SECTION 2.6
FOREIGN ENTITIES

...NTOR No. 57: Embassy of Greece

...nts on the Draft Environmental Impact Statement
...ed Nuclear Weapons Nonproliferation Policy
...Foreign Research Reactor Spent Nuclear Fuel

...written comments, please feel free to use this page and drop it ...when you leave. Alternatively, you may mail your comments to ...t the address listed below. Also, please provide us with your ...one number for any follow-up information or any questions ...ur comments. This will also allow us to properly indicate the ...the comment response document. Thank you.

...RONOPOULOS Phone: (202) 9395804
...irst Secretary / Political Affairs / Embassy of Greece
...ACHUSETTS AVE. N.W.
...D.C. State ____ Zip 20008

*** COMMENTS ***

...of "DEMOKRITOS" NRR I express my ...tions and comments presented ...ntatives (Joe Egan, Jack Edlow) of ...n reactors members of the ...ted by the representatives of ...IAEA are also cosponsored by ...f Greece.

57-1

...d like to point out the lack ...ans for "DEMOKRITOS", that of Dounreay incl... ...lack of spent fuel storage sites in Greece.

57-2

...Correspondence to:

...nagement, EM-37
...gy
...ue, SW
...-0001

Response to Comment
Commentor No. 57: Embassy of Greece

Response to Comment No. 57-1

The commentor's position concerning statements of the Edlow Group, EURATOM, and the IAEA is noted.

Response to Comment No. 57-2

The commentor's expression of limited or nonexistent disposition alternatives available to Greece due to lack of spent nuclear fuel storage sites in Greece, is noted.

[redacted]

ENTOR No. 58:
Y OF CANADA (CONT'D.)

ould of course be kept open.
fuel wastes and maximises fuel
in this EIS as an option. This
ough further EIS's and lawsuits.
s return of the spent fuel.

58-6

the spent fuel, should be
h that being charged at the time
y one other "player" in the
ge option, using their
vant comparison.

58-7

ringing the issue to this point,
el return agreement at last within
progress, one shouldn't be too
hich can prolong or divert the

58-8

Frank Kelly
May 31 1995

RESPONSE TO COMMENT
COMMENTOR No. 58:
ATOMIC ENERGY OF CANADA (CONT'D.)

Response to Comment No. 58-6

The commentor's support for accepting the foreign research reactor spent nuclear fuel into the United States and for chemically separating it is noted. NEPA requires that the environmental impacts of all reasonable alternatives be evaluated, regardless of political opposition or potential litigation.

Response to Comment No. 58-7

DOE considers that reprocessing at Dounreay provides a reasonable basis for establishing a competitive price since it would be the alternative to the U.S. program that several countries are considering. DOE also considers that the price, however determined, should be based on current conditions rather than those prevailing at the expiration of previous agreements.

Response to Comment No. 58-8

The commentor's position on this matter is noted.

COMMENTOR NO. 62: ICI TRACERCO

ICI Tracerco

Mr C Head
Office of Spent Fuel Management (EM-37)
US Department of Energy
1000 Independence Avenue SW
Washington DC 20585
U.S.A.

ICI Tracerco
ICI Chemicals & Polymers Limited
PO Box 1 R2 Building
Billingham
Cleveland TS23 1LB
Telephone (01642) 522350
Fax (01642) 522991

Our Ref	Direct Line	Ext	Date
DG LF 763W	01642 523302	3302	28 April 1995

Dear Mr Head

ENVIRONMENTAL IMPACT STATEMENT - REPATRIATION OF HEU AND LEU FUEL

I would wish to offer the following comment on the above document which is being circulated within the USA for public consultation. I manage a Triga reactor facility in the UK which has LEU fuel purchased from General Atomics over the past 25 years.

The original decision to purchase the Triga Reactor rather than opt for a UK facility was strongly influenced by the safety features of the fuel design and the reassurance that the spent fuel would be eventually returned to the USA. The change in policy on repatriation has, in common with other Triga operators, created major problems in defining decommissioning strategies. We are currently wishing to decommission our Triga Reactor at the earliest opportunity and are extremely interested in the current debate on repatriation. 62-2

We fervently hope that an early decision will be made which will alleviate the difficult situation in which most Triga Operators now find themselves.

Yours sincerely

DR D GREEN
Environmental & Reactor Services Manager

RESPONSE TO COMMENT
COMMENTOR NO. 62: ICI TRACERCO

Response to Comment No. 62-1

The commentor's position on acceptance of TRIGA spent nuclear fuel under Management Alternative 1 is noted. Section 1.2 of the EIS describes the purpose and need for the proposed action and United States obligations under the Treaty on the Non-Proliferation of Nuclear Weapons.

COMMENTOR No. 104: GKSS FORSCHUNGSENTRUM

GKSS FORSCHUNGSZENTRUM

. Charles Head, Program Manager
. Department of Energy
ice of Spent Nuclear Fuel Management
M-37)
0 Independence Avenue, SW
shington, DC 20585

Unser Zeichen	Durchwahl Telefon	Durchwahl Telefax	Datum
RZL-Dr.Kr/ri	04152/87- 1200	04152/87- 1338	June 7, 1995

Ref.: DOE/EIS-0218D, March 1995: Draft Environmental Impact Statement on a Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel

ar Sir,

behalf of the GKSS-Forschungszentrum Geesthacht GmbH we would like to thank you for the portunity to comment the draft EIS. GKSS has already commented the draft EA as well as parti-ated in a hearing at Washington, DC, on that draft on February 10, 1994 and expressed its posi-n and concerns in papers presented at the last two RERTR meetings and in a publication in the rnal "Nuclear Engineering International":

Letter to Mr. John J. Jicha, (DOE, Office EM-37), dated February 18, 1994

Paper: GKSS position on the back end of the fuel cycle of its research reactor FRG-1, presented at the hearing on the EA on February 10, 1994 in Washington, DC

W. Krull: Comments on the future activities of the RERTR program, paper presented at the 16. RERTR meeting, Oarai, October 3-7, 1993, Japan

W. Krull: Comments on the future activities of the RERTR program - part II, presented at the 17. RERTR meeting, Williamsburg, September 19-22, 1994, USA

W. Krull: Operators beware, Nuclear Engineering International, page 33-36, December 1994

ackground informations for the following comments can be found especially in no. 2 to 5 of the bove mentioned documents and papers. GKSS has some general comments on the necessity for

GKSS-Forschungszentrum Geesthacht GmbH · Max-Planck-Straße · D-21502 Geesthacht
Postanschrift: Postfach 1160 · D-21494 Geesthacht
Gesellschaft mit beschränkter Haftung · Sitz in Geesthacht · Amtsgericht Geesthacht · HRB 2655 · USt-IdNr.: DE 135151 688
Vorsitzender des Aufsichtsrates: Ministerialdirektor Dr. rer. pol. Reinhold Leinweber · Geschäftsführer: Stefan Heinrich, Dr. Günther von Storch
Bankverbindungen sind nur bei Angabe der Kontonummer möglich
Bankkonten: Commerzbank 0479 008 (BLZ 200 400 00) · Deutsche Bank 98 08 404 (BLZ 200 700 00) · Dresdner Bank 172 80 10 (BLZ 200 800 00)

RESPONSE TO COMMENT
COMMENTOR No. 104: GKSS FORSCHUNGSENTRUM

OR NO. 104: GKSS FORSCHUNGSENTRUM (CONT'D.)

s proposed policy, some special comments on the draft EIS and remarks on the alt-
3-1 research reactor.

comments

publication of the Draft EIS the DOE has reached after years of preparation an im-
nilestone the second after the announcement of the Secretary of DOE in her letter
y 13, 1993 in reentering the Policy on the Receipt of Spent Nuclear Fuel from For-
search Reactors. This is gratefully appreciated.

milestones are only the beginning and other more important ones must follow, es-
the effective implementation of that proposed policy. Only then the international
reactor community can believe that DOE is again a reliable partner.

ust stay on that way with extreme efforts as at the moment some operators and
are looking or implementing already independent national solutions. Such spla-
l cause the worldwide spread of not sufficiently physical protected HEU forever
consequences on nonproliferation. 104-1

ust consider for the existing spent fuel at reactor facilities that a large quantity has
n self protecting, another part is no longer self protecting and more fuel will loose
rotection soon. Physical protection does not follow in many cases the necessary re-
ns. 104-2

s offset of the Policy for the Receipt of Spent Fuel from Foreign Research Reac-
the last decade the stockpile of fresh fuel (including spent fuel loosing its self
n) increases worldwide with all negative consequences in proliferation risk. It is on
ake over this responsibility and burden for some time.
ase of the stockpile of HEU at the back end of the fuel cycle is directly opposite to
E conclusion and it undermines the efforts of the RERTR program to reduce the
of HEU on the front end of the fuel cycle. 104-3

arch reactor operators worldwide have to be convinced upon the necessity of re-
e proliferation risk and to continue with the RERTR program. The US should lead
now by positive examples. Hesitating and not converting own reactors soon is no
onvincing others. The offset of developing higher density fuel is in the same way a
e wrong direction. 104-4

st consider what actions should be taken if in spite all positive intentions the sum-
mers are so high that first shipments will be significantly delayed. 104-5

e the proliferation risk coming up from the operation of research reactors with
a long period of time the only effective possibility is the return of this material to 104-6

RESPONSE TO COMMENT
COMMENTOR NO. 104: GKSS FORSCHUNGSENTRUM (CONT'D.)

Response to Comment No. 104-1

The commentor's position on the urgency of implementing the proposed action is noted. Section 1.2 of the EIS discusses the need for action and some potential consequences of inaction.

Response to Comment No. 104-2

Section 4.6.1 has been edited to include a discussion similar to that provided by the commentor.

Response to Comment No. 104-3

The commentor's position on the lapse of the Off-Site Fuels Policy is noted.

Response to Comment No. 104-4

The commentor's position on the conversion of research reactors in the United States is noted. The majority of nongovernmental research reactors in the United States have either converted or are in the process of converting to the use of LEU fuels. DOE is also considering the utility of converting U.S. Government owned reactors to the use of LEU fuels. The United States is the originator and strongest supporter of the RERTR program and continues to pursue the goal of eliminating the civilian use of HEU. To this end, DOE has requested money for Fiscal Year 1996 to resume development of advanced, high density LEU fuels to facilitate reactor conversion.

Response to Comment No. 104-5

If a decision is made to manage foreign research reactor spent nuclear fuel in the United States, the actions that DOE would take in the case that implementation of the policy is delayed depend on the specific implementation alternatives that will be selected in the Record of Decision.

Response to Comment No. 104-6

The commentor's support for the return of HEU to the country of origin is noted. Other options are discussed in Section 2.3 of the EIS.

the country of origin. Having it stored at many locations worldwide may be safe today. But the world is changing. 104-6 (Cont'd.)

I-9 Since DOE's offset of the Off-Site Fuel Policy for the Receipt of Spent Nuclear Fuel from Foreign Research Reactors operators and countries started to look at other solutions e.g.:

- reprocessing in Dounreay and further use of the reprocessed HEU
- building and licensing national long term storage facilities
- designing, licensing and construction of casks for long term dry storage
- building additional storage racks to have storage capacity for the scheduled life time of the reactor and then indirectly forever.

104-7

These actions undermine the efforts to reduce the proliferation risk worldwide.

I-10 DOE should state in the EIS that there are legal obligations to take back the spent fuel e.g.:

- contracts with some operators
- Fed. Reg. Note from December 1987 to issue a new Fed Reg. Note for a 10 years period
- Fed. Reg. Note from February 1986 for the LEU spent fuel acceptance to ensure the return of HEU during the conversion from HEU to LEU and later on LEU!
- letter of the Secretary of DOE from July 13, 1993, which has to be seen as a Record of Decision under the condition that the risk is acceptable. This has now been confirmed in the Draft EIS.

104-8

II Specific comments

II-1 After implementing the EIS it is without any doubt that there will be a termination of this policy. DOE must be a reliable partner again, but the US must not be the world storage place for these spent fuel elements forever. 104-9

II-2 Termination for 10 years for the production of spent fuel seems to be a reasonable time frame. But the additional 3 years only for shipment of all the spent fuel elements containing fuel of US origin seems to be away from practice. Only if everything runs well, 3 years are enough. 104-10

II-3 DOE should consider delays between implementing the new Policy, scheduled shipments and real shipments. Delays will be caused by force majeure, law suits at all possible levels, availability of necessary licenses or permissions, availability of suitable casks meeting the feasibilities at the operators site, availability of carriers, local intervenors and demonstrants at the US and non US sites and harbors etc. Within the EIS precautions should be included for these delays. 104-11

Response to Comment No. 104-7

The reactor operators' options in case the DOE selects the No Action Alternative are noted. These are also discussed in Sections 1.2 and 4.6 of the EIS.

Response to Comment No. 104-8

It is DOE's position that neither DOE nor the United States Government has any legal obligation to accept spent nuclear fuel from foreign research reactors.

Response to Comment No. 104-9

The commentor's position on the policy duration alternatives under Management Alternative 1 as described in Section 2.2.2.2 of the EIS is noted. The intent of the proposed policy is to remove as much U.S.-origin HEU as possible from civil programs worldwide and give foreign research reactor operators time to convert their reactors to the use of LEU fuels and to make arrangements for disposition of their LEU spent nuclear fuel (Section 1.2 of the EIS).

Response to Comment No. 104-10

If Management Alternative 1 (Management in the United States, Section 2.2 of the EIS) is adopted and if delays in implementation occur, the delays are anticipated to occur mainly in the early portions of the program. The three year acceptance period which follows the ten year policy period is intended to allow for cool down and shipment of the last elements of spent nuclear fuel from foreign research reactors to the United States.

Response to Comment No. 104-11

It is not feasible to include in an EIS precautions to account for uncertainties such as delays resulting with suits brought to stop implementation of the action as decided in the Record of Decision.

COMMENTOR NO. 104: GKSS FORSCHUNGSENTRUM (CONT'D.)

- 4 -

II-4 Not all casks listed are licensed today. And the number of necessary shipments listed are diffierent between this EIS and DOE/EIS-0203-F. Some casks have to be used for US domestic shipments, too. — 104-12

II-5 Many solutions are possible. But only the management alternative 1 with the basic components is the only acceptable one in bringing back trust in the actions of DOE and reducing the proliferation risk really. If other management alternatives will be chosen research reactor operators will not be willing to suffer under the penalties (increasing fuel cycle costs, loss of reactor performance, licensing difficulties) of conversion of their reactors to LEU and they will stay on HEU. HEU will be spread worldwide forever. — 104-13

II-6 If DOE is not taking management alternative 1 with the basic components
- only a marginal reduction in proliferation risk and
- the complete loss of reliability
will be the consequence. — 104-14

II-7 HEU should be taken back under special conditions for some additional years after the implemented EIS expires for LEU. There are many reasons possible to miss the given time schedule (money can be one, even for operators in industrial nations). Reduction of proliferation risk should be the driving force. — 104-15

II-8 Target material should be accepted, too. Stay on this way. — 104-16

II-9 The EIS clearly demonstrated that the amount of heavy metal in foreign research reactor spent fuel is negligible compared with other sources already managed, presently managed or need to be managed by DOE. — 104-17

II-10 All risks involved with shipment, storage and disposal of the spent fuel under this EIS is negligible, too. Therefore it should be without any doubt acceptable. — 104-18

II-11 US tax payers should not subsidize the foreign reactor operators in the future. They did not so in the past as prices paid for the reprocessing services published in the Fed. Reg. have been calculated on a full cost recovery basis. The new prices must be an updating of the old ones as the old prices included the same services more or less plus reprocessing. — 104-10

II-12 Prices should not be prohibitive high. It is clear that many operating organizations will wait in such cases for other solutions and therefore this EIS may not be successful. — 104-20

II-13 The final EIS should give a preferred alternative which must be close to Management Alternative 1 with Basic Implementation Components and to the letter of the Secretary of DOE, dated July 13, 1993 (see I-10). — 104-21

III Situation at the research reactor FRG-1

III-1 GKSS as operator of the FRG-1 has fully and successfully cooperated since 15 years to a very high degree with the RERTR program and the relevant activities at the IAEA.

RESPONSE TO COMMENT
COMMENTOR NO. 104: GKSS FORSCHUNGSENTRUM (CONT'D.)

Response to Comment No. 104-12

a. The potential spent nuclear fuel transportation casks identified in the EIS for marine transport (as given in Appendix B, Table B-13), except for Unifetch, have been certified by the U.S. Department of Transportation in the past. At the present time however, except for the LHRL-120 and GNS-11 casks, all others have expired certificates and need to be recertified by the U.S. Department of Transportation according to the requirements of 49 CFR Part 173.473. This is a normal procedure that each cask needs to follow in order to maintain an up-to-date certificate of compliance.

b. The difference in the number of estimated shipments in this EIS and that provided in DOE/EIS-0203-F, (Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Environmental Impact Statement, [or Programmatic SNF & INEL EIS]), is due to the following reasons:

1. This EIS's estimate of the number of shipments from foreign research reactors is based on 22,700 spent nuclear fuel elements, whereas the Programmatic estimate is based on 25,000 spent nuclear fuel elements. The Programmatic SNF & INEL EIS used a bounding number of elements to cover any uncertainties in the estimated projection.

2. The Programmatic SNF & INEL EIS also adds the number of shipments containing target materials (140 shipments), whereas this EIS considers the target material shipments separately as an implementation alternative.

Both EIS's provide correct estimates of the potential spent nuclear fuel shipments from foreign research reactors, considering the different purposes of the two documents.

c. Table B-15 of Appendix B of the EIS identifies the potential domestic casks for shipments between the management sites. The domestic research reactor fuels are not considered in this EIS, but were evaluated in the Programmatic SNF & INEL EIS.

Response to Comment No. 104-13

The commentor's support for Management Alternative 1 (Section 2.2 of the EIS) is noted.

Response to Comment No. 104-14

The commentor's opposition to alternatives other than Management Alternative 1 (Section 2.2 of the EIS) is noted. Management Alternative 2, Management Alternative 3, and the No Action Alternative are described in Sections 2.3, 2.4, and 2.5 of the EIS, respectively.

COMMENTOR NO. 104: GKSS FORSCHUNGSENTRUM (CONT'D.)

III-2 GKSS has converted its FRG-1 early in 1991 totally to LEU as the first European and till today the only German research reactor.

III-3 GKSS was accepting the penalties caused by the conversion as it was and is fully convinced on the necessity to make the world safer by reducing the proliferation risk.

III-4 GKSS needs to operate its reactor FRG-1 for its research program and will undertake all necessary measures to reach this condition.

III-5 GKSS has approx. 16 kg HEU (~ 75 % enriched) from reprocessed uranium and is still waiting for solutions. DOS and DOE have been asked to take this material back but did not answer yet.

III-6 GKSS has from the operation of its research reactors FRG-1 and FRG-2 (shutdown in 1995) 141 spent HEU fuel elements. The last spent HEU fuel elements have been produced in 1991.

III-7 The 141 spent HEU fuel elements are loosing its self protection. Actions must be taken. The by far most convincing action will be to ship these fuel elements in two shipments (2 x 66) soon to the US. Casks (GNS-II) are available and can be used at the research reactor facility.

III-8 GKSS got a new license for its FRG-1 dated April 12, 1995, limiting explicitly the amount of fresh HEU fuel and spent HEU fuel loosing its self protection (see page 3 and 4 of this license). Therefore actions are really necessary. A copy of parts of the license is being attached.

III-9 Shipments of the spent HEU fuel elements must therefore be made in 1996 and 1997 to DOE facilities. GKSS is prepared to cover the costs.

III-10 GKSS is willing and prepared to cooperate as in the past with the RERTR program and the IAEA in all relevant activities at all necessary levels.

Dear Sir,

we are looking forward to the actions that will be made within this year at the DOE. Your decisions will be in any way very important for the RERTR program, the efforts in reducing the proliferation risk, the survival of many research reactors and for the reliable cooperation between partners. GKSS is willing to assist, if so required.

Sincerely yours,

GKSS-FORSCHUNGSZENTRUM GEESTHACHT GMBH

(Prof. Dr. [illegible]) i.A. (Dr. W. Kroll)

Enclosure

RESPONSE TO COMMENT
COMMENTOR NO. 104: GKSS FORSCHUNGSENTRUM (CONT'D.)

Response to Comment No. 104-15

The intent of the proposed action is to support U.S. nuclear weapons nonproliferation policy seeking to reduce, and eventually eliminate, the use of highly enriched (weapons-grade) uranium in civil programs worldwide (Section 1.2 of the EIS). To this end, one of the implementation alternatives for Management Alternative 1 evaluated in this EIS is for indefinite acceptance of HEU (Section 2.2.2.2).

Response to Comment No. 104-16

The commentor's support for accepting target materials in addition to foreign research reactor spent nuclear fuel is noted. Acceptance of target materials is discussed in Section 2.2.2.1 of the EIS.

Response to Comment No. 104-17

The commentor's observation on the amount of heavy metal in spent nuclear fuel accepted from foreign research reactors is noted (Section 2.2.1.3 of the EIS).

Response to Comment No. 104-18

The commentor's position that the risks resulting from implementation of the proposed action would be negligible is noted.

Response to Comment No. 104-19

As discussed in Section 2.2 1.2 and 2.2.2.3 of the EIS, several financing options have been considered, ranging from collection of fees from the research reactor operators that would pay all of the costs of the program to full subsidization of the program by DOE. A compromise between these extremes would be for developed countries to be charged a competitive fee, while U.S. taxpayers would absorb the full costs of the program for developing countries and absorb the amount above a competitive fee for developed countries, to accept and manage their spent nuclear fuel. Charging a competitive fee is a market-based approach. It is likely that full-cost recovery would exceed the competitive fee.

Response to Comment No. 104-20

The competitive fee discussed in Section 2.2.1.2 of the EIS would be based on an estimate of what similar services would cost at other sites (e.g., Dounreay), with adjustments made for such factors as waste storage costs. DOE is aware that setting a fee too high would cause the program to fail. DOE is attempting to balance the interests of the RERTR program, taxpayers, and the research reactor operators.

Response to Comment No. 104-21

The commentor's preference for Management Alternative 1 is noted. Section 2.2 of the EIS describes Management Alternative 1.

COMMENT
O NATIONAL LABORATORY

t forth in preparation of this document is
eptance of all the spent nuclear fuel from
tive 1) is only one of three management
being considered in this EIS. While the
ections 2.9 and 4.7 of the EIS), the final
tion will be presented in the Record of

COMMENTOR NO. 133: RISO NATIONAL LABORATORY (CONT'D.)

2

Danish Background
In what follows, we will give our comments in particular with background in the Danish situation:

Denmark has always strongly supported all international initiatives leading up to the Non-Proliferation Treaty, and Denmark was one of the first countries to ratify this treaty in January 1969. Denmark, and especially Risø, actively supported and participated in the International Nuclear Fuel Cycle Evaluation, INFCE, and in accordance with this Danish policy Risø as operator of the Danish research reactor DR 3 actively joined the US-initiated RERTR Programme. Under this programme, Risø developed its own manufacturing process for low-enriched uranium-silicide fuel elements for the DR 3 Reactor.

Conversion to LEU fuel started in 1988 and full conversion was achieved in 1990, DR 3 being one of the first converted research reactors. Out of its own limited research funds, Risø invested more than 1 Million US Dollars in this conversion process.

Risø National Laboratory is a governmental institution, which was founded in 1956 as a consequence of an agreement, signed on July 25, 1955, between the Government of the United States and the Danish Government, for cooperation on civil uses of atomic energy. This agreement was later amended, and the first two research reactors at Risø were of American origin, while the third reactor, DR 3, operating since 1960, is a British type. Up to 1973, the spent fuel, containing HEU of US origin, was shipped to the U.K. for reprocessing in agreement with US authorities. Between 1978 and 1988, 684 spent fuel elements from the DR 3 reactor were shipped in 19 shipments to the US for reprocessing.

Thus, for more than 33 years, the operation of the DR 3 has depended on the shipment of the spent fuel elements for reprocessing and/or final storage, first to the U.K. and later on to the United States.

Plans for final storage of high-level radioactive waste in Denmark have never been established. After the decision in 1985 by the Danish Parliament to exclude nuclear power reactors from the Danish energy systems, no such plans could be expected to be established in a foreseeable future. Therefore reprocessing at the British Dounreay Plant is no option for Risø because this would include the obligation for Denmark to take back the high-level waste.

The 10 MW heavy-water moderated and cooled research reactor, DR 3, is today one of the most efficiently exploited research reactors in Europe and is part of the Large Installations Programme under the research programmes of the European Union. Annually this attracts more than 100 European and American scientists, specialized in Materials Science to join the international recognized group of Danish scientists. The reactor is globally also one of the largest producers of irradiated silicon for semi-conductors, and covers the Danish needs for short-lived and specialized radio-isotopes for medical use.

RESPONSE TO COMMENT COMMENTOR NO. 133: RISO NATIONAL LABORATORY (CONT'D.)

33:
:Y (CONT'D.)

ntinued operation of the
under the Management
luclear Fuel in the United
ation of Components of

133-2

nt of Foreign Research
a politically acceptable
cessing waste might be
logical disposal. It should
osed to reprocessing of
ay Facility closed, based

133-3

ng HEU and LEU of US
during the 10 year policy
e made for an additional
nsidered as a minimum
harmful to the planning
sibilities of ensuring the

133-4

133-5

, and the remaining life-

iting individual bilateral
don of spent nuclear fuel
into consideration.

133-6

overnmental institution,
he remaining funds come
which normally do not
of income arises from
ercial company, and the
ust entirely be covered
hich will be charged by
n costs, should not be
kilogramme heavy metal
e on a full cost recovery

133-7

RESPONSE TO COMMENT COMMENTOR NO. 133: RISO NATIONAL LABORATORY (CONT'D.)

Response to Comment No. 133-2

The commentor's preference for Management Alternatives 1 or 3 is noted. These alternatives are described in Sections 2.2 and 2.4 of the EIS, respectively.

Response to Comment No. 133-3

The commentor's opposition to Management Alternative 2 and to reprocessing in general, is noted.

Response to Comment No. 133-4

The commentor's position that thirteen years represents a minimum appropriate acceptance period for spent nuclear fuel from foreign research reactors is noted. Sections 2.2.1 and 2.2.2 of the EIS discuss policy duration.

Response to Comment No. 133-5

See response to comment 133-4, above.

Response to Comment No. 133-6

Bilateral agreements are possible so long as they comply with the adopted policy and do not result in environmental impacts not addressed in this EIS.

Response to Comment No. 133-7

A competitive fee should be based on current market conditions for the most realistic alternatives, e.g., reprocessing at Dounreay, rather than on non-market fees charged before 1988. The ultimate fee structure would depend on the implementation alternative specified in the Record of Decision, and would include the charges for U.S. acceptance and disposal of high-level waste from Dounreay, if that is part of the alternative.

NTOR No. 133:
L LABORATORY (CONT'D.)

4

o any legal obligations by DOE to receive

that as a consequence of the RERTR
15, 1984) exists between the University
onal Laboratory, ANL) and Risø National
cept three spent LEU fuel elements from
and it is stated that this agreement shall
elements are delivered to the designated
Laboratory.

133-8

Spent Nuclear Fuel

able 2-1 on Page 2-7, Vol. 1, concerning
ments will, of course, depend on the size
arison, it might be noted that during the
d in all approximately 60 shipments with
thout any technical problems.

ging Director

RESPONSE TO COMMENT COMMENTOR NO. 133: RISO NATIONAL LABORATORY (CONT'D.)

Response to Comment No. 133-8

With the exception of cases in which DOE has executed contracts for acceptance of spent nuclear fuel from specific foreign research reactors, DOE considers that neither the DOE nor the United States Government has any legal obligation to accept spent nuclear fuel from foreign research reactors.

Comment
cMaster University

as practicable. However, in completing
pplicable internal DOE procedure and
e document and the analyses contained
including the Secretary. In accordance
f Decision no sooner than 30 days after

MASTER UNIVERSITY (CONT'D.)

route from MNR is not shown but
presentative - could be used.
for many shipments in the past,
and then follows I-190 south to
to US-48, US-48 east to US-40,
o I-81 where we are back on the
Savannah River Site (SRS). Our
R route to SRS be explicitly
itly included by the word

161-2

return of foreign spent fuels
resolution seems imminent. We
policy will not be derailed by
e issuance of the Final EIS in

161-3

Yours truly

Peter C. Ernat
Reactor Manager

nbassy, Washington
al

RESPONSE TO COMMENT
COMMENTOR NO. 161: MCMASTER UNIVERSITY (CONT'D.)

Response to Comment No. 161-2

The word representative does allow for the inclusion of additional routes. Representative routes were chosen for the purpose of risk analysis. On the other hand, the shipments from the MNR reactor could travel over Canadian roads to enter the United States at Alexandria Bay, NY. The shipper would request that the NRC approve its exact route before each shipment or campaign of shipments.

Response to Comment No. 161-3

The commentor's preference for acceptance of the spent nuclear fuel from foreign research reactors into the United States is noted (Section 2.2 and 2.4 of the EIS, Management Alternative 1 or 3).

COMMENTOR NO. 164: AUSTRALIAN NUCLEAR SCIENCE & TECHNOLOGY ORGANIZATION

AUSTRALIAN NUCLEAR SCIENCE
& TECHNOLOGY ORGANISATION

LUCAS HEIGHTS RESEARCH LABORATORIES NEW ILLAWARRA ROAD, LUCAS HEIGHTS, NSW

PRIVATE MAIL BAG
MENAI NSW 2234

14 June, 1995

Mr Charles Head
Program Manager
Office of Spent Nuclear Fuel Management (EM-37)
US Department of Energy
1000 Independence Avenue, SW
WASHINGTON DC 20585
USA

by fax: 1-202-586-5258

Dear Mr Head

ANSTO Comments on Draft EIS, DOE/EIS-0218D of March 1995

The Australian Nuclear Science and Technology Organisation (ANSTO) is grateful for the opportunity to comment on the *Draft Environmental Impact Statement on a Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel.*

ANSTO's comments on the Draft EIS are attached and we trust these will be taken into account in the finalisation of this important document. In summary, we are highly supportive of the proposal which we believe will serve well the interests of nuclear nonproliferation as well as meeting existing USDOE obligations to research reactor operators.

Yours sincerely

John Rolland

John Rolland
Director, Information Services

ansto

Telephone (02) 717 3111 • Telegram Ansto Sydney • Facsimile (02) 543 5097 • Telex AA 24562

RESPONSE TO COMMENT
COMMENTOR NO. 164: AUSTRALIAN NUCLEAR SCIENCE & TECHNOLOGY ORGANIZATION

ECHNOLOGY ORGANISATION
OSED NUCLEAR WEAPONS
FOREIGN RESEARCH REACTOR
FUEL

S on a Proposed Nuclear Weapons
search Reactor Spent Nuclear Fuel.
rd and the coverage comprehensive.
and a more than adequate basis to
foreign research reactor fuel will have
t.

164-1

the objective of the policy is to secure
nefits of reducing, and ultimately
believe that the proposed policy will
the quantities and locations of HEU
e EIS offers alternatives or proposes
ose alternatives, criteria or conditions
the US, and hence maximising the
basic objectives of the EIS.

164-2

tions analysed the clearly preferred
f Management Alternative 1, as this
d spent fuel and is thus likely to be
jectives of the policy.

164-3

mpact of this proposed policy it is
ount of foreign research reactor spent
tonnes HM) is only a tiny fraction of
(2,700 tonnes) or commercial power

164-4

responsibility of the United States
artment of State. We consider this to
his fact be reflected by inclusion of
int sponsor.

164-5

a number of suggestions to offer
ould further improve the technical
and comments are provided in the

1

Response to Comment
Commentor No. 164: Australian Nuclear Science & Technology Organization (Cont'd.)

Response to Comment No. 164-1

The commentor's acknowledgment that the analysis in the EIS supports the conclusion of low human health or environmental impacts as described in Section 4 of the EIS, is noted.

Response to Comment No. 164-2

The commentor's position on the need for reduction of HEU in civilian commerce is noted.

Response to Comment No. 164-3

The commentor's support for the basic implementation of Management Alternative 1 as described in Section 2.2.1 of the EIS is noted.

Response to Comment No. 164-4

As discussed in Section 2.2.1.3 of the EIS, the amount of foreign research reactor spent nuclear fuel to be managed under the proposed action is less than 1 percent of the total mass of heavy metal that DOE currently manages as spent nuclear fuel. The environmental impacts evaluated in Section 4 of the EIS reflect the management of the foreign research reactor spent nuclear fuel portion.

Response to Comment No. 164-5

In compliance with the National Environmental Policy Act and Council on Environmental Quality Regulations (Section 5 of the EIS), DOE is the lead agency for the proposed action, and the Department of State is a cooperating agency. While DOE assumes primary responsibility for preparation of this EIS, the document was developed under consultation with the Department of State. It is customary to include the names of the lead agencies on the cover of the EIS and acknowledge the cooperative agencies in the text of the EIS. Omission of the cooperating agency's status on the cover is not intended to diminish the Department of State's significant contributions to this EIS.

. 164: AUSTRALIAN NUCLEAR SCIENCE & OLOGY ORGANIZATION (CONT'D.)

NTS

s - Throughout the EIS these are frequently referred to as high ified HLW. For example in the Summary Volume on p 11, p 24, rstanding is that the UK reprocessor does not produce a vitrified that the waste is cemented and of such low heat generation and t qualify as HLW but rather is long-lived ILW. This distinction can disposal options and should be recognised in the EIS. 164-6

cost estimates, eg on p47 of the Summary, seem inflated. If be charged on a full cost recovery basis the charges would petitive with other current reprocessors and would be several previously levied by USDOE or included in earlier USDOE s. Such charges would clearly undermine the policy and cause ctor operators to seek alternative solutions such as overseas is only available for HEU fuels. This would perpetuate the holdings of HEU and continuation of HEU use, contrary to the policy. We note that the US Government Accounting Office has D/RECD-94-119 (p14), that the DOE should assess the operators actors a charge for returned spent fuel that balances the need to den on the US with the reactor operators' need for a reasonable /e strongly endorse this approach. We further point out that the of the policy is not to provide a commercial service for the tor operators but to support US nonproliferation policies: it is also given to foreign research reactor operators over many years, obligations in some cases. We therefore consider that the US to meet a significant part of the resultant cost in obtaining these ls. 164-7

1 Vol 1

ive 2 generally - We give little support to this alternative as it situation of overseas storage and/or processing of HEU which is objectives of the EIS. However, should this option be adopted st Australia is one of those countries without a nuclear power a position to readily take back reprocessing wastes. We would y wastes to be accepted by the US for storage and ultimate 164-8

.2 - In connection with "chemical separation", the statement is n of the high-level waste is the preferred waste management ld see benefit in having a range of approaches available to gement on the basis of, for example, whether the waste is really e, ILW, and depending on what specific disposal alternatives are circumstances cement or Synroc or other wasteforms might be 164-9

2

RESPONSE TO COMMENT COMMENTOR NO. 164: AUSTRALIAN NUCLEAR SCIENCE & TECHNOLOGY ORGANIZATION (CONT'D.)

Response to Comment No. 164-6

In the United States, the waste stream from chemical separations that contains most of the fission products is always termed high-level waste, independent of the specific activity. The cemented waste produced at the Dounreay site would not be acceptable in the United States. The possible exchange of vitrified high-level waste from Sellafield for cemented waste from Dounreay is discussed in Section 4.4.2.3 of the EIS.

Response to Comment No. 164-7

The price of overseas reprocessing would be a consideration in establishing the U.S. price (not cost) for management of spent nuclear fuel accepted from developed countries. The analysis in the final EIS assumes that the price of foreign reprocessing is similar to the cost of chemical separation in the United States.

The requirement that countries reprocessing at Dounreay (or Marcoule) accept the return of their high-level waste is a factor that these countries must consider in deciding how to proceed. For countries without waste handling capability, accepting the waste would not be feasible. For countries with waste handling capability, especially those with large-scale power reactor programs, accepting the waste could be acceptable.

One alternative is for the United States to base its fee on the competitive fees charged by others, notably Dounreay. These fees would have to be adjusted for factors such as the ultimate acceptance of the high level waste. For developed countries, affordability would be treated in the context of the cost to the foreign research reactors for alternatives to U.S. acceptance, not the revenues or budgetary factors affecting the foreign research reactor operators.

Response to Comment No. 164-8

The commentor's opposition to Management Alternative 2 is noted. The fact that Australia has no nuclear power infrastructure is also noted.

Response to Comment No. 164-9

See the response to Comment 164-6, above.

E TO COMMENT
USTRALIAN NUCLEAR SCIENCE &
RGANIZATION (CONT'D.)

found in seawater has been added to Section 3.1.2

(Section 4.2.1.2 of the EIS) has been revised to
or regularly scheduled ships would be based on
res and costs.

analysis in the EIS demonstrates that the use of
ransport the foreign research reactor spent nuclear

ear medicine in the United States (Section 1.1 of
actors. In the event that foreign research reactors
ited States were forced to shut down, it would be
suppliers or augment capabilities for domestic
Construction of a new reactor, if these shutdowns
States were required, would have to be addressed
ent.

support U.S. nuclear weapons nonproliferation
spent nuclear fuel elements that contain uranium
1.3 and 2.1 of the EIS). DOE and the Department
t of the spent nuclear fuel elements in question
It is the amount of U.S.-origin material that is of
the precise atoms or molecules which must be
with the policy, 221 out of 441 elements were

ESPONSE TO COMMENT 164: AUSTRALIAN NUCLEAR SCIENCE & LOGY ORGANIZATION (CONT'D.)

Vo. 164-15

s been revised and the status of MOATA reactor is changed to ing HEU Fuel.

Vo. 164-16

) in Appendix B (page B-21) of the EIS was only intended to ified spent nuclear fuel transportation casks (including basket Currently, the LHRL-120 does not have a certification to use it is specifically designed for, which is HIFAR spent nuclear ion cask has already been certified to carry different baskets Appendix B, Section B.1.6 has been revised to avoid any npact.

Vo. 164-17

ither DOE nor the United States Government has any legal uclear fuel from foreign research reactors.

No. 199: Commonwealth Department of Primary Industries and Energy

DEPARTMENT OF PRIMARY INDUSTRIES AND ENERGY
DING, BARTON ACT
6, Canberra ACT 2601 Tel: (06) 272 3933 Telex: 62188 Fax: (06) 272 5161

ar Fuel Management (EM-37)
ergy
venue, SW
20585

ment of Primary Industries and Energy (DPIE) which has
oactive waste management policy in Australia, welcomes
omment on the *Draft Environmental Impact Statement on Weapons Nonproliferation Policy Concerning Foreign st Nuclear Fuel.*

ng standing international support to policies which
non-proliferation. Most recently Australia made a
n to achieving indefinite extension of the *Treaty on the Nuclear Weapons* (NPT). Australia's efforts
approach to achieve this objective. DPIE believes that
licy on the return of spent research reactor fuel will also
ly to non-proliferation.

wish to place on record its support for the policy and the
roliferation as the primary objective throughout the
orts full implementation of Management Alternative 1
draft EIS convincingly supports the conclusion that the
imal environmental impact. 199-1

vel, it is important to state that as Australia does not
industry, it is not in a position to readily accept for
ste from the reprocessing of research reactor spent fuel.
e come to rely on undertakings given by the US over the
t will repatriate research reactor spent fuel of US origin.
ve consider that there is also a contractual commitment in
e US to take back research reactor spent fuel of US origin. 199-2 199-3

tation of Management Alternative 1 would also greatly
nsiderations on a replacement research reactor. A
l is dependent on the satisfactory resolution of the
xisting inventory of spent fuel. 199-4

Response to Comment Commentor No. 199: Commonwealth Department of Primary Industries and Energy

Response to Comment No. 199-1

The commentor's support for the proposed action, the maintenance of nonproliferation and the full implementation of Management Alternative 1, as described in Section 2.2 of the EIS is noted.

Response to Comment No. 199-2

DOE acknowledges that Australia is not in a position to readily accept for storage or disposal waste from the reprocessing of research reactor spent nuclear fuel. This alternative is discussed in Sections 2.3 and 4.4.2 of the EIS.

Response to Comment No. 199-3

It is DOE's position that neither DOE nor the United States Government has any legal obligation to accept spent nuclear fuel from foreign research reactors.

Response to Comment No. 199-4

DOE does not wish to complicate Australia's decisions regarding a replacement research reactor. Nevertheless, as specified in Section 2.1 of the EIS, spent nuclear fuel (either HEU or LEU) would not be accepted from any new research reactor starting operation after the implementation date of any new foreign research reactor spent nuclear fuel management policy. Accordingly, this comment is beyond the scope of the EIS.

COMMENTOR NO. 199: COMMONWEALTH DEPARTMENT OF PRIMARY INDUSTRIES AND ENERGY (CONT'D.)

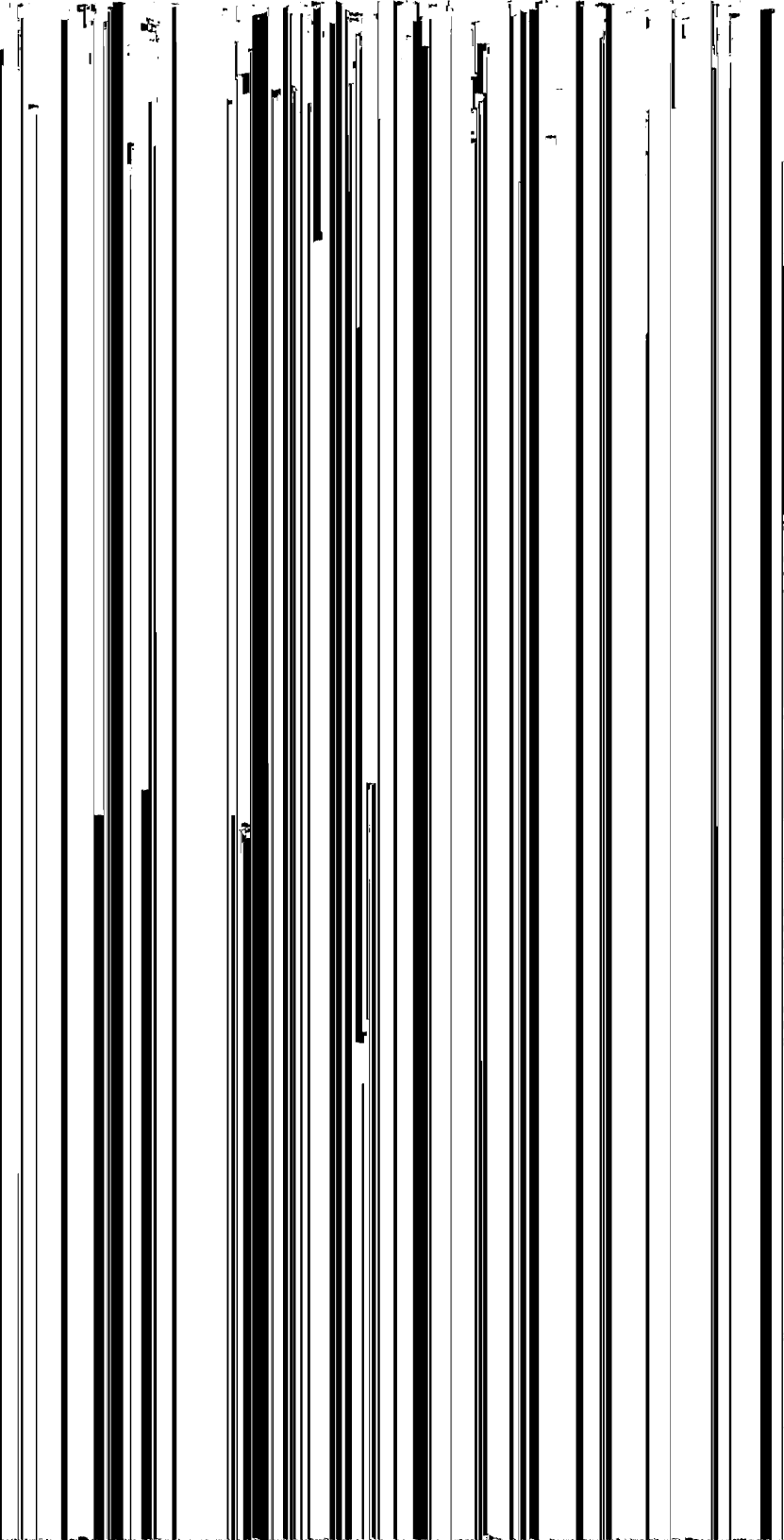
In summary our views should be seen as supportive of Management Alternative 1.

Yours sincerely

R N Rawson
Assistant Secretary
Uranium & Nuclear Policy Branch

13 June 1995

RESPONSE TO COMMENT
COMMENTOR NO. 199: COMMONWEALTH DEPARTMENT OF PRIMARY INDUSTRIES AND ENERGY (CONT'D.)



PPLY AGENCY

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5. VI. 1995

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Fuel Management,

of Energy
nce Avenue, SW
: 20585-0001

ons
: Nuclear Fuel

the subject Draft
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States is vital, in
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ntries have relied
t fuel, it would be
y sites for minute

eir sites to be able
delays by DOE in
y situations which

:27

RESPONSE TO COMMENT
COMMENTOR NO. 214: EURATOM SUPPLY AGENCY

214-1

Response to Comment No. 214-1

The commentor's support for Management Alternative 1, as described in Section 2.2 of the EIS, is noted.

COMMENTOR No. 216:
PHYSIKALISCH-TECHNISCHE BUNDESANATALT

W. Hajek In
Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

PTB

Physikalisch-Technische Bundesanstalt Postfach 33 45 38023 Braunschweig

Charles Head, Program Manager
Office of Spent Nuclear Fuel
Management (EM-37)
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
U.S.A.

Ihr Zeichen, Ihre Nachricht vom	Unser Zeichen, unsere Nachricht vom	Telefon	Datum
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Comment on: Published Draft Environmental Impact Statement on a Proposal Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel

Dear Charles Head

First of all, we like to thank you for your extraordinary efforts which led to the publication of the Draft EIS, highly appreciated by us.

We are memeber of the so-called 'Edlow Group' and support the comments which have been filed through this Group on behalf of the foreign Research Reactor group members.

In addition, with reference to the our specific facility - the FMRB reactor - we believe it is imperative that DOE supplements ist eligibility criteria on page 2-5 of Volume 1 of the Draft EIS to include following language:

„Spent nuclear fuel (HEU) would be accepted from research reactors (e.g. FMRB of PTB) planning to shut down by a specific date and which, although they have not yet converted to LEU fuel, consume only that HEU fuel which was already previously purchased and is available on site."

216-1

We believe, this language is essential to minimize the likelihood of ambiguity or confusion in the existing language.

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Bundesbankkonto Hannover
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LZB Hannover 250 01 000 (BLZ 250 000 00)

PTB Berlin-Charlottenburg
Abbestraße 2-12, 10587 Berlin
PTB Berlin-Fasanenplatz
Fasanenplatz Damm 300, 12207 Berlin

RESPONSE TO COMMENT
COMMENTOR No. 216:
PHYSIKALISCH-TECHNISCHE BUNDESANATALT

Response to Comment No. 216-1

DOE considers that the discussion in Section 2.1 of the EIS under Qualifying Fuel Types and Policy Stipulations is appropriate. The proposed policy is not intended to cover spent nuclear fuel from foreign research reactors that plan to shutdown at a date beyond the expiration of the policy.

COMMENTOR NO. 216: PHYSIKALISCH-TECHNISCHE BUNDESANATALT (CONT'D.)

We count on your continued co-operation and like to thank your for unterstanding of our urgent need of a successful implementation of this Policy.

Yours faithfully

Address Correspondence to:

Physikalisch-Technische Bundesanstalt
Walter Hajek
Bundesallee 100
38023 Braunschweig
Tel. +int+ 531 592 7110
Fax +int+ 531 592 7015
Email: Walter.Hajek@.PTB.DE

RESPONSE TO COMMENT COMMENTOR NO. 216: PHYSIKALISCH-TECHNISCHE BUNDESANATALT (CONT'D)

COMMENTOR NO. 258: STUDSVIK

Studsvik

Handläggare - Matter handled by

Datum - Date
June 16, 1995
Ert datum - Your date

1(2)
Vår referens - Our reference
LE/Kdt
Er referens - Your reference

Charles Head, Program Manager
Office of Spent Nuclear Fuel Management (EM-37)
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
USA

Comments of Studsvik AB on DOE's Draft Environmental Impact Statement on a Proposed Nuclear Weapons Non-proliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel

Studsvik AB is pleased to have the opportunity to comment on DOE's Draft Environmental Impact Statement DOE/EIS-0218D released in April 1995 and discussed at DOE's public hearing held on May 31, 1995 in Washington DC.

These comments are made in addition to the comments of the Edlow Group submitted jointly by 14 research reactor operators including Studsvik AB.

Three management Alternatives listed in the Draft EIS are understood as follows:

1 Acceptance and management of foreign fuel from US enrichment origin at DOE sites -- with interim storage or near-term chemical separation in the US.

2 Facilitation of financial and technical assistance to foreign research reactor operators to store SNF at their sites -- or ship it for reprocessing at French or British facilities.

3 Development of a hybrid approach, using a combination of the first two alternatives.

Of these three Management Alternatives, Studsvik finds only Alternative 1 to be totally acceptable as it is listed. However, Studsