Logged

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9202538
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: JENSEN, Gordon F.: UNIVERSITY OF UTAH

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 07/13/92

SUBJECT: HE IS WRITING REGARDING THE POSSIBLE ESTABLISHMENT OF THE UTAH ENGINEERING EXPERIMENTAL STATION CONCEPT AT THE TECHNICAL UNIVERSITY OF GDANSK, POLAND.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED: [redacted] Jeff

ACTION REQUIRED: FOR DAB'S SIGNATURE

STAFF ACTION: For DAB's signature

****

SENDER'S DUE DATE:

OSTP DUE DATE: 08/05/92 STAFF DUE DATE 8/5/92

DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO:

****

WHITE HOUSE TRACKING #: CONTACT PERSON:

PHONE: EXT:

REMARKS:

OSTP RECEIVED: 07/21/92 DEPT RECEIVED:

FILE: INTERNATIONAL

CENTRAL FILES:

THE WHITE HOUSE

WASHINGTON

August 3, 1992

Dear Dr. Jensen

Thank you for your letter of July 13, 1992, concerning your travel to Poland. I appreciate receiving the summary describing the Utah Engineering Experiment Station and efforts to establish a similar organization at the Technical University of Gdansk in Poland.

International cooperation is critical to the success and strengthening of science and technology, in the United States and abroad. Central and Eastern Europe present particularly significant opportunities to tap the rich potential of such cooperation. Both government and non-government sectors are important to this effort, and this is particularly true in Central and Eastern Europe as countries of the region move to market economies. I am encouraged to see the University of Utah and other American universities working to expand joint activities with institutions in the region.

Prior to your visit to Poland, you may be interested in learning more about the U.S.-Polish Joint Fund managed by the U.S. Department of State. I suggest you call Mr. Thomas Hutson, Acting Program Officer, Cooperative Science and Technology Programs in the State Department, who will be able to provide you with information on the Fund and other relevant U.S. government activities in Poland. You may also wish to contact the U.S. Science Counselor in Warsaw, Mr. Coleman Nee. Mr. Hutson can be reached at (202) 647-2958, and can provide you with Mr. Nee's phone number and address.

Again, thank you for your letter. I wish you and the University of Utah the best of luck during your visit to Poland.

Sincerely,

D. Allan Bromley

D. Allan Bromley
The Assistant to the President
for
Science and Technology

Dr. Gordon F. Jensen
Director
Utah Engineering Experiment Station
104 Energy Minerals Research Office
Salt Lake City, Utah 84112

cc: Thomas Hutson

2538

THE UNIVERSITY OF UTAH

July 13, 1992

Dr. Alan Bromley
Director of the Office of
Science and Technology Policy
Executive Office of the President
Washington, D.C. 20500

Subject: Possible Establishment of Utah Engineering Experiment Station (UEES) Concept At the Technical University of Gdansk (TUG) Gdansk, Poland

Dear Dr. Bromley:

At the suggestion of Dr. Roger B. Porter, I am taking the privilege of writing you this letter.

The Technical University of Gdansk at Gdansk, Poland, is considering establishing "an agency similar to the UEES in order to provide a technology 'bridge' between education and industry." An official of the TUG has indicated that "we have been informed of its (i.e. UEES) success in interacting with industry and all levels of government. We are impressed with the accomplishments of the UEES in raising funds and coordinating the activities of faculty and partners from industry and government."

I am enclosing (1) a copy of the letter inviting me to lecture in Poland on the UEES; (2) a copy of the University of Utah press release announcing the invitation; and (3) a brochure describing the UEES. *I am seeking your, or your associates', counsel on any suggestions as to how I may optimize the success of my visit. For example: are there persons I should contact, either in the U.S. or Poland? Are there programs in place that could assist in this effort, financially or in other ways?*

My basic desire is to render a service of some permanency rather than just provide some interesting lectures. I tentatively plan to be in Washington within the next month. I thank you for considering this request and look forward to your response.

Very truly yours,

Gordon F. Jensen

Gordon F. Jensen
Director
Utah Engineering Experiment Station

Enclosures (3)
cc: Dr. Jan Hupka, University of Gdansk
Dr Antoni Nowakowski, Gdansk
Dr. Roger B. Porter

Utah Engineering Experiment Station
104 Energy Minerals Research Office
Salt Lake City, Utah 84112
(801) 581-6348
FAX: (801) 581-5440

POLITECHNIKA GDAŃSKA

TECHNICAL UNIVERSITY OF GDAŃSK

ul. Majakowskiego 11/12 ◎ 80-952 Gdańsk-Wrzeszcz
Informacja telefonicza 47-11-00 ◎ telefax 415521 ◎ telex 0512302 pig pl

Gdańsk _____

Mr. Gordon F. Jensen
Director
Utah Engineering Experiment Station
EMRO 104
University of Utah
Salt Lake City, UT 84112

Subject: Invitation to lecture at the Technical University of Gdansk in October or November, 1992.

Dear Mr. Jensen,

It is our honor and pleasure to invite you to visit our University for ten days in October or November 1992 and to give lecture on the operation of the Utah Engineering Experiment Station. We have been informed of its success in interacting with industry and all levels of goverment. We are impressed with the accomplishments of the UEES in rising funds and coordinating the activities of faculty and partners from industry and government.

Your travel expenses within Poland including transport from Warsaw and back as well as accomodation will be covered by the Technical University of Gdansk. To our regret, we have no means to reimburse you with the travel costs to Poland and back.

Please contact Professor Jan F. Biernat, the Dean of The Faculty of Chemistry to establish the convinient date of your visit.

Looking forward to a real y, at your earliest convenience, I am sending you our kindest regards.

Your sincerely
PROREKTOR
d/s ogólnych
A. Nowa

Prof. dr hab. inż. Antoni Nowakowski

Gdansk, February 25, 1992.

U N I V E R S I T Y O F U T A H

NEWS

RELEASE AT WILL
7 April 1992

GDANSK OFFICIALS LOOK TO U. AGENCY AS POSSIBLE ECONOMIC DEVELOPMENT MODEL

Officials at The Technical University of Gdansk, one of Poland's leading research and educational schools, will study the Utah Engineering Experiment Station at the University of Utah as a possible model for industry-university economic cooperation.

They have invited Gordon F. Jensen, UEES director, to present a series of lectures and to meet with educators in the port city where the Solidarity labor movement began, led by Lech Walesa, now Poland's president.

Jensen, an administrator and professional engineer, will visit Poland in late October and early November. He will explain how UEES works with faculty, government and industry. UEES primarily serves the colleges of mines and earth sciences and engineering.

Dr. Antoni Nowakowski, vice president at Gdansk who announced Jensen's visit, says the Polish technical school hopes to establish an agency similar to UEES to provide a technology "bridge" between education and industry.

"We are impressed with the Utah's Experiment Station's accomplishments in helping raise research funds and in coordinating the activities of faculty with their industry and government partners," says Nowakowski.

Private companies and state and federal agencies work through UEES to tap into the broad expertise of university faculty. The station's basic financial support is provided

NEWS AND
INFORMATION
SERVICES
308 Park Building
Salt Lake City, Utah 84112
801-581-[illegible]

through state mineral leasing funds.

Dr. Jan F. Biernat, dean of the Faculty of Chemistry at Gdansk, will visit the Utah campus this summer to complete arrangements for Jensen's visit and to tour laboratory and research centers. Another Gdansk professor, Dr. Jan Hupka, will soon end a three-year visiting professorship at the U. and return to Poland. Hupka is a member of the U.'s preeminent tar sands research team and an authority in petroleum engineering.

The Technical University of Gdansk, a 90-year-old institution, has nearly 10,000 students working toward degrees in science, technology and engineering. Gdansk is the largest harbor on the Baltic Sea and the home of several other universities and colleges, and is a center for opera, symphony and theatre.

The U.'s relationship with Gdansk dates to Dr. Jan D. Miller's 1980 visit there soon after the independent trade union federation was formed by Walesa following a successful strike at the Lenin Shipyard. Miller, professor of metallurgical engineering, initiated an academic exchange program with Gdansk and other technical schools in Eastern Europe. On a return visit in 1991, Miller saw, first-hand, Poland's historic battle for democratic reform and the struggle by educators to keep science and technology studies alive in their country.

###

For further information:

Gordon Jensen, 581-6348

News Service contact:

James C. Bapis, 581-7932

UTAH ENGINEERING EXPERIMENT STATION

University of Utah

Nearing a Century of Service to Government, Experimenters and Business Entrepreneurs

Logged

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9202170
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: TURLAY, Rene: COMMISSARIAT A L'ENERGIE ATOMIQUE

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/10/92

SUBJECT: HE IS WRITING REGARDING THE FUNDING FOR THE SSC PROJECT.

Jeff - Coordinate response w/ Karl Erb

JS 8/5/92

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED: JS

ACTION REQUIRED: AS NECESSARY

STAFF ACTION: 9/30/92 - Sent letter under my signature - similar to other recent SSC letters KEB

****

SENDER'S DUE DATE:

OSTP DUE DATE: 08/17/92

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT: 9/30/92

****

COPIES TO: D. Allan Bromley
PHYSICAL SCIENCES

****

WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE: EXT:

REMARKS: Dr. Schneider regarded (Jeff S. DOT w/ JTR).

OSTP RECEIVED: 08/03/92 DEPT RECEIVED:

FILE: P-INTERNATIONAL

CENTRAL FILES:

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

September 30, 1992

Dear Dr. Turlay:

Thank you for your recent letter to Dr. Bromley regarding funding of the Superconducting Super Collider. We in the Administration, including the President, have worked very hard with Congress to turn the earlier House vote around. These efforts have been successful, and joint congressional action has restored funding to the SSC. The restoration, while substantial, is still under the President's request for fiscal 1993 but will allow us to move forward on constructing this forefront research facility.

Thank you again for your expression of interest and support and good luck with Saclay's efforts on the SDC.

Sincerely yours,

Lee S. Schroeder

Lee S. Schroeder
Assistant Director
for
Physical Sciences and Engineering

Dr. Rene Turlay
Director, DAPNIA/DSM/SACLAY
91191 Gif-sur-Yvette
FRANCE

2170

COMMISSARIAT A L'ENERGIE ATOMIQUE

Direction des Sciences de la Matière

CE-S - DAPNIA - 91191 GIF-sur-YVETTE CEDEX - Tél. (1) 69 08 24 02
Télex PARTIC 603212F - Fax (1) 69 08 76 36

Département d'Astrophysique
de la Physique des Particules
de la Physique Nucléaire
et de l'Instrumentation Associée

Dr. Allan BROMLEY
Science Advisor to the President
Old Executive Office Building, Room 360
17th and Pennsylvania Avenue NW
WASHINGTON, DC 20506

Direction
DIR/RT/CB/123

Saclay, le 10 juillet 1992

Dear Dr. Bromley

Saclay is an active participant in the Superconducting Super Collider project. A group of twenty Saclay physicists and engineers participate in the Solenoidal Detector Collaboration, preparing one of the two major detectors for the SSC. This participation has been strongly supported by our scientific committees as well as by the direction of our department and of our division. Saclay intends to supply the Shower-Maximum Detector and the Global Level 2 Trigger for the SDC detector.

Furthermore, our technical services have a contract with the SSC Laboratory for the development and fabrication of prototypes for the superconducting quadrupole magnets of the SSC High Energy Booster. This effort requires close coordination between Saclay and the participating American Laboratories (SSC Laboratory, Brookhaven National Laboratory, and Fermilab). We feel that the exchange of information is beneficial to all parties involved.

We were surprised and shocked by the recent House vote condemning the SSC Project. We sincerely hope that full funding for the SSC will be restored in subsequent Congressional actions. We feel that the death of the SSC Project would have a destructive effect on the future of science and technology in Europe, as well as in the United States.

I am a member of the SSC Scientific Policy Committee, and I will be in Dallas in August for the next Committee meeting. I will take advantage of this occasion to reiterate our continuing support for the SSC.

Sincerely,

René TURLAY
Director, DAPNIA/DSM/SACLAY

Logged

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9202528
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: MARBURGER, John H.: STONYBROOK NATIONAL LABORATORY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/10/92

SUBJECT: HE IS WRITING TO URGE DR. BROMLEY'S INTEREST IN THE TAEJON EXPO TO BE HELD IN KOREA.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED: JS

ACTION REQUIRED: FOR DAB'S SIGNATURE

STAFF ACTION: FOR DAB's signature

****

SENDER'S DUE DATE:

OSTP DUE DATE: 08/04/92 STAFF DUE DATE 8/4/92

DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS:

OSTP RECEIVED: 07/21/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL

CENTRAL FILES:

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01a. Letter	To: John Marburger From: Allan Bromley Re: Response to 7/10 letter (1 pp.)	8/4/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files
WHORM Cat.:
File Location: International: General [8 of 10] [1992]

Date Closed:	5/4/2010	**OA/ID Number:**	62063-005
FOIA/SYS Case #:	2005-0336-F	**Appeal Case #:**	
Re-review Case #:		**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01b. Letter	To: Allan Bromley From: John Marburger Re: Korea (2 pp.)	7/10/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files
WHORM Cat.:
File Location: International: General [8 of 10] [1992]

Date Closed:	5/4/2010	**OA/ID Number:**	62063-005
FOIA/SYS Case #:	2005-0336-F	**Appeal Case #:**	
Re-review Case #:		**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

Logged

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9202521
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: DYVIG, Peter: ROYAL DANISH EMBASSY

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 07/09/92

SUBJECT: HE IS FORWARDING A LETTER FROM THE DANISH MINISTER OF EDUCATION, BERTEL HAARDER, REGARDING IMPROVEMENTS IN THE EXCHANGE OF RESEARCHERS.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED: JS

ACTION REQUIRED: FOR DAB'S SIGNATURE

STAFF ACTION: FOR DAB's signature

****

SENDER'S DUE DATE:

OSTP DUE DATE: 08/04/92 STAFF DUE DATE 8/4/92

DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley

****

WHITE HOUSE TRACKING #: CONTACT PERSON:

PHONE: EXT:

REMARKS:

OSTP RECEIVED: 07/21/92 DEPT RECEIVED:

FILE: P-INTERNATIONAL

CENTRAL FILES:

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02a. Letter	To: Bertel Haarder From: Allan Bromley Re: Response to 6/29 letter (1 pp.)	8/4/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files
WHORM Cat.:
File Location: International: General [8 of 10] [1992]

Date Closed:	5/4/2010	**OA/ID Number:**	62063-005
FOIA/SYS Case #:	2005-0336-F	**Appeal Case #:**	
Re-review Case #:		**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02b. Letter	To: Allan Bromley From: Peter Dyvig Re: Forwarding Haarder's letter (1 pp.)	7/9/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files
WHORM Cat.:
File Location: International: General [8 of 10] [1992]

Date Closed:	5/4/2010	**OA/ID Number:**	62063-005
FOIA/SYS Case #:	2005-0336-F	**Appeal Case #:**	
Re-review Case #:		**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02c. Letter	To: Allan Bromley From: Bertel Haarder Re: Researcher exchange (2 pp.)	6/29/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files
WHORM Cat.:
File Location: International: General [8 of 10] [1992]

Date Closed:	5/4/2010	**OA/ID Number:**	62063-005
FOIA/SYS Case #:	2005-0336-F	**Appeal Case #:**	
Re-review Case #:		**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

Logged

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9202534
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: BELLETTINI, Giorgio: ISTITUTO NAZIONALE DI FISICA NUCLEARE

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/07/92

SUBJECT: HE IS WRITING EXPRESSING HIS VIEWS ON THE SSC.

****

DIRECTORATE ASSIGNED: ~~INTERNATIONAL/POLICY~~ PHYSICAL SC. & ENG.

STAFF ASSIGNED: JTR JS coordinate w/ Erb's staff

ACTION REQUIRED: AS APPROPRIATE

STAFF ACTION: as appropriate

****

SENDER'S DUE DATE:
OSTP DUE DATE: 08/05/92 STAFF DUE DATE 8/5/92
DATE COMPLETED: DATE COMPLETED/DEPT: 8/4/92

****

COPIES TO: D. Allan Bromley
Karl Erb

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS: Dr. Erb requested.

OSTP RECEIVED: 07/22/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL

CENTRAL FILES:

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

August 4, 1992

Dear Dr. Bellettini:

Thank you for your supportive letter concerning our determination to build the Superconducting Super Collider. The President's Science Advisor, Dr. Bromley, and all the rest of us in the executive branch are working hard to convince the Congress that the SSC merits construction. We are making progress and I believe the project will move forward.

Thank you again for your expression of support.

Sincerely,

Karl A Erb

Karl A. Erb
Associate Director for
Physical Sciences and Engineering

Dr. Giorgio Bellettini
Instituto Nazionale di Fisica Nucleare
Via Livornese 582/A
56010 S. Piero A Grado
Pisa, ITALY

Istituto Nazionale di Fisica Nucleare

Sezione di Pisa

Telephone	50 - 546111
Telex	500319 PSAFIS I
Telefax Laboratory	50- 589047
Telefax Administration	50 - 960733

Date.....JULY 17, 1992...

Destination
Telefax 001/202/456/2461

TELEFAX COVER SHEET

TO DR. D. ALLAN BROMLEX

WASHINGTON

FROM GIORGIO BELLETTINI

INFN - VIA LIVORNESE 582/A - 56010 S. PIERO A GRADO - PISA - ITALY

THIS TRANSMISSION CONSISTS OF 3 PAGES EXCLUDING THIS COVER SHEET

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
03. Letter	To: Allan Bromley From: Giorgio Bellettini Re: Superconducting Supercollider (3 pp.)	7/17/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files
WHORM Cat.:
File Location: International: General [8 of 10] [1992]

Date Closed:	5/4/2010	**OA/ID Number:**	62063-005
FOIA/SYS Case #:	2005-0336-F	**Appeal Case #:**	
Re-review Case #:		**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9202517
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS
****

FROM: EDSALL, John T.: HARVARD UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/07/92

SUBJECT: HE IS WRITING WITH COMMENTS ON THE SCIENCE AND TECHNOLOGY REPORT.

****
DIRECTORATE ASSIGNED: INTERNATIONAL POLICY STAFF ASSIGNED:

Bill Wells. This probably deserves a response from me DSB

ACTION REQUIRED: AS NECESSARY STAFF ACTION:

****
SENDER'S DUE DATE:
OSTP DUE DATE: 08/04/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:
REMARKS:

OSTP RECEIVED: 07/21/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL

CENTRAL FILES:

THE WHITE HOUSE

WASHINGTON

August 31, 1992

Dear Dr. Edsall:

Thank you for your remarks concerning the President's Science and Technology Report and Outlook.

I could not agree with you more that in today's world, a strong economy is an essential component of national security. That is why the Administration has supported a vigorous program of research activity in a broad spectrum of science and technology endeavors that are designed both to advance our fundamental knowledge of nature and support our economic competitiveness. Our initiatives in the areas of high performance computing and communications, advanced materials and processing, and biotechnology are but a few examples of these efforts.

The Federal Coordinating Council for Science, Engineering and Technology (FCCSET) also manages an initiative in math and science education. Through his America 2000 program, the President has provided strong leadership for the Nation in meeting a very specific set of National Education Goals, including "by the year 2000, U.S. students will be first in the world in science and mathematics." It is up to you and I, as private citizens concerned about education, to work at the local level -- where 94 percent of education funding originates -- to ensure that these goals can be met.

Again, I appreciate your response to the report as well as your reactions to it.

Sincerely,

D. Allan Bromley
The Assistant to the President
for
Science and Technology

Dr. John T. Edsall
Department of Biochemistry and Molecular Biology
Harvard University
7 Divinity Avenue
Cambridge, MA 02138

2519

Department of Biochemistry and Molecular Biology
Harvard University. 7 Divinity Ave. Cambridge MA 02138
July 7, 1992

Dr. D Allan Bromley, Assistant to the President

Dear Dr. Bromley,

I have read with interest the report to Congress on "Science and Technology" from your office. I offer some comments on selected portions of it.

To begin with, I note that this is, in the broad sense, a political document. I say this in no desire to cast aspersions on it. A report like this, aimed at Congress, is bound to be political, whichever party produces it This is in the nature of things. More than with most political documents, however, this one does rest its case, for the most part, on arguments designed to appeal to Congress and the American public on a non-partisan basis.

My first comments concern the chapter on education, pp 29-40. It recognizes clearly the grave decline in participation of students in science and math studies, in secondary and higher education, especially in our public schools and colleges. This is part of a general decline in educational standards, and it must be ofthe gravest concern to anyone who perceives a coming decline in what is now an undisputed American leadership in science. The chapter then goes on to propose a general plan for reversing present trends, and restoring American scientific education to its previous leading position by the year 2000.

The intentions of this proposal are good, but I cannot praise it. I believe that, to achieve the desired results, or even come close to them, a much more drastic, expensive, and painful effort would have to be applied to the problem than is indicated in the discussion in this chapter. I think it would be necessary to pay school teachers substantially better than they are paid now, and further to change social attitudes so that schoolteachers have a higher status in the community than they have today. The latter change might well be even more dificult to bring about than the former, though the raising of salaries would be in itself a boost for the social status of the teachers. An adequate program would be enormously expensive, given the present recession and the sorry state of both federal and state budgets. In fact neither the present Administration nor its critics in the Democratic Party appears to have the daring to tell the public, in adequate language, how desperate the present situation is, and how much pain it will cost the American people to correct it. A really inspiring leader is required to turn the situation around, and I see no such person on the horizon at present.

I jump now to the chapter on life sciences and biotechnology. I consider this on the whole a good chapter. I agree with the statement on p.

Department of Biochemistry and Molecular Biology
Harvard University, 7 Divinity Ave, Cambridge MA 02139

July 7, 1992

Dr. D Allan Bromley, Assistant to the President

Dear Dr. Bromley,

I have read with interest the report to Congress on "Science and Technology" from your office. I offer some comments on selected portions of it.

To begin with, I note that this is, in the broad sense, a political document. I say this in no desire to cast aspersions on it. A report like this aimed at Congress is bound to be political, whichever party produces it. This is in the nature of things. More than with most political documents, however, this one does treat its case, for the most part, on arguments designed to appeal to Congress and the American public on a non-partisan basis.

My first comments concern the chapter on education, pp 29-40. It recognizes clearly the grave decline in participation of students in science and math studies in secondary and higher education, especially in our public schools and colleges. This is part of a general decline in educational standards, and it must be of the gravest concern to anyone who perceives a coming decline in what is now an undisputed American leadership in science. The chapter then goes on to propose a general plan for reversing present trends and restoring American scientific education to its previous leading position by the year 2000.

The intentions of this proposal are good, but I cannot praise it. I believe that to achieve the desired results, or even come close to them, a much more drastic, expensive, and painful effort would have to be applied to the problem than is indicated in the discussion in this chapter. I think it would be necessary to pay school teachers substantially better than they are paid now, and further to change social attitudes so that schoolteachers have a higher status in the community than they have today. The latter change might well be even more difficult to bring about than the former. Though the raising of salaries would be in itself a boost for the social status of the teachers. An adequate program would be enormously expensive, given the present recession and the sorry state of both federal and state budgets. In fact neither the present Administration nor its critics in the Democratic Party appears to have the daring to tell the public, in adequate language, how desperate the present situation is, and how much pain it will cost the American people to correct it. A really inspiring leader is required to turn the situation around, and I see no such person on the horizon at present.

I jump now to the chapter on life sciences and biotechnology. I consider this on the whole a good chapter. I agree with the statement on p

70 that Federal regulation should focus on the characteristics and risks of the biotechnology product, not on the methods by which the product was achieved. I would say, however that, whatever the methods of production, the possible risks of a product may lie in dangers that are not revealed by the usual tests for safety. The classical example is that drug (whose name I cannot at the moment remember) which produced terrible abnormalities in fetuses when taken by pregnant women. If I remember right, it passed all the other tests with flying colors. That drug was simply a product of classical organic chemistry, having nothing to do with biotechnology. Are tests on pregnant animals done now routinely to check such risks before drugs are accepted for trials on humans? I rather presume they are; but we have to be on the alert for other possible unexpected risks that are not covered by any of the existing tests.

My most serious disagreements with the report come in the chapter on national security (pp 81-88). In the first place I think that the concept of national security should be considered in terms much broader than the strictly military. For instance the Department of Agriculture has been reporting for years that our most fertile lands in the Middle West have been losing topsoil at a much greater rate than natural processes replace it. I consider this a much greater risk, in the long run, to the future of this country, than the great majority of military risks. One might prefer to class such risks under another category than national security; this is a minor matter, as far as I am concerned. The point is that these great long-term risks need to be borne in mind, if we are to serve the interests, and the safety, of our country. We should remember that war, and often preparations for war (as in the nuclear weapons programs) are powerful processes for producing environmental degradation and poisoning. I believe that, in view of the environmental threats we face from such sources, we need to accelerate efforts in foreign policy to prevent wars, as well as being prepared to fight them.

On p. 86 there is a reference to the successes achieved by the Patriot missile in the Gulf War. I think such claims should be toned down. There have been widely publicized congressional hearings in which powerful evidence was presented that the Patriot was far less successful in shooting down missiles than had been thought during the war.

I consider the SDI program (lower on P. 86) a false lead and a shocking waste of money. If President Reagan had asked the National Academy to examine the prospects of success for the SDI program before launching it, I feel pretty sure that they would have given him a strongly adverse report Unfortunately so much money has now been spent on it that it has developed a powerful constituency that has a vested interest, financially and otherwise, in seeing it continue. I acknowledge that I am not an expert in this area of science; I base my judgment on that of the best

physicists and chemists I know. In any case, with the collapse of the Soviet Union, there is no country in the world that has either the capability or the desire to shoot ICBMs at the United States; nor will there be for some time to come. For national security I think we should push strongly, through the UN, with the backing of the most powerful countries in the world, to make nonproliferation of nuclear weapons a major and primary goal. A general nuclear test ban would be an essential tool of such a policy, to be enforced by military, but non-nuclear, action against an offending country if necessary. Nuclear weapons are simply irrational as weapons of war; we, and a few other countries, will have to have them for deterrence (without using them) for a pretty long time to come, but I believe that, in fact, we can accomplish our aims without ever actually using nuclear weapons.

Here, of course, I am in complete opposition to the position of the Bush Administration, which wants to continue testing, and "improving" nuclear weapons. I simply state my profound disagreement with this attitude here.

Both the Reagan and the Bush Administrations have been quite generous in their suport of basic science. However they have also shifted the cneter of gravity, as far as research money is concerned, far over on the side of research of military significance. In the national interest, and in view of the end of the Cold War, it is high time to shift a great many of the scientific workers back into research that is urgently needed for our civilian economy.

Yours sincerely,

John T. Edsall

John T. Edsall

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9207867
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

****

FROM: PENG, Zhi Zheng: INSTITUTE OF HIGH ENERGY PHYSICS

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/06/92

SUBJECT: HE IS WRITING REGARDING HIS VIEWS ON THE SSC AND THE RECENT VOTE IN THE U.S. HOUSE OF REPRESENTATIVES.

****

DIRECTORATE ASSIGNED:

STAFF ASSIGNED:

ACTION REQUIRED:

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE:

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY
PHYSICAL SCIENCES

****

WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE: EXT:

REMARKS:

OSTP RECEIVED: 07/06/92 DEPT RECEIVED:

FILE: P-INTERNATIONAL

CENTRAL FILES:

7867

IHEP INSTITUTE OF HIGH ENERGY PHYSICS
ACADEMIA SINICA

Director's Office, 81.1882
Foreign Affairs Office, 81.6783
Telex, 22082 IHEP CN
Telefax, 8213374

Mail address:
P.O.Box 918
Beijing, People's Republic of China

Dr. D. A. Bromley
Science Advisor to the President
Old Executive Office Building, Room 360

July 6, 1992

Dear Dr. Bromley:

I am writting to you on the House vote on the funding of the SSC Project which worries me and many of my colleagues here in China.

As you may know that we have just entered into Collaborative Agreements at different levels, namely, between CAS and DOE, IHEP and SSCL in line with the umbrella agreement for cooperation in science and technology between the two governments. Concrete steps have been taken in fabricating and contributing linac coupling cavities to SSCL in China, which is only one of the many items for collaboration.

We think the SSC will be the most powerful tool of physics into the 21st century. It is of vital importance to the progress of science and man's understanding of the basic building blocks of nature. Based on this belief and the existing collaboration with SSCL, we feel concerned about the House vote. As the main scientific research institution in high energy physics in China and as one of these international collaborators of the SSCL, we would like to offer our strong support. We hope and we are confident that the Senate will restore the funding to the SSC. We wish the SSC would be a reality and a full success as is scheduled.

With best regards,

Sincerely Yours

Zheng Zhi Peng
Director, Institute of High Energy Physics
Beijing

C.C. Prof. Roy Schwitters

Logged

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9202165
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: MINGAY, Don: ATOMIC ENERGY CORPORATION OF SOUTH AFRICA LIMITED

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/01/92

SUBJECT: HE IS WRITING REGARDING AN UNANSWERED FAX, AND INVITES DR. BROMLEY TO VISIT THEIR FACILITY.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED: JS

ACTION REQUIRED: FOR DAB'S SIGNATURE

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: 08/17/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS:

OSTP RECEIVED: 08/03/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL

CENTRAL FILES:

2165

Atomic Energy Corporation of South Africa Limited
PO Box 582 Pretoria 0001 Telephone: (012) 316-4911

AEC·AEK

REF : BES 999
TEL No : (012) 316-5853
FAX No : (012) 316-5925
DATE : 1992-07-01

Prof D A Bromley
Scientific Adviser to the President
Office of Science and Technology Development
White House
WASHINGTON D.C.

Dear Allan,

I write with a level of concern and worry as I wonder at a present lack of response from you. I have been very aware of the fact that no matter how busy, you have always found time to respond to my calls for assistance and help, (invariably very positively), essentially by return which is classically your style. My overriding concern is that I might be seen to have abused or misused my contact with you which would be most distressing and for which I would attempt to reconcile, apologise appropriately, and take corrective action. This relates directly to my recent "last minute" FAX requesting the possibility, be it ever so slight, of you finding time to give Dr K Fouche a brief audience during his visit to Washington on past Friday, 26th June. It was a very late planning action and he is a man who I admire sufficiently to consider requesting that you open a very special door to him. I am also aware of your time demands and that a high possibility existed that you would not be able to accommodate him. That was a risk worth taking. This request was sent by FAX on Thursday, 18th June. The other alternative explanation that I have is that this communication link did not work. I should have phoned but decided against "double channeling". I guess I seek some reassurance of availability of continued contact which I treasure.

In that FAX I also mentioned that we have thrown our plants and research at the AEC open to many visitors from the USA in particular and shown them both past achievements and future hopes. I believe that there is a definite niche that should still be filled by trying to coerce you into putting aside a few days to come out and visit and view the AEC yourself. Nothing would give me more pleasure than being able to play a role in establishing any such possible visit should it be at all possible and welcome you back to a visit to South Africa. Your positive response to this would

bring a big smile. It is recognised that your diary is, in all probability, reasonably full!!! That does not stop me from trying.

As mentioned in the FAX, our family is well, Caryl passing exams and getting back to 100 % fitness, but not without a level of psychologically associated trauma. She is at the University of Cape Town majoring in English and Psychology .... and enjoying the lifestyle! Mike thrives on amateur electronics and explosions and Ann is painting and making jewellery for relaxation while also having a growing commercial overtone. My situation is 100 % work driven at this time with the occasional game of tennis.

The immediate political and financial factors emerging in the USA are fascinating. I would love to have a brief view of the future as you see it. You seem to have many hot irons in several fires simultaneously from what we see out here in the general literature.

Our situation is somewhat tense with negotiations having broken down while the economy continues it's downward spiral. It is not very reassuring at this time and hopefully trust is not misplaced. I would trust that having Lynn and family near at hand still provides the escape route so essential to provide the buffer from daily pressures and sometimes insanities which seem to be more prevalent these days (out here in any case).

All best wishes,

Sincerely,

Don Mingay

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

DATE 8-5-69

TO:
ADDRESS: Don Mingay

TELEPHONE NUMBER: 011-27-012-316-5925
FAX NUMBER:

FROM: D. Allan Bromley
TELEPHONE NUMBER: 202/456-7116
FAX NUMBER: (202) 395-3261

NUMBER OF PAGES, INCLUDING COVER SHEET 2

TRANSMISSION REPORT

THIS DOCUMENT (REDUCED SAMPLE ABOVE)
WAS SENT

** COUNT **
# 2

*** SEND ***

NO	REMOTE STATION I. D.	START TIME	DURATION	#PAGES	COMMENT
1	0123165925	8- 5-92 7:34	1'22"	2	
		TOTAL	0:01'22"	2	

XEROX TELECOPIER 7021

THE WHITE HOUSE

WASHINGTON

July 6, 1992

Dear Don:

Thank you for your recent letter bringing me up to date on your activities and for your invitation to visit South Africa again. My schedule, already pretty hectic as you might ~~imagine, has grown fuller with election year~~ commitments as well. A trip to your part of the world would be a welcome pleasure but time does not appear in my favor anytime in the near future as far as I can tell. I will, however, consider your offer a standing invitation.

With regard to your request for me to see Dr. Karel Fouche, I fear we never heard from him during his most recent visit. Of course, I would have been pleased to meet with him.

I enjoyed hearing from you--please stay in touch. Best wishes to Anne and your family,

Sincerely yours,

Allan

D. Allan Bromley
The Assistant to the President
for
Science and Technology

And thanks for all the news

Dr. Don W. Mingay
Atomic Energy Corporation of
South Africa, Limited
Post Office Box 582
Pretoria, South Africa 0001

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9207885
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS
****

FROM: FINARELLI, Margaret G.: NASA

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/01/92

SUBJECT: SHE IS WRITING TO ACCEPT DR. BROMLEY'S OFFER TO PARTICIAPTE IN THE FIRST MEETING OF THE U.S.-CANADA JOINT CONSULTATIVE MECHANISM.

****

DIRECTORATE ASSIGNED: STAFF ASSIGNED:

ACTION REQUIRED: STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
Tom Ratchford
PHYSICAL SCIENCES

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:
REMARKS:

OSTP RECEIVED: 07/16/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL

CENTRAL FILES:

7885 ✓

NASA

National Aeronautics and
Space Administration

Washington, D.C.
20546

Reply to Attn of: I

July 1, 1992

The Honorable D. Allan Bromley
Assistant to the President
for Science and Technology and
Director, Office of Science and
Technology Policy
Executive Office of the President
Washington, DC 20506

allan

Dear Dr. ~~Bromley~~:

I appreciate and accept your invitation to participate in the first meeting of the U.S.-Canada Joint Consultative Mechanism. NASA has enjoyed a productive, mutually beneficial relationship with Canada that dates back over 30 years. I would be delighted to discuss our experience and our ongoing cooperative programs, in particular, Space Station Freedom.

Sincerely,

Margaret G. Finarelli
Associate Administrator
for Policy Coordination
and International Relations

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9207874
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

****

FROM: DANILOV, Michael et al: INSTITUTE OF THEORETICAL AND EXPERIMENTAL PHYSICS, MOSCOW

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 06/30/92

SUBJECT: HE IS WRITING EXPRESSING HIS CONCERN OVER THE FUNDING FOR THE SSC.

****

DIRECTORATE ASSIGNED: STAFF ASSIGNED:

ACTION REQUIRED: STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY
PHYSICAL SCIENCES

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS:

OSTP RECEIVED: 07/06/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL

CENTRAL FILES:

7874

June 30, 1992

Dr. D. Allan Bromley
Science Advisor to the President
Old Executive Office Building, Room 360
17th and Pennsylvania Avenue, N. W.
Washington, D. C. 20506

Dear Dr. Bromley:

For the last several years we, three Russian physicists, have served on the main International Advisory Committees of the Superconducting Super Collider (SSC) Laboratory.

Being fully familiar with the SSC project, we were shocked to learn that the House of Representatives decided to kill it.

Such a decision, if actually carried through, would ruin High Energy Physics in the United States and would be extremely damaging worldwide in this most fundamental frontier of Modern Science.

The last decades have witnessed an immense progress in our understanding of the fundamental forces of Nature, revealing the crucial importance of the TeV energy scale. The forthcoming multi-TeV colliders (of which the SSC is the largest one) promise to shed light on the nature of such basic concepts as those of mass, of vacuum, and of the creation of the universe.

The world community of high energy physicists and engineers, which has been formed during the second half of this century, is a unique team that is capable of exploring the TeV energy region. Renouncing the challenge would lead to inevitable and irreversible decay of that community.

Now, when with the end of the Cold War huge resources are being liberated, the big colliders and especially SSC could and should be used as an evident instrument in the process of converting military labs and industry to serve the needs and aspirations of Mankind. This is true not only for the United States, but for Russia as well.

During recent years there has been a distinct trend to internationalize SSC. In particular, big collaborations involving large foreign intellectual, technological, and financial resources were formed to build the SSC detectors. At this 'moment of truth' it becomes even more clear that one should not spare any effort to make the SSC Laboratory a truly international enterprise.

We are addressing you in hope that with the worldwide support for saving the SSC, you will be able to persuade Congress to continue this vital project.

Sincerely yours,

Michael Danilov
Deputy Director, ITEP
(Institute of Theoretical and Experimental Physics)
Moscow;
SSCL Program Advisory Committee member

Lev Okun
Member of the Russian Academy of Sciences,
Member of Academia Europe,
Head of the Laboratory of Elementary
Particle Theory, ITEP, Moscow;
SSCL Scientific Policy Committee member

Alexander Skrinsky
Member of the Russian Academy of Sciences,
Chairman of Nuclear Physics Division of the Academy,
Director, INP
(Institute of Nuclear Physics), Novosibirsk;
SSCL Machine Advisory Committee member

Identical letters sent to:
Dr. Frank Press
Secretary James D. Watkins

cc: Dr. Roy Schwitters, SSCL
Dr. William Happer, DOE

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9203132
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

****

FROM: BRAVERMAN, DR. AVISHAY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 06/29/92

SUBJECT: RE:HIS INABILITY TO MEET WITH DR. BROMLEY DURING HIS VISIT TO ISRAEL. ALSO ENCLOSED HIS ARTICLE "BRAVING THE PEACE FRONTIER"

****

DIRECTORATE ASSIGNED: D. Allan Bromley

STAFF ASSIGNED:

ACTION REQUIRED: AS NECESSARY

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE:

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

****

COPIES TO:

****

WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE: EXT:

REMARKS:

OSTP RECEIVED: DEPT RECEIVED:

FILE: P-INTERNATIONAL

CENTRAL FILES:

ת.ד. 653 — באר־שבע 84105
טל. 461219, 57-33341
פקסימיליה - 57-39949

P.O.B. 653 - 84105 BEER-SHEVA, ISRAEL
Tel. 57-33341, 461219
FACSIMILE - 57-39949

הנשיא
THE PRESIDENT

אוניברסיטת
בן־גוריון
בנגב
BEN-GURION
UNIVERSITY
OF THE NEGEV

29 June 1992

3132

Dr. D. Allan Bromley
Assistant to the President of the United States
for Science and Technology

Dear Dr. Bromley,

Welcome to Israel.

To my regret, I will not be able to meet with you during your current visit. I was eager to discuss Ben-Gurion University with you but I do have the best of excuses. I am getting married tomorrow.

Ben-Gurion University of the Negev, Israel's youngest institution of higher learning together with the State of Israel are facing a critical period. If Israel is to succeed in the two momentous goals she is now facing - the absorption of hundreds of thousands of new immigrants from the former Soviet Union, and the achievement of true peace with our neighbors, the Negev must play a crucial role. The Negev looks to Ben-Gurion University with its reservoir of experts in medicine, arid-zone agriculture and many other fields, to lead the way.

I do hope you will return to Israel soon so I will have the opportunity of hosting you in the Negev and showing you some of our unique accomplishments.

With best wishes.

Avishay Braverman

Dr. Avishay Braverman
President

P.S. Enclosed is an article I wrote recently called "Braving the Peace Frontier" which I hope you will find of interest. I gave the article to our mutual friend, Mike Boskin, my former teacher and colleague from Stanford University, as well. As you may know, I worked in the World Bank for more than ten years and I consider Washington my second home.

BRAVING THE PEACE FRONTIER

Dr. Avishay Braverman

President, Ben-Gurion University of the Negev
[Former Division Chief, The World Bank]

With the current, sporadic Middle-East negotiations in Washington, Jerusalem and Arab capitals focused intently on Israel's northeast borders -- and critical U.S. loan guarantees held hostage to Israeli settlement concessions -- a major opportunity for long-term regional stability is being overlooked. The path to non-confrontational diplomacy, maximizing immigrant absorption potential, Israel's economic independence...and Peace...leads south to the Negev.

During Israel's forty-three years of existence, many politicians have paid lip service to the necessity of population dispersion away from the crowded coastal plain, but only David Ben-Gurion, Israel's first Prime Minister, and a few of his followers, actually tried to realize this goal. Ben-Gurion not only preached the importance of the Negev in Israel's development, he made his home there.

The Negev constitutes sixty-percent of the land mass of Israel but only about seven-percent of its population. More than sixty- percent of the population and most of the industrial and communication centers are located within a radius of thirty miles of Tel-Aviv. Israel's consequent vulnerability was dramatically proven by the Scud missiles launched by Saddam Hussein during the Gulf War. Moreover, the concentration of population and industry around Tel-Aviv has created transportation and pollution nightmares, resulting in a marked deterioration of the quality of life for many Israelis. Ben-Gurion's vision was stark: "Israel without the Negev will be a Carthage named Tel-Aviv."

Over the years, it has been argued that the Negev will not provide a viable basis for a large population. But my experience, as an economist working on economic development issues around the world, shows that societies are economically successful if they satisfy three criteria. First, they must have a commitment to excellence in education and to higher education, in particular. Second, an economic system must encourage free enterprise. While a government's role is very important, it must be limited to the creation of physical, educational and social infrastucture which provides a safety net for the less privileged. Third, the social ethos must be future oriented, emphasizing hard work and savings, thus creating wealth and providing for its transfer to future generations.

The successes of Korea and Japan, in contrast to the disappointing performance of Argentina, testify to the fact that it is the organization and management of human capital, guided by appropriate ethical values, which determine the economic rise and decline of a nation, rather than its initial inventory of natural resouces.

Israel's economic development potential can be realized in the Negev by paying attention to the three elements mentioned above. The climate in the Negev -- hot, but not humid -- is better than in Tel-Aviv or Washington, D.C. The shortage of water is a problem that can be solved through corrections in the distorted water pricing system and implementation of alternative technologies now being developed. In addition, progress in the peace process will advance proposals for regional cooperation including the transfer of water from the Euphrates in Turkey to Syria, Jordan, the Palestinians and Israel.

What about the availability of top quality human resources in the Negev? As a student at Stanford University in the early 1970's, I witnessed the evolution of "Silicon Valley". The ingredients were an excellent University, the availability of venture capital and a commitment to achievement. I believe that the existence of Ben-Gurion University in the Negev, the availability of highly skilled Israelis (native born and immigrant) and the aspiration for achievement which is part of the Israeli ethos, can make Ben-Gurion's vision into a reality within a decade. Only the lack of economic capital and the need for economic reform stand in the way.

Israel is now at a fundamental crossroad in this, the most critical decade of its existence. On the one hand, the peace process has been revived after more than ten years of inaction, and on the other hand, the flow of immigration from the Soviet Union may bring nearly one million Jews to Israel in the next few years.

Israel could try to absorb a million immigrants, most of them well educated, in the crowded triangle formed by Haifa, Tel-Aviv and Jerusalem, or return to the vision of Israel's founders and direct efforts, energy and resources toward the creation of a metropolitan center in Beer Sheva, the capital of the Negev. According to Tel-Aviv University urban economist, David Pynes, the additional congestion and environmental costs imposed by settling one immigrant in the center triangle is $60,000. These costs can be minimized by settling the immigrants in the sparsely-populated Negev.

Although massive housing construction has been undertaken in the vicinity of Beer Sheva, the goal of doubling the population in the area will be unattainable unless accompanied by paralleled efforts to create an appropriate infrastructure -- airports, roads, communication systems, enhanced education and public health systems, and most important, the formation of new industries, many of them high tech, utilizing the human potential of the new immigrants.

The capital needed for the development of the Negev and the absorption of the immigrants from Eastern Europe and Ethiopia will be found if there is an international understanding that the peace process will not move forward without economic initiatives beneficial to all parties: a regional economic plan which requires the infusion of financial capital contingent upon economic reforms in all the countries in the region.

It is essential that the U.S. and the E.E.C., both actively committed to successful conclusion of the peace negotiation, realize this. They can play a formative role in such an economic initiative, thus creating a positive climate for the peace process. Japan should also be called upon to support such endeavors.

History has shown the value of wise and timely gestures in influencing the course of events. The Middle East is at a crossroad. Will the economic powers of the free world have the vision to meet the challenges of leadership? Will the peoples of this troubled region have the courage to answer the call? A comprehensive development plan, based upon economic reform in the countries involved, should consist of projects in a variety of areas.

The Negev comprises Israel's border with both Jordan and Egypt. That, and its proximity to Saudi Arabia, make it the natural focus for Israel's participation in an economic development regional plan. I believe that the World Bank is the obvious agency to lead such an endeavor.

Too often, Israel is accused of intransigence and inflexibility due, in large measure, to the security risks imposed on her since the creation of the State. An Israel with a developed, flourishing Negev wlll be a healthier, more secure Israel, able to share the benefits of her technology and achievements with all of her neighbors.

Ben-Gurion, perhaps Israel's greatest statesman, said: "The supreme test of Israel at this time in its history lies not in the struggle with hostile forces outside its frontiers but in its success in wresting fertility from the [Negev] wasteland..."

The peace negotiations hold the potential both for disaster and for triumph. Israel may be called upon to relinquish territory. A vision not of retreat, but of reclamation of the Negev wasteland, can bring hope to Israel, and to the region, in the crucial months ahead.

THE WHITE HOUSE

WASHINGTON

July 30, 1992

Dear President Braverman:

I too was sorry that we were unable to meet during my recent visit to Israel and I must say that I very much enjoyed my breakfast meeting with your colleagues.

I much appreciate your sending me your interesting article **Braving the Peace Frontier** and I have mentioned to Mike Boskin that we had made contact although had not been able to meet while I was in Israel.

My own impression gathered from an admittedly brief visit to Israel, Jordan and Egypt is that the prospects for peace are better now than they have been at any time since 1948.

While I currently have no plans to return to Israel in the near future I too would very much look forward to the opportunity of seeing what you have accomplished at Israel's newest university.

With warmest best wishes,

Sincerely yours,

D. Allan Bromley
The Assistant to the President
for
Science and Technology

Dr. Avishay Braverman
President
Ben-Gurion University of the Negev
Post Office Box 653
84105 Beer-Sheva
Israel

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9207856
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

****

FROM: SOBHAN, Mohammad A.: THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 06/28/92

SUBJECT: HE IS FORWARDING THE SECOND EDITION OF THE ASME CHAPTER NEWSLETTER.

****

DIRECTORATE ASSIGNED:

STAFF ASSIGNED:

ACTION REQUIRED:

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE:

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
INDUSTRIAL
INTERNATIONAL/POLICY

****

WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE: EXT:

REMARKS:

OSTP RECEIVED: 07/06/92 DEPT RECEIVED:
FILE: INTERNATIONAL

CENTRAL FILES:

7856

The American Society of Mechanical Engineers

MOHAMMED A. SOBHAN
ASME - CORRESPONDENT
AND
CHAIRMAN - EXECUTIVE COMMITTEE
(C&WP) Chapter - Saudi Arabia.
TEL. (O): 9662-684-1959.
TEL. (R): 9662-682-0030 X 6762.
FAX: 9662-651-5134

P.O Box 14066
Jeddah 21424
Saudi Arabia

June 28, 1992.

Dear Mr. D. Allan Bromley

I am pleased to forward herewith our 2nd edition of ASME Chapter news letter "ASME UPDATE". You will find some informations & idea about our chapter activities in this region. Your valuable comments & Suggestions to improve our activities will be highly appreciated by the ASME Saudi Arabia. This will help us in developing various ASME activities in this region.

Thank you very much.

Yours Sincerely

(Engr. Mohammad A. Sobhan)
Chairman
Executive Committee.

Info

cc: International
DAB

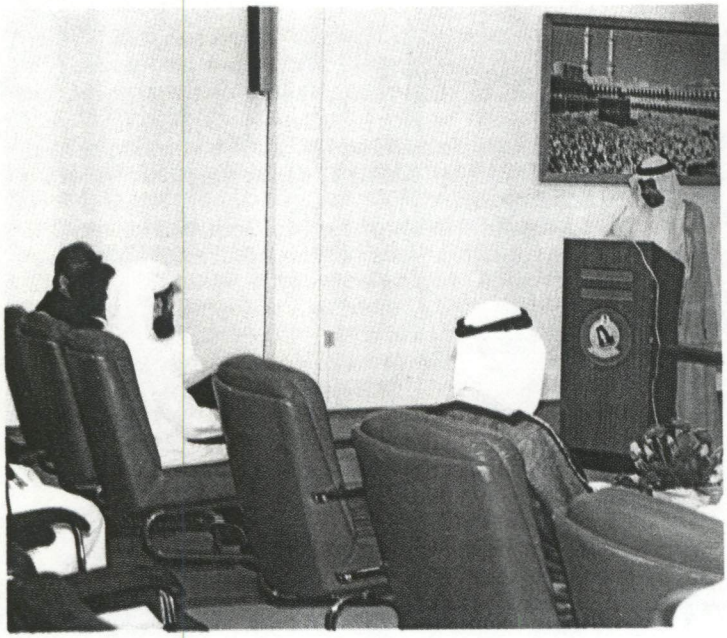
ASME UPDATE

News Letter of Saudi Arabia Chapter

Vol-1 No. 2 | P.O.Box. 14066, Jeddah 21424. | April 1992.

ENGINEERS WEEK CELEBRATION

Jeddah, Saudi Arabia, March 01, 1992



H. E. Gen. Amin Speaking on Engineers Week Celebration.

The American Society of Mechanical Engineers, Saudi Arabia Chapter , celebrated Engineers Week by holding seminars , Lectures and school visits to promote the Engineering education among the young Saudis and Engineers.

ASME Saudi Arabia planned a weeklong program to celebrate Engineers Week from Feb 22nd to 27th, 1992 .

Day 1, Event, February 22nd , 1992.

The First day seminar was hosted by Saudi Binladin Group , at their Head office Auditorium. Shaikh Ahmed Al-Khareiji, President and C.E.O. PETROLUBE, was the chief guest. Engr. Mohammad A. Sobhan, chairman ASME Saudi Arabia Chapter, welcomed the Chief Guest and the sponsor for their support and gave the details of weeklong program to celebrate 'Engineers week ' in saudi Arabia for the first time.

Dr.Fouad Rihani, Guest speaker, spoke on "Engineering Management in construction". Dr.Muhammad Salim Moini of I.A.P. spoke about the 'Legal Aspects in Engineering practice ASME video film on 'Engineering is for Everyone' was shown to the audience. Dr. Ibrahim Olwi concluded the seminar with thanks to the guests, speakers and the chief guest.

CONTINUED TO PAGE 14

MAINTENANCE MANAGEMENT -THE SYSTEM APPROACH

Jeddah, Saudi Arabia, December 05, 1991

H. E. Gen Amin with the U .S.Consul General Mr. Phillip J. Griffin and Engr. Mohammad A. Sobhan, Chairman ASME, Saudi Arabia, at Maintenance Management -The System Approach. Seminar.

The ASME Saudi Arabia chapter arranged a seminar on "Maintenance Management -The System Approach" which was held at Al-Fau Holiday Inn , Jeddah on November 26, 1991. About 500 engineers and guests of about 80 of the Kingdom's top organizations attended the seminar. The major organizations include Saudi Arabian Airlines, Presidency of civil Aviation, I.A.P., King Abdul Aziz University, Umul Qura University, SAMAREC, SWCC, SCECO, AL-Mawarid Co., Binladin group of companies and many other private companies of the Kingdom of Saudi Arabia.

The Seminar was sponsored by the International Airports Projects. His Excellency Said Y. Amin , Deputy President of the Presidency of Civil Aviation and Directopr of I.A.P was the Chief Guest. Said Amin in his address said that the Saudi Government has laid great emphasis on the maintenance of the Kingdom's modern facilities constructed over the past two decades. He commended ASME activities and said that the "Society's role in scientific development and research has been a trend-setter." These activities realize the sprit of international cooperation for the benefit of all."

CONTINUED TO PAGE 6

TYPE: ACTION DOCUMENT NUMBER: 9207809
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS
****

FROM: RONG-DIAN, Han: UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 06/27/92

SUBJECT: HE IS WRITING REGARDING FUNDING FOR THE SSC.

****
DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY
STAFF ASSIGNED:

ACTION REQUIRED: FOR DAB'S SIGNATURE
STAFF ACTION:

****
SENDER'S DUE DATE:
OSTP DUE DATE: 07/14/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
PHYSICAL SCIENCES

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:
REMARKS:

OSTP RECEIVED: 06/27/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL

CENTRAL FILES:

7809

№ 0003581

中国科学技术大学
University of Science and Technology of China
President office
Hefei, Anhui 230026
People's Republic of China
Tel,(551) 331134, 331812
Telex: 90028 USTC CN
Telefax: (551) 331760

TO:
name Dr. D. Allan Bromley
address Scie. Adviser to the President
Washington, DC 20506
Fax. 202-456-2461 (USA)

FROM,
name Han Rong-Dian
address U. of Scie & Tech of China
Dept. of Modern Physics
Hefei, Anhui, CHINA

page 1 of 1 date 6/27/1992

DMP
Dept of Modern Physics

To Science Adviser
to the President

From Han, Rong-Dian

Dear Dr. D. Allan Bromley:

Having heard that the House of Representatives voted to reduce FY1993 funding to $ 33.7 million, that means the SSC project is killed. I am disappointed for it.

The SSC project in the public eye is a absolutely essential for particle physics in the 21-st century to know the secrets of nature. It is one of the most important achievements of the United States, and it is a pride of all the scientists in the world. In fact to cancel the SSC project is the meaning to stop research work of the particle physics in the United States, and it will exercise a bad influence on the development of the high energy physics in the world.

I hope you can support to restore $ 650 million budget, and appeal by you to the house of Senate for support the SSC project.

Sincerely,

Han Rongdian
Han, Rong-Dian

Professor of Physics
Head of group of USTC
Chairman of Dept. of
Modern Physics

ACTION: INT

cc: DAB
PS

7900

CIF

CENTRO INTERNACIONAL DE FISICA

APARTADO AEREO 49490
BOGOTA, COLOMBIA

June 27, 1992

Dr. D. Allan Bromley
Science Advisor to the President
Old Executive Office Building, Room 360
17th and Pennsylvania Avenue, NW
Washington, DC 20506
U.S.A.

Dear Dr. Bromley:

I am in charge of coordinating the programs in high energy physics of the Centro Internacional de Fisica in Bogota, Colombia, an organization with international reach in Latin America for the promotion of physics research. Dozen of groups in Latin America today are doing experimental high energy physics research, and most of them started with the successful program of collaboration started by Leon Lederman at Fermilab in 1981, which in my opinion, is a model for international scientific cooperation.

Many of us throughout the continent have put faith in the Superconducting Supercollider and hope to continue and expand a very fruitful program of international collaboration with the United States well into the 21th century. I see with a great deal of concern the possibility of cancellation of the SSC project due to an action by the Congress of the United States. I want to make a strong statement of support for the continuation of the project, not only because of the prime importance of its research in fundamental science, but also for the health of international science.

Sincerely,

Juan Pablo Negret

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9203411
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

****

FROM: WINEGARD, WILLIAM C: MINISTER FOR SCIENCE, CANADA

TO: D.A. BROMLEY

DATE OF CORRESPONDENCE: 06/25/92

SUBJECT: CONFIRM INTENT TO ESTABLISH JOIN CONSULTATION ON S & T WITH THE U.S.

****

DIRECTORATE ASSIGNED: STAFF ASSIGNED:

ACTION REQUIRED: STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: 11/18/92 DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
RALPH BRESCIA
Tom Ratchford

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS:

OSTP RECEIVED: 07/30/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL

CENTRAL FILES:

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
04. Letter	To: Allan Bromley From: William Winegard Re: Joint Consultations on Science and Technology (2 pp.)	6/25/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files
WHORM Cat.:
File Location: International: General [8 of 10] [1992]

Date Closed:	5/4/2010	**OA/ID Number:**	62063-005
FOIA/SYS Case #:	2005-0336-F	**Appeal Case #:**	
Re-review Case #:		**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

Tom - 6/16

DAB cannot go in his present capacity. I'm not even sure he can write a "no thanks" letter to a CCNA offered One would have to check with AIT

p2

Document Originally Attached to Following Page

TOM,
I'LL HAVE TO DEFER TO PIERRE AND OTHERS ON THIS UNTIL I KNOW MORE ABOUT OUR APPROACH TO CHINA.

JF

Pierre
Please check out our letter-writing options.

JR
6/16/92

Jim Keith, NSC says writing to him is ok as long as "ROC" is not used. Draft reply attached p2

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9202132
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS
****

FROM: CHEN, Shuh-Kuen: COORDINATION COUNCIL FOR NORTH AMERICAN AFFAIRS

TO: DR. D.A. BROMLEY

Diane
Jeff
Comments?

DATE OF
CORRESPONDENCE: 06/02/92

SUBJECT: HE IS OFFERING HIS ASSISTANCE WITH ANY TRIP THAT DR. BROMLEY MAY BE PLANNING TO VISIT THE REPUBLIC OF CHINA.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED:

ACTION REQUIRED: AS NECESSARY

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: 06/25/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS:

OSTP RECEIVED: 06/11/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL

CENTRAL FILES:

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

August 3, 1992

Dear Mr. Chen:

Thank you very much for your kind letter of June 2, 1992. I appreciate your kind remarks concerning the graduation ceremonies at the University of Massachusetts.

I do not presently have any plans to travel to your country at this time. I do, however, appreciate you hospitable sentiments, and also look forward to our next encounter.

Sincerely yours,

D. Allan Bromley
Director

Mr. Shuh-Kuen Chen
Director, Cultural Division
Coordination Council for North American Affairs
Office in Boston
Boston, MA 02110

Cultural Division
Coordination Council for North American Affairs
Office in Boston
99 Summer Street, Suite 801
Boston, MA 02110
Tel: (617) 737-2055
Fax: (617) 951-1312

2132

June 2, 1992

Dr. D. Allen Bromley
Assistant to the President
of the United States for
Science and Technology
Office of Science and Technology Policy
Old Executive Office Building
Washington, DC 20506

Dear Dr. D. Allen Bromley,

I was very pleased to have the honor of meeting you on the occasion of your honorary degree conference at The University of Massachusetts at Boston on May 29th, 1992. I was very impressed by your magnificent discourse on the state of higher education in the United States, and agree completely with your viewpoints. The President justly considers you to constitute the vanguard of your field.

If you have any intentions to visit the Republic of China at some date in the future, it would be my pleasure, on behalf of the Ministry of Education, to extend every courtesy to you and a select staff. Please contact me with any plans you might be considering, and I look forward to the happy occasion of our next encounter.

Sincerely,

Shuh-Kuen Chen
Director, Cultural Division

SKC/rew

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9202043
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: PEARSON, W. Robert: U.S. DEPARTMENT OF STATE

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 06/01/92

SUBJECT: HE IS FORWARDING A MEMORANDUM FROM UNDERSECRETARY BARTHOLOMEW TO DR. BROMLEY CONCERNING A PROPOSED STUDY ON INTERNATIONAL SCIENCE AND TECHNOLOGY BY CISET.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED:

ACTION REQUIRED: AS NECESSARY

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: 06/18/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
FCCSET

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS:

OSTP RECEIVED: 06/04/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL

CENTRAL FILES:

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
05a. Memorandum	To: Ambassador Bartholomew From: Allan Bromley Re: CISET Study on International Science and Technology (1 pp.)	6/26/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files
WHORM Cat.:
File Location: International: General [8 of 10] [1992]

Date Closed:	5/4/2010	**OA/ID Number:**	62063-005
FOIA/SYS Case #:	2005-0336-F	**Appeal Case #:**	
Re-review Case #:		**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

July 24, 1992

MEMORANDUM FOR D. ALLAN BROMLEY

FROM: TOM RATCHFORD

SUBJECT: BARTHOLOMEW MEMORANDUM

Your note to me asks to discuss the May 30, 1992 memorandum to you from Reg Bartholomew. In his memorandum to you, Reg suggests the international S&T principles and guidelines study be done through an OES PCC Working Group chaired by me and reporting to Buff Bohlen.

Attached, for discussion purposes, is a draft reply. It expresses a preference for using CISET but a willingness to discuss options. The options include working through the PCC process, but eschewing the route of reporting through Buff.

I would be happy to discuss this in more detail at your convenience.

Please type up memo in final form for signature.

9211593

2043

United States Department of State

Washington, D.C. 20520

June 1, 1992

MEMORANDUM FOR BRENT SCOWCROFT
THE WHITE HOUSE

SUBJECT: CISET Study on International Science and Technology

Please transmit the attached memorandum from Under Secretary Bartholomew to Dr. Bromley concerning a proposed study on international science and technology by the Committee on International Science, Engineering and Technology (CISET).

W. Robert Pearson
Executive Secretary

Attachment:
As stated.

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
05b. Memorandum	To: Allan Bromley From: Reginald Bartholomew Re: CISET Study on International Science and Technology (2 pp.)	5/30/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files
WHORM Cat.:
File Location: International: General [8 of 10] [1992]

Date Closed:	5/4/2010	**OA/ID Number:**	62063-005
FOIA/SYS Case #:	2005-0336-F	**Appeal Case #:**	
Re-review Case #:		**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

April 27, 1992

MEMORANDUM FOR AMBASSADOR BARTHOLOMEW

FROM: D. ALLAN BROMLEY

SUBJECT: REQUEST FOR CISET STUDY TO DEVELOP PRINCIPLES AND GUIDELINES FOR INTERNATIONAL SCIENCE AND TECHNOLOGY

As you know, the last four decades have seen a remarkable degree of international activity and cooperation in science and technology (S&T) by the Federal Government. In this endeavor, we have tried both to foster goodwill and cooperation among countries, and to facilitate the conduct of research that is inherently international in scope.

These four decades have seen fundamental changes in the distribution of centers of research, flows of scientists and engineers, and commercial importance of research and development. We need to continue to adjust to these changes in our national policies, foreign policy development, and in our technical agencies.

The U.S. Government has, as you know, hundreds of international agreements promoting and facilitating cooperation in S&T, both at the technical agency level and at the U.S. Government level. I am of the opinion that there is a need for a clear articulation of foreign and economic policy goals of the United States as they relate to international S&T activities. In addition, there is a need within each technical agency to review their international S&T activities in light of their mission and overall U.S. foreign and economic policy.

In your capacity as Chair of the Committee on International Science, Engineering and Technology (CISET), I am requesting the creation of an Ad Hoc Working Group of CISET to prepare a report which will address these issues. This report, including recommended actions, would be due July 1, 1992, and a draft principles and guidelines for the conduct of international S&T would be delivered by October 1, 1992. A draft State of Roles and Objectives describing specific functions, structure, and tasks is attached for your reference.

The CISET is the appropriate forum for discussing these important topics, considering its mandate to increase the overall effectiveness and productivity of Federal efforts in international science, engineering and technology. Additionally, because this exercise will cut across agency boundaries, a forum of this type is needed to provide the necessary overview and expertise.

If you feel that an Ad Hoc Working Group of CISET is not the appropriate venue for this study, and that these issues should be more appropriately addressed in some other forum, I would be pleased to discuss this further with you.

I look forward to your positive response.

Attachment

STATEMENT OF ROLES AND OBJECTIVES
FOR THE
AD HOC WORKING GROUP OF THE
COMMITTEE ON INTERNATIONAL SCIENCE,
ENGINEERING, AND TECHNOLOGY
ON
PRINCIPLES AND GUIDELINES FOR
INTERNATIONAL SCIENCE AND TECHNOLOGY

The Ad Hoc Working Group on Principles and Guidelines for International Science and Technology (hereinafter referred to as the Working Group) is hereby established under the Committee on International Science, Engineering, and Technology (CISET) of the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET) by action of the FCCSET Chairman.

Purpose

The purpose of the Working Group is to review the conduct of international science and technology activities sponsored and supported by the United States Government through its technical agencies. The Working Group will draft guidelines and principles for use by Federal agencies in their conduct of international science and technology programs and activities, and recommend through the CISET to the FCCSET whether the principles and guidelines be recommended to the President for possible incorporation into an executive order.

Functions

Reporting to and under the direction of the Chairman of CISET, the Working Group will review:

- **the changing environment for international science and technology, including national security, economic, and domestic policy considerations;**

- **the role of international science and technology in research and development programs of technical agencies;**

The Working Group will review and recommend principles and guidelines with respect to:

- **effectiveness of present policies and organization in utilizing science and technology in support of foreign policy objectives;**

- o the scope and effectiveness of government role in providing foreign science and technology information for U.S. Government, universities and industry;
- o the role of science and technology exchanges (mobility) in civilian technology transfer;
- o the role and utility of both umbrella and agency level science and technology agreements;
- o the process for review, approval, and implementation of international science and technology agreements including the utility of a "model" agreement, the interagency approval process, and documentation and reporting on activities under the agreements;
- o the role of international cooperation in megaprojects from both a domestic and foreign policy perspective;
- o U.S. government practices for addressing foreign proposals for technology cooperation, particularly when the proposals cut across multiple agencies and include private sector participation;
- o agency procedures for handling proposals from foreign principal investigators;
- o existing legislation including the effectiveness and value of the Title V reporting requirements; and
- o emerging S&T relationships with Eastern & Central Europe & CIS.

Structure and Membership

The Associate Director for Policy and International Affairs in the Office of Science and Technology Policy will serve as Chairman of the Working Group.

The following departments and agencies are represented on the Working Group:

National Security Council
Office of Management and Budget
United States Trade Representative
National Space Council
Agency of International Development
Department of Agriculture
Department of Commerce
Department of Defense

Department of Energy
Department of Health and Human Services
Department of Interior
Department of State
Department of Transportation
Environmental Protection Agency
National Aeronautics and Space Administration
National Science Foundation
Nuclear Regulatory Commission

Responsibility of the Working Group Chairman

- **Hold regular meeting of the Working Group and approve agendas;**
- **appoint individuals as necessary to take responsibility for completing reports or other necessary documents to be drafted by the Working Group;**

Products and Delivery Times

1) A study of the issues outlined above including recommended action; due July 1, 1992;

2) Proposed guidelines and principles for the conduct of international science and technology; due October 1, 1992.

Termination Date

The Working Group shall terminate on November 1, 1992, unless otherwise extended by the FCCSET Chairman.

Determination

I hereby determine that the formation of the Ad Hoc Working Group of the Committee on International Science, Engineering, and Technology on Principles and Guidelines for International Science and Technology is in the public interest in connection with the performance of duties imposed on the Executive Branch by law and that such duties can best be performed through the advice and council of such a group.

Recommended: **Approved:**

Chairman, CISET Date **Chairman, FCCSET Date**

THE WHITE HOUSE

WASHINGTON

April 28, 1992

Dear Secretary Watkins:

Thank you for your letter of January 16 regarding the need for Administration-wide principles for international science and technology (S&T) collaboration. I am pleased to learn of efforts within your own department to address issues related to international agreements. It is my firm belief that improvements to agency procedures, operations, and goals must come from within.

I have been considering your suggestion for a White House-initiated study and strategy for handling of international S&T efforts. What you have suggested is consistent with my efforts to create, within the FCCSET Committee on International Science, Engineering and Technology (CISET), an Ad Hoc Working Group to look at the need for and possible development of principles and guidelines to guide international S&T activities of the technical agencies. My staff is coordinating these efforts with the staff of the National Security Council and the Department of State.

Thank you for bringing this important issue to our attention and I look forward to working with you to bring about real and substantial improvements to our international S&T endeavors.

Sincerely,

D. Allan Bromley
The Assistant to the President
for
Science and Technology

The Honorable James D. Watkins, USN (Retired)
The Secretary of Energy
Washington, DC 20585

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9202032
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: BARSCHALL, H.H.: UNIVERSITY OF WISCONSIN

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 05/30/92

SUBJECT: HE IS WRITING EXPRESSING HIS VIEWS OF THE "GERMAN-AMERICAN ACADEMY" MEETING. HE REQUESTS DR. BROMLEY'S VIEWS ON HIS OBSERVATIONS.

****

DIRECTORATE ASSIGNED: Pierre Perrolle STAFF ASSIGNED:

ACTION REQUIRED: FOR DAB'S SIGNATURE STAFF ACTION:

****

SENDER'S DUE DATE:
OSTP DUE DATE: 06/17/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
Tom Ratchford

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS:

OSTP RECEIVED: 06/03/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL

CENTRAL FILES:

2032

University of Wisconsin - Madison
Department of Physics

Nuclear Physics
1150 University Avenue
Madison, Wisconsin 53706
Telephone: 608-262-6555 Office
608-262-1496 Accelerator

TELEFAX: 608-262-3598
TELEX: 265452 UOFWISC MDS
BITNET: NUCLEAR@WISCNUC

TELEFAX MESSAGE FROM NUCLEAR PHYSICS
UNIVERSITY OF WISCONSIN - MADISON

2 PAGES FOLLOW THIS COVER SHEET

PLEASE FORWARD AS SOON AS POSSIBLE
TO THE ATTENTION OF

Dr. D. A. Bromley

THANK YOU

SENT BY H. H. Barschall

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
06. Letter	To: Allan Bromley From: H.H. Barschall Re: German-American Academy meeting (2 pp.)	5/30/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files
WHORM Cat.:
File Location: International: General [8 of 10] [1992]

Date Closed:	5/4/2010	**OA/ID Number:**	62063-005
FOIA/SYS Case #:	2005-0336-F	**Appeal Case #:**	
Re-review Case #:		**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9202059
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: GIBSON, Walter M.: UNIVERSITY AT ALBANY, SUNY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 05/28/92

SUBJECT: HE IS WRITING REGARDING HIS CONCERNS ABOUT THE COLLABORATIVE DEVELOPMENT OF X-RAY AND NEUTRON OPTICS THAT THEY HAVE UNDERTAKEN WITH PROFESSOR M.A. KUMAKOV OF THE I.V. KURCHATOV INSTITUTE IN MOSCOW.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED:

ACTION REQUIRED: AS NECESSARY

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: 06/22/92

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley

****

WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE: EXT:

REMARKS:

OSTP RECEIVED: 06/08/92 DEPT RECEIVED:

FILE: P-INTERNATIONAL

CENTRAL FILES:

Department of Physics

Physics 215
Albany, New York 12222

518/442-4501
Fax: 518/442-5260

2059

UNIVERSITY AT ALBANY

STATE UNIVERSITY OF NEW YORK

28 May, 1992

D. Allan Bromley
The Assistant to the President
for Science and Technology
The White House
Washington, D.C.

Dear Allan,

I appreciate very much the opportunity that I had to meet with you briefly during your visit to Albany on May 16 and 17. I also appreciate the letter that you sent to me in July of last year especially since I know how busy you are.

This letter is a follow-up to your suggestion that I write you about my concerns about the collaborative development of X-ray and neutron optics that we have undertaken with Professor M.A. Kumakhov of the I.V. Kurchatov Institute in Moscow. We are not concerned about the feasibility of this important new technology or its application to science, medicine and industry. Indeed, we have demonstrated the feasibility for virtually every major application in our laboratories both in Moscow and in Albany. However, we are deeply concerned that unless some significant help is obtained, we may not be able to proceed to fabrication of reliable optics of the size and complexity needed for important medical, industrial and scientific applications in a way that the Russian society and economy will benefit. It has been our goal from the beginning that this effort would benefit the people and economy of the Eastern countries as well at the people and economy of the US.

The story is somewhat complex. I will try as briefly as possible to give you the background and current status of this program. Two years ago, in May 1990, at the invitation of Muridan Kumakhov from the Kurchatov Institute in Moscow, I reviewed in detail a new technology for managing X-rays and neutrons that Kumakhov and his colleagues had developed. Based on that review I committed to work with Kumakhov to further develop this technology and its applications. I reluctantly set aside my own research program and plans

universities, hospitals and industries is in jeopardy. This program has such strong potential for both short term and long term benefit to these countries that it would be a tragedy for it not to be realized, especially since its origins are so clearly rooted in Russian work.

The problem is that we have now identified that the major barriers to producing optics for sale to research groups and for major medical and industrial applications are manufacturing process control and testing.

In their current manifestation, the optics are based on the use of very fine hollow, glass capillary arrays. In some cases the diameter of each capillary channel is only two or three microns. There are often several million such channels in a lens. In fact the total length of channels in some cases can approach 1000 kilometers. At first sight, the technology to produce such optics might seem to resemble that used to make microchannel electron multipliers but this is wrong. The surface smoothness required by the optics allows fluctuations of less than 5 angstroms, far beyond that attainable by current microchannel plate technology. The technology to produce such fine microcapillary arrays which also have large fractional open area (typically 70-80%) was developed in Russia and to our knowledge has not been matched in the west.

In fact the techniques used are extensions of those used for optical fibers with added constraints on size and surface control. It has been possible to produce components and lenses sufficient to demonstrate focusing, quasiparallel beam production, energy filtering and active collimation of X-rays with energy up to 80 Kev and thermal and cold neutrons. However, for widespread use and commercial production it is clear that production control and clean room environments comparable to that used for optical fiber production will be required. That is the problem. The capitalization to do this and to provide the necessary critical testing needed is not available in Russia under the current economic climate, especially since it is clear that a significant amount of equipment from the west will be required to do this in a short time.

The Soviet and Russian governments have already invested more than forty million (noninflated) rubles in this project and are still investing heavily in people and laboratory support. From the beginning I have made the commitment that we will carry out as much of the component fabrication as possible in Russia, since this is the main way to insure that benefits can flow to those responsible for the technology and to laboratories, hospitals and industries in the struggling eastern countries. The alternative will be to move the fabrication to the US with the result that; a) introduction of the technology into

which I had turned to with renewed enthusiasm after 13 years of intense administrative involvement at the University.

I was willing to do this because I was convinced that the release from $1/R^2$ that these new optics provided for X-rays and neutrons: could revolutionize the use of X-rays and neutrons in medical diagnostics and therapy; provide important new opportunities in materials science and astronomy; and even help to put the US back into the microelectronics business by providing an X-ray lithography process compatible with existing production lines and processes and at the same time be much less expensive than the Synchrotron route that the Japanese have adopted. Of course the fact that this new technology evolved from work that Kumakhov and I both did on channeling and bending of very high energy electron, positron and proton beams has made it easier for me to leave the beloved pursuit of channeling and its fascinating applications that I have carried on since Tom Madden and I stumbled onto it in 1963. I have corresponded and collaborated with Kumakhov on channeling questions for more than twenty years which is one of the reasons that he approached me as a partner in this new venture.

Since May 1990 a lot has happened.

1). We have moved the work from the Kurchatov Institute into a new Institute, The Institute for Roentgen Optical Systems (IROS), under the Moscow Branch of the World Laboratory and therefore free from ministerial control or politics. This was necessary to clarify the path by which intellectual property transfer and assignment could be carried out. It has also very much simplified the exchange of people and transfer of equipment and information in both directions. I am President of the Scientific Council of IROS and Kumakhov is Director. IROS is funded by the Russian government and has several groups and branches involving more than 40 people.

2). We established The Center for X-Ray Optics (CXO) at The University at Albany. I am Director. Six faculty, two postdocs and 8 students are now associated with CXO. We have had a number of experienced Soviet specialists working in Albany for periods of up to 5 months.

3). We formed a company, X-Ray Optical Systems, Inc. (XOS), to pursue the commercial development of what we now call "Kumakhov Optics". This is managed and staffed separately from IROS or CXO, although Russian specialists are frequently employed by XOS for short periods of time and both Kumakhov and I serve as Directors and Consultants to XOS.

4). Extensive US and International patent applications have been filed covering not only the work done since our collaboration began but also the previous Soviet work (although the Soviet work goes back to 1986, since it was classified and unpublished, much of it could be captured). The patents have been funded by and exclusively assigned to XOS. We expect the first US patents to be issued soon.

5). We (Kumakhov and I or me alone) have visited major research centers (ORNL, NIST, NIH, BNL, NASA MSFC, Mass General Hospital, GE CR&D, AT&T, IBM) and many Universities (Stanford, Berkeley, Harvard, MIT, Georgetown, Cornell, Vanderbilt, RPI, BYU) to present and discuss in detail these optics and their applications. Although there has been a little criticism of this "dog and pony show", we felt that it was necessary to get the claims and supporting data in front of the scientific community as directly and rapidly as possible and to also identify both the most important applications and the best possible specialists to work with in each of the application areas.

6). In addition to three papers that Kumakhov and his coworkers have published in English language journals and ten or so publications in Russian, we have submitted five papers and have seven more in advanced stages of preparation for publication. I have also given three invited papers at national or international meetings and have several more coming up. We have certainly not been hiding our light under a bushel.

7). Eleven grant applications have been submitted for both XOS and CXO. To date four Phase I SBIR grants (from DOE, NSF and NIH) and a DARPA grant have been awarded to XOS and a NASA Grant has been awarded to CXO in addition to funding from the University and from the Advance Neutron facility development program (through NIST). Most notably, XOS was recently awarded an Advanced Technology Program (ATP) Grant from the Department of Commerce to support modeling, alternative materials, processing and radiation damage, and reliability studies. These awards dramatically affirm the reality of this technology and its importance for scientific and economic development.

As you can see, we have been pretty busy.

This letter is not to seek support or help in funding for work in the US. We have always felt that we should go through the normal competitive grant review process for such funds and as indicated above, this has been remarkably successful. However we face a crisis in proceeding with the program in a way that will insure continued collaborative development with our Russian colleagues. In particular economic development in Russia through this program and benefit to Eastern Block scientific laboratories,

useful products will be slowed down as much as one year in order to bring US fabricators up to speed, b) the final cost will be higher, and c) the expertise and experience developed over the past 6 years in Russia will be largely lost. Most seriously, an opportunity to help turn an important Russian discovery into stabilizing economic development with important scientific and social benefit will be lost. Indeed the modest investment needed will be paid back many fold in direct benefit to our own institutions. This seems to me to be a classic case of teaching someone to fish.

Not knowing where to turn with this I decided to approach you for help, guidance and advice. I have enclosed a list of people who have been exposed to these new optics in enough detail to give you some advice about their potential. I have also enclosed a draft of a short proposal that might be useful for discussion purposes.

I apologize for the length of this missive. I would, of course, be happy to meet with you or anyone you suggest to discuss these matters

With warm personal regards and best wishes.

Sincerely,

Walter Gibson

Walter M. Gibson
Distinguished Professor of Physics
Director, Center for X-Ray Optics
Chair, Department of Physics

cc. M.A. Kumakhov

X-RAY AND NEUTRON OPTICS: A NEW TECHNOLOGY

A Proposal for Aid to Russia with Short and Long Term Economic Growth Benefit

W.M. Gibson, M.A. Kumakhov May 1992

UNIVERSITY AT ALBANY
STATE UNIVERSITY OF NEW YORK

WALTER M. GIBSON
Director

Center for X-Ray Optics
Albany, NY 12222

518/442-4484
Fax: 518/442-4486

I. Introduction

There are various possibilities and approaches to providing aid from the West to Russia and other countries in the evolving and struggling societies in the former Eastern block. Of course immediate humanitarian aid must be first priority when life threatening hardship is present or imminent. However, providing help that leads to effective economic and social stability and progress through self-help is the most useful and cost effective in the long term. One only needs to remember the consequences of the Marshall Plan in Europe after the Second World War. The situation in the countries of the Eastern block is complicated by an absence of traditions of democracy and market economy. This means that just putting money into existing programs or institutions will often be counterproductive. It is clear that the presence of an effective base of activity, commitment and productivity is desirable for long term success and may be crucial for short term success. If this is accompanied by a complementary, supportive and experienced partner from the West, the probability of success in both the short and long term is greatly enhanced. This proposal describes just such a circumstance.

Beginning in the mid 1980's an important new technology was developed at the I.V. Kurchatov Institute for Atomic Energy in Moscow under the direction of M.A. Kumakhov. This technology is based on the well understood physical principle of total external reflection of X-rays from smooth solid surfaces at small incidence angles. This small angle reflection has been widely used in X-ray astronomy and other scientific programs involving X-rays, especially for reflective mirrors at virtually every synchrotron radiation facility in the world. What was demonstrated by Kumakhov and his co-workers was that by the use of specially constructed surfaces, many small angle reflections could be used to capture, control and focus X-rays and neutrons over a wide angular

and energy range making possible dramatic improvements in the use of X-rays and neutrons in medicine, industry and scientific research.

In May 1990, it was mutually agreed that Walter M. Gibson and Muridan A. Kumakhov would work together to develop this new technology and its applications. This was a continuation of a nearly twenty year association and collaboration between Gibson and Kumakhov on studies and applications of ion channeling in crystals from which this new technology evolved. Since that time a number of things have happened:

1. The work was transferred from the Kurchatov Institute into a new institute, The Institute for Roentgen Optical Systems (IROS), under the Moscow Branch of the World Laboratory and therefore free from ministerial control or politics. This was necessary to clarify the path by which transfer of intellectual property could be carried out. IT has also very much simplified the exchange of people and transfer of equipment and information in both directions. The support and advice of Academician E.P. Velikov and the fact that he is both Director of the Kurchatov Institute (now the Kurchatov Center) and President of the Moscow Branch of the World Laboratory has been essential in achieving this. Gibson is President of the Scientific Council of IROS (at Velikov's suggestion) and Kumakhov is Director. IROS is funded by the Russian government and has several groups and branches involving more than 40 people.
2. The Center for X-Ray Optics (CXO) was established at The University at Albany. Gibson is Director and Kumakhov is an Adjunct Professor and a Fellow of the Center. Six faculty, two postdocs and eight students are now associated with CXO. A number of experienced Soviet specialists have worked in Albany for periods of up to 5 months.
3. A company, X-Ray Optical Systems, Inc. (XOS), was formed to pursue the commercial development of this new technology. This is a New York State corporation and is managed and staffed separately from IROS or CXO, although Russian specialists are frequently employed by XOS for short periods of time, and both Kumakhov and Gibson serve as Directors and Consultants to XOS.
4. Extensive US and International patent applications have been filed covering not only the work done since the collaboration began but also the previous Soviet work. Although the Soviet work goes back to 1986, since it was classified and unpublished, much of it could be captured. The patents have been funded by and exclusively assigned to XOS. The first US patents are expected to be issued soon.

5. Kumakhov and Gibson have visited major research centers (ORNL, NIST, NIH, BNL, NASA MSFC, Mass General Hospital, GE CR&D, AT&T, IBM) and many Universities (Stanford, Berkeley, Cornell, Harvard, MIT, Georgetown, Vanderbilt, Rutgers, RPI, BYU) to present and discuss in detail these optics and their applications.

   This was necessary to get the claims and supporting data in front of the scientific community as directly and rapidly as possible. It also served to get feedback which identified both the most important applications and the best possible specialists in each of the application areas.

6. In addition to three papers that Kumakhov and his co-workers have published in English language journals and ten or so publications in Russian, five papers have been submitted to scientific journals and seven more are in advanced stages for publication. In addition, three invited presentations have been made at national or international conferences and several more are planned.

7. Eleven grant applications have been submitted for both XOS and CXO. To date four Phase I SBIR grants (from DOE, NSF and NIH) and a DARPA grant have been awarded to XOS and a NASA grant has been awarded to CXO in addition to funding from the University and from the Advanced Neutron facility development program (through the National Institute for Standards and Technology). Most notably, XOS was recently awarded an Advanced Technology Program (ATP) Grand from the Department of Commerce to support modeling, alternative materials, processing and reliability studies. These awards dramatically affirm the reality of this technology and its importance for scientific and economic development.

This proposal is not to seek support for help in funding work in the US. Such funding proposals will continue to go through the normal competitive grant review process.

However, we are now facing a crisis in proceeding with the program in a way that will insure continued collaborative development between the US and Russian partners and, in particular, economic development in Russia through this program. Also at risk is access to the outcomes of this technology by hospitals, industries and scientific laboratories in the former Eastern block countries. This program has such strong potential for both short term and long term benefit to these countries that it would be a tragedy for it not to be realized, especially since its origins are so clearly rooted in Russian work.

The problem is that we have now identified that the major barrier to producing optics for sale to research groups and for major medical and industrial applications are manufacturing process control and testing.

In their current manifestation, the optics are based on the use of very fine hollow, glass capillary arrays. In some cases the diameter of each capillary channel is only 2 or 3 microns. There are often several million such channels in a lens. In fact the total length of channels in some cases can approach 1000 kilometers. At first sight, the technology to produce such optics might seem to resemble that used to make microchannel electron multipliers, but this is wrong. The surface smoothness required by the optics allows fluctuations of less than 5 angstroms, far beyond that attainable by current microchannel plate technology. The technology to produce such fine micro-capillary arrays which also have large fractional open area (typically 70-80%) was developed in Russia, and to our knowledge, has not been matched in the West.

In fact the techniques used are extensions of those used for optical fibers with added constraints on size and surface control. It has been possible to produce components and lenses sufficient to demonstrate focusing, quasiparallel beam production, energy filtering and active collimation of X-rays with energy up to 80 KeV and thermal and cold neutrons. However, for widespread use and commercial production it is clear that production control and clean room environments comparable to that used for optical fiber production will be required. That is the problem. The capitalization to do this and to provide the necessary critical testing needed is not available in Russia under the current economic climate, especially since it is clear that a significant amount of equipment from the West may be required to do this in a short time.

The Soviet and Russian governments have already invested more than forty million (non-inflated) rubles in this project and are still investing heavily in people and laboratory support. If the transition is not made to a viable manufacturing operation, the expertise and experience developed over the past 6 years in Russia will be largely lost. Most seriously, an opportunity to help turn an important Russian discovery into stabilizing economic development with important scientific and social benefit will be lost. Indeed the modest investment needed will be paid back many fold in direct benefit to US as well as Russian institutions.

An important feature of this proposal is that it is based on an established collaboration and contains the expertise and contacts for manufacturing, business and scientific management as well as integration of these optics into end products through collaboration with established original equipment manufacturers (OEMs). Confirmation

of this base of expertise is contained in the recent Advanced Technology Program (ATP) award to X-Ray Optical Systems by the Department of Commerce.

The next sections describe the specifics of need, cost factors and management (in II), the short term economic benefit (in III), the long term economic benefit (in IV), the scientific, social and economic implications (in V), and a short summary (in VI).

II. The Specific Proposal

Fabrication of X-ray optical systems (lenses) for capturing X-rays from a divergent source to produce a quasiparallel beam, to focus X-rays from a divergent or nearly parallel beam (for example from a Synchrotron), or focusing of neutrons, has shown variability in transmission efficiency, nonuniformity of transmitted beam and misalignment of individual capillary channels. For demonstration of scientific feasibility and production of prototype lenses for specific applications, it has been possible to select capillary fibers, adjust final lens subassembly alignment and accept a low yield of fabricated systems. These problems are aggravated when very small channel diameters, large area or long lengths are needed. In addition, without solving the fabrication control problems, it is not practicable to fabricate large cross-sectional area optics needed for important industrial (X-ray lithography), medical, or astronomical applications.

The situation is similar to that encountered in the early development of optical fibers for telecommunications except that there are additional constraining parameters such as control of channel cross section shape, control of surface smoothness to less than five Angstroms, and precise control of variable cross section. It is felt that many of the same techniques that resulted in such dramatic reduction in transmission losses for optical fibers are needed here. These include use of special ultra high purity glass, high level clean room environment throughout the fabrication process, and computer-controlled, continuous fiber drawing apparatus. In addition, it is vital that quality control measurements be made at each step of the process.

In addition to the environmental and mechanical aspects, it is important that high quality management and process control engineering be implemented. This will be done by utilizing US specialists in glass technology and production control. The personnel associated with the present fabrication are experienced, dedicated and extremely competent. Indeed, they have achieved results with respect to capillary channel size and fractional open area unmatched in the West. At the same time, they are very receptive to learning from American glass artisans. It is clear that a great deal will be gained from both sides by bringing together relevant experts.

The first step will be to bring together a group of experts from the US and from Russia to discuss the current status of the capillary optics fabrication and testing and to outline a specific course of action. Indeed, we feel that realistic cost figures should also be the aim of such an initial discussion between the U.S. and Russian glass fiber experts. In order to determine the facility modifications necessary and to determine the extent to which necessary equipment and construction can make use of Russian facilities and abilities, an early (the first or second) meeting of this panel of experts should take place in Russia. In order to insure that the effort and the funds be focused on the technical and management needs that appropriate accounting, oversight and reporting procedures be carried out, it is proposed that the program be supervised by XOS Corporation which contains or has access to appropriate management expertise and has the contacts and experience necessary to identify and assemble the appropriate technical experts from the US. XOS has already established effective working and contractual relationships with the Institute for Roentgen Optical Systems in Moscow and with the main fabrication facility in Saratov.

Since a detailed budget must await the detailed review indicated above, it is not possible to give a complete cost breakdown at this time. However, some of the main components and activities that should be included in the cost calculation are:

Management and travel costs:

Half-time manager for two years, consulting fees for Advisory Council, travel to and from Russia and support for meetings in the US.

Construction and equipping of clean room facilities in Russia (Saratov) ($200m^2$).

Pulling Towers (2) with computer control of heating and drawing apparatus.

Computer controlled equipment for thermal processing and pressing of integrated lenses (2).

Mechanical processing equipment (4).

Controlling, measuring and testing equipment.

Synthesis and evaluation of special glass.

Laboratory equipment and supplies.

Salary supplement for Russian specialists (although the Russian specialists will continue to be supported by the Russian government, a supplement is desirable to insure continuity and retention of the best people).

Overhead and management costs for XOS Corp. XOS will not only provide management supervision, but will also handle purchasing and shipping of all equipment from the US.

It is estimated that if the major part of the process and control equipment were to come from the US, the total cost would be about $5.5M. Pending review by the panel of experts, the cost might be reduced substantially if Russian sources can be used, with the additional advantage that those sources would be strengthened. However, it should be emphasized that the effective exchange rate for technological equipment is much lower than the general exchange rate and may approach 1:1 in some cases. The factor of speed with which the necessary changes can be implemented must also be a factor in implementation decisions.

III. Current Activity

This collaborative program for development of X-Ray and neutron optics is centered on three organizations, the Institute for Roentgen Optical Systems (IROS) in Moscow, the Center for X-Ray Optics (CXO) at the University at Albany in Albany, New York, and the X-Ray Optical Systems Corporation (XOS) in Albany, New York.

IROS

The Director of IROS is Professor Muridan A. Kumakhov. There are eight Laboratories and a Technical Support Group in IROS comprising about 40 scientific and support personnel. They are engaged in a variety of optics development activities and also collaborate with specialists from a variety of Institutes and Hospitals to explore applications of the optics in medicine, materials analysis, and scientific studies. For example, the theoretical group lead by Dr. Vladmir V. Beloshitsky, has been very much involved in heat production and transfer calculations to determine the behavior and limits of the optics in intense Synchrotron beams.

Extension of the energy range to the region important to many potential medical and scientific application puts special demands on the design and fabrication of the capillary optics. Indeed, to address the special efficiency and alignment challenges posed at higher X-ray energies, a new technology was developed in which the small (a few micrometers in width), individual capillary channels are self aligned with and supported by adjacent channels.

These "third generation" Kumakhov optics place burdens on the fabrication process even beyond that described above for individual capillary fibers. Five of the Laboratories in IROS are connected with design and evaluation of these optical systems.

The Institute for Roentgen Optical Systems is supported by the Russian government which has invested more than forty million rubles (pre-inflation) into the X-ray optics program.

CXO

The Center for X-Ray Optics was formed in November 1990 in order to provide a joint scientific and development laboratory in the US. Professor Walter M. Gibson is Director and Professor Carolyn MacDonald is Associate Director. This laboratory was designed from the outset to be closely collaborative with IROS in the study and development of X-ray and neutron optics.

The Center now has eight faculty associates and ten Ph.D. students who are studying basic X-ray and neutron interactions with solid surfaces and are exploring the optics aspects of applications which include X-ray astronomy, protein crystal structure analysis, mammography, X-ray microanalysis and neutron scattering and focusing. Although CXO is not divided into separate laboratories, many of the activities parallel those in IROS and the efforts are closely coordinated. Since its formation, five different specialists from IROS have spent periods of time up to five months in the US working with CXO personnel.

CXO has been supported by the University at Albany. Grants to CXO have been awarded or applied for by the New York State Science and Technology Foundation, the National Institutes of Health, NASA, the Department of Energy, and the National Science Foundation. In addition to laboratory facilities, CXO also has dedicated computer facilities built around a Digital electronics work station for computations and modeling of optical components or systems.

XOS

The component of the collaboration responsible for commercial development of the capillary technology for X-Ray and neutron optics is the X-Ray Optical Systems Corporation. David M. Gibson, who is trained and experienced in economics, mechanical engineering and business management is President and Chief Operating Officer of XOS. Four Small Business Innovative Research (SBIR) grants have been awarded to XOS from the Department of Energy (2), the National Science Foundation, and the National Institutes of Health as well as a grant from the Defense Advanced Projects Agency (DARPA). XOS has also received an award from the Department of Commerce under the Advanced Technology Program. Five additional SBIR grant proposals are under review or in preparation.

XOS has established a measurement and computational laboratory at the University at Albany from which space has been leased and access to a machine shop, radiation safety, electronic, library and other support has been obtained by contract. XOS now has seven employees and has arrangements to utilize the support of specialists from IROS and student and faculty support from CXO as needed and appropriate.

XOS has also arranged for support from the Rensselaer Polytechnic School of Business for marketing and other studies. XOS has established appropriate accounting, book-keeping, legal and secretarial support.

United States patent applications have been filed for the technology including much of the early work done in the Soviet Union. These include claims in the following areas:

- lens geometries
- assembly and alignment technologies
- use of polycapillaries
- application specific uses including; medical, material analysis, and X-ray lithography.

It is expected that the initial US patents will be issued soon. Through the Patent Cooperative Treaty (PCT), patents are being applied for in Europe, Japan and other selected countries. XOS has a contract with IROS concerning transfer of intellectual property. The inventor of the technology has assigned XOS all non-Soviet patent rights for the initial work.

IV. Short Term Economic Activity

During the first period of this collaboration, which began about one year ago (February 1991) and will extend to the time when reliable and larger scale manufacture can be carried out, benefit to the Russian participants and economy will arise from opportunity for specialists to work in the US on grant supported research and development, from purchase of optical components for use in these research programs and from limited sale of optical components and systems to other research groups.

Since February 1990, eight different specialists from IROS have, under the sponsorship of CXO and XOS spent periods up to five months in the US for a total of 32 months. In addition, funds have been provided to IROS from sale or rental of optical components or other equipment. Even this small beginning has had significant effect. In addition, it may be possible to sell in the US some related equipment such as X-ray sources and image intensifiers. These benefits will be limited more by the rate with which high quality systems can be produced than by the research based sales opportunity. In spite of this we expect, over the next two years, that twenty or more specialists will participate in short term visits in the US and the income realized from manufacture, and sale of prototype optical systems will also increase several fold.

V. Long Term Economic Activity

Long term and sustained economic benefit from this important new technology will depend on successful solution of the manufacturing and process control challenges described above. When this is accomplished, then the ability which has been demonstrated in the laboratories to dramatically improve performance in most applications where X-rays and low energy neutrons are used can then be used to:

Improve resolution and decrease radiation dose in medical imaging, including mammography and angiography.

Increase the effectiveness of X-rays and neutrons in medical therapy, including irradiation of inoperable tumors, neutron capture, therapy, and correction of nearsightedness.

Provide new opportunities in material analysis, including X-ray diffraction analysis of proteins, X-ray and neutron microscopy, and laboratory based (as opposed to Synchrotron based) materials studies.

Improve or provide new opportunities for industrial processing, including X-ray lithography.

Open new doors for scientific studies, including X-ray astronomy, X-ray and neutron interferometry.

It is anticipated that production and sale of optics and perhaps other equipment utilizing optics will provide stable employment for hundreds of people in Russia. At the same time, the utilization of Kumakhov optics in scientific laboratories, and introduction into end use equipment will significantly improve the competitive position for US companies.

VI. Scientific, Social and Economic Implications

One of the most important results of successful completion of this collaboration between the US and Russia will be the demonstration that such joint development can provide economic and social benefit from both partners without exploitation, and without the disruption that comes from draining technology and expertise from Russia. In addition to the benefits to Russia noted in the previous section, vital benefit will be realized by the management, production and marketing lessons learned, by the application of such lessons to the use of optical fibers in telecommunications, medicine, and science, and by the fact that through these collaborations, the same kinds of equipment and techniques will be available to the laboratories, hospitals and factories of Russia and other Eastern countries as in the West.

VII. Summary

A proposal is made to build upon an existing, soundly based collaboration between the US and Russia for the development of a new technology for X-rays and neutrons by providing financial and technical help to overcome process control and management barriers to broad application and commercialization world-wide. This technology has the potential to revolutionize the use of X-rays and neutrons in medical diagnosis and therapy, to provide the means to smoothly and economically move to the next generation of integration for computer memories and microelectronics, and to provide new opportunities for materials analysis, X-ray astronomy and other scientific and technical applications of X-rays and neutrons. Success of this collaboration will also aid economic and scientific stability and growth in Russia and in the US.

Perhaps the greatest outcome will be to demonstrate that trusting, collaborative development can result in significant mutual benefit without exploitation and without draining resources or people. This project is extremely visible in Russia. It has had the direct endorsement and support at the highest levels of Russian science and government. If it were to fail as a truly collaborative project because of the lack of help, the economic and social benefit to the place of origin would be lost, a trust would be destroyed and a wrong message would be sent. "For want of a nail, the shoe was lost."

"Document Control"

TYPE: MEETING REQUEST DOCUMENT NUMBER: 9201944
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: DICKSON, Elizabeth: INDUSTRY, SCIENCE, AND TECHNOLOGY CANADA

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 05/25/92

SUBJECT: SHE REQUESTS TO MEET WITH DR. BROMLEY DURING HER VISIT TO WASHINGTON, TO DISCUSS VARIOUS ISSUES, ESPECIALLY NATIONAL COMPETITIVENESS.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED:

ACTION REQUIRED: AS NECESSARY

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: 05/29/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
INDUSTRIAL

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS:

OSTP RECEIVED: 05/28/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL

CENTRAL FILES:

1944

Industry, Science and Technology Canada
Industrie, Sciences et Technologie Canada

Ottawa, Canada
K1A 0H5

Your file Votre référence

Our file Notre référence

May 25, 1992

Dr. D. Allan Bromley
Science Advisor to the President
Office of Science and Technology Policy
White House

Dear Dr. Bromley,

I write to you following a suggestion by Mr. Peter Drabble, First Secretary (Commercial), at the Canadian Embassy in Washington. I plan to be in Washington from Tuesday June 9 to Thursday June 11, 1992, and would appreciate the opportunity to meet with you to discuss various issues, particularly with respect to your work with national competitiveness. This issue is gaining prominence on the Canadian political and industrial arena and I would be interested in exchanging ideas and information on the latest developments in the United States and Canada.

As Director General of the Chemicals and Bio-Industries Branch, my responsibilities include industrial development in the areas of chemicals, medical devices, pharmaceuticals and biotechnology.

I have asked my Planning and Coordination Officer, Lizanne Gosselin (telephone 613-954-3012), to follow up on this letter by calling your office to see whether a mutually convenient time can be arranged for our discussions. I look forward to meeting you soon.

Yours sincerely,

Elizabeth Dickson

Dr. Elizabeth Dickson
Director General
Chemicals and Bio-Industries Branch

Canada

Industry, Science and Technology Canada | Industrie, Sciences et Technologie Canada

FACSIMILE MESSAGE/ TRANSMITTAL SLIP

FICHE DE MESSAGE/ TRANSMISSION PAR FAC-SIMILÉ

☐ URGENT ☒ ROUTINE	Date: May 25, 1992	No. of pages (including this form) / Nbre de pages (incluent cette formule): 2 PAGES

SECURITY CLASSIFICATION

DO NOT transmit classified/protected documents on non-secure machines.

CLASSIFICATION DE SÉCURITÉ

Veuillez NE PAS TRANSMETTRE de documents classifiés/protégés sur des fac-similés qui ne sont pas dotés d'un dispositif de sécurité.

Classified - Classifié

☒ Non Classified / Non-classé ☐ Protected / Protégé ☐ Confidential / Confidentiel ☐ Secret / Secret ☐ Top Secret / Très Secret

To - À	From - De
Dr. D. Allan Bromley Science Advisor to the President Office of Science and Technology Policy White House	Dr. Elizabeth Dickson Director General Chemicals and Bio-Industries Branch
Facsimile No. of Addressee - N° de fac-similé du destinataire 1-202-395-3261	Facsimile No. of Sender - N° de fac-similé de l'expéditeur 1-613-952-4209

If there are any problems with this transmission, please call / S'il y a des problèmes avec cette transmission, veuillez appeler ▷ 1-613-954-3012

MESSAGE

Please see attached.

Canada

Logged

"Document Control"

TYPE: MEETING REQUEST DOCUMENT NUMBER: 9201775
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS
****

FROM: PLEASANT, John Paul: ENERGY FRONTIERS INTERNATIONAL

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 05/17/92

SUBJECT: HE IS WRITING TO REQUEST A MEETING WITH DR. BROMLEY FOR PROFESSOR KAZUO FURUKAWAFROM TOKAI UNIVERSITY, JAPAN, REGARDING COMMERCIAL NUCLEAR ENERGY.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED: SB

ACTION REQUIRED: AS NECESSARY

STAFF ACTION: as necessary

****

SENDER'S DUE DATE:

OSTP DUE DATE: 06/01/92 STAFF DUE DATE 6/1/92
DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
PHYSICAL SCIENCES

****

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS:

OSTP RECEIVED: 05/18/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL

CENTRAL FILES:

"Document Control"

TYPE: MEETING REQUEST DOCUMENT NUMBER: 9201775
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: PLEASANT, John Paul: ENERGY FRONTIERS INTERNATIONAL

TO: DR. D.A. BROMLEY

Karl Eub Schmidpeter

DATE OF CORRESPONDENCE: 05/17/92

SUBJECT: HE IS WRITING TO REQUEST A MEETING WITH DR. BROMLEY FOR PROFESSOR KAZUO FURUKAWAFROM TOKAI UNIVERSITY, JAPAN, REGARDING COMMERCIAL NUCLEAR ENERGY.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED:

Tom R
See DAB note above - please give prints copy to Karl. thanx Charlie B.

ACTION REQUIRED: AS NECESSARY

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: 06/01/92 STAFF DUE DATE

DATE COMPLETED: DATE COMPLETED/DEPT:

T.U. Jama 5/19

****

COPIES TO: D. Allan Bromley
PHYSICAL SCIENCES

****

WHITE HOUSE TRACKING #: CONTACT PERSON:

PHONE: EXT:

REMARKS:

OSTP RECEIVED: 05/18/92 DEPT RECEIVED:

FILE: P-INTERNATIONAL

CENTRAL FILES:

1775

Energy Frontiers International

J. PAUL PLEASANT, President

Dr. Allan Bromley
Assistant to the President
Science and Technology
The White House
Washington, D.C.

May 17, 1992

Dear Dr. Bromley:

It has been suggested by W. Henson Moore, Deputy Chief of Staff to the President that I communicate with your office directly.

Professor Kazuo Furukawa, Institute of Research and Development, Tokai University is one of Japan's leading nuclear physicist. He has taken a public leadership role advocating that Japan, and the world, avoid the production of plutonium in the utilization of commercial nuclear energy.

Professor Furukawa is the leading exponent of THORIMS-NES, an Accelerator Molten-Salt Reactor concept utilizing thorium. This concept will require a close cooperative effort with the Oak Ridge National Laboratory.

11472 EHREN ST., LAKE VIEW TERRACE, CALIFORNIA 91342 • 818 / 890-4144

Professor Furukawa will visit the United States in June and has expressed a strong desire to meet with you, or staff, in Washington, D.C. on June 10 or 11.

Enclosed are copies of recent correspondence. The correspondence reflects a developing international interest in this nuclear energy project.

I believe it is most important to the long-term interests of the United States that Japan avoid an energy future based upon plutonium dependence. I strongly urge that Mr. Furukawa be granted a personal opportunity to discuss his vision of Japan's energy future.

Please advise if this meeting can be scheduled.

Sincerely,

J. Paul Pleasant
President,
ENERGY FRONTIERS INTERNATIONAL

International Specialists' Meeting on Potential of Small Nuclear Reactors for Future Clean and Safe Energy Sources
October 23-25, 1991

Flexible Thorium Molten-Salt Nuclear Energy Synergetics

Kazuo Furukawa[a], Kohshi Mitachi[b], Yoshio Kato[c] & Alfred Lecocq[d],

[a]Institute of Research & Development, Tokai University, Hiratsuka, Kanagawa 259-12, Japan

[b]Deptartment of Engineering, Toyohashi University of Technology, Toyohashi 400, Japan

[c]Fuel Development Division, Japan Atomic Energy Research Institute, Tokai, Ibaraki 319-11, Japan

[d]European Working Associ.for Molten-Salt Reactor Development [EURIWA], 11 Av. Dr.Vaillant, 91940 Gometz le Chatel, France

Abstract

The new global fission industry for the next century should solve perfectly and simultaneously the following all issues: (A)resources and environmental problems, (B)safety, (C)nuclear-proliferation and -terrorism, (D)breeding fuel-cycle, chemical processing and radio-wastes including their incineration, and (E)social acceptability and economy, including "North-South" problems. One of the most promising flexible systems to solve the above would be the Thorium Molten-Salt Nuclear Energy Synergetics[THORIMS-NES] depended on the isolation of fissile-producers and power-stations, allowing the smaller stations .

1. INTRODUCTION - GLOBAL ENERGY STRATEGY IN NEXT CENTURY

The next 21st century will be a transient period from fossil fuel age to nuclear energy, as the global and especially local climate could not accommodate the excess heat emission more than 0.1% of solar input to globe. [The heat-emission type energy technologies will not be used as major ones in the 22nd century.]

If it might be accepted that the future global energy trend would be shown by the rational prediction of Marchetti [1] as shown in **Figure 1**, the total energy production by fission industry will amount to about 900TWe·year in the period of 200 years between 1965 and 2165, as shown in **Figure 2** in absolute scale assuming the yearly growth rate of 2.3%.

This is 450 times larger than the past nuclear energy production of 2 TWe·year, and could not be replied not only by

latter reasons are as follows [2,3]:

[I] low breeding power to climb up the steep curve of **Figure 2**: the real design requirement on the doubling-time of fissile breeding should be 5～8 years,

[II] low flexibility in power-size: large sophisticated high-performance breeders will be refused, and

[III] handling and transportation of a huge amount of Pu such as $1 \sim 4 \times 10^4$ tons in LMFBR.

Now the strategy should be prepared rationally solving the following issues all: **(A)resource and environmental problems, (B)safety, (C)nuclear-proliferation and -terrorism, (D)breeding fuel-cycle, chemical processing and radio-wastes, and (E)public and institutional acceptability and economy**, including **"North-South"** problems. This would require a technological revolution or a new philosophy.

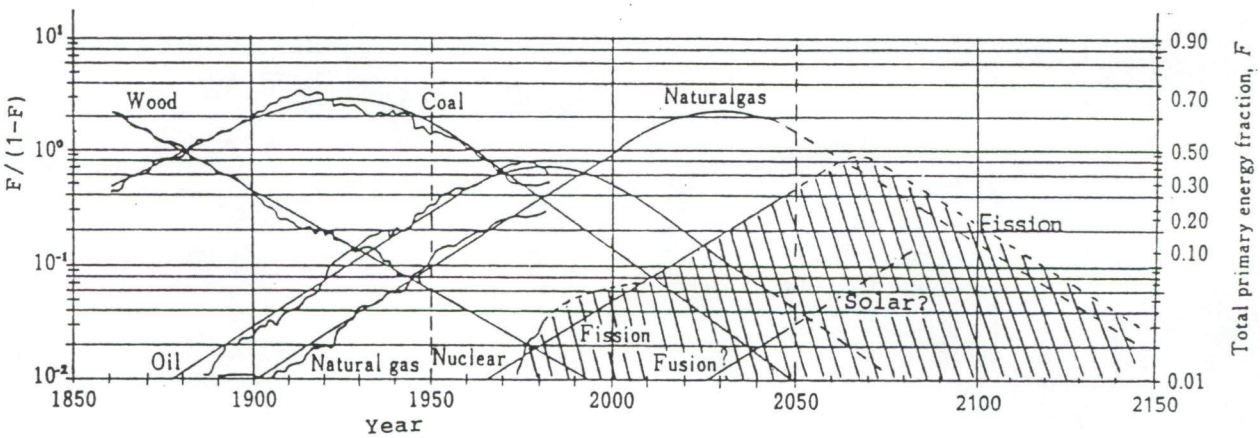


Figure 1. Historical trend in energy substitution of the world. [The amount of primary energy is plotted as fraction "F" of the total energy market [1]. The dotted curve of nuclear(fission) energy is added by authors.

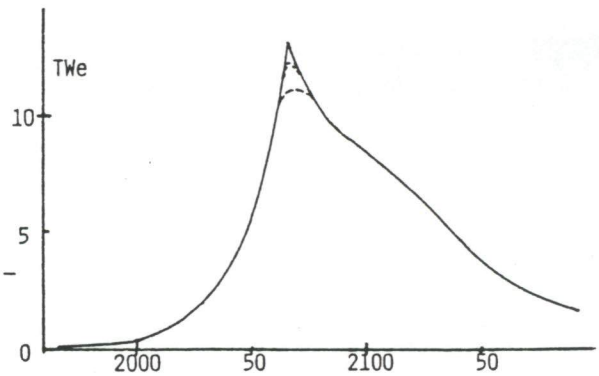


Figure 2. Global energy production by fission industry, depending on Figure 1 and the yearly growth rate of 2.3%.

2. NEW NUCLEAR ENERGY STRATEGY -- THORIMS-NES --

Depending on the pioneer work of ORNL on the molten-fluoride fuel concept [4], a new philosophy: **THORIMS-NES** [Thorium Molten-Salt Nuclear Energy Synergetics] has been proposed by our group in recent [2,3].

2.1. New philosophy

Originally ORNL had aimed to establish the **MSBR** [Molten-Salt Breeder Reactor] in 1947～1976. However, MSBR has three difficulties: (i)inherently large power-size, (ii)troublesome core-graphite exchange, and (iii)very hard development of continuous chemical-process facility. These difficulties all could be overcome by our **THORIMS-NES**, which depends on the following three principles:

[I] Thorium utilization: refusing to use U resource and Pu,

[II] Molten-salt fuel concepts: in practice, the "**Flibe**(LiF-BeF_2) base molten-fluoride" concept should be applied, which has already established the sound technological basis by the brilliant long effort of ORNL people, USA, throughout 1947～76. It grounds on the successful operation of **MSRE** (Molten-Salt Reactor Experiment) and on their intense R&D works on **MSBR** (Molten-Salt Breeder Reactor) [4,5].

[III]Separation of fissile-producing facilities [MSB: Molten-Salt Breeders**] and power stations [MSR:**Molten-Salt Reactors**]**: now MSR is not a "breeder" such as MSBR.

This will be effective to establish the essential improvements in the above five **(A) (E)** issues, as explained in below.

2.2. What is the THORIMS-NES ?

For example, the **Small Molten-Salt Power Station** (MSR) of 350 MWth (155 MWe) named **FUJI-II** [cf.**Figure 3 & Table 1**] has the following performance [6,7,8,3]:

(a)fuel self-sustaining characteristics, which means practically the conversion ratio of 1.0[in situ]. The amount of initial inventory and additional in transient stage is also excellently small, which means the best partner of MSB. It results a very few fuel transportation only.

(b)simple structure, easy operation and maintenance works enhancing its safety and economy, because of (i)no opening of reactor-vessel, (ii)no fuel assembly fabrication, (iii)no fuel-processing in full life except the removal of Kr, Xe and T, achieving the burn-up of 500%, (iv)nearly no control-rod due to the very low excess reactivity, and (v) essentially no Trans-U elements(TRU). This system is practically effective for TRU-incineration and anti-terrorism.

Already, the following three types of **MSBs** were proposed:

(1) Accelerator Molten-Salt Breeder(AMSB): by the neutrons generated from spallation reaction of Th nuclei in molten-salt target/blanket with 1GeV protons [9,10],

(2) Impact Fusion Molten-Salt Breeder(IFMSB): applying new ideas of axially symmetric mass-driver and shaped-projectile accommodating DT-pellet[11], and

(3)Inertial-confined Fusion Hybrid Molten-Salt Breeder(IHMSB): adopting the first wall of molten-salt waterfall for the elimination of radiation damage [10]. Its development is much easier than the pure fusion plant.

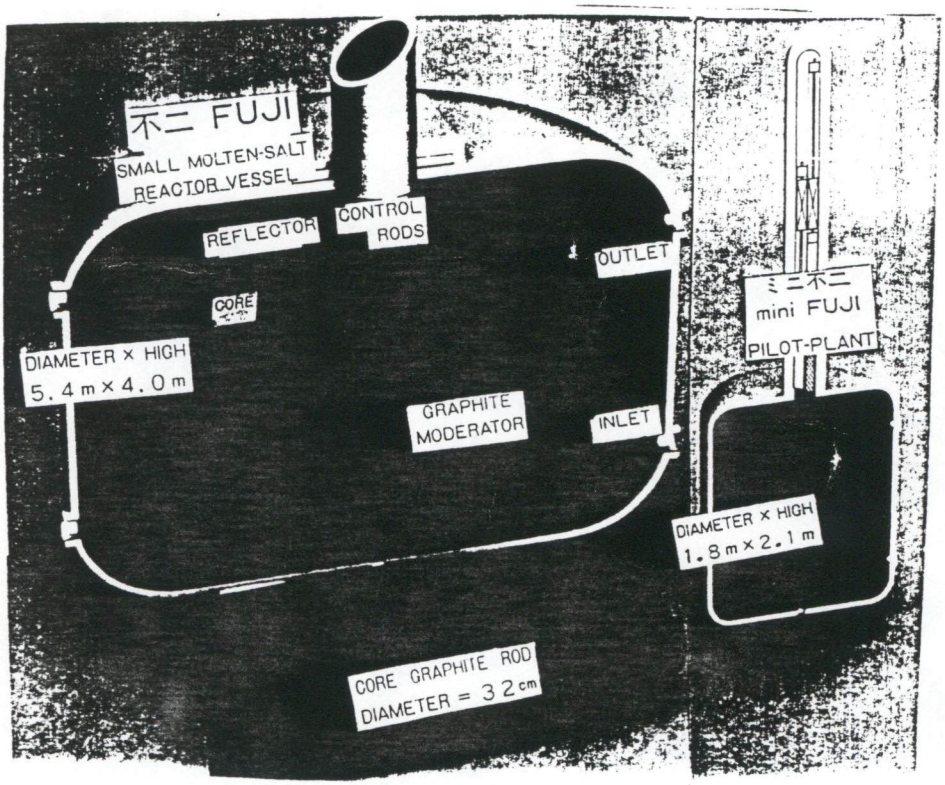


Figure 3. Vertical cross-sectional view of reactor-vessels "FUJI-II" and "miniFUJI-II" in same scale-sized models. (About 90 volume % in reactor vessels is occupied by graphite.)

These systems are designed promising the preparation of the target salt in high $^{233}UF_4$ content(0.5～0.7mol%), which can be supplied directly to the fuel-salt tank of FUJI-series **MSR** fueled in low $^{233}UF_4$ content(0.2～0.3mol%). A schematic flow of fuel-salt is shown in **Figure 4.**

They could be developed until 2010～2030 due to the recent rapid development of related technologies. **AMSB** will be the

Table 1. Main parameters of several small Molten-Salt Reactors

	standard power station (fuel self-sustaining) **F U J I-II**	denatured-U fueled ($20\%^{235}U$) **F U J I-V**	pilot-plant (super-compact) **■iniFUJI-II**	experimental reactor(ORNL) (operated in 1965～69) **M S R E**
heat capacity (MWth)	350.	250.	16.7	7.3
electric power(netMWe)	161.	100.	7.	--
thermal efficiency(%)	46.	40.	42.	--
reactor size (m) (diameter x high)	5.5x 4.1	5.0x 3.9	1.8x 2.1	1.45x 2.2
high temp.containment	12. x 8.	11. x 8.	3.7x 3.2	5.8 x 7.2)
fuel: conversion ratio	1.002	0.91?	0.58	---
^{233}U inventory(kg)	370.	^{235}U=340. ?	27.	32.
^{232}Th (ton)	20.1	16.3	0.65	---
fuel salt: $^{233}UF_4$(mol%)	0.22*	$^{235}UF_4$=0.25?	0.47*	0.14
total volume (m^3)	13.7	11.1	0.45	2.1
flow rate (m^3/min)	33.2	33.0	1.59	4.5
temperature (C)	585→725	565→655	560→700	632→654
main piping(inn.dia.cm)	25.	25.	8.	15.

(*) $^{7}LiF - BeF_2 - ThF_4 - ^{233}UF_4 = (72-x) - 16 - 12 - x$ [mol%]

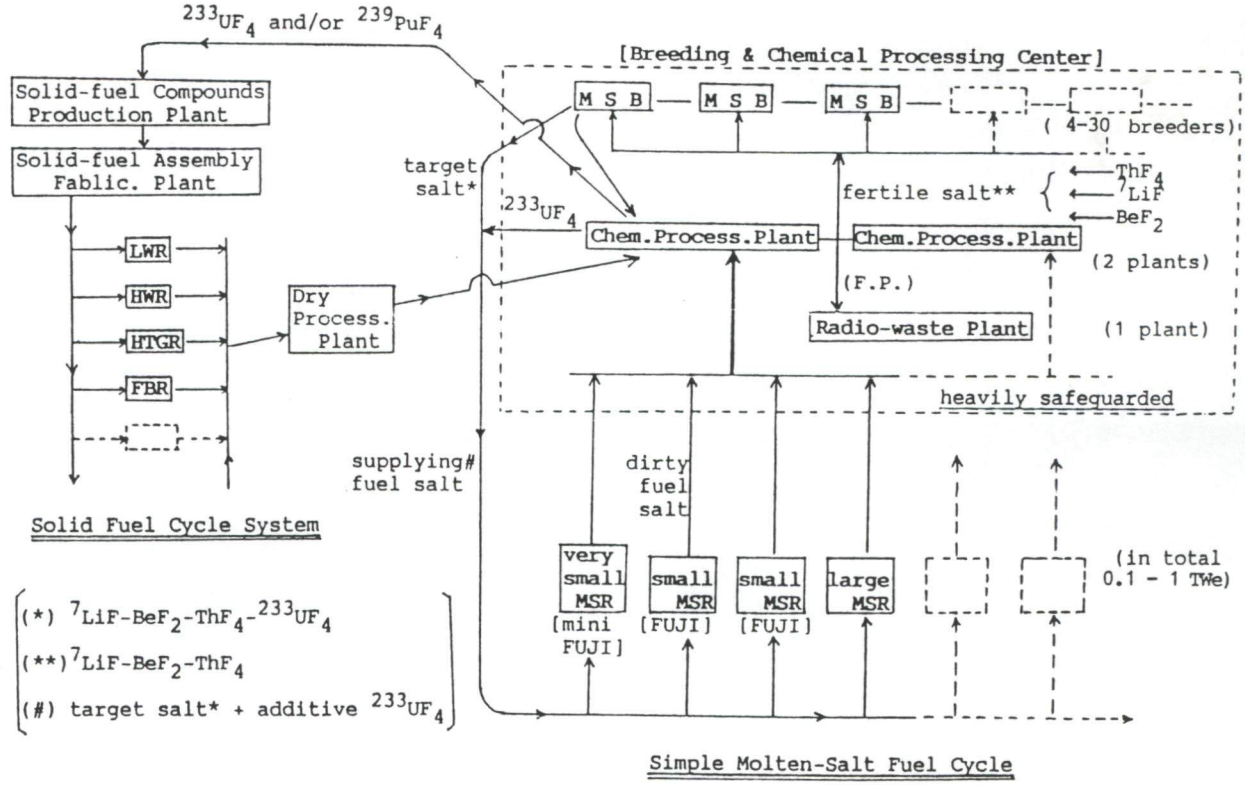


Figure 4. Molten-salt breeding fuel-cycle in THORIMS-NES composed of fissile-producers [MSB] and power stations [MSR].

most practical and promising concept including the reactor-chemical behaviors. However, IFMSB might become a "dark horse" in some case[9,3].

3. Significant characteristics of THORIMS-NES

The significant improvements in the above **(A)**$\sim$ **(E)** issues will be briefly explained in belows:

3.1. (A)Resource and environmental problems

At least, the nuclear industry has to contribute to the triangle-shaped energy share of about 900TWe·year as shown in **Figure 1**, suppressing the CO_2, SO_x and NO_x emissions.

The Th resource is already confirmed more than 4 Mton, and never be monopolized. However, the full application of THORIMS-NES in the world, the total consumption of thorium will require only about 2$\sim$3 Mton Th(its about 30% will be fissioned), in contrast with 4$\sim$5 Mton Th in MSBR or with 140~180 Mton U in LWR system. This might introduce great advantages in the issues of resource, radiowaste and ecology.

3.2. (B) Safety

In the normal condition, FUJI(MSR) is easy in operation with the following performances: **(i)**no need of fissile supply in life, **(ii)**self-controllable, **(iii)**load-followable, and **(iv)**very few maintenance work such as fission-gas and tritium removal, and slight addition of Th in about once per week.

In the accidental cases of FUJI, the supposition of "SEVERE ACCIDENTS" is very difficult. The full stop of fuel-salt flow means only a graphite temperature increase of about 500°C not requiring any control-rod function. A large leak of fuel-salt by the fracture will not result any "core-meltdown" or "re-criticality", by the isolation of fuel and moderator [3].

Radioactivity is triple-confined by reactor-vessel, high-temperature containment, and reactor-containment. Even in the case of reactor destruction by military or terrorists' attack, it will be safer than any other reactor systems depending not only on the stationary removal of gaseous radio-activities from fuel, but also an easy suffocation-extinguishment of graphite fire without disturbance of fuel-salt [3,12]. [It will not be easy in the Modular Gas-cooled Reactors.]

3.3. (C) Nuclear-proliferation and -terrorism

The social safety and especially anti-terrorism will become more important issue in the next century. If U breeding system would be deployed in the coupling of LWR & LMFBR following a conventional policy, the world has to handle the Pu in the amount of 11 and 28 Kton in the age of 2036 and 2050, respectively [3], which would be fatal for globe [13,14].

In Th breeding system, essentially no TRU(Pu, Am, Cm) will be generated, and THORIMS-NES is the most effective and practical system for their incineration [cf.**(D)**]. In THORIMS-NES, the

^{232}U concentration in ^{233}U fuel will become more than 500ppm [2] (30 times richer than that in MSBR), and fatal for terrorists (robbers) due to the strong 2.6MeV gamma-ray from ^{208}Tl, the daughter of ^{232}U.

In the transient stage before maturing the THORIMS-NES, FUJI-V fueled by denatured-U would be valuable(cf.sec.5).

3.4.(D)Breeding fuel-cycle, chemical processing and radiowastes

In the present nuclear technology, the once-through handling of fuel will be most economical. However, in the future, the complete fuel reprocessing is essential not only for establishment of breeding fuel-cycle but also for public acceptance. The Flibe-based molten fluoride fuel system will be the best system for the above purposes, and now will be able to establish the rational managements of **"Radio-waste"**, which depend on the principles of "minimization of reprocess-steps and maintenance-works" and "full utilization of irradiated fuel materials" [15], as follows:

(cf.sec.3.1].

(ii)high-level waste: TRU will be 3 order of magnitude less than the amounts in U-Pu system, and essentially they are staying in fuel-salt as a fissile or fertile species.

(iii)low level waste: maintenance and chemical processing works in proper are very few, resulting a significant minimization of low-level waste in the order of 1/100 comparing with the case of present nuclear facilities.

(iv)graphite waste: fairly big amount of core and reflector graphite waste will be produced. However, the plate-out radio-activity on graphite will be removed for reuse by peeling 0.5mm in depth, diminishing the radio-waste [4]. The preliminary estimation on the total amount of final graphite waste is about 8 10 Mton. [MSBR will produce 30 Mton graphite waste.]

(v)structural materials [Hastelloy N]: induced radioactivity from the maximum irradiated reactor-vessel alloy will be reduced to 0.3 rem/hr/ton in 1 year after reactor shut-down [16]. It will mostly come from 0.871 & 0.703 MeV gamma of long life ^{94}Nb [half-life: 2.03×10^4 year]. However, it might be reused by the vacuum-remelting with the low contaminated alloy.

(vi)incineration of long-life Fission-Products: F.P. of half-lives longer than 30 years coming from own and other reactors might be easily incinerated in THORIMS-NES [3,15]:

(a) in the form of molten fluorides: ^{129}I, ^{135}Cs and ^{151}Sm by MSR or MSB, and ^{90}Sr, ^{93}Zr, ^{126}Sn and ^{137}Cs by MSB;

(b)in the metallic form casing in graphite, for example: ^{59}Ni, ^{63}Ni, ^{94}Nb and ^{99}Tc by MSR or MSB, and ^{107}Pd by MSB.

(vii)incineration of TRU: TRU are valuable fissile or fertile isotopes, and should be effectively utilized as fissile fuels but not reproducing TRU. For this purpose MSR will be the best facility. In practice, a modification of FUJI-II named FUJI-IV[12] has been proposed, in which about 1/3 of ^{233}U is replaced by TRU of 100～200 Kg, and fertile ThF_4 is decreased to

8 mol% from 12 mol% resulting in the fissile shortage, which is supported by the further addition of TRU in burning rate of about 50 Kg/year. In this design it seems that any technological difficulties do not exist due to the following reasons:

(a)TRU fluorides are stable trivalent and enough soluble in fuel-salt, not requiring any special pure separations;

(b) Their incineration can continue more than 20 years among reactor-life, not same as 1～2 years in solid-fuel reactors, not producing any additive(induced) radioactivity, and not requiring any additive R&D.

3.5.(E)Public and institutional acceptability and economy, including "North-South" problems [3,12]

Excellent public acceptability will be expected from **[a]**high safety, **[b]**rational radio-waste management, **[c]**high resistance to nuclear-proliferation and -terrorism, **[d]**very few load-transportation of nuclear materials, **[e]**low thermal pollution, and **[f]**characters in proper suitable for utility facilities.

Institutional acceptability also will be enough due to the following reasons: **[i]**flexible capacity choice including smaller power stations, **[ii]**easy siting: accessibility to consumers, **[iii]**easy operation and few maintenance work, **[iv]** possibility of process-heat and district-heat supply.

These advantages will encourage its distribution to the developing countries area. This will be enhanced by the excellent economy due to the simple fuel-cycle system. The expected low cost of R&D is also significant as explained in below.

4.DEVELOPMENTAL PROGRAM

The basic technology of molten fluoride fueled reactors including material-compatibility problems has been prepared by the intense R&D study of ORNL in 1947 1976. After confirming them, the first step might be the development of Small MSR.

In the development of small MSR, the following **"simple and rational nature" of MSR technology** should be recognized [3,12]:

[A] no need of fuel irradiation test, due to no radiation-damage,

[B] simple chemistry ---high theoretical predictability of physico-chemical behaviors of fuel-salt, including structural-materials compatibility [5,3],

[C] simplicity in configuration, operation and maintenance: (i)no core-graphite exchange: no opening of the reactor-vessel; (ii)fuel self-sustainable, reactor self-controllable and load-following characters --nearly no control-rod; and (iii)no need of sophisticated continuous chemical process facility,

[D] commercialization from the small reactors in the first step for maturing the new MSR technology, which means (i)the low capital cost in smaller ones, (ii)straight application of excellent experience of "**MSRE**", successfully operated throughout 4 years in ORNL, (iii)few additional R&D items, and (iv)not competition with the proven large Solid-fueled Power Reactors.

[E] wide applicability of Liquid-Na Reactor-Components development results, with the three advantages of MSR technology on the chemical inertness, low thermal shock and no oxidized vapor condensation comparing with Liquid-Na technology.

These MSRs might keep an excellent performance as effective partners of Fissile-producing MSBs in order to establish the practical **THORIMS-NES** all over the world including the developing countries and isolated areas.

In parallel, MSBs, especially **AMSB** could be developed by the rational step-wise increase of the proton-current among 20 years not expecting any big difficulties except a beam injection-port technology.

As a practical first step, a pilot-plant named **miniFUJI-II** (16.7MWth, 7MWe) was proposed [7,3], which would be promising as a similar-size one as **MSRE** except electric generation. However, an alternative simpler 10 years' plan **FUJI-V** has been proposed for replacing the 12～15 years' plan of **miniFUJI-II & FUJI-II** [3].

5. FUJI-V PROJECT FUELED BY DENATURED-URANIUM

THORIMS-NES is strongly protective for nuclear-proliferation and -terrorism as explained, and the supply of initial ^{233}U fuel will be also feasible [2,3]. However, as an alternative approach before maturing THORIMS-NES, the denatured-U fueled MSR might be considered, refusing any weapon materials [13,17].

In **FUJI-V** (cf.sec.3.3) the initial and additive fissile supply are 20% enriched-U (=20%^{235}U + 80%^{238}U), and has been modified to simplified design and lower performance than **FUJI-II** as shown in **Table 1**.

The significant characteristics of **FUJI-V** are as follows: **(a)**much improved resistance for nuclear-proliferation and -terrorism, **(b)**still essentially ^{233}U reactor, because Pu is only about 10% of fissile in final stage of life, **(c)**easier in thermal design in reactor-core, and **(d)**higher economy in plant-cost and power-cost.

6.CONCLUSIONS

In the next century, the further increase of fossil fuel utilization would not be acceptable, and the new-proposal : **THORIMS-NES depending on the "molten fluoride" technology** seems to be most promising for global application in huge-scale, considering all technological, social and ecological issues. The effective investment to this new "Energy Industry" will contribute to create a cultural healthy society solving "North-South" problems, because in near future the biggest problem in the world is the shortage of capital.

This would be one of the most practical replies to the Lilienthal's appeal of "A NEW START" in Nuclear Energy by encouraging "a revival of positive and affirmative fighting

spirit" of scientists and engineers [18].

[Acknowledgments]
The authors wish to express sincere thanks to many friends of USA, France, USSR, India, Switzerland, Canada, Germany, Belgium, Japan and the other countries for their kind cooperation and encouragements. A part of this work has been done by the Grant-in-Aid for Scientific research of the Ministry of Education, Science and Culture, Japan.

[REFERENCES]
1 C.Marchetti & N.Nakicenovic, RR-79-13, IIASA, 1987; Nucl.Sci. Eng., 90(1985) 521.
2 K.Furukawa, K.Mitachi, K.Minami & Y.Kato,Alternative Energy Sources VIII(T.N.Veziroglu,Ed.) vol.2, pp.3-22, Hemisphere Pub., 1989.
3 K.Furukawa, A.Lecocq, Y.Kato & K.Mitachi, J.Nucl.Sci.Tech., 27(1990) 1157.
4 M.W.Rosenthal, P.N.Haubenreich & R.B.Briggs, Devel. Status of Molten-Salt Breeder Reactors, ORNL-4812 (1972).
5 J.R.Engel, W.R.Grimes, H.F.Bauman, H.E.McCoy, J.F.Dearing & W.E.Rhoades, ORNL/TM-7207 (1980).
6 K.Furukawa, K.Minami, T.Oosawa, M.Ohta, N.Nakamura,K.Mitachi & Y.Kato,Emerging Nuclear Energy Systems (G.Velarde et al., ed.) p.235, World Science, 1987.
7 K.Furukawa, K.Minami, K.Mitachi & Y.Kato, Proc.Joint Int. Sympo.Molten Salts,Proc.Vol.87-7(1987) 896,Electrochem. Soc..
8 K.Mitachi, K.Furukawa,K. Minami, Y. Kato, J.Atom. Ene. Soc.Japan, 32(1990) 377(in Japanese).
9 K.Furukawa, K.Tsukada, & Y.Nakahara,J.Nucl.Sci.Tech.,18(1981) 79; K.Furukawa,Altern.Ene.SourcesVII (T.N.Veziroglu,ed.), vol.3, 353, Hemisph.,1987; K.Furukawa, et al.:Proc.1st Int. Sym. M.S.Chem.Tech.,p.399,406,409,497 ,Kyoto,1983.
10 K.Furukawa, Atomkern.Kerntech.,44(1984) 42.
11 K.Ikuta, & K.Furukawa, Proc. Joint Int..Sympo.Molten Salts, Proc.Vol. 87-7(1987) 906, Electrochem.Soc..
12 K.Furukawa, K.Kato, K.Mitachi & A.Lecocq: Proc.Indo-Japan Seminar on Th Util.(Bombay, Dec.,1990).
13 A.Lecocq & K.Furukawa, Proc.2nd Workshop Verif.Arms Reduc.(Wien,Sept.,1990).
14 A.DeVolpi, Prog.Nucl.Energy, 10(1982) 161.
15 K.Furukawa, A.Lecocq, Y.Kato & K.Mitachi, Sp.Meeting Accel.-driven Transmut.Tech Radiowaste & Other Appl., (June, Saltsjobaden, Sweden, 1991).
16 T.Noda & K.Furukawa: unpublished.
17 K.Furukawa, A.Lecocq, K.Mitachi & Y.Kato, Materi.Sci.Forum, 73-75(1991) 685.
18 D.E.Lilienthal, Atomic Energy: A New Start. Harper & Row, 1980 [translated to Japanese by K. Furukawa: Kironitatu-Gennsiryoku. Nihonn-Seisannsei-Honnbu(Japan Productivity Center),1982].

TOKAI UNIVERSITY

INSTITUTE OF RESEARCH & DEVELOPMENT

1117-Kitakaname, Hiratsuka, Kanagawa, 259-12 JAPAN
Phone 0463-58-1211 Ext. ~~2298, 2299~~ 5300
Fax " - " - 1203

Mr. J.Paul Pleasant
President,
Energy Frontiers International,
11472 Ehren St.,
Lake View Terrace, California 91342
U.S.A.

9th March, 1992

Dear Mr. Pleasant,

Thank you very much for your letter of 2nd March, 1992 and copies of letters indeed.

I am quite waiting the successes of these actions. Please report me soon by Fax [463-58-1203]. I also want to know your Fax number, please.

Could you imagine now Japanese are also quickly understanding our opinion (good for all peoples) among top peoples or opinion leaders.

My next essay ~~will be~~ was published ~~tomorrow~~ day on the leading NewsPaper: ASAHI (5 M copies ?) much discussing on Pu: "Let extinguish the fire of Pu", they chosen this title. On 1st March, timely, Mr.Torii, a Editorial Writer of Japan Economy NP[Nihonn KEIZAI] presented quite clear essay: "New Nuclear Energy Way", quite following our way, he said, and really Ministry Foreign Aff. & Tokyo ELec. Power Corp. are appreciating these proposal now.

Asahi also wrote a similar editorial on 22th Feb. titled "Re-examine the Pu policy". Therefore I sent them the above second essay.

Tokyo E.P.Co invited me on the end of this January.

I am meeting with Mr.K.Tanigawa, Minister of Sci.Tech. Agency on 10th March. Socialist Party has invited me for a lecture to rebuild their energy policy on 18th March.

Looking forward to seeing you near future,
Sincerely yours,

Kazuo Furukawa

Kazuo FURUKAWA

P.S. Please tell me your Fax number and the air-port for seeing you. (How to go there ?)

the first
讀賣新聞 1992年(平成4年)2月20日(木曜)

論点

今こそ有望な「トリウム」燃料

古川 和男(ふるかわ かずお)
東海大学教授

私たちは、来世紀に向かっての環境およびエネルギー対策を、太陽エネルギーに頼れるならば最良と思っている。だが何ぶん密度が低く不規則なので、補助か特殊目的から抜け出すのは困難であろう。

今の化石燃料時代からこの太陽エネルギー時代への橋渡しをどうするか？ 一部の人は核融合に期待しているらしい。しかし、ITER（国際熱核融合実験炉）の推進者たちも、実用化は四、五十年先という。もし実現して世界エネルギーの一％を供給し始めたとしても、二、三〇％を占めるのは再来世紀初めになってしまう。

許された時間はせいぜい二、三十年にすぎないのであるから、核分裂利用をもう一度、抜本的に見直してみる必要がある。ただし、資源、安全、核拡散・核テロ、廃棄物、社会適合、経済性のすべての面において、全世界で喜んで使ってもらえるものでなければならないであろう。

しかも環境対策にもなるように核エネルギーを生かそうとするならば、着実に規模を拡大し来世紀中に少なくも七千万から一兆KW・年の電力を生産することが必要である。これでも、化石燃料の使用で増え続ける世界の炭酸ガス放出率は、二〇六五年にようやく増勢が止まる程度である。過去の原発発電総量はわずか二十億KW・年に過ぎず、その数百倍の生産は、とても既存の軽水炉の改良程度で追いつけることではなかろう。ではどうしたらよいか？

それにはウランの代わりに「トリウム」を利用する道がある。さらに固体をやめて液体の溶融塩核燃料利用に移るのである。米国オークリッジ国立研究所の人々が、この基礎研究をまとめ推奨を始めた一九五八年ころから、筆者も生涯の仕事と決め三十年以上努力してきたが、ようやく来世紀世界に展開するにふさわしい具体構想が固まってきた。しかも前記の課題すべてを解決する見込みがある。

安全性に関しては、炉が破壊されても過酷事故（炉心溶融・再臨界など）が想定できないくらい安全である。ガス状の放射能は常に除去されており、事故時に放出されるものはほとんどない。炉内は裸の黒鉛（空間の九〇％占有）とすきまを流れる溶融塩燃料だけから成り、フタなしの単純なタンクが本体である。

核燃料は自給自足されるので、余剰燃料が不要で制御棒なしに出来るかも知れない。核燃料の路上輸送は、運転始めと終わりの二度だけでよい。燃料は空気・水と反応しない常圧の最も安定な液体である。冷えれば燃料塩はガラス状に固化し、放射能閉じ込めに最良で、水に溶けない。廃棄物についても、まず一番やっかいな超ウラン元素類がほとんど生まれない。燃料をいじり回さないので、低レベル廃棄物を激減できる。

核拡散・核テロ対策では、トリウムの利用によりプルトニウム廃絶が可能である。トリウムは核分裂性の人工ウラン233に変えられて燃やされるのであるが、これは必ず強烈なガンマ線を伴い、テロリストは致死量を浴びてしまう。遮蔽（しゃへい）するには厚さ二十㌢の鉛の容器が必要で、簡単に運べない。検知・監視はきわめて容易である（従って、燃料は液体にして遠隔操作され、作業員は被ばくをまぬかれる）。

このほか、この炉は小型化できる利点をもつ。既存の大型原発と不必要に競争せず、小型炉から次第に世界に展開していけばよい。技術成熟に、立地に有利である。

米・仏・伊などには、かねがね一刻も早く開発したいという仲間がいる。最近、ロシアの研究所が挙げて共同したいと動き出した。開発途上国でも、現にチェルノブイリ災害に懲りて原発を拒否していたトルコ政府機関までが、一緒に検討させてほしいと言って来ている。インド・インドネシアその他にも熱心な仲間がいる。

このような新しい炉は開発費が大変だろうとよく言われるが、逆である。その証拠に、オークリッジでは実にわずかの資金と最高二百人の陣容で、すでに実験炉が立派に運転され、技術基盤はできているのである。最小限の新技術実証には、約十年の年月と国連が今世紀内に必要という環境対策費一兆㌦の千分の一ぐらいがあれば十分と思われる。経済性の高さも十分推察していただけるであろう。

これにはまた、世界が膨大な投資をしながら実用化されていない高速増殖炉用の液体ナトリウム技術が、有効に、しかもより易しく活用できるからである。日本におけるこの技術の基礎は、二、三十年前に筆者らが中心になり、この日のために育てておいた。

第二次大戦後の世界は核戦略の下で動いてきた。それが崩れた今、世界は日夜、核拡散・核テロに震えている。今こそ、今世紀初頭にアインシュタインが開いた核エネルギー技術の真の平和利用を求めて、人類が再出発すべき好機であろう。

（核エネルギー論）

Mino the second

（15） 12版 朝日 1992年（平成4年）3月9日 月曜日

論壇

プルトニウムの火を消そう

古川 和男

朝日新聞の二月二十二日社説は、「プルトニウム政策を練り直せ」と題し、原子力平和利用の中核を成して来たウラン・プルトニウム核燃料計画の全面的見直しを提案している。これはまことに時宜をえたものである。戦後の国際政治を大きく支配して来た核兵器の大幅削減がまさに現実となっており、また、ちょうど日本は原子力委員会が「原子力開発利用長期計画」を五年ぶりに改訂しようとしている時点だからである。ぜひ広く国民が参加して論議すべきであろう。

その際、当面のご都合に引きずられて中・長期への配慮が名ばかりになってほしくない。また、十分に国際的視点から論議してほしいものである。

過去四十年の開発努力の九九%は、ウラン・プルトニウムサイクルに焦点を合わせて来たのは事実である。したがって、当事者たちがこれから逃れられないのはよく分かる。現実に関連施設が、核物質が存在しているからである。しかし、だからといって、数十年先までこのままの基本路線をたどれるかどうか、冷静に考えてみたい。

わが国だけでも、二〇一〇年までに必要な原発七千万キロワットの半分くらいしか、立地点の手配が付いていない、と新聞は報じている。環境対策上からも、重大な事態に直面していると考えるべきではないか。

われわれの課題はすべて世界の動向と直結している。わが国でも満足に展開できそうにないものが、世界に通用するはずがない。また、世界が受け入れないものを、わが国だけ利用できるはずもない。

社説では、「核テロ」の話題は敬遠しているが、本当に深刻なのはこれではなかろうか。テロリストはプルトニウムを持っていなくて活動できる。「持っていないと確言できない時代」だからである。したがって、少なくも検知の容易な技術に移行させるべきである。それが、ここで訴えたいと思うトリウム・ウラン核燃料サイクルである。トリウムは炉内でウラン233に変えて燃やされるが、その強烈なガンマ線により監視・検知は極めて容易である。すでに一九八六年の核テロ国際会議でも推奨されている（核燃料は液体にし遠隔操作する）。

なお最初に原発が社会との摩擦を引き起こしたのは、安全問題である。既知の炉構想では、ついに社会説得に成功していない。炉心溶融や再臨界事故の可能性を完全には排除できず、その対応策が複雑化・非経済化を呼んでいるからである。

また使用済み燃料再処理を世界的に展開できる見通しはない。増殖サイクル完成は夢であり、廃棄物対策も悪化をたどるだけだろう。ウラン採鉱による環境破壊も無視できない。

これらすべてに対して、われわれがかねがね検討を深めてきたトリウム・ウランサイクルの溶融塩燃料炉方式は、最良の対応ができる見通しが得られてきた。プルトニウム核弾頭の有効利用消滅も容易である。ウラン・プルトニウム炉では、プルトニウムと縁は切れない。

今後二、三十年は既存原発に頼らざるをえない。これは、化石燃料がいくら汚染を助長しても来世紀前半の主エネルギーであることを止められないのと同様である。しかし、その先のために、今こそ新しい道を探り始めるべきである。研究開発の基礎はほとんど整えられてあり、資金も手間もいくらもかからない。小型化に適するので、既存大型炉と不必要な競合なしに、健全な移行が可能である。

諸外国は賛成を始めている。皆で徹底的な論議をしてみようではないか。一層深刻化するのが明白な、南北問題打開への大きな一歩としようではないか。南北間の共同体制が整わねば、環境問題も社会争乱も手のほどこしようがないはずである。

（東海大学教授、核エネルギー論・高温融体工学）

TOKAI UNIVERSITY

INSTITUTE OF RESEARCH & DEVELOPMENT

1117-Kitakaname, Hiratsuka, Kanagawa, 259-12 JAPAN
Phone 0463-58-1211 Ext. ~~2298, 2299~~ 5300
Fax " - " -1203

Mr. J.Paul Pleasant
President,
Energy Frontiers International,
11472 Ehren St.,
Lake View Terrace, California 91342
U.S.A.

18th February, 1992

Dear Mr. Pleasant,

Thank you very much indeed for your letter[and beautiful stamps] of 14th January(February ?), 1992.

Your statements all are quite agreeable and encouraging me. I am sorry for my silence , but I did a lot for Th. Partially I shall report you, as Th is on time:

0) Please tell me your Fax No.. Mine is 463-58-1203.
1) Th fuel cycle promotion by HTGR is natural for USA. However, the age is shifting, and really a new era. Your country has the base of MSR tech.. Comparing them, HTGR is an incomplete set, especially concerning "fuel processing", really. I discussed severely on it with Professor Schulten[Julich] 3 years ago, and off course, with other severals including EdF chief engineer (cf. II-5 section of our blue book prepared by the help of EdF.).
2) So long I am hoping for DOE to move on MSR development using ORNL, with which I have a deep connection as you know. I prepared a very easy approach than ORNL-MSBR, and can distribute all over the world. I enclosed our newest report here. ORNL peoples are supporting me.

I am very happy if you would couple with me to prepare the international coopo.system for th-MSR development. Would you please explain our idea to Mr.Henson Moore[what is his previous career ?], because the several groups in the world are more and more supporting our proposal:
3) For example:

Now Russian Inst.for Theo.& Expmtl Physics, Moscow [2500 persons, responsible for N.Weapon head incineration] is officially coworking in our direction.

Turkish Atomic E.Authority President presented his hope to study more on our system cooperatively (already progressing in partial). Please understand it means that this tech. is very attractive for developing countries, too. In recent, India, Indonesia, Czecho., Israel, --- are hoping to know more.

Will you know a week ago Indonesia nearly gave up PWR after

long examination choosing coal.

Japan is now more understanding the difficulty of LWR siting. Two days later (20th Feb.) the Japanese biggest conservative Newspaper "YOMIURI" is publishing an invited energy essay of mine in 9 million copies.

4) I have to explain more in detail. Could we meet together near future ? Where is your town ? Last year I missed to visit USA, but this year have to go, at least visiting LLNL, EPRI, Los Angeles, LANL ?, ORNL, Tennessee Univ.. Which period is suitable for meeting you ?

Would you have a connection with the former President Carter, who was a reactor fuel engineer and really promoted to use Th than Pu strongly !(I am also not impossible to find it.) Senate of Tennessee (who) should move to use ORNL more for not only USA but also the world, don't you ?

I shall move more now. Please help me.

Looking forward to seeing you near future,

Sincerely yours,

Kazuo Furukawa

Kazuo FURUKAWA

P.S. I heard that Dr.Clark Gibb, the head of ETEC, Canoga Park, has an interest on MSR. More than 20 years ago, I had a deep connection with LMEC and Atomic International. I am writing him, too.

"Document Control"

TYPE: MEETING REQUEST DOCUMENT NUMBER: 9201775
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS C

****

FROM: PLEASANT, John Paul: ENERGY FRONTIERS INTERNATIONAL

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 05/17/92

SUBJECT: HE IS WRITING TO REQUEST A MEETING WITH DR. BROMLEY FOR PROFESSOR KAZUO FURUKAWAFROM TOKAI UNIVERSITY, JAPAN, REGARDING COMMERCIAL NUCLEAR ENERGY.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED: SARA BOWDEN

ACTION REQUIRED: AS NECESSARY

STAFF ACTION: AS NECESSARY

****

SENDER'S DUE DATE:

OSTP DUE DATE: 06/01/92 STAFF DUE DATE

DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
PHYSICAL SCIENCES

****

WHITE HOUSE TRACKING #: CONTACT PERSON:

PHONE: EXT:

REMARKS: DAB and L. Schroeder met with Furakawa on 6/9/92.

OSTP RECEIVED: 05/18/92 DEPT RECEIVED: 05/19/92

FILE: P-INTERNATIONAL

CENTRAL FILES:

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

July 7, 1992

Dear Professor Furukawa:

I am sorry that I have taken so long in getting back to you but I had to return to California for personal reasons for several weeks and have just recently returned to OSTP.

As you remember from your conversation with Dr. Bromley and myself we indicated that the appropriate agency to continue your discussions of molten salt reactors would be the U.S. Department of Energy (DOE). Below is the name and address of the appropriate person at DOE to whom you should address future inquiries:

Dr. Sol Rosen
Director, International Nuclear Programs Division
U. S. Department of Energy
NE-45/GTN
Washington, D.C., 20585

It was a pleasure meeting you and I wish you the best of luck with your project.

Sincerely yours,

Lee S. Schroeder
Assistant Director

Prof. Kazuo Furukawa
Research Assoc. for Thorium Energy
Business Center
Four Seasons Hotel Chinzan-So, Tokyo
10-8 Sekiguchi 2-Chome, Bunkyo-Ku
Tokyo 112, JAPAN

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

July 9, 1992

Dear Dr. Rosen:

As I metioned in our telephone conversation of July 8th, Dr. Bromley and I met with Professor Kazuo Furukawa at the request of Deputy Chief of Staff Henson Moore and Senator Craig on June 9, 1992. Professor Furukawa was interested in discussing his ideas concerning the use of thorium (molten salt) as a uranium-plutonium fuel cycle replacement. During this meeting we indicated that the appropriate U.S. agency for such discussions was the Department of Energy and stated that we would provide him with a potential DOE contact. Enclosed is my letter to him indicating your office as an appropriate point of contact on the subject of molten salt reactors.

Please feel free to get in touch with me if there is any additional information that you might like to have concerning Professor Furukawa's visit to OSTP.

Sincerely,

Lee S. Schroeder
Assistant Director

Dr. Sol Rosen
Advanced Reactor Program Office
U.S. Department of Energy
NE-45/GTN
Washington D.C., 20585

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9201769
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: HERMAN, Richard H.: JOINT POLICY BOARD FOR MATHEMATICS

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 05/14/92

SUBJECT: HE IS WRITING TO ENCOURAGE EFFORTS TO PROVIDE FUNDING FOR SCIENTISTS IN THE FORMER SOVIET UNION.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED:

ACTION REQUIRED: AS NECESSARY

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: 06/01/92

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley

****

WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE: EXT:

REMARKS:

OSTP RECEIVED: 05/18/92 DEPT RECEIVED:

FILE: P-INTERNATIONAL

CENTRAL FILES:

1769

JOINT POLICY BOARD FOR MATHEMATICS

OFFICE OF GOVERNMENTAL AND PUBLIC AFFAIRS • 1529 EIGHTEENTH STREET NW, WASHINGTON, DC 20036 • 202/234-9570 • FAX 202/462-7877

May 14, 1992

The Honorable D. Allan Bromley
Assistant to the President for
Science and Technology
Executive Office of the President
Washington, DC 20506

Dear Dr. Bromley:

I am writing to you to encourage efforts to provide funding for scientists in the Former Soviet Union (FSU). The April 24 issue of Science sums up the situation rather well and points to a "comprehensive European initiative" to provide support.

The leadership of the mathematical community is very much in favor of efforts in this direction. Sidney Drell's remarks about Russian physics having its "own footprint, trademark, signature" are entirely apropos for mathematics. Both mathematics and physics represent the highlights of science in the FSU. Indeed the great worry is that "homogenization" will result in a considerable loss to mathematics and physics research.

I know that many in the mathematical community stand ready to help organize efforts to help out counterparts in the FSU. In particular, I might mention Bob MacPherson and Pierre de Ligne as two with long term relationships to FSU mathematicians. We sincerely hope that you will call upon us, both to help gather funds or help disperse them should they become available.

Very truly yours,

Richard H. Herman, Chair
Joint Policy Board for Mathematics

/arr

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9201766
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: KNAUSS, John A.: U.S. DEPARTMENT OF COMMERCE

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 05/14/92

SUBJECT: HE IS WRITING TO URGE DR. BROMLEY TO SUPPORT TO THE ROLE OF THE IOC IN THE GLOBAL OCEAN OBSERVING SYSTEM AND THE CONCEPT OF A TRUST FUND TO HELP IMPLEMENT THIS PROPOSAL.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED:

ACTION REQUIRED: AS NECESSARY

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: 06/01/92 STAFF DUE DATE

DATE COMPLETED: DATE COMPLETED/DEPT:

****

COPIES TO: D. Allan Bromley
ENVIRONMENT

****

WHITE HOUSE TRACKING #: CONTACT PERSON:

PHONE: EXT:

REMARKS:

OSTP RECEIVED: 05/18/92 DEPT RECEIVED:

FILE: P-INTERNATIONAL

CENTRAL FILES:

1766

UNITED STATES DEPARTMENT OF COMMERCE
The Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

Honorable D. Allan Bromley
Assistant to the President for
Science and Technology
Washington, D. C. 20506

Dear Allan,

I have heard indirectly that the United Kingdom (UK) science minister, at the meeting you will attend in the UK on May 22, will suggest that the "global ocean observing system" should be supported and the Intergovernmental Oceanographic Commission (IOC) of UNESCO should be charged with its implementation [in the same way that the World Meteorological Organization (WMO) is charged with implementation and coordination of the World Weather Watch]. I understand that he will also suggest that the "big member states" should contribute to an IOC Trust Fund to help with this process.

The proposal has strong support from the U.S. science community. I am the first vice chair of the IOC and the idea of a trust fund to support programs such as this is something I have been pushing within the IOC for the past year. I would prefer you not agree on a sum of money [most of which will probably have to come from my budget], but I would urge you to give strong support to both the role of the IOC in the global ocean observing system and the concept of a trust fund to help implement this proposal.

Sincerely,

John A. Knauss

THE ADMINISTRATOR

Logged Charlie B.

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9201770
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

****

FROM: KNAUSS, John A.: U.S. DEPARTMENT OF COMMERCE

TO: DR. D.A. BROMLEY

DATE OF CORRESPONDENCE: 05/14/92

SUBJECT: HE IS WRITING TO INFORM DR. BROMLEY OF THE AVAILABILITY OF GURIY I. MARCHUK HAS ACCEPTED THE NOAA INVITATION TO SPEND THREE MONTHS WITH THEM, AND SUGGESTS DR. BROMLEY MAY WANT TO MEET WITH HIM.

****

DIRECTORATE ASSIGNED: INTERNATIONAL/POLICY

STAFF ASSIGNED: John O'Neil

ACTION REQUIRED: AS NECESSARY

STAFF ACTION:

****

SENDER'S DUE DATE:

OSTP DUE DATE: 06/01/92 STAFF DUE DATE Action Complete.

DATE COMPLETED: DATE COMPLETED/DEPT: 6/8/92

****

COPIES TO: D. Allan Bromley

****

WHITE HOUSE TRACKING #: CONTACT PERSON:

PHONE: EXT:

REMARKS:

Copy of response to Dr. Knauss is attached.

OSTP RECEIVED: 05/18/92 DEPT RECEIVED:

FILE: P-INTERNATIONAL

CENTRAL FILES:

1770

UNITED STATES DEPARTMENT OF COMMERCE
The Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

Dr. Alan Bromley
Office of Science and Technology Policy
Old Executive Office Building
17th Street & Pennsylvania Avenue, N.W.
Washington, D.C. 20500

Dear Alan,

This is a "heads up" to inform you that your friend Guriy I. Marchuk has accepted the National Oceanic and Atmospheric Administration's (NOAA) invitation to spend three months with us, beginning September 10, 1992. I expect that he will be helpful to us in developing and implementing more active scientific cooperation with the Former Soviet Union. He also hopes to have time for some long deferred individual research.

He will be accompanied by his wife and will reside in Boulder, Colorado, where NOAA has five research laboratories. He will be available for activity at other locations, and we will be glad to share him with you if you want.

He is acquainted with President Bush, having been seated next to him at Gorbachev's state banquet during the President's visit to Moscow. If you wish to arrange an audience, feel free to do so.

I am also notifying Secretary Franklin, Frank Press, and Robert White (see enclosures for more detail).

Dr. Marchuk will be hosted in Boulder by Joseph Fletcher, who can answer any questions you may have. His phone number is 303-497-6000.

Sincerely,

John A. Knauss

Enclosures

THE ADMINISTRATOR

UNITED STATES DEPARTMENT OF COMMERCE
The Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

MAY 14 1992

Dr. Frank Press
President, National Academy of Sciences
2101 Constitution Avenue, N.W.
Washington, D.C. 20418

Dr. Robert M. White
President, National Academy of Engineering
2101 Constitution Avenue, N.W.
Washington, D.C. 20418

Dear Frank and Bob,

This is a "heads up" to inform you that Guriy I. Marchuk has accepted the National Oceanic and Atmospheric Administration's (NOAA) invitation to spend three months with us, beginning September 10, 1992. I expect that he will be helpful to us in developing and implementing more active scientific cooperation with the Former Soviet Union. He also hopes to have time for some individual research. We will be glad to share him with you if you wish. He will be accompanied by his wife and will be hosted in Boulder by Joseph Fletcher, who will be glad to answer any questions. His phone number is 303-497-6000.

Sincerely,

John A. Knauss

THE ADMINISTRATOR

Form CD-183 (REV. 3-82) DAO 214-9

U.S. DEPARTMENT OF COMMERCE

ABSTRACT OF SECRETARIAL CORRESPONDENCE

TO: ☒ Secretary ☐ Deputy Secretary Control No: 52456

Date: MAY 14 1992

INFORMATION MEMORANDUM

From: John A. Knauss
Under Secretary for Oceans and Atmosphere

Prepared by: Ned A. Ostenso/NOAA/AA/OAR/713-2458

Subject: Extended Visit of Academician Guriy I. Marchuk

Academician Marchuk, who has been the top science official in the USSR for more than a decade, has accepted the National Oceanic and Atmospheric Administration's (NOAA) invitation to spend a three month sabbatical with us, beginning September 10, 1992. He will be accompanied by his wife.

From 1986 to 1992 he was President of the Academy of Sciences of the USSR under which there are about 300 research institutes. Before that, he was for eight years Chairman of the State Committee for Science and Technology (roughly analogous to Alan Bromley). Now that the Former Soviet Union (FSU) has broken up into 15 Republics, each Republic has its own Academy of Sciences. There has been formed a "Council of Presidents" and Marchuk is the Chairman. We expect that this talented and vigorous man will continue to be a prominent figure in FSU science.

He is a mathematician by training with strong interests in mathematical modeling of oceans and atmosphere and a long history of cooperation with US scientists. He will reside in Boulder, Colorado, where NOAA has five research laboratories, but will also work with other NOAA elements. We expect that Marchuk will be especially useful in developing and implementing scientific cooperation with the FSU.

In Moscow, the Marchuk family shares a four-plex residence with Gorbachev, Ligahev and Yazov (now in confinement). During President Bush's visit to Moscow, Marchuk was seated next to him at Gorbachev's state banquet and they had extensive discussion. Attached is a copy of the notification to Dr. Alan Bromley of this visit in case he wishes to include an audience with the President during Marchuk's time with us. Also attached are copies of notifications sent to Frank Press and Robert White.

Attachment

CC: ES-GC-DUS-ASO-AS-US-DAS-Lavon-VanCleave

	PREPARED BY	CLEARED BY	CLEARED BY	CLEARED BY	CLEARED BY	CLEARED BY	CLEARED BY
SURNAME & ORGANIZATION (Please type)	Ostenso NOAA/OAR						
INITIALS & DATE	4/27/92						

USCOMM DC 99749

THE WHITE HOUSE

WASHINGTON

June 2, 1992

Dear John:

Thank you so much for your letter informing me of Guriy Marchuk's upcoming sabbatical with the National Oceanic and Atmospheric Administration (NOAA). I have fond recollections of visiting him in May 1991 in Moscow on the occasion of the meeting of the Joint Commission for our Agreement on Cooperation in the Field of Basic Scientific Research. In fact, during that meeting Guriy and I signed a Memorandum of Understanding between the National Institute of Standards and Technology and the then Soviet Academy of Sciences. We used his offices in the Academy Presidium as an elegant venue for the signing. Following this festive gathering, he led us on a personal tour of the Academy's new quarters. I understand the Academy now does not plan to occupy that building but rather will rent out space to Western businesses. It really is a luxurious building with a commanding view of Moscow.

I would like to thank NOAA for extending the opportunity to Guriy to take a sabbatical in the United States. With the changes in the Academy, and in his personal life, I am sure this will be an especially valuable rest. I trust some of his strange ideas will benefit from interaction with NOAA scientists. When Guriy travels to Washington, I would be delighted to meet with him. This would offer an opportunity to thank him for the wonderful way my delegation and I were treated in Moscow. I will have my staff contact Joseph Fletcher in Boulder, as you suggest.

Thank you again for thinking of me.

Sincerely yours,

D. Allan Bromley
The Assistant to the President
for
Science and Technology

The Honorable John A. Knauss
Under Secretary for Oceans & Atmosphere
United States Department of Commerce
Washington, DC 20230

JFO'NEIL:jward:June 2, 1991 9201770