, at a time to be agreed, to visit various laboratories and universities that either have or are planning the establishment of variable energy cyclotrons. We will be pleased to assist your people in planning and arranging the itinerary for such a visit. To assist you in this regard, I am appending a list of U.S. facilities that might be of interest as well as a table on isochronous cyclotrons located in various countries. You may also wish to refer to the "Proceedings of the International Conferences on Sector-Focused Cyclotrons", University of California, April 17-20, published by the North Holland Publishing Company. This volume contains a number of papers on the design and operation of variable energy cyclotrons.

8. Possible Transfer Of U.S. Plutonium. I understand that during your meeting with Commissioner Ramey you inquired as to whether it might be feasible for the Commission to transfer to India an amount of plutonium for use in your proposed research and development program related to plutonium and thorium recycle. We explained that due to questions of policy as well as the current limited availability of such material we were obliged to consider requests involving the transfer of sizeable quantities of plutonium on a case-by-case basis and it was agreed that you would furnish us for our review a detailed outline of your requirements. We observed that either a new Agreement for Cooperation or an amendment to our existing Agreement for Cooperation would be required to permit us to transfer additional quantities of special nuclear material to India (for uses other than the Tarapur reactor). We also explained that it is now our policy to include a provision in our Agreements for Cooperation to the effect that the safeguard responsibility will be promptly transferred to the International Atomic Energy Agency. I gather that you would not foresee any difficulty in our agreeing on such a formula regarding the IAEA in this case. I suggest that we resume our discussions on the possible need for an amendment to our existing Agreement or a new Agreement when the Commission has had an opportunity to review your requirements for plutonium in detail. I understand that you would prefer to handle this matter in a new Agreement for Cooperation rather than in an amendment to the Tarapur Agreement.

The Commission is extremely pleased over the prospects outlined above for more intensive cooperation with the Indian AEC in these areas, and we are confident that they will, in time, be supplemented by exchanges in other new areas as well.

As a closing note, I would like to state that the Commission has no intention to publicize this letter with the understanding that you also do not intend to publish the contents.

It was indeed a pleasure for all of us, and a personal pleasure for me, to see you in Washington and I look forward to seeing you on your next visit.

Sincerely,

Chairman

Dr. Homi J. Bhabha, Chairman
Department of Atomic Energy
Apollo Pier Road
Bombay 1, India

Enclosures:
1. Principal Provisions Anticipated to be Incorporated in Letter Agreement
2. List of U.S. Facilities
3. Table on Isochronous Cyclotrons

cc: Chairman (2)
Commissioner Bunting
Commissioner Palfrey
Commissioner Ramey
Commissioner Tape
GM
AGMIA
Secretariat (2)
OGC
AA/LA Br., IA

PRINCIPAL PROVISIONS LIKELY TO BE INCLUDED IN A U.S. - INDIAN EXCHANGE ARRANGEMENT RELATING TO THORIUM RECYCLE

1. The United States Atomic Energy Commission and the Indian Atomic Energy Commission recognizing their mutual interest in fields of research and development related to the use of thorium in thermal and fast reactors shall exchange information in the following fields:

(Detailed technical scope to be delineated following visit of the team of Indian scientists to the U.S. in April, 1965.)

2. The foregoing information shall be exchanged by reports, letters, drawings, specifications, visits, and the long-term assignment of personnel and such other means as the Parties may agree from time to time.

3. The information exchanged under this arrangement shall be available for use in the programs supported by the U.S. AEC and the Indian AEC and may also be made available to industry in the respective countries for normal commercial use.

4. A coordinator shall be designated by each Party for the purposes of developing and controlling the detailed arrangements for implementing the effective exchange of information under this arrangement. This shall include, among other things, the nomination of correspondents on each side to deal with specific areas of technology.

5. The Parties shall arrange joint meetings at approximately annual intervals for overall discussions in areas relating to the scope of this exchange.

6. Insertion of an applicable patent clause covering the disposition of rights to inventions or discoveries made as a result of the exchange.

The text of an appropriate patent clause will be forwarded by the U.S. AEC to the Indian AEC for its consideration.

7. This arrangement shall come into force upon receipt of a letter from the Indian Atomic Energy Commission stating its concurrence in the terms outlined above, and shall remain in effect for a term of _____ years. The Parties may review the arrangement from time to time to determine whether any modifications are indicated. Moreover, they may each terminate the exchange on one years notice if they so desire.

AEC Variable Energy Cyclotron Facilities

University of Colorado — Prof. David Lind
Boulder, Colorado

52 inch — 30 Mev protons 1 ma int. current
30 Mev alphas

Research program includes experiments on pickup reactions and elastic and inelastic proton scattering.

University of Michigan — Prof. William Parkinson
Ann Arbor, Michigan

83 inch — 40 Mev protons 1 ma int. current
40 Mev deuterons

Cyclotron in operation but on limited basis pending completion of additional shielding.

Oak Ridge National Lab. — Dr. Robert S. Livingston
Oak Ridge, Tennessee

76 inch — 75 Mev protons 1 ma int. current
heavy ions $\geq$ 100 Mev

Pickup reaction studies. Polarized proton scattering.

Lawrence Radiation Lab. — Dr. Bernard Harvey
Berkeley, California

88 inch — 55 Mev protons 1 ma int. current
120 Mev alphas

Polarized proton studies. Elastic and inelastic scattering of alphas. p,t and p, He^3 reactions

Argonne National Laboratory — Dr. John J. Livingood
Argonne, Illinois

Design study of 170 inch variable energy cyclotron. 100 Mev protons. 240 Mev alphas. 360 Mev Ne^{+4}.

University of California — Prof. John Jungerman
Davis, California

Copy of 76" Oak Ridge cyclotron with modest engineering changes. Scheduled completion end of 1965.

Texas A&M — Prof. Royce Jones
College Station, Texas

Copy of 88" Lawrence Radiation Laboratory cyclotron. Preliminary engineering completed.

University of Maryland — Prof. Harry Holmgren
College Park, Maryland

To be designed to obtain 100 Mev protons and 130 Mev alphas.

National Science Foundation Project

Michigan State University — Prof. Henry Blosser
East Lansing, Michigan

64 inch 50 Mev protons 1 ma int. current
Beam recently obtained.

AEC Electron Linear Accelerator Facilities

Yale University — Prof. Howard Shultz
New Haven, Connecticut

40 Mev 750 μamp av. current

Neutron capture γ ray studies, photonuclear reactions, electron scattering.

Rensselaer Polytechnic Institute — Prof. Erwin Gaerttner
Troy, New York

66 Mev 720 μamp av. current

Neutron cross section measurements. Reactor physics measurements.

MIT — Prof. Peter Demos
Cambridge, Massachusetts

Proposed 400 Mev 100 μamp av. current

Oak Ridge National Laboratory — Dr. John A. Harvey
Oak Ridge, Tennessee

Proposed 120 Mev machine.

Non-AEC: National Bureau of Standards — Dr. William Koch
Gaithersburg, Maryland

150 Mev 100 μamps av. current.

ISOCHRONOUS CYCLOTRONS, SPECIFICATIONS

		Status	Energy (MeV)	Beam, Goal			Magnet								RF System						Comments
				Int (μA)	Ext (μA)	Orbit, r max (cm)	Pole dia (cm)	Gap min (cm)	Sect	Spiral max (°)	AVF Coils (pr/sect)	Circ Trim Coils (pr)	Av Field at r max (kG)	Total Power (kW)	Dees (No., °)	Dee Apt (cm)	RF (Mc/s)	Power max, in (kW)	Energy Gain, max keV/turn	Dee Tuning	
Canada	Winnipeg	Const (1964)	50p*	100	1	53	117	2.5	4	49	0	0	20	120	2, 45	2.5	14–29	50	100	MS	Temp reg Invar shims
CERN	Geneva	Study	850p	100		427			8	60			12				9.4		200	FF	Meson factory
France	Grenoble	Eng (1966)	60p*	200	20	80	200	14	4	45	3	9	15	250	2, 90	4	10.5–21	60	120	MP	CSF machine
	Orsay	Const (1965)	30p*	200		47	110	16	4	35	0	0	17	250	1, 180	4.5	10–25.2	100	200	MS	Alloy shims
	Orsay	Const (1963)	68d*	1000		85	200	21	3	0	5	0	14.3	400	1, 180	5	4–10.5	300	300	MS	Alloy shims
	Saclay	Const (1963)	25p*	100	20	56	120	14	3	35	3	11	15	140	1, 180	2.5	7–22	85	100	MS	Philips machine
Germany	Julich	Eng	90d	50	10		320	6	3	Yes					3, 60				300		AEG study
	Karlsruhe	1962, in use	50d	100	10	107	225	8	3	0	5	0	14.7	30	3, 60	4	33	70	240	FF	AEG machine
India	Calcutta	Study	25p*																		Would be purchased
Italy	Milan	Const (1964)	45p*	100	10	70	166	11	3	0	0	8	14.1	200	1, 180	3.6	17–22	120	140	MP	Pole tips contoured
Japan	Osaka	Study	40p	500	50	62	140	15	3		2	7	16		1, 180	3.5	7.5–22.5	120	160	MS	
Netherlands	Amsterdam	Const (1964)	25p*	100	20	56	140	15	3	35	3	11	15	140	1, 180	2.5	7–22	85	100	MS	Philips machine
	Delft	1958, in use	12p	500		34	86		4	0	0	0	14		1, 180	5.6	21		25	FF	1st isochronous cyclotron
	Eindhoven	1963, in use	25p*	100	20	56	120	14	3	35	3	11	15	140	1, 180	2.5	7–22	85	100	MS	Philips prototype
	Eindhoven	Const (1964)	27p			57	142	16	3	48			13.4		1	3	20		100	FF	Philips; isotope production
	Groningen	Design (1968)	50p*	100	10	115	280	25	3 or 4			10	14	300	1, 180	4	5–15	300	140		Philips machine
Switzerland	Zurich	Study	500p	100		490	1000	8	8	25	7		7.5	400	4 cav	5	60	400	1000	FF	Injection at 70 MeV
USSR	Alma Ata	Design					150														
	Dubna	1959, in use	13d	20		53	120	8	6	75			14	55	1, 180	4	10.4	15	70	FF	
	Leningrad	Const (1963)					69		3	Low							7–21				
	Moscow	1961, in use	32d*	300	70	69	150	16	3	0	1	6	16.7	200	2, 180	5.8	7.8–13	120	280	MS	Converted 1.5-m machine
UK	Amersham	Design	27p			57	142	16	3	48			13.4		1, 180	5.6	21			FF	Philips machine
	Birmingham	1961, in use	11d*	1000	250	46	102	7.6	3	0	2	8	15.8	40	1, 180	2.5	7–16	45	60	MS	Ions injected axially
	Harwell	1959, in use	3p	1000		20	56	10	3	0	0	12	13	100	1, 180	5	15–20	20	60	MS	Model of 76-in.
	Harwell	Const (1964)	50p*	500	50	76	178	19	3	42	3	12	17	750	1, 180	4.1	7.2–23	445	200	MS	
USA	Ann Arbor	1963, in use	37p*	1000	250	93	211	17	3	43	0	12	15	200	2, 180	3.2	6–16	360	280	MS	Beam testing (April 63)
	Argonne	Study	70p*		200		94	19	3	60		17	17		1, 180	3.8	6–20			MP	
	Berkeley	1961, in use	60p*	1000	100	99	224	19	3	56	5	17	17.1	1036	1, 180	3.8	5.5–16.5	350	140	MP	
	Boulder	1962, in use	30p*	1000	100	60	132	12	4	45	5	1	13.2	100	1, 180	3.8	7.5–21.3	100	150	MP	Deflecting H^- ions
	Brookhaven	Model tests	42p*	300	50	64	152	19	3			8	14.65	200	1, 180	4.8	9–27	150	200	MP+MS	Conversion of 60-in.
	Claremont, Cal	1960, in use	2.5p	25		25	58	10	6	0	0	0	9	3	1, 180	2.5	13.9	2.5	34	FF	For undergraduate instruction
	Davis, Cal	1962, in use	12p*	400	100	25	60	4.4	3	45	1	9	19.7	45	2, 110	1.5	15–30	20	100	MS	
	Davis, Cal	Design (1965)	75p*				193		3	30	1	10			1, 180		7.5–22.5			MS	Old 60-in. Crocker magnet
	E. Lansing	Const (1964)	50p*	1000	500	71	163	17	3	0	0	8	14	140	2, 144	4.4	13.5–21.5	240	270	MP	Double mode RF
	Los Angeles	1960, in use	50p*			51	125	2.5	4	47	0	8	20	120	2, 45	2.5	26.5–29		90	MP	Deflecting H^- beam
	Los Angeles	Study	700H⁻	170	150	1036	1113	76	6	78	4	17	3.1	3500	2, 180	20	11.31	1780	400	FF	To accelerate neg ions
	Maryland	Proposed	75p*	1000	200	99	224	19	3	56	6	17	17	460	1, 180	4.1	6–19.5	100	140	MP	Brobeck Eng
	NRL (Wash)	Proposed	75p*	1000	100	80	193	19	3	30	4	10	17.2	2000	1, 180	4.8	7.5–22.5	650	200	MS	Horizontal "ORIC"
	NRDL (San F)	Model tests	100p*	1000		84	178	5	4	56	5	9	18	300	2, 35	2.5	10–30	205	300	MS	Movable iron shims
	Oak Ridge	1962, in use	75p*	1000	100	80	193	19	3	30	4	10	17.2	2000	1, 180	4.8	7.5–22.5	650	200	MS	Vertical mod plane
	Oak Ridge	Model tested	810p	200	100	584			8				18			10	13.7 or 20.6	<800	1000	FF	Testing RF cavities
	St Louis	Const (1963)	30*	1000	100	58	137	15	3	Low	4	5	14	150	1, 180	3.2	7.5–22.5	120	120	MS	Conversion of 45-in.
	Texas A&M	Proposed	100p*	1000	100	99	224	19	3	56	5	17	13.2	2000	1, 180	3.8	8–24	650	150	MP	Copy of LRL 88-in.
	Urbana	1958, in use	15p*	300	50	47	111	14	4	$\tan^{-1}.12r$	1	5	15.7	98	1, 180	3.8	9–18.5	100	180	MS	Conversion of 50-in.

*Also other ions.
MS Movable short
MP Movable panels
FF Frequency fixed.

F. T. Howard
ORNL May 15, 1963

~~CONFIDENTIAL~~

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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

MAR 9 1965

Mr. Charles Johnson
Office of Special Assistant to the
President for National Security Affairs
The White House

Dear Mr. Johnson:

Following your conversation with Hal Bengelsdorf of this office, I am transmitting herewith for your review a proposed letter from Dr. Seaborg to Indian AEC Chairman Homi J. Bhabha summarizing Dr. Bhabha's discussions with the Commission during his visit to Washington from February 19 to February 23, 1965. As you know, these discussions were held as part of a general effort the United States is making to enhance the image of India's scientific capability and the principal items that we discussed concerned the prospects of closer U.S.-Indian cooperation in the field of the peaceful uses of atomic energy. The discussions were a follow-up on the meetings Commissioner Palfrey and I had with Dr. Bhabha during our visit in India January 21 to January 31, 1965.

I believe the letter is largely self-explanatory and, as Hal indicated to you over the phone, many of the proposed cooperative activities which we discussed with Dr. Bhabha are modest in scope and are a logical outgrowth of our already existing cooperative relationships with India. In other words, we probably would have gone ahead with a number of these activities in any case even had we not been urged to give special attention to India at this time.

The draft has been reviewed and cleared by the Department of State.

Following your review and signature by the Chairman, the letter will be sent by the State Department to Ambassador Bowles for appropriate delivery. The Ambassador has already been informed of the highlights of the discussion. You will note that the first visit exchange is to take place in April.

I would be happy to answer any questions you have on this matter or to discuss any of the items further.

Sincerely yours,

Myron B. Kratzer

Myron B. Kratzer, Director
Division of International Affairs

Attachment:
Proposed Letter to Dr. Bhabha

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~~CONFIDENTIAL~~

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

Dear Dr. Bhabha:

We were very pleased to have the opportunity to meet with you during your recent visit to Washington to discuss the various prospects for more intensive cooperation between the United States and India in fields related to the peaceful uses of atomic energy. I believe we found ourselves in general agreement that there were several interesting and important areas of cooperation that warrant further exploration. In the following paragraphs I shall attempt to summarize the principal points that we discussed and the conclusions we came to regarding the appropriate next steps.

1. U.S.-Indian Exchange In The Field of Thorium Recycle. As a result of your meeting with Commissioner Ramey, it was agreed that we should take prompt steps to initiate an intensive exchange of information and personnel, in areas of technology related to thorium based fuel cycles. As a first step it was concluded that an Indian team will visit the United States in April for an overall orientation on the Commission's principal activities related to this field. We shall forward to you shortly a recommended detailed itinerary for the visit. At the end of its tour of the appropriate AEC facilities we understand that the Indian group will plan to visit the USAEC Headquarters to put into final form a letter agreement covering our proposed cooperative exchange in this area. An outline of the principal provisions that we would anticipate would be incorporated in such a letter agreement is appended to this letter. We would anticipate that both thermal and fast reactors of significance to the thorium cycle would be covered in the proposed exchange. One of the first activities we would be prepared to consider in terms of implementation would be the long-term assignment of a U.S. reactor specialist to Trombay to work on the critical experiments using the Zerlina reactor.

2. Joint Study Regarding How India Might Utilize Its Uranium And Thorium Resources Most Effectively. In the course of the meeting we agreed that it would be desirable to establish a joint working group, comprised of about five to six people, to study and prepare a report on the various approaches that the Government of India might take, in its future nuclear power program, so as to achieve the most effective use of India's reserves of thorium and uranium. It was agreed that, during the April team visit referred to in the preceding paragraph, general discussions on this subject will be held, and that around May or June the USAEC would send a team to Trombay to meet with your designees and undertake the initial phases of this investigation. Our representatives would plan to review with your people the long-term studies that already have been prepared by the Indian AEC in this area and they also would be prepared to make available to your scientists the results of the recent studies performed by the USAEC on advance converters. We would expect that both thermal and fast reactors would be considered in this evaluation.

3. Fast Reactor Exchange. We agreed that it would be desirable for the United States and India to consider the development of a more intensive exchange of information and people in the field of fast reactors. As already noted, our proposed co-operative long-term study regarding the effective utilization of India's thorium and uranium resources and our exchange on the thorium based fuel cycle will each include a consideration of fast as well as thermal reactors. I propose that after these two activities have been initiated we consider further what specific type of cooperative activity in the area of fast reactors would be most appropriate.

4. Maritime Reactors. During our conversations you expressed an interest in exploring the development of a joint project that might serve to assist India in establishing its own program in the field of nuclear maritime reactors. You explained that this area might be particularly promising in view of the relatively high cost of the oil now used to fuel Indian merchant ships. It also was observed that the successful execution of such a project in India, with heavy reliance on Indian scientific and engineering personnel, could serve to demonstrate India's impressive capabilities in the field of atomic energy. As we explained, the U.S. nuclear program in the maritime field is now undergoing an overall reevaluation and this necessarily will influence the extent of our ability

to cooperate with the Indian AEC at the present time. Within these limits, however, we would be pleased to discuss the various possibilities for joint cooperation in further detail and to furnish the Indian AEC with our views on the economic studies you already have performed on the relative merits of fossil fueled and nuclear fueled vessels. As an initial step, we have agreed that the Indian AEC will send a team to the United States at a time to be mutually agreed, as soon as these preliminary Indian studies have been completed.

5. Plowshare Program. In the course of our conversations you indicated that it was conceivable that the U.S. Plowshare Program might be able to make an important contribution, in time, to the solution of some of India's basic engineering problems. It was noted, for example, that nuclear devices might be employed to deepen the ship channel between Ceylon and India, or to shorten the water flow distance in the Hooghly River, which, in turn, would increase the water flow gradient and reduce the rate of silt deposition. It was observed that the latter application probably could be performed with wholly-contained nuclear devices. In order to permit the Government of India to assess the current status of the U.S. technology in this area, it was agreed that the Commission would send a U.S. team of experts to India, at a mutually agreed time, to (a) present some lectures to appropriate Indian scientists on the current status of the U.S. Plowshare Program (including the remaining experimental work that needs to be done), and (b) assist the Government of India in evaluating the possible role this technology might play in helping India solve some of its engineering problems. Following this visit, and at a time to be agreed, a team of Indian scientists might wish to visit the United States and hold further preliminary discussions with our scientists on the matter. We noted that these discussions would be held without any commitment to proceed further on the matter and that the actual performance by the United States of any Plowshare projects overseas (in India or elsewhere) would depend on the further development of the technology and the relevant political considerations at the time, including whatever implications the specific project involved had insofar as the Limited Test Ban Treaty is concerned.

6. Desalting. We expressed our willingness to furnish the Government of India with full information on the U.S. program in the field of desalting and to consider the possibility of a joint program in this area. You explained that the Indian studies in this field are still in a very preliminary stage and that, accordingly, this matter could be taken up more profitably as soon as these preliminary studies had been completed.

7. Assistance In The Design And Construction Of Particle Accelerator. In the course of the discussions you indicated that there was some interest in India in building, with heavy reliance on Indian personnel, either a 20-25 Mev Van de Graaff (tandem type) accelerator or a 50 Mev variable energy cyclotron. You inquired as to the possibility of obtaining the assistance of two or three U.S. scientists in helping the Indian group design and construct the machine that may be selected. We indicated that in terms of our own experience we felt it would be exceedingly difficult for India to construct a tandem Van de Graaff accelerator and that if such a machine was desired it probably could best be purchased from the High Voltage Engineering Company. I gather that this coincides with your own evaluation. It was noted, however, that several U.S. institutions had successfully built, as of late, variable energy cyclotrons. Accordingly, as a first step and to assist India in its further study and evaluation of this alternative, it was concluded that you would send a team to this country, at a time to be agreed, to visit various laboratories and universities that either have or are planning the establishment of variable energy cyclotrons. We will be pleased to assist your people in planning and arranging the itinerary for such a visit. To assist you in this regard, I am appending a list of U.S. facilities that might be of interest as well as a table on isochronous cyclotrons located in various countries. You may also wish to refer to the "Proceedings of the International Conferences on Sector-Focused Cyclotrons", University of California, April 17-20, published by the North Holland Publishing Company. This volume contains a number of papers on the design and operation of variable energy cyclotrons.

8. Possible Transfer Of U.S. Plutonium. I understand that during your meeting with Commissioner Ramey you inquired as to whether it might be feasible for the Commission to transfer to India an amount of plutonium for use in your proposed research and development program related to plutonium and thorium recycle. We explained that due to questions of policy as well as the current limited availability of such material we were obliged to consider requests involving the transfer of sizeable quantities of plutonium on a case-by-case basis and it was agreed that you would furnish us for our review a detailed outline of your requirements. We observed that either a new Agreement for Cooperation or an amendment to our existing Agreement for Cooperation would be required to permit us to transfer additional quantities of special nuclear material to India (for uses other than the Tarapur reactor). We also explained that it is now our policy to include a provision in our Agreements for Cooperation to the effect that the safeguard responsibility will be promptly transferred to the International Atomic Energy Agency. I gather that you would not foresee any difficulty in our agreeing on such a formula regarding the IAEA in this case. I suggest that we resume our discussions on the possible need for an amendment to our existing Agreement or a new Agreement when the Commission has had an opportunity to review your requirements for plutonium in detail. I understand that you would prefer to handle this matter in a new Agreement for Cooperation rather than in an amendment to the Tarapur Agreement.

The Commission is extremely pleased over the prospects outlined above for more intensive cooperation with the Indian AEC in these areas, and we are confident that they will, in time, be supplemented by exchanges in other new areas as well.

As a closing note, I would like to state that the Commission has no intention to publicize this letter with the understanding that you also do not intend to publish the contents.

It was indeed a pleasure for all of us, and a personal pleasure for me, to see you in Washington and I look forward to seeing you on your next visit.

Sincerely,

Chairman

Dr. Homi J. Bhabha, Chairman
Department of Atomic Energy
Apollo Pier Road.
Bombay 1, India

Enclosures:
1. Principal Provisions Anticipated to be Incorporated in Letter Agreement
2. List of U.S. Facilities
3. Table on Isochronous Cyclotrons

cc: Chairman (2)
Commissioner Bunting
Commissioner Palfrey
Commissioner Ramey
Commissioner Tape
GM
AGMIA
Secretariat (2)
OGC
AA/LA Br., IA

Nuclear

Tarapur site

Mr Kamen

Dope on

IAEA

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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

JUL 30 1963

Mr. Charles N. Johnson
NSC Staff Member
The White House

Dear Chuck:

Howard Brown has requested me to provide you with some background information on the International Atomic Energy Agency and its safeguards system, particularly from the point of view of the developing countries. As a related matter, I understand you have requested information on the interest of the developing countries in power reactors, the effect of safeguards with respect to their plans to install such reactors, and the role of the Agency in applying safeguards.

From the very beginning the notion of an international agency has had wide and enthusiastic support, particularly on the part of the developing countries. This was probably due, in part, to the fact that these countries needed both financial and technical assistance to get started in the field of the peaceful applications of atomic energy. The statute of the IAEA makes it clear that the Agency was not created to be a source of large-scale financial assistance, although it was recognized that the developing countries, which constitute a majority of the member states, would require some aid. In practice it has worked this way and a large number of fellowships, equipment grants and cost-free experts and consultants have been made available to these countries through the Agency.

With respect to safeguards, the IAEA has adopted, subject to approval by the General Conference of the IAEA in September, 1963, a safeguards system applicable to large reactors and associated materials provided through the Agency or, in those cases agreed by the parties, bilaterally. During the early development of the safeguards system, India and the Soviet Union had gained the support of several of the developing countries for the concept that safeguards discriminated against the developing countries. The principal argument used by India was that the industrially advanced countries (U. S. and U. K.) were making nuclear weapons; and, by means of safeguards, were attempting to prevent other nations from doing the same. In June of

JUL 30 1963

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this year, however, not a single vote was cast in the IAEA's Board of Governors against the extension of the safeguards system to large reactors, although there were three abstensions.

There has been a growing interest in nuclear power on the part of several developing nations, including India, Pakistan, the United Arab Republic, Israel and Brazil. The recently negotiated agreement with India with respect to the Tarapur Atomic Power Station is the first agreement, to our knowledge, covering installation of a nuclear power plant in a developing country. This interest has been generally prompted by the reduction in the cost of producing electricity in these type plants to the point where it compares favorably with the cost of power produced in conventional plants in areas of relatively high fuel costs. This is particularly so in the case of reactors fueled with enriched uranium, although some countries, such as Brazil, are seriously considering natural uranium fueled reactors. This is so, in large part, because they believe they will be able to supply at least some of the uranium from domestic sources and thereby decrease reliance on foreign sources and, at the same time, conserve foreign exchange.

It has become accepted over the past several years that enriched uranium can be obtained from the United States for fueling power reactors only under appropriate safeguards. The Tarapur Agreement provides for the application of bilateral safeguards, and for the U. S. and India to take steps to arrange for IAEA application of safeguards later. To date, except for small quantities of material, the major suppliers of natural uranium have refrained from supplying this material without safeguards.

The IAEA can play an important role in applying safeguards to reactors and fuel supplied either bilaterally or through the IAEA, and, as you know, it is our Government's policy to promote this role.

If you wish additional information, we should, of course, be glad to provide it.

Sincerely yours,

A. A. Wells, Director
Division of International
Affairs

Excerpt from AEC's
Bi-Weekly Report,
August 13, 1963

US-Indian Agreement for Cooperation Signed

A 30-year agreement for cooperation with India that provices the legal framework for installing and operating a 380 MW(e) nuclear power station of U. S. design at Tarapur, India, was signed on Thursday, August 8th, at the Department of State, by Indian Ambassador Braj Kumar Nehru, by myself, and by Assistant Secretary of State Phillips Talbot. In compliance with the Atomic Energy Act of 1954, as amended, the agreement has been placed before the Joint Committee on Atomic Energy for a period of 30 days. Following the waiting period, it would become effective upon an exchange of notes between the two governments. The two 190 MW(e) boiling water power reactors for the Tarapur Station will be built by the General Electric Company. As previously announced, the agreement provides that at a suitable time, following adoption by the IAEA of a safeguards system generally consistent with the provisions of the bilateral agreement, the Agency will be requested to enter into a trilateral agreement with India and the United States for the application of Agency safeguards against diversion to military use.

Mr. Charles Johnson (NSC)

file Tarapur 37

The Director July 16, 1963

Military Division

AEC's proposed bilateral agreement with India

Attached for your concurrence and transmittal to the President is a file of material from AEC (with Chairman Seaborg's covering letter to you of July 10) constituting a proposed agreement with the Government of India in the civil uses of atomic energy, designed to deal primarily with the supply of nuclear fuel for the proposed Tarapur Atomic Power Station near Bombay. Attached also for your information are a letter from AEC staff to Military Division staff amplifying on the subject and a recent joint AEC-State press release which is also relevant.

We have reviewed the file, particularly from the standpoint of its budgetary and fiscal implications, and we have checked the file with International Division and with staff of NSC, neither of which has any objection. We recommend that you sign the letter of transmittal to the President concurring in the AEC recommendation.

A special urgency attaches to this particular file inasmuch as State is anxious to secure Presidential action if at all possible prior to c.o.b. on Friday, July 19 so that it can be signed by the Indian Ambassador the following week before he returns to India.

Background information

The proposed Tarapur Atomic Power Station will comprise two 190 megawatt (electric) boiling water power reactors to be supplied by General Electric Company. The total cost of the plant will be about $114 million, of which $80 million will comprise an AID loan, all of which will be spent in the United States.

The negotiation of the sale to India and particularly of the related bilateral agreement covering fuel supply and safeguards has been an extended and controversial one. The U.S. has pressed India for acceptance by India of safeguard controls by the International Atomic Energy Agency (IAEA), of which India is a member. India has resisted this strongly, and the position taken by AEC and State has been strongly supported by the Joint Committee on Atomic Energy.

The proposed bilateral agreement

As indicated above, the bilateral deals with safeguards and with the fuel supply for the Tarapur station, which is estimated at not to exceed 14,500 kilograms of contained uranium-235. This amount constitutes the

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"pipeline" requirements for the reactor plus the total burn-up over its lifetime. The fuel will have an enrichment of 2.2% and will represent a sale of about $115 million. However, AEC has extended to India the benefit of its "deferred payment" plan, whereby India will pay for the amount actually consumed plus 4-3/4% interest on the initial inventory (about $15 million) during the first 10 years, following which the principal amount will be repaid over the next 10 years.

Apart from special aspects of the bilateral and its negotiation which are described in further detail below, the proposed agreement is similar in many respects to comprehensive power-type bilateral agreements which the United States has entered into with other countries. The special aspects center around the two principal points of controversy with India and their final resolution, as follows:

1. IAEA control. The first issue related to the applicability of IAEA controls. The U.S. (which has a vested interest in IAEA because the international agency was a U.S. idea) has felt that if the Tarapur reactor could not be brought under IAEA controls as a kind of test case, there was little reason left for continued existence of IAEA. India for its part has resisted IAEA controls as a reflection upon its sovereignty (although the rational basis for India's opposing safeguard administration by an international agency while embracing safeguard administration by the U.S. itself has never been clear). The Indian argument appears to be that the IAEA safeguards are discriminatory in that they apply to the recipient nations (which are often of an underdeveloped nature) but not to the donor nations (like the U.S.) which possess their own nuclear technology and administer their own safeguards. (However, this is not precisely true in the case of the U.S., because four U.S. reactors are under IAEA safeguard control.)

The situation was further complicated by the fact that the IAEA does not yet possess the capability of administering safeguard controls over reactors as large as the Tarapur station. However, IAEA is now in the process of developing such a capability, and it is expected that this will be accomplished in a matter of months. The agreement as finally written represents a compromise which appears to meet U.S. interests fully. The agreement on its face provides a system of U.S. safeguards. However, the Parties "agree in principle" that, at a suitable time, IAEA will be requested to enter into a trilateral agreement for the implementation of the safeguard provisions of the agreement, assuming that IAEA achieves a safeguard capability and provided that IAEA adopts a system which is generally consistent with the safeguard provisions of the bilateral agreement.

The agreement includes one U.S. concession to Indian sensibilities. Artible VIII-A states that AEC is prepared to accept (in the IAEA trilateral) IAEA safeguards on such by-product plutonium from the Tarapur reactor as may be received in the U.S.

2. Applicability of safeguards control to equipment as well as to nuclear fuels. India has long taken the position that international safeguards by one nation to another (in this case U.S. to India) should attach only to the supply of enriched uranium and not to the supply of the equipment, i.e., the reactor itself. This position appears to be based upon Indian concern that control by another nation over nuclear equipment, which is not intrinsically dangerous, constitutes an infringement upon its sovereignty. The U.S. position has been that safeguards should apply both to equipment and to nuclear fuels, since both reactor facilities and fuel are equally important to the production of the special nuclear material which can be diverted to military use. The agreement as written provides for U.S. safeguard controls over the equipment until such time as IAEA controls become applicable. (AEC expects that IAEA will also assert controls over equipment.) India, under pressure from the U.S., agreed that this arrangement would not compromise its basic position in this instance, since it has agreed that the Tarapur station will be operated on U.S.-supplied fuels only.

Balance of payments aspects

The proposed agreement appears to be entirely favorable from the balance of payments standpoint. All of the AID funds will be spent in the U.S. for manufacture of the equipment. The sale of the nuclear fuel will have a favorable balance of payments effect over the long term, even though the return for the first 10 years will be limited to charges for amounts consumed and 4-3/4% interest on the value of the fuel inventory. Although an outright sale would have been more favorable to the balance of payments aspects, AEC states that without the deferred payment feature, there would have been no possibility of consummation of the agreement, even with AID assistance on the reactor.

Attachments

cc
Mr. Hansen
Mr. Irving Lewis
Mr. C. Johnson (NSC)

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

file Tarapur 38

July 10, 1963

Dear Mr. President:

The Atomic Energy Commission submits for your consideration, in accordance with Section 123 of the Atomic Energy Act, the enclosed "Agreement for Cooperation Between the Government of the United States of America and the Government of India Concerning the Civil Uses of Atomic Energy."

The proposed Agreement for Cooperation, which has been negotiated by the Atomic Energy Commission and the Department of State, generally follows the pattern of previous agreements with a number of other countries providing for a cooperative power reactor program. The Agreement with India, however, contains features which reflect the latest Commission policies and it has been designed specifically to deal only with the proposed Tarapur Atomic Power Station which India plans to construct at a site north of Bombay.

The Tarapur Nuclear Power Station is to consist of two nuclear reactors of U. S. design and manufacture. Financing to cover the dollar costs of the reactors will be provided by the U. S. Agency for International Development.

The more significant features of this particular Agreement are discussed below.

This would be the first "fuel requirements" agreement and would give effect to the Commission's new policy assuring foreign operators of enriched uranium reactors of an adequate long-term supply of fuel. Thus, under Article II, the Commission would agree to supply, and the Indian authorities would agree to purchase, all of the enriched uranium fuel requirements for this plant, during the term of the Agreement, subject to an overall ceiling of 14,500 kilograms of U-235 contained in uranium enriched up to 20%, provided construction of the Station is begun by June 30, 1965.

Since the Indian Government plans to build its own reprocessing facility, Article II would permit reprocessing of the fuel in India subject, of course, to the safeguards provisions set forth in this Agreement.

Article VI of the proposed Agreement, and an Annexure, contain a series of safeguard provisions which, while tailored to a single project, are the same in substance as those contained in a number of existing comprehensive power agreements. In addition, the Article provides that the Government of India shall have the right, upon prior notice to the United States, to remove from the scope of the Agreement (including the safeguard provisions) quantities of special nuclear material, provided India has, pursuant to mutually acceptable measurement arrangements, placed agreed equivalent quantities of the special nuclear material under the scope of the Agreement for Cooperation. This opportunity for equivalent substitution reflects a principle that is incorporated in the safeguard procedures of the International Atomic Energy Agency.

Article VII contains the required guarantees on the part of India that materials, equipment or devices transferred to India will not be used for any military purpose and will not, without U. S. approval, be transferred beyond the jurisdiction of India. This Article also contains a guarantee by the United States that, consistent with its announced policy, the United States would not use for any military purposes any plutonium produced in the Tarapur reactor which it might acquire from India. Provisions with a comparable effect, in whole or in part, have been included in some of our other agreements, including our Agreement with the IAEA.

The proposed Agreement would go further than any of our other nuclear power agreements in establishing the principle of application of safeguards by the International Atomic Energy Agency. Specifically, Article VIII includes an agreement in principle, by the Parties that, at a suitable time, the International Atomic Energy Agency will be requested to enter into a trilateral agreement for the implementation of the safeguard provisions in Article VI as follows: After the Agency has adopted a system of safeguards for large scale reactors of the size of the Tarapur Nuclear Power Station, and at a reasonable time to be mutually agreed upon, the United States and India will consult with each other to determine whether the Agency's system

so adopted is generally consistent with the safeguard provisions contained in Article VI. If the system is generally consistent with these provisions, the Parties will request the Agency to enter into a trilateral agreement regarding the implementation of safeguard res[illegible] Parties recognize that the trilate[illegible]uld be implemented as soon as [illegible] order to avoid any dislocation or uncertainty during the period of early operation of the Tarapur Nuclear Power Station, that the Government of India may specify that the agreement with the Agency shall not be implemented until the Tarapur Statio[illegible] reached reliable full-power operation.

Article VIII also provides that the Government of the United States is prepared, in principle, to include appropriate provisions in the trilateral agreement with the Agency which would enable the Agency to apply its safeguards to any special nuclear materials produced in the Tarapur project and returned to the United States. The inclusion of this principle is compatible with the strong support the United States has given to the evolution of safeguards administered by the International Atomic Energy Agency and to the concept that Agency controls should effectively follow special nuclear materials produced in Agency-safeguarded facilities.

The Agreement was designed to assure the Indians of a long-term supply of fuel over a 25-year period and since it is anticipated that construction of the Station will require from four to four and one-half years, Article X provides that the Agreement shall remain in force for a period of 30 years.

The other provisions of this Agreement are similar in content to those contained in comprehensive power-type Agreements for Cooperation which we have with a number of countries.

The Commission, having considered the proposed Agreement, recommends that in accordance with the Atomic Energy Act you determine that its performance will promote and will not constitute an unreasonable risk to the common defense and security; that you approve it and authorize its execution. The Department of State supports the Commission's recommendations.

Following your approval and authorization, the Agreement will be formally executed on behalf of the Government of the United States of America, by appropriate representatives of the Atomic Energy Commission and the Department of State. In compliance with Section 123c of the Atomic Energy Act of 1954, as amended, the Agreement will then be placed before the Joint Committee on Atomic Energy.

Respectfully yours,

Lewis L. Strauss

Chairman

The President
The White House

Enclosure:
Amendment to Agreement for Cooperation
Between the Government of the United States
of America and the Government of India

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

JUL 1 1 1963

Mr. Frederick C. Schuldt, Jr.
Assistant Chief for Atomic Energy
Military Division
Bureau of the Budget
17th & Pennsylvania Avenue, N.W.
Washington, D. C.

Dear Fred:

In line with your memorandum of May 13, 1963, I am providing herewith background information relating to a proposed Agreement for Cooperation with the Government of India which the Commission has sent, or will shortly send, to the Bureau of the Budget for transmittal to the President.

The proposed Tarapur Atomic Power Station is to consist of two boiling water power reactors, to be fueled with enriched uranium, each with a rated capacity of 190 MWe. International General Electric Company has been selected by the Government of India to design, construct, and put into initial operation the Station on a "turnkey" basis. The Indians hope to have the Station in operation by mid-1967, and reportedly have already commenced clearing the site for the Station at a location 62 miles north of Bombay.

The proposed Agreement is similar in many respects to comprehensive power-type bilateral agreements which the United States has entered into with other countries, although it limits cooperation only to the Tarapur Project. Variations in this Agreement from the usual comprehensive power-type agreements are discussed in the letter transmitting the Agreement to the President.

Two important controversial issues on which the U. S. and the Indians have heretofore taken divergent positions arose during the negotiation of the Agreement.

Rec'd 7-11-63
3:15 pm rec'd

The Indians, in the last six or seven years, have been outspoken critics of some of the features of the IAEA's safeguards system, notably the concept that control should apply to equipment. They also generally have felt that IAEA controls are discriminatory in that they apply to the recipients, but not the donors, of atomic assistance. The United States, on the other hand, has followed a policy which favors a concerted effort to place bilateral agreements under IAEA safeguards.

The Agreement provides that the Parties "agree in principle" that, at a suitable time, the Agency will be requested to implement the safeguards provisions of the bilateral Agreement. This formulation provides that if the Agency adopts a system which is generally consistent with the safeguard provisions of the bilateral Agreement, the Parties will request the Agency to enter into a trilateral arrangement for the implementation of safeguards. Assuming the Agency system is consistent with the bilateral Agreement, there thus is a positive and unconditional requirement to transfer safeguards to the Agency. Further, if the U. S. and India do not reach a mutually satisfactory agreement on the terms of the turnover arrangement, either Party may terminate the bilateral Agreement.

When the negotiations were begun, more than twelve months ago, the IAEA had not taken any steps to amplify its existing safeguard system to cover large reactors of the size of the Tarapur Nuclear Power Station. Accordingly, those of us who were concerned with this matter felt it was only prudent and appropriate to devise a formula that would afford the U. S. with the opportunity to satisfy itself that any expansion in the Agency's system was adequate before an actual transfer was arranged. We still believe this opportunity for review is desirable until such time as the expanded Agency safeguard system is formally adopted and put into actual operation. As the situation now stands, we are heartened with the progress that the Agency has made to date in this area. Specifically, on June 19, 1963, the Board of Governors of the IAEA approved a proposed expansion of the Agency's safeguard system for consideration by the forthcoming General Conference. This proposed expansion in the Agency's system, in our view, is consistent with the safeguard provisions in our proposed Agreement for Cooperation with India. Accordingly, it should be only a matter of time until the Tarapur Agreement is placed under IAEA controls.

The other issue on which we encountered difficulty arose as a result of a long-standing belief by India that safeguards should not result from the supply of equipment as contrasted with enriched uranium, by one nation to another.

The United States has always been of the strong opinion that safeguards should be applied to equipment as well as to enriched uranium fuel since reactor facilities and fuel are equally important to the production of the special nuclear material which can be diverted to military use. The Government of India concluded, however, that it was able to agree to this formulation in this instance, without compromising its basic position on this matter since it has agreed that the Tarapur Nuclear Power Station only will be operated on U. S. enriched uranium or plutonium produced therefrom. Specifically, since safeguards would in any case be attached to the Tarapur Station by virtue of the controls that would follow the enriched uranium, the Government of India has concluded that its basic policy will not be jeopardized if it permits the United States to apply safeguards to equipment and hardware in this instance. The traditional U. S. position in turn has been preserved since safeguards are clearly applicable to equipment as well as fuel under the Agreement.

In December, 1963, the Commission approved an extension and amplification of its existing deferred payment plan for fuel inventories of nuclear power reactors constructed in developing countries to encompass a total of 1,000 MW(e) installed capacity. Pursuant to this action, the Commission extended the benefits of this plan to the Government of India to make the enriched uranium (valued at approximately $14.7 million) in the initial fuel inventory for the Tarapur reactors available on a deferred payment basis. Under this arrangement India is required to make interest payments identical to the use charge rates (currently 4 3/4%) paid by U. S. reactor operators on the value of the material during the first ten years, with repayment of the capital costs plus interest on the unpaid balance during the second ten-year period. Replacement fuel to compensate for burnup will be paid for on a current basis as it is delivered.

The Agency for International Development (AID) has approved an Indian loan request in the amount not to exceed $80 million dollars to cover the foreign exchange costs of the reactors. The loan will fall within the aid commitments to India by the Consortium.

We regard this Agreement as an especially important and meritorious one. It extends our international cooperative program in civilian nuclear power to the nation which is, perhaps, most crucial in our competition with the Soviet system. It secures the adherence of India, not only to safeguards, but to the principle of internationally administered safeguards which India has heretofore been in the forefront in opposing. It should, therefore, set the trend toward the general acceptance of such safeguards by other

nations. It insures that the major potential of these facilities for the production of material which could be employed in weapons will be under effective safeguards, a result which would not necessarily have been the case if these reactors had been supplied from other sources.

The project will develop close technical and economic ties between the United States and India. In particular, India must rely for the fuel for this reactor for an indefinite period on the United States, a factor which will favorably affect our long-term political and economic relationships. Participation in the project by Indian scientists and industry will, we believe, have an upgrading influence on many facets of their technology and industry.

From the economic standpoint, the project will help strengthen the Indian economy by supplying critically needed power at rates which are lower than those of the only feasible alternative, that is, coal.

The project itself will be a dramatic evidence of U. S. aid to India. Initial Indian press comment has already been highly favorable.

With regard to the effect that this Agreement will have on the U.S. balance of payments, all of the funds loaned to India by AID will be expended in the U. S. for the purchase of the reactor and its components, and there will, therefore, be no dollar drain. Repayment of this loan in dollars will have a long-term positive effect on the balance of payments. Payment for replacement fuel will be a positive element in the balance of payments. Many U. S. firms would benefit, since even the prime supplier and contractor, International General Electric, would purchase numerous items from firms in all parts of the country. AID has stated that further advantages to our economy would accrue via the multiplier effect. Favorable effects also will result from establishment of a market for U. S. replacement and spare parts for the plant.

Sincerely yours,

Myron B. Kratzer

Myron B. Kratzer, Deputy Director
Division of International Affairs

AEC

Mr. C. Johnson NSC 40

UNITED STATES
ATOMIC ENERGY COMMISSION

UNITED STATES
DEPARTMENT OF STATE

Washington 25, D. C.

from WHS

No. F-128
Tel. HAzelwood 7-7831
Ext. 3446

June 29, 1963

(The following joint statement by the Governments of India and the United States was distributed to the news media by the Department of State at 12:00 noon (EDT), Saturday, June 29, and is sent to you for your information.)

JOINT PRESS STATEMENT ON U.S.-INDIAN NEGOTIATIONS ON TARAPUR PROJECT

In the last few days representatives of the Government of India and the Government of the United States have substantially completed negotiations on the text of a proposed Agreement for Cooperation which would provide a legal basis for the installation and operation of a 380 electrical megawatt nuclear power station, of U.S. design, at Tarapur, India. The availability of U.S. financing for the project is now being considered by the U.S. Agency for International Development.

The Agreement for Cooperation which has been negotiated but not signed is specifically tailored for the Tarapur project. Under the terms of the proposed arrangement, which would last for thirty years, the United States would undertake to supply India with its estimated long term fuel requirements for the plant, and information would be exchanged on matters pertaining to the design, construction and operation of the plant as well as problems of health and safety. Unclassified information in related fields of research and development, including developments in boiling water technology and the use of plutonium as a fuel, would also be exchanged between the Parties during the period of the Agreement.

(more)

In the course of the negotiations, India and the United States gave serious consideration to the nature of the safeguard arrangements that should pertain to the Tarapur Station to assure its peaceful use. The Agreement will contain bilateral safeguard provisions designed to assure the peaceful use of the Tarapur Station. India and the United States have always agreed, in principle, that safeguards should be applied to enriched uranium fuel but there has been a difference of opinion between the Governments with regard to the attachment of safeguards to equipment. In the case of the Tarapur project, it has been possible to achieve a mutually satisfactory arrangement without either Government giving up its basic position regarding the attachment of safeguards to equipment, since the Tarapur Station will be operated only on enriched uranium supplied by the United States or on plutonium produced therefrom; the United States would guarantee the supply of enriched uranium for the period of the Agreement.

Another major subject that has been under careful review is the role that the International Atomic Energy Agency should play in the cooperative program. The United States and India have recognized that it would be desirable for both Parties to avail themselves of the services of the International Atomic Energy Agency. The International Atomic Energy Agency is not yet in a position to apply safeguards to large scale reactors of the size to be installed at Tarapur although the Agency is developing a system to cover such large reactors. Accordingly, the U.S.-Indian arrangement would include an agreement in principle that, at a suitable time, the Agency will be requested to enter into a trilateral agreement for the implementation of the safeguard provisions in the proposed bilateral agreement subject to the following conditions: After the Agency has adopted a system of safeguards for large reactors, and at a reasonable time to be mutually agreed, the U.S. and India will consult with each other to determine whether the system so adopted is generally consistent with the provisions in the bilateral agreement. If the system is generally consistent, the Parties will request the Agency to enter into a trilateral arrangement covering

(more)

the implementation of safeguard responsibilities. The Agreement would permit deferring implementation of the arrangement with the Agency until after the Tarapur Nuclear Power Station has achieved reliable full power operation.

It is expected that the proposed Tarapur Station will make an important contribution to the development of the peaceful uses of atomic energy.

- 30 -

6/29/63

THE WHITE HOUSE
WASHINGTON

✓ 41

Hold for Ramsey

Mr. Kaysen

Carl - Mac might be interested in the happy outcome.

KG

6/28

file Taragon

4/a

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D. C.

JUN 2 1963

Mr. Charles E. Johnson
NSC Staff Member
The White House

Dear Chuck:

In response to our telephone conversation of today's date, this note briefly describes the current status of our proposed cooperation with India on the Tarapur Nuclear Power Station.

In the last few days, representatives of the Department of State and the Commission have completed negotiations on the text of an Agreement for Cooperation which would serve as the basis for the installation and operation of a 380 electrical megawatt nuclear power station, of U.S. design, which India plans to construct at Tarapur, north of Bombay. The proposed Agreement, which would last for thirty years, is similar in substance to the nuclear power agreements that the United States has in effect with other countries except it has been specifically tailored to cover one project. Under the terms of the arrangement, the United States would undertake to supply India with its estimated long-term fuel requirements for enriched uranium fuel, and unclassified information would be exchanged in fields related to the construction and operation of the reactor.

The Agreement includes appropriate safeguards designed to assure the peaceful use of the Tarapur Station. During the initial stages, these safeguards will be administered by the United States, since the International Atomic Energy Agency is still in the process of developing an expanded safeguard system which would be suitable for such large-scale reactors. As one of its most notable features, however, the Agreement includes an agreement in principle between the United States and India that, at a suitable time, the IAEA will be asked to enter into an arrangement for the implementation of the safeguard provision, provided that the Agency's expanded safeguard system is generally consistent with this provision. The Agreement thus would go further than any of our other nuclear power agreements in committing the Parties to the principle of safeguards administered by the International Atomic Energy Agency.

Dr. Seaborg recently briefed Senator Pastore and other members of the Joint Congressional Committee on Atomic Energy on this matter. Although Senator Pastore had previously expressed some concern over this matter,

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he warmly congratulated the Administration for its handling of the negotiations and stated that his previous misgivings had been put to rest.

India has requested a loan from the Agency for International Development covering the estimated dollar costs of the plant ($78,000,000). We understand that AID has approved the loan request subject to review by the Inter-Agency Development Loan Committee.

The Commission plans to submit the proposed Agreement to the President for his review and approval in the next few days.

Sincerely yours,

A. A. Wells, Director
Division of International Affairs

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Johnson
Tarapur

DEPARTMENT OF STATE
FOR THE PRESS

JUNE 29, 1963 NO. 344

UNITED STATES-INDIAN NEGOTIATIONS
ON NUCLEAR POWER STATION AT TARAPUR, INDIA

In the last few days representatives of the Government of India and the Government of the United States have substantially completed negotiations on the text of a proposed agreement for cooperation which would provide a legal basis for the installation and operation of a 380 megawatt nuclear power station of United States design at Tarapur, India. The availability of United States financing for the project is now being considered by the United States Agency for International Development.

The agreement for cooperation which has been negotiated but not signed is specifically tailored for the Tarapur Project. Under the terms of the proposed arrangement, which would last for 30 years, the United States would undertake to supply India with its estimated long term fuel requirements for the plant and information would be exchanged on matters pertaining to the design, construction and operation of the plant as well as problems of health and safety. Unclassified information in related fields of research and development, including developments in boiling water technology and the use of plutonium as a fuel would also be exchanged between the parties during the period of the agreement.

In the course of the negotiations, India and the United States gave serious consideration to the nature of the safeguard arrangements that should pertain to the Tarapur station to assure its peaceful use. The agreement will contain bilateral safeguard provisions designed to assure the peaceful use of the Tarapur station. India and the United States have always agreed in principle that safeguards should be applied to enriched uranium fuel, but there has been a difference of opinion between the governments with regard to the attachment of safeguards to equipment. In the case of the Tarapur project, it has been possible to achieve a mutually satisfactory arrangement without either government's giving up its basic position regarding the attachment of safeguards to equipment, since the Tarapur station will be operated only on enriched uranium supplied by the United States or on plutonium produced therefrom; the United States would guarantee the supply of enriched uranium for the period of the agreement.

Another major subject that has been under careful review is the role that the International Atomic Energy Agency should play in the cooperative program. The United States and India have recognized that it would be desirable for both parties to avail themselves of the services of the International Atomic Energy Agency. The International Atomic Energy Agency is not yet in a position to apply safeguards to large scale reactors of the size to be installed at Tarapur although the Agency is developing a system to cover such large reactors. Accordingly, the United States-Indian arrangement would include an agreement in principle that, at a suitable time, the Agency will be requested to enter into a trilateral agreement for the implementation of the safeguard provisions in the proposed bilateral agreement, subject to the following conditions:

After the Agency has adopted a system of safeguards for large reactors, and at a reasonable time to be mutually agreed, the United States and India will consult with each other to determine whether the system so adopted is

generally

generally consistent with the provisions in the bilateral agreement. If the system is generally consistent, the parties will request the Agency to enter into a trilateral arrangement covering the implementation of safeguard responsibilities. The agreement would permit deferring implementation of the arrangement with the Agency until after the Tarapur nuclear station has achieved reliable full power operation.

It is expected that the proposed Tarapur station will make an important contribution to the development of the peaceful uses of atomic energy.

* * *

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

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Mr. Charles E. Johnson
NSC Staff Member
The White House

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The Commission plans to submit the proposed Agreement to the President for his review and approval in the next few days.

Sincerely yours,

A. A. Wells, Director
Division of International Affairs

file
"Tarapur Reactor"

cc: TO Komer, 6/28

Wash. Post 6/28/63

India Yields On A-Plant Inspection

India has put aside earlier hesitations and agreed to international inspection of a proposed nuclear power plant that the United States will help finance at Tarapur, near Bombay.

Homi J. Bhabha, Secretary of India's Department of Atomic Energy, disclosed his country's change of mind while visiting U. S. officials here this week.

The 100-million-dollar 380-megawatt reactor would be by far the biggest power plant to come under the inspection facilities of the International Atomic Energy Agency in Vienna. The inspection would mark a major step in advancing an international control system over the peaceful uses of atomic energy.

Until now, India has had no objection to having its proposed nuclear power plant subjected to safeguard inspection by any single nuclear power, such as the United States or the Soviet Union. But India has had objection to exposing its power plants to groups of small-nation inspectors, such as its border enemy Pakistan, in the fear that such inspectors might try to embarrass India in their reports.

The change in India's position came after the Soviet Union, after a long history of objections, agreed last week to empower the IAEA to inspect large-scale, or over 100-megawatt-size, nuclear power reactors.

The United States, which has indicated its willingness to finance some $78 million of the Indian plant, has been under considerable pressure from Sen. John O. Pastore (D-R. I.), Chairman of the Joint Committee on Atomic Energy, to see to it that India complied with IAEA's international inspection safeguards.

Pastore accused the Administration of "pussyfooting" with the Indian government and allowing its desire to open a U. S. atomic market in India to take priority over the need to further international nuclear safeguards.

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

JUN 10 1963

MEMORANDUM FOR: Mr. Charles Johnson
The White House

SUBJECT: SAFEGUARD ARRANGEMENTS FOR TARAPUR ATOMIC POWER PROJECT

In accordance with your request, I am enclosing copies of communications relating to the safeguards arrangements for the proposed Tarapur power station. It is my understanding that Senator Pastore advised Chairman Seaborg that the Senator intended to raise this question with the President. According to Chairman Seaborg, Senator Pastore implied he would do this not so much to take issue with the President, but rather to seek some assurance that the President was behind the project and our position on it.

A. O. Wells

A. O. Wells, Director
Division of International Affairs

Attachments:
As stated

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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

JUN 10 19

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The White House

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A. A. Wells, Director
Division of International Affairs

Attachments:
As stated

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

JUN 3 1963

MEMORANDUM FOR THE CHAIRMAN

THROUGH GENERAL MANAGER — L

SUBJECT: TARAPUR PROJECT

The Joint Committee staff has advised that Senator Pastore intends to send you a letter critical of the U.S. Government's position on Tarapur safeguards, and requesting that no further action be taken until members of the Committee have an opportunity to discuss the matter with the Commission. The following background information is for your use in this regard.

In conversations with the Joint Committee staff members, they have identified three related areas of concern to them. These, and our comments are outlined below:

1. Why should we merely be seeking "agreement in principle", rather than unconditional agreement, that Agency safeguards will apply to the project?

From the time the U.S. position on this issue was first formulated, as the Committee has been informed, our position has been to seek "agreement in principle". Senator Pastore, in his earlier letter, took strong exception to the fallback position but mentioned no dissatisfaction with our initial position of "agreement in principle". We have, accordingly, assumed that there was no JCAE objection to this position.

The formulation "agreement in principle" was chosen since the Agency has not developed and adopted a safeguards system for large reactors. We believed that it was unreasonable to request other governments to bind themselves to the acceptance of an Agency safeguards system which has not yet been defined. Of equal if not greater importance is the undesirability of entrusting safeguards to an Agency system which may prove to be inadequate. Congress was concerned with the reliability of the IAEA as a custodian of U.S. materials and amended the Atomic

JUN 3 1963

Energy Act to require Congressional authorization of any material to be supplied to the IAEA. The underlying concern, of course, is equally applicable whether material is supplied through the IAEA, or only safeguarded by it.

We believe that the approach of "agreement in principle" continues to be valid. The Committee also may have an exaggerated impression of the uncertainty implied by "agreement in principle". The provision as a whole requires that the parties request the Agency to enter into an agreement if the Agency's system is generally consistent with the bilateral system. Failure of the Indians to fulfill this obligation would constitute a breach of the Agreement.

2. How can we proceed with the Agreement in view of our differing interpretation of the Agency's role?

At the conclusion of the March negotiating sessions with Dr. Bhabha, the Indian position was that the Agency should be "associated" with the implementation of safeguards while the U.S. position was that the Agency should have complete responsibility. The Indian desire to retain some U.S. participation in safeguards even after the Agency takes over does not appear to be entirely unreasonable when it is recalled that our own initial approach to such arrangements was to retain U.S. bilateral inspection rights intact during the period of Agency safeguards. Since March, the Indian position has moved substantially toward the U.S. position. Dr. Bhabha has agreed that the Agency should have a responsible role, not excluding the role visualized by the U.S. The two positions are, therefore, no longer far apart. In view of this, coupled with the fact that the language more reasonably supports our interpretation than any other, and the fact that the Agency is establishing precedents as to its appropriate role in safeguards, we consider it probable that the trilateral agreement will conform to our position. However, while it is not our intention to so advise the Indians, we would not, at the time Agency implementation begins, rule out some degree of continuing U.S. participation or residual rights if the Agency has no objection.

3. Was the Indian behavior at the recent Agency safeguards drafting committee meeting unsatisfactory, and should not their performance when the Agency Board acts on safeguards this month determine whether we go ahead or not?

The Indian representative at the drafting committee was difficult and tedious in the debates. A JCAE staff member who visited Vienna subsequently was told that the Indian was "obstreperous". We believe

it would be most undesirable to place great weight on a matter such as the behavior of the Indian representative, since this obviously is so largely dependent on personal factors rather than governmental instructions. Of more significance are the Indian positions on safeguards. In this regard, the Indians, as expected, restated their classic position that safeguards should not be applied to natural uranium and "hardware". While we disagree with this position, the fact that the Indians hold it is not inconsistent with their agreement in principle to Agency safeguards on Tarapur, and cannot in any sense be interpreted as bad faith.

The Indians also opposed the establishment, in advance, of an inspection frequency formula for large reactors, extending up to "access at all times" for reactors of the Tarapur size. They were in favor of a more flexible system, with the Board determining inspection frequency on a case-by-case basis. While we oppose this approach, we cannot conclude that it is necessarily inconsistent with the concept of Agency administration of safeguards on Tarapur, provided that the Indians would not claim that such a system, if adopted by the Agency, was inconsistent with the bilateral safeguards. In a third area, the application of safeguards to subsequent generations of produced plutonium (pursuit) the Indian position was somewhat more cooperative than in the past. They acknowledged the principle of pursuit, but argued that it was premature to embody it in the Agency's regulations at this time, since subsequent generations of material will not exist for some time.

The Joint Committee staff has advocated for some time that we should press the Indians to support our safeguards positions in the Agency, as part of their obligations under the Tarapur arrangement. The Department of State is strongly opposed to attempting to require the Indian Government to abandon positions which appear to be honestly held and which it has long and publically supported in exchange for U.S. assistance on Tarapur. We believe they are right in this conclusion. On the other hand, the Department feels that there is a point beyond which the Indians cannot go in opposing safeguards at Vienna, if we are to conclude that they are acting in good faith in respect to their agreement in principle to Agency safeguards when the Agency has adopted a system which is generally consistent with the bilateral provisions.

At the drafting committee meeting, the U.S. member, Mr. Kratzer, followed this approach in advising the Indian representative of the unfortunate implications of the Indian support for a Soviet proposal that would have inspection frequencies decided by the

Board on a case-by-case basis, within a ceiling--perhaps six per year--approved by the General Conference. As a consequence, the Indian representative disassociated himself from the Soviet position, and the Soviet proposal was modified to omit the ceiling figure. In the same spirit, we have just met with the Indian representatives to remind them of the necessity for acting consistently with their undertakings in the proposed Tarapur agreement. We emphasized, however, that we were not suggesting that they must abandon their long-held position on matters such as the application of safeguards to equipment and source material.

We are inclined to believe that the Joint Committee attitude on the Tarapur safeguards problem, while undoubtedly representative of their belief in the importance of Agency safeguards, results in equal or greater measure from a feeling that if the Indians want our assistance, they should accept our terms on safeguards. The Agreement as worked out is not entirely in accordance with our desires; it admittedly contains compromises. We believe that it is the best agreement that we can get, and that the alternative to it is no Tarapur Project. (As you know, the principal issues were referred to the Prime Minister.) Even so, the Indians moved immeasurably further to accommodate our positions than have we to accommodate theirs. Even with these compromises, we think it is a good agreement which will be looked on by the world at large not as a setback, but as a major step forward in the development of Agency safeguards.

We believe there may be some tendency on the part of those who feel strongly on this issue to overlook the fact that our assistance on the Tarapur project would not be extended simply on the basis of our desire to be helpful, but on the basis of important benefits which we are convinced would flow to the United States from this dramatic and unique example of cooperation. We believe these affirmative aspects of the project should be stressed in future discussions with the Committee. The most important of these aspects as we see them, are:

1. This would be the first important case in which India has agreed to safeguards of any kind, and the first in which they have agree, even in principle, to Agency safeguards. This will advance, and not set back international safeguards.

2. Close technical and economic ties will inevitably result from the project. In particular, India will have a $100,000,000 facility, supplying an important part of its power for industrial development, which will be dependent indefinitely on the U.S. for its fuel supply.

3. The project will be a major counterweight to the impact of Red Chinese atomic energy developments, both civil and military.

4. The project will have great political and public impact in India. The U.S. Ambassador regards it as a major asset in the continuing effort to keep India on the free world side.

A. A. Wells, Director
Division of International Affairs

cc: Chairman Seaborg
Commissioner Haworth
Commissioner Palfrey
Commissioner Ramey
Commissioner Wilson

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

JUN 3 1963

MEMORANDUM FOR THE CHAIRMAN

THROUGH GENERAL MANAGER — L

SUBJECT: TARAPUR PROJECT

The Joint Committee staff has advised that Senator Pastore intends to send you a letter critical of the U.S. Government's position on Tarapur safeguards, and requesting that no further action be taken until members of the Committee have an opportunity to discuss the matter with the Commission. The following background information is for your use in this regard.

In conversations with the Joint Committee staff members, they have identified three related areas of concern to them. These, and our comments are outlined below:

1. Why should we merely be seeking "agreement in principle", rather than unconditional agreement, that Agency safeguards will apply to the project?

From the time the U.S. position on this issue was first formulated, as the Committee has been informed, our position has been to seek "agreement in principle". Senator Pastore, in his earlier letter, took strong exception to the fallback position but mentioned no dissatisfaction with our initial position of "agreement in principle". We have, accordingly, assumed that there was no JCAE objection to this position.

The formulation "agreement in principle" was chosen since the Agency has not developed and adopted a safeguards system for large reactors. We believed that it was unreasonable to request other governments to bind themselves to the acceptance of an Agency safeguards system which has not yet been defined. Of equal if not greater importance is the undesirability of entrusting safeguards to an Agency system which may prove to be inadequate. Congress was concerned with the reliability of the IAEA as a custodian of U.S. materials and amended the Atomic

Energy Act to require Congressional authorization of any material to be supplied to the IAEA. The underlying concern, of course, is equally applicable whether material is supplied through the IAEA, or only safeguarded by it.

We believe that the approach of "agreement in principle" continues to be valid. The Committee also may have an exaggerated impression of the uncertainty implied by "agreement in principle". The provision as a whole requires that the parties request the Agency to enter into an agreement if the Agency's system is generally consistent with the bilateral system. Failure of the Indians to fulfill this obligation would constitute a breach of the Agreement.

2. How can we proceed with the Agreement in view of our differing interpretation of the Agency's role?

At the conclusion of the March negotiating sessions with Dr. Bhabha, the Indian position was that the Agency should be "associated" with the implementation of safeguards while the U.S. position was that the Agency should have complete responsibility. The Indian desire to retain some U.S. participation in safeguards even after the Agency takes over does not appear to be entirely unreasonable when it is recalled that our own initial approach to such arrangements was to retain U.S. bilateral inspection rights intact during the period of Agency safeguards. Since March, the Indian position has moved substantially toward the U.S. position. Dr. Bhabha has agreed that the Agency should have a responsible role, not excluding the role visualized by the U.S. The two positions are, therefore, no longer far apart. In view of this, coupled with the fact that the language more reasonably supports our interpretation than any other, and the fact that the Agency is establishing precedents as to its appropriate role in safeguards, we consider it probable that the trilateral agreement will conform to our position. However, while it is not our intention to so advise the Indians, we would not, at the time Agency implementation begins, rule out some degree of continuing U.S. participation or residual rights if the Agency has no objection.

3. Was the Indian behavior at the recent Agency safeguards drafting committee meeting unsatisfactory, and should not their performance when the Agency Board acts on safeguards this month determine whether we go ahead or not?

The Indian representative at the drafting committee was difficult and tedious in the debates. A JCAE staff member who visited Vienna subsequently was told that the Indian was "obstreperous". We believe

it would be most undesirable to place great weight on a matter such as the behavior of the Indian representative, since this obviously is so largely dependent on personal factors rather than governmental instructions. Of more significance are the Indian positions on safeguards. In this regard, the Indians, as expected, restated their classic position that safeguards should not be applied to natural uranium and "hardware". While we disagree with this position, the fact that the Indians hold it is not inconsistent with their agreement in principle to Agency safeguards on Tarapur, and cannot in any sense be interpreted as bad faith.

The Indians also opposed the establishment, in advance, of an inspection frequency formula for large reactors, extending up to "access at all times" for reactors of the Tarapur size. They were in favor of a more flexible system, with the Board determining inspection frequency on a case-by-case basis. While we oppose this approach, we cannot conclude that it is necessarily inconsistent with the concept of Agency administration of safeguards on Tarapur, provided that the Indians would not claim that such a system, if adopted by the Agency, was inconsistent with the bilateral safeguards. In a third area, the application of safeguards to subsequent generations of produced plutonium (pursuit) the Indian position was somewhat more cooperative than in the past. They acknowledged the principle of pursuit, but argued that it was premature to embody it in the Agency's regulations at this time, since subsequent generations of material will not exist for some time.

The Joint Committee staff has advocated for some time that we should press the Indians to support our safeguards positions in the Agency, as part of their obligations under the Tarapur arrangement. The Department of State is strongly opposed to attempting to require the Indian Government to abandon positions which appear to be honestly held and which it has long and publically supported in exchange for U.S. assistance on Tarapur. We believe they are right in this conclusion. On the other hand, the Department feels that there is a point beyond which the Indians cannot go in opposing safeguards at Vienna, if we are to conclude that they are acting in good faith in respect to their agreement in principle to Agency safeguards when the Agency has adopted a system which is generally consistent with the bilateral provisions.

At the drafting committee meeting, the U.S. member, Mr. Kratzer, followed this approach in advising the Indian representative of the unfortunate implications of the Indian support for a Soviet proposal that would have inspection frequencies decided by the

Board on a case-by-case basis, within a ceiling--perhaps six per year--approved by the General Conference. As a consequence, the Indian representative disassociated himself from the Soviet position, and the Soviet proposal was modified to omit the ceiling figure. In the same spirit, we have just met with the Indian representatives to remind them of the necessity for acting consistently with their undertakings in the proposed Tarapur agreement. We emphasized, however, that we were not suggesting that they must abandon their long-held position on matters such as the application of safeguards to equipment and source material.

We are inclined to believe that the Joint Committee attitude on the Tarapur safeguards problem, while undoubtedly representative of their belief in the importance of Agency safeguards, results in equal or greater measure from a feeling that if the Indians want our assistance, they should accept our terms on safeguards. The Agreement as worked out is not entirely in accordance with our desires; it admittedly contains compromises. We believe that it is the best agreement that we can get, and that the alternative to it is no Tarapur Project. (As you know, the principal issues were referred to the Prime Minister.) Even so, the Indians moved immeasurably further to accommodate our positions than have we to accommodate theirs. Even with these compromises, we think it is a good agreement which will be looked on by the world at large not as a setback, but as a major step forward in the development of Agency safeguards.

We believe there may be some tendency on the part of those who feel strongly on this issue to overlook the fact that our assistance on the Tarapur project would not be extended simply on the basis of our desire to be helpful, but on the basis of important benefits which we are convinced would flow to the United States from this dramatic and unique example of cooperation. We believe these affirmative aspects of the project should be stressed in future discussions with the Committee. The most important of these aspects as we see them, are:

1. This would be the first important case in which India has agreed to safeguards of any kind, and the first in which they have agree, even in principle, to Agency safeguards. This will advance, and not set back international safeguards.

2. Close technical and economic ties will inevitably result from the project. In particular, India will have a $100,000,000 facility, supplying an important part of its power for industrial development, which will be dependent indefinitely on the U.S. for its fuel supply.

3. The project will be a major counterweight to the impact of Red Chinese atomic energy developments, both civil and military.

4. The project will have great political and public impact in India. The U.S. Ambassador regards it as a major asset in the continuing effort to keep India on the free world side.

A. A. Wells, Director
Division of International Affairs

cc: Chairman Seaborg
Commissioner Haworth
Commissioner Palfrey
Commissioner Ramey
Commissioner Wilson

Congress of the United States

JOINT COMMITTEE ON ATOMIC ENERGY

February 19, 1963

49

Dear Dr. Seaborg:

I have your letter of February 8, 1963 with regard to the U. S. policy toward the International Atomic Energy Agency. As I understand from your letter, and from the Department of State letter of January 22, which you referenced, it is the policy of the United States to make a determined effort to transfer safeguard arrangements as soon as possible to the International Atomic Energy Agency and get all new bilateral partners to accept Agency safeguards.

In view of this policy, I cannot understand why the United States is not more forceful in negotiating with the Indian Government on the Tarapur reactor case. It would seem to me that any proposed agreement for cooperation with India should contain a provision requiring the Indians to permit inspection by the IAEA once such a system has been set up. I do not believe that a provision calling for "sympathetic consideration to the application of Agency safeguards" or similar pussy-footing on our part will further the stated United States' policy.

I am at a loss to understand how we can expect other nations to come around to our policy when we fail to adhere to it in our negotiations with the Indians for a new bilateral agreement. Now is the time to set a precedent when we are being asked to finance, through A. I. D. and other arrangements, the Indian project amounting to over $100,000,000. (It is my understanding that consideration is being given to furnishing approximately $70,000,000 through A. I. D. and approximately $30,000,000 for civil construction through U. S. counterpart funds.)

Separate and distinct from the safeguards problem, there is another important factor which I believe should be considered in connection with the proposed Tarapur project. Despite the efforts of our very best reactor experts, construction firms, and reactor operating specialists we have experienced numerous problems in the construction and operation of our large scale power reactors. When one considers the remote area, the difficulties to be encountered in utilizing local construction

Honorable Glenn T. Seaborg
Chairman
U. S. Atomic Energy Commission

ACTION Director 2/21

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personnel and the generally less experienced nuclear reactor operators in India, it is questionable whether the construction of such a large full scale power reactor in India should be undertaken at this time. I don't believe we should encourage a nation to become involved in a project which it may not be technically competent to support. Instead of expected gratitude, in the event of technical difficulties, the United States may find itself in the long run subject to severe criticism by this same Government.

While I am in strong support of the "Atoms For Peace" program and for assisting foreign nations in the peaceful use of atomic energy, I believe premature and ill-advised projects can adversely affect not only our "Atoms For Peace" program but the United States prestige in the eyes of the world.

I am sending a copy of this letter to the Secretary of State so that the Department may have my views in this matter.

Sincerely yours,

John O. Pastore
Chairman

cc: Secretary of State

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OFFICIAL USE ONLY

MAY 1 6 1963

Dear Senator Pastore:

I should like to advise you of the present status of our negotiations with the Government of India on the Agreement for Cooperation covering the Indian Tarapur Atomic Power Station. When I last wrote you on this subject on March 1, I noted that it was our "firm intention of establishing the principle of application of safeguards by the International Atomic Energy Agency". In our negotiations with the Indians on this matter we have continued to maintain this position. As a consequence, India has now accepted a provision in the agreement concerning the turnover of safeguards to the International Atomic Energy Agency (IAEA). Under this provision, the parties would "agree in principle that at a suitable time the Agency will be requested to enter into a trilateral agreement for the implementation of the safeguards provisions" of the agreement. This negotiation will take place after the Agency has adopted a safeguards system for large reactors which is generally consistent with the bilateral safeguards provisions.

We have advised the Government of India that it is our interpretation of this provision that the Agency is to assume the prime responsibility for implementation of safeguards. On its part, India has acknowledged our interpretation of the turnover provisions of the agreement, and has advised us that while not excluding the giving of prime responsibility to the IAEA for implementation of safeguards, it feels that the language does not exclude other arrangements with a responsible role for the IAEA. In making this point, Dr. Bhabha has emphasized that he is confident that India will be able to achieve a satisfactory agreement with the United States and the IAEA on this matter when the actual detailed transfer arrangements are negotiated.

We believe that the language agreed upon, coupled with the provisions of the Agency statute and precedent being established by other trilateral agreements for application of Agency safeguards, lead to an arrangement which would place upon the Agency the prime responsibility which we regard as its appropriate role. The turnover article also includes a provision which awards to each party the unilateral right of termination of the agreement in the event a satisfactory arrangement with the Agency is not concluded.

OFFICIAL USE ONLY

I believe that India's agreement in principle to the turnover of safeguards to the Agency, which constitutes the first such agreement involving a large power reactor, represents an important development in the evolution of effective international safeguards and controls. This is particularly true in view of India's long-standing opposition to the acceptance of Agency safeguards.

Negotiations are now progressing on the remainder of an agreement for cooperation concerning the Tarapur Project. In general, this agreement will parallel our existing agreements for cooperation but its language will be tailored to the fact that the agreement will be confined specifically to the Tarapur Project. One new provision of the agreement as presently visualized would be a statement that the United States is prepared in principle to include appropriate provisions in the arrangement turning over safeguards to the IAEA which would enable the Agency to apply its safeguards system to any special nuclear material produced in the Tarapur Project and returned to the United States. This is, of course, consistent with our position of strong support for the principle of IAEA safeguards and is one which we have always considered as a necessary consequence of the application of safeguards by the IAEA. As you know, the Agency is now successfully carrying out inspections of four small reactors in the United States and any arrangement providing for Agency inspections in the United States will be conducted so as to assure that there is no access by Agency inspectors to Restricted Data.

We have agreed with the Indians that we shall develop a joint approach in advising the Press on this subject. Until this statement has been developed, and mutually agreed to, we are treating the information on the nature of the provision relating to the IAEA as "Official Use Only". We also do not intend to publicize Dr. Bhabha's observation regarding the degree of responsibility to be assumed by the IAEA, since to do so would tend to lend support to his approach to this matter.

If you have any questions on this matter, we shall be glad to answer them.

Sincerely,

Chairman

bcc: Chairman Seaborg
Commissioner Haworth
Commissioner Palfrey
Commissioner Ramey
Commissioner Wilson
GM
AGMIA Secretariat (2)
Cong.(2)

Honorable John O. Pastore, Chairman
Joint Committee on Atomic Energy
Congress of the United States

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MBKraemer:mks Well

FORM DS.10
4.1.55

DEPARTMENT OF STATE

REFERENCE SLIP

DATE 61

June 10, 1963

TO: NAME OR TITLE	ORGAN. SYMBOL	ROOM NO.	BLDG.	INITIALS	DATE
1. Mr. Charles E. Johnson					
2.					
3.					
4.					
5.					

	APPROVAL		NOTE AND FORWARD
	AS REQUESTED		NOTE AND RETURN
	COMMENT		PER CONVERSATION
	FOR YOUR INFORMATION		PREPARE REPLY
	INITIAL FOR CLEARANCE		SEE ME
	NECESSARY ACTION		SIGNATURE

REMARKS OR ADDITIONAL ROUTING

GPO 939117

Per your request.

FROM (NAME AND ORGANIZATION)	ROOM NO. AND BLDG.
John P. Trevithick SCI	4207 NS
SIGNATURE	PHONE NO.
	5183

519

February 19, 1963

Dear Dr. Seaborg:

I have your letter of February 8, 1963 with regard to the U. S. policy toward the International Atomic Energy Agency. As I understand from your letter, and from the Department of State letter of January 22, which you referenced, it is the policy of the United States to make a determined effort to transfer safeguard arrangements as soon as possible to the International Atomic Energy Agency and get all new bilateral partners to accept Agency safeguards.

In view of this policy, I cannot understand why they United States is not more forceful in negotiating with the Indian Government on the Tarapur reactor case. It would seem to me that any proposed agreement for cooperation with India should contain a provision requiring the Indian to permit inspection by the IAEA once such a system has been set up. I do not believe that a provision calling for "sympathetic consideration to the application of Agency safeguards" or similar pussy-footing on our part will further the stated United States' policy.

I am at a loss to understand how we can expect other nations to come around to our policy when we fail to adhere to it in our negotiations with the Indians for a new bilateral agreement. Now is the time to set a precedent when we are being asked to finance, through A.I.D. and other arrangements, the Indian project amounting to over $100,000,000. (It is my understanding that consideration is being given to furnishing approximately $70,000,000 through A.I.D. and approximately $30,000,000 for civil construction through U.S. counterpart funds.)

Separate and distinct from the safeguards problem, there is another important factor which I believe should be considered in connection with the proposed Tarapur project. Despite the efforts of our very best reactor experts, construction firms, and reactor operating specialists we have experienced numerous problems in the construction and operation of our large scale power reactors. When one considers the remote area, the difficulties to be encountered in utilizing local construction

Honorable Glenn T. Seaborg
Chairman
U.S. Atomic Energy Commission

Pastore.

personnel and the generally less experienced nuclear reactor operators in India, it is questionable whether the construction of such a large full scale power reactor in India should be undertaken at this time. I don't believe we should encourage a nation to become involved in a project which it may not be technically competent to support. Instead of expected gratitude, in the event of technical difficulties, the United States may find itself in the long run subject to severe criticism by this same Government.

While I am in strong support of the "Atoms For Peace" program and for assisting foreign nations in the peaceful use of atomic Energy, I believe premature and ill-advised projects can adversely affect not only our "Atoms For Peace" program but the United States prestige in the eyes of the world.

I am sending a copy of this letter to the Secretary of State so that the Department may have my views in this matter.

Sincerely yours,

John O. Pastore
Chairman

cc: Secretary of State

FORM DS-10
4-1-55

DEPARTMENT OF STATE

REFERENCE SLIP

DATE 6/11/63 5²

TO: NAME OR TITLE	ORGAN. SYMBOL	ROOM NO.	BLDG.	INITIALS	DATE
1. Mr. Charles Johnson	White House				
2.					
3.					
4.					
5.					

	APPROVAL		NOTE AND FORWARD
	AS REQUESTED		NOTE AND RETURN
	COMMENT		PER CONVERSATION
X	FOR YOUR INFORMATION		PREPARE REPLY
	INITIAL FOR CLEARANCE		SEE ME
	NECESSARY ACTION		SIGNATURE

REMARKS OR ADDITIONAL ROUTING

GPO 939117

In line with our recent conversation, I am enclosing herewith a memorandum which I have prepared for AID which I believe gives you all of the relevant information on the Tarapur safeguards negotiations. Should you need anything additional, please call John Trevithick in my office and he will dig out whatever you may need.

FROM (NAME AND ORGANIZATION)	ROOM NO. AND BLDG.
Charles W. Thomas/em Charles W. Thomas	4207 N. S.
SIGNATURE SCI	PHONE NO. 5181

713

CONFIDENTIAL

AID/GC - Mr. Drew

June 8, 1963

SCI - Charles W. Thomas

Brief Historical Survey of the Negotiations on the Tarapur Nuclear Power Project

Several years ago the Indian Government decided to build a large nuclear power project at Tarapur sixty miles north of Bombay. Their initial plan was to consider only natural uranium reactors and to exclude from consideration enriched uranium reactors which are the principal types that are built in the United States. On the initiative of a U. S. company (presumably Westinghouse) the Indian proposal was changed to include enriched uranium plants. In June, 1961 shortly after this change was made, the Indians approached Ambassador Galbraith and asked if the financing of this project could be considered by the U. S. Government as an additional loan to India beyond our commitments under the consortium. In June of 1961 this question was considered in the Department of State, the AEC and the then ICA, in conjunction with Ambassador Galbraith, and it was determined that the United States could not commit itself to assist this project outside the consortium.

On August 31, 1961, the Indians received seven bids for the Tarapur project, two from British concerns, one from a French group, one from a Canadian group, and three from American companies - International General Electric, Westinghouse and General Atomics. After long consideration, the Indians decided that the International General Electric bid was the best, the Westinghouse the second best, and the French the third. At this time they made a new approach to the U. S. Government about assistance to this project under AID and as a part of the U. S. consortium commitment. After appropriate consultations in Washington, the Indians were informed that the United States could consider the financing of this project, provided three basic conditions were met. These conditions were: (1) That the nuclear power plant would be reasonably competitive with a conventional power plant in the same area; (2) That the Indian Government would be willing to give this project the priority required to include it in the overall five year Indian development plan; and (3) That India and the U. S. Government could reach a mutually satisfactory position on safeguards covering the nuclear materials and equipment supplied for the project. A further condition of a proposed safeguards agreement was the U. S. proposal that the Indian Government would be willing to commit itself in principle to provide an ultimate role for the International Atomic Energy Agency (IAEA) in the application of safeguards to the Tarapur Plant. Upon getting this conditional agreement that the United States would consider the project, the Indian Government committed itself to accepting the IGE bid for two 190 megawatt electrical nuclear reactors to be built on a turnkey basis at Tarapur.

CONFIDENTIAL

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In July of 1962 a group of Indians, headed by Mr. Chakravarti, the chief of the Tarapur Project, came to Washington and had tentative discussions with officials of the Department of State and the Atomic Energy Commission concerning the text of a bilateral "Agreement for Cooperation" covering the Tarapur Project. The general terms of an agreement which were worked out on an ad referendum basis provided for initial U. S. bilateral safeguards on the project, for the supply of fuel by the U.S. AEC and for an ultimate transfer of the safeguards functions to the IAEA.

On the matter of transferring the safeguards to the IAEA, the U. S. negotiators encountered serious difficulty with the Indians. The Indians maintained that they were perfectly willing to accept U. S. bilateral safeguards on both the enriched fuel to be supplied and on the reactor, despite the fact that they have always opposed safeguards on reactors. Their rationale for accepting bilateral safeguards on this particular reactor lay in the fact that the U. S. Government is the only source of enriched uranium and that this reactor could operate only by the use of such enriched uranium. Therefore, if they accepted safeguards on the uranium, the reactor itself would automatically fall under safeguards because of its operating with safeguarded uranium. They were afraid, however, that if they accepted IAEA safeguards on this project, people would use this as a precedent to get them to accept IAEA safeguards on natural uranium reactors which they might subsequently buy from France, Canada, or the United Kingdom. An additional objection that they had to IAEA safeguards lay in their belief that they were discriminatory in the first instance against all non-nuclear powers and in the second instance against all underdeveloped or developing countries. They expressed the view that it was hardly fair for the United States to insist on safeguards on peaceful materials in countries such as India when at the same time the United States did not accept safeguards on its own military materials nor expect that such countries as Russia, the United Kingdom or France accept them on their military programs.

In this connection the Indians are also very critical of the U. S. position in not requiring Euratom countries to accept IAEA safeguards. Some years back the United States agreed with Euratom that that organization could establish its own safeguards system and that the U. S. Government would accept Euratom inspections on U. S. materials and equipment subject to the condition that the Euratom system would be kept consistent with the U. S. bilateral safeguards system and the safeguards system of the IAEA. The Indians pointed out that with political unification of the Euratom area this would amount to self inspection which they regard as unacceptable. Their belief in the discrimination against underdeveloped countries lay in the fact that a highly industrialized country would be in a position technically to duplicate a reactor purchased under safeguards and thus get an identical unsafeguarded reactor. The underdeveloped country, in contrast, would always have to buy its reactors from developed countries and therefore all reactors in underdeveloped countries would remain under safeguards whereas

those in developed countries which were copied from those supplied would not be safeguarded. A further objection that the Indians had to the U. S. insistence on Agency safeguards lay in their fear that the Indian Government might be forced to accept inspectors from hostile countries.

In May, 1963 after very long and difficult negotiations, the Indian Government and the U. S. Government came to agreement on the role that the IAEA should ultimately play in the safeguarding of the Tarapur reactor. This agreement, copy of which is attached as Tab A, provided that in view of the recognized desirability of making use of the facilities and services of the IAEA, both parties agree in principle that at an appropriate time the Agency will be requested to enter into a trilateral agreement for the implementation of the safeguards on this project. The agreement provides further that such implementation will not occur until the Agency has adopted a system of safeguards for reactors of the size of the Tarapur Power Station which is generally consistent with the safeguards provisions in the bilateral agreement. The agreement provides, moreover, that if the parties cannot reach a mutually satisfactory agreement on the transfer of the safeguards functions to the IAEA, either side may by notification terminate the agreement. It is provided, however, that such determination will not occur without the parties considering carefully the economic effect of such determination and without permitting the other party sufficient time to make necessary adjustments. In view of the newness of the safeguards concept, the Indians also insisted that this termination provision will not be invoked unless the IAEA safeguards have been widely accepted by other nations with whom the U. S. has bilateral agreements and that the transfer to the IAEA will not be implemented until the Tarapur station has reached reliable full power operation.

Although at this writing the members of the Joint Committee on Atomic Energy (JCAE) of the United States Congress have not seen the actual text of this safeguards transfer, they are aware of its general nature and feel that the Executive Branch has not been firm enough in requiring the Indians to agree now to an absolute and immediate unconditional transfer of the safeguards to the IAEA at an appropriate date. For this reason the JCAE is not entirely happy with the Tarapur Project. Senator Pastore, the present Chairman of the JCAE, has asked to have conversation on this subject with Chairman Glenn Seaborg of the AEC and appropriate officials of the Department of State. Moreover, Senator Pastore has suggested that he will discuss this question with the President. The Department and the AEC believe that given the strong negative attitude of the Indian Government toward safeguards of any kind and their specific objections to IAEA safeguards, the agreement which has been reached includes a surprisingly strong commitment on the part of the Indian Government to accept the IAEA procedures. Moreover, in view of the present uncertainty as to the precise nature of the expanded IAEA safeguards system which is now under consideration, and in view of the total lack of experience in the manner in which the IAEA will conduct its inspection

of large power reactors, the U. S. Government itself would be reluctant to make a commitment to transfer safeguards to the IAEA which was any more binding than the one contained in the attached language.

As indicated above, the IAEA does not presently have a safeguards system for reactors the size of those proposed at Tarapur. At U. S. initiative a group of experts convened in Vienna in early April, 1963 to work out the technical aspects of such a system. This is going to be considered by the IAEA in its June Board meeting which convenes on June 11. Tentatively this particular item has been scheduled for June 17 and 18. In the course of the deliberations of the technical committee in early April, the Indian member caused some difficulties for the rest of the committee and has been described by a member of the staff of the JCAE who was in Vienna at the time on other business as "obstreperous". Knowing that this new expanded system of IAEA safeguards is going to be considered at the June Board meeting, the staff of the JCAE, headed by Mr. John Conway, has had many conversations with representatives of the AEC in which he has suggested that if the Indians are again "obstreperous" in the June meeting, and if they should lead the fight to postpone the consideration of the new system, the Joint Committee will regard this as an evidence of bad faith. In an effort to warn the Indians of this, conversations were held with representatives of the Indian Government in Washington on May 31 and June 6, 1963. A memorandum of conversation on the first meeting is attached. The reporting telegram on the second meeting was Deptel 2999 to Vienna, Rptd New Delhi 4262. In both of these meetings, it was made clear to the Indian Government representatives that the Department and the AEC are not trying to influence substantive positions but to make them understand that they have in the proposed Tarapur agreement expressed their recognition of the desirability of making use of the facilities and services of the IAEA and have agreed in principle to transfer the safeguards to the IAEA. With these positions a matter of record, it would not be difficult for anyone so desiring to regard an effort by the Indians to postpone or kill the extension of IAEA safeguards system as an evidence that the bilateral agreement was signed in bad faith. Mr. Conway of the JCAE has in fact suggested that if the Indians are instrumental in postponing the consideration of the extension of the IAEA safeguards system he is certain that the JCAE will insist on a postponement of the Tarapur agreement. Inasmuch as AID wishes to make the Tarapur grant — if it is to be made — during fiscal year 1963, it is urgent that a decision be reached within the next two weeks, taking into account all of the facts which have been set forth above.

It is my understanding that AID has examined the Indian loan application for this project and finds that it meets the first two conditions which were imposed, namely that the nuclear power project be reasonably competitive with conventional power projects in the same area, and that the Indian Government

give it sufficient priority to include it in their general five year development plan. For this reason we have now reached a point where the only outstanding issue is the Indian position on safeguards. As indicated above, they have accepted with a few minor outstanding problems, bilateral safeguards which meet all U. S. requirements and they have accepted in principle the concept of transferring the bilateral safeguards to the IAEA at an appropriate time. The JCAE has certain reservations about the acceptability of these transfer clauses but would probably accept them if the Indian Government were not to lead a fight against the expansion of the IAEA system in the June Board meeting. Although the Indians have been informed in rather explicit terms of this problem, we do not know as of this writing precisely what action they will take.

SCI:CWThomas:em:6/3/63

Attachments:

Tab A - Draft Agreement
Tab B - Memorandum of Conversation

INCOMING TELEGRAM *Department of State*

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Control: 6833
Rec'd: JUNE 9, 1963
12:50 PM

FROM: NEW DELHI

TO: Secretary of State

NO: 4853, JUNE 9, 6 PM

ACTION DEPARTMENT 4853, INFORMATION VIENNA 28, BOMBAY 1001.

VIENNA FOR USDEL IAEA

DEPTEL 4262

FONSEC DESAI CALLED ME IN TODAY ON QUESTION OF IAEA SAFEGUARDS. HE HAD EVIDENTLY HAD REPORT OF CONVERSATION DESCRIBED REFTEL.

I PUT TO DESAI ALL OF THE CONSIDERATIONS SET FORTH IN REFTEL. HE TOOK FULL NOTE OF THEM, BUT ASKED THAT I CONVEY TO DEPARTMENT GOI VIEW THAT EXTENSION OF IAEA SAFEGUARDS SYSTEM SHOULD BE DEFERRED AND NOT TAKEN UP AT JUNE MEETING, ON BASIS THAT GOI AND OTHER DEVELOPING COUNTRIES HAD NOT HAD OPPORTUNITY TO CONSIDER PROPOSED EXTENSION IAEA SAFEGUARDS SYSTEM. DESAI HOPED CONSIDERATION COULD BE DEFERRED UNTIL NEXT SEPTEMBER. I MADE CLEAR USG COULD NOT CONSIDER POSTPONEMENT AT THIS TIME, AND STRESSED WHAT EFFECTS WOULD LIKELY FOLLOW FROM ANY GOI EFFORT TO KILL EXTENSION OF IAEA SAFEGUARDS SYSTEM OR POSTPONE CONSIDERATION.

SCP-3.

TIMMONS

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OUTGOING TELEGRAM Department of State

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☐ CHARGE TO

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ACTION: AmEmbassy VIENNA 2999

INFO: AmEmbassy NEW DELHI 4262
AmConGen BOMBAY 607

VIENNA FOR IAEA

Dept and AEC today had discussion Krishnamoorthi and Ghosh, Indian Embassy, and Dayal, Indian AEC. With regard to Indian stance in forthcoming Board meeting as it relates extension IAEA safeguards system, USG informed Indian reps that, without wishing to influence any traditional Indian technical positions on safeguards, it important they understand that any effort GOI to kill proposed extension Agency safeguards system or to postpone its consideration will very likely have serious adverse effects in USG and might well lead to long term postponement Tarapur Project. Indian reps made strong point that GOI has not had opportunity consider proposed extension IAEA safeguards system since document not received until May 22. USG pointed out that proposed system is, with minor exceptions, merely extension system now in use for lower power reactors and should consequently not require long study by GOI. USG pointed out further that decision February Board meeting to consider this question in June meeting if possible has been known to GOI since February and that as member technical committee on extension safeguards, GOI had full knowledge of proposed extension by mid-April and should consequently have had ample time to consider its implications.

Drafted by:	SCI:CWThomas:em:6/6/63	Telegraphic transmission and classification approved by:	SCI - Charles W. Thomas

Clearances:
SOA - Mr. Adams
OES - Mr. Fennemore (subs)

[redacted]

FORM DS-322

~~CONFIDENTIAL~~

Indians then stated that despite these facts and at least in part because absence of Bhabha GOI had not yet considered the question and would probably not be able to reach appropriate decision prior June Board meeting. They then asked USG to sponsor motion for postponement or support such motion if introduced by others. USG stated it impossible consider postponement at this time because of imminence many other negotiations on application Agency safeguards which depend on extension of Agency system. In summary USG urged India not place itself in position of leading fight to postpone or stop approval of system while, at same time if they so wish, maintaining their traditional position on such questions as safeguards on hardware. Indians agreed to carefully reassess their position. Krishnamoorthi advised he would be in touch with Dept and AEC in near future.

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END

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INCOMING TELEGRAM *Department of State*

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Control: 7212
Rec'd: June 10, 1963
11:17 AM

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SAUNDERS
SCHLESINGER
WIESNER

FROM: New Delhi

TO: Secretary of State

NO: 4865, June 10, 7 PM

ACTION DEPARTMENT 4865, INFORMATION VIENNA 29, BOMBAY 1107.

VIENNA FOR USDEL IAEA

DEPTEL 4262/EMBTEL 4853

In connection my conversation with FONSEC Desai, consider it most desirable Department and AEC take advantage Bhabha's presence in US to make clear to him what US position is on safeguards issue, and why. Bhabha can make decisions that cannot be made by any Indian in Vienna or, for that matter, in Bombay or Delhi (except Nehru).

SCP-3.

TIMMONS

LLN/3

get info and telegrams

call Wilco

[redacted]CONFIDENTIAL[redacted]

INCOMING TELEGRAM *Department of State*

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LIMITED OFFICIAL USE

Control: 8763
Rec'd: June 11, 1963
3:57 p.m.

FROM: Vienna

TO: Secretary of State

NO: 2510, June 11, 8 p.m.

PRIORITY

ACTION DEPARTMENT 2510, INFORMATION NEW DELHI PRIORITY 5

IAEA

Dasgupta (India) just informed Smyth that India would not oppose US on extension safeguards. Said India would, however, make statement reiterating traditional objection to safeguards on hardware. (FYI, Dayal attended today's board meeting.)

SCP-EXEMPT.

RIDDLEBERGER

VLH

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INCOMING TELEGRAM *Department of State*

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UNCLASSIFIED

Control: 2971
Rec'd: JUNE 5, 1963
9:51 A.M.

Action NEA
Info SP L IO SCI UIB E IGA AID P USIA NSC INR CIA NSA OSD ARMY NAVY AIR AEC COM TRSY RMR

FROM: NEW DELHI

TO: Secretary of State

NO: 4775, JUNE 5

ACTION DEPARTMENT 4775; INFO BOMBAY 993.

TODAY'S STATESMAN CARRIES STORY SAYING "THE LAST HURDLES TO THE PROGRESS OF INDIA'S FIRST NUCLEAR POWER STATION AT TARAPUR ARE LIKELY TO BE REMOVES SOON AND THE CONSTRUCTION OF THE 380 MEGAWATT PLANT IS EXPECTED TO BEGIN IN OCTOBER".

STORY STATES THAT "THIS IS REPORTED TO BE THE RESULT OF CURRENT NEGOTIATIONS IN WASHINGTON BETWEEN DR. BHABHA AND REPRESENTATIVES OF THE U.S. GOVERNMENT AS WELL AS THE AMERICAN FIRM WHICH WILL SET UP THE POWER STATION. INDO-US AGREEMENT IS LIKELY TO BE ANNOUNCED WITHIN THE NEXT TWO OR THREE WEEKS OVER THE TWO POINTS WHICH HAVE HELD UP THE NUCLEAR POWER PROJECT SO FAR: FINANCIAL ARRANGEMENTS AND SAFEGUARDS". ADDS THAT "ACCORDING TO AUTHORITATIVE SOURCES HERE IT WOULD BE POSSIBLE FOR INDIA AND THE USA TO AGREE ON THE QUESTION OF SAFEGUARDS WITHIN THE FRAMEWORK OF THE INDIAN POSITION".

RE FINANCIAL ARRANGEMENTS, STORY SAYS "ALL THAT INDIA WANTS IS THAT THE MONEY, TO BE PROVIDED BY THE USA, SHOULD NOT BE COUNTED AS PART OF THE CONSORTIUM AID, BUT GIVEN IN ADDITION TO IT, AND THAT THE RATES OF INTEREST SHOULD BE LOW. LITTLE DIFFICULTY IS FORESEEN ON THIS ACCOUNT, ESPECIALLY IN VIEW OF THE FACT THAT CANADA, WHICH HAS PROMISED TO HELP IN SETTING UP THE SECOND NUCLEAR POWER STATION IN RAJASTHAN, HAS ALREADY AGREED THAT ITS CONTRIBUTION TO THE POWER STATION WOULD NOT BE COUNTED IN HER ASSISTANCE TO INDIA THROUGH THE CONSORTIUM".

TIMMONS

RWN

UNCLASSIFIED

April 8, 1963

[redacted]

MEMORANDUM FOR MR. KAYSEN

SUBJECT: Nuclear Safeguards--Some Aspects of the Tarapur Deal

Charles Thomas told me that as a result of the circulation of the Crawford memorandum dealing with Crawford's talks with Weber, our Science Advisor in Israel, there is an unfortunate impression in the number of places in Government that the U. S. is the only nuclear supplier that is insisting on safeguards. He wanted me to make sure that you and Bob Komer were aware of the fact that all of the nations that are in a position to supply either reactor equipment or uranium, except France, are enforcing effective safeguards. The French have been uncooperative.

The above is important in terms of the Tarapur deal, inasmuch as the French bid will be considered by the GOI if we are unable to reach agreement with them on safeguards. The French would finance the reactor by devoting a portion of its consortium funds to the reactor.

Incidentally, Thomas feels that if we remain flexible on our policy with respect to applying safeguards under a bilateral agreement as a fall-back position if we cannot agree on using the IAEA mechanism, he is optimistic on the eventual outcome. The Indians are coming in today to discuss new language which Thomas thinks goes a long way in meeting our requirements.

Charles E. Johnson

cc: Mr. Komer

[redacted]

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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON

file
Indian
Reactor
Project

OFFICE OF THE CHAIRMAN

February 21, 1963

Dear Chuck:

In accordance with your request, I am enclosing a copy of the Chairman's letter to Senator Pastore, dated February 8th, and a copy of the Senator's reply of February 19th regarding the Indian Tarapur Reactor.

Sincerely,

Chris

Chris L. Henderson
Staff Assistant
to the Chairman

Mr. Charles Johnson
The White House

2 Enclosures

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Congress of the United States

JOINT COMMITTEE ON ATOMIC ENERGY

February 19, 1963

Dear Dr. Seaborg:

I have your letter of February 8, 1963 with regard to the U. S. policy toward the International Atomic Energy Agency. As I understand from your letter, and from the Department of State letter of January 22, which you referenced, it is the policy of the United States to make a determined effort to transfer safeguard arrangements as soon as possible to the International Atomic Energy Agency and get all new bilateral partners to accept Agency safeguards.

In view of this policy, I cannot understand why the United States is not more forceful in negotiating with the Indian Government on the Tarapur reactor case. It would seem to me that any proposed agreement for cooperation with India should contain a provision requiring the Indians to permit inspection by the IAEA once such a system has been set up. I do not believe that a provision calling for "sympathetic consideration to the application of Agency safeguards" or similar pussy-footing on our part will further the stated United States' policy.

I am at a loss to understand how we can expect other nations to come around to our policy when we fail to adhere to it in our negotiations with the Indians for a new bilateral agreement. Now is the time to set a precedent when we are being asked to finance, through A. I. D. and other arrangements, the Indian project amounting to over $100,000,000. (It is my understanding that consideration is being given to furnishing approximately $70,000,000 through A. I. D. and approximately $30,000,000 for civil construction through U. S. counterpart funds.)

Separate and distinct from the safeguards problem, there is another important factor which I believe should be considered in connection with the proposed Tarapur project. Despite the efforts of our very best reactor experts, construction firms, and reactor operating specialists we have experienced numerous problems in the construction and operation of our large scale power reactors. When one considers the remote area, the difficulties to be encountered in utilizing local construction

Honorable Glenn T. Seaborg
Chairman
U. S. Atomic Energy Commission

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personnel and the generally less experienced nuclear reactor operators in India, it is questionable whether the construction of such a large full scale power reactor in India should be undertaken at this time. I don't believe we should encourage a nation to become involved in a project which it may not be technically competent to support. Instead of expected gratitude, in the event of technical difficulties, the United States may find itself in the long run subject to severe criticism by this same Government.

While I am in strong support of the "Atoms For Peace" program and for assisting foreign nations in the peaceful use of atomic energy, I believe premature and ill-advised projects can adversely affect not only our "Atoms For Peace" program but the United States prestige in the eyes of the world.

I am sending a copy of this letter to the Secretary of State so that the Department may have my views in this matter.

Sincerely yours,

John O. Pastore
Chairman

cc: Secretary of State

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

FEB 8 1963

Dear Senator Pastore:

On January 19, 1963, representatives of the Department of State, assisted by representatives of the Atomic Energy Commission, met with Joint Committee staff members and briefed them on the recently adopted United States position on the transfer of bilateral safeguard responsibilities to the International Atomic Energy Agency (IAEA). A copy of the Department of State's policy statement on this subject was subsequently provided for the Committee's information, by the Department, on January 22, 1963.

The Commission actively participated in the review of U. S. policy toward the IAEA and in formulating the newly established policy. The basic objective was to determine how the U.S. might best proceed to strengthen the Agency's safeguard responsibilities now that the Agency has successfully established an initial safeguard system which covers nuclear reactors of up to 100 MW thermal. During this review the principal question was whether the U.S. should insist that cooperating nations submit to IAEA safeguards or whether it should continue to follow a persuasive approach in encouraging other nations to submit to IAEA controls. Particular attention was given to the role the IAEA should play in any U.S.-Indian cooperative arrangement in connection with the proposed Tarapur Atomic Power Project. An outline of the policy is set forth below:

a. The United States will continue to adopt a persuasive approach in encouraging cooperating countries to submit to Agency safeguards. This approach already has been reasonably successful and is likely to be even more so in the future. The alternative of adopting a mandatory policy could result in the cancellation of some important existing projects or in forcing some countries to seek their assistance from suppliers who do not require safeguards.

b. At the same time, however, a substantially greater diplomatic effort will be made to persuade countries to agree to IAEA controls. To this end, over the next six to eight months the Department of State will make a

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vigorous effort to place a number of our bilateral agreements under the existing (100 MW) Agency safeguards system and to persuade our new bilateral partners to accept IAEA controls, in principle, in conjunction with the negotiation of new agreements. This effort will exclude the EURATOM nations since EURATOM has its own multilateral safeguard system.

c. Inasmuch as the Agency's role as a supplier of materials appears to be less meaningful than its role in applying safeguards it has been agreed that the U. S. should continue to supply fissionable materials either bilaterally or through the Agency depending on the wishes of the cooperating country.

d. The proposed new policy will be applied in the following fashion to the Indian Tarapur case: (i) An attempt will be made, at the highest level, to persuade the Indians to accept, in principle, IAEA safeguards, now, recognizing that such agreement must be subject to further negotiations when IAEA safeguards are set up for high power reactors of over 100 MW thermal. (ii) The U.S.-Indian bilateral agreement will contain effective bilateral safeguards and the clause contemplating a transfer of safeguards to the IAEA that is normally found in our comprehensive bilateral agreements. This clause enables either party to cancel the agreement in the event of failure to agree on the application of Agency safeguards. (iii) Failing the achievement of the objectives outlined in paragraph (i), an understanding would be reached with India that India will be expected to give sympathetic consideration to the application of Agency safeguards to Tarapur when these safeguards have been developed. The United States, in turn, would be willing to describe to India the circumstances under which we might exercise our right to terminate the agreement if India does not accept Agency safeguards when they are developed.

Representatives of the Commission and of the Department of State plan to meet with Dr. H. J. Bhabha, Chairman, Indian AEC, and other Indian officials on February 11 and 12 in Geneva, while in Europe to attend the IAEA's Board of Governor's Meeting, to discuss the above outlined policy and other matters relating to cooperation with respect

to the Tarapur Project. Since we hope, of course, to achieve our initial position in negotiations with the Indians, we believe any publicity at this time on our position, particularly the "fallback" position, would be detrimental to achievement of this objective. We would be very appreciative of the Committee's ecoperation in this regard.

We shall keep the Committee informed of significant developments on this matter.

Sincerely,

(Signed) Glenn T. Seaborg

Chairman

Honorable John O. Pastore
Chairman, Joint Committee
on Atomic Energy
Congress of the United States

cc: Chairman Seaborg (2)
Commissioner Haworth
Commissioner Palfrey
Commissioner Ramey
Commissioner Wilson
General Manager
Secretariat (2)
AGMIA
Congressional Liaison (2)
Thomas, State, (2)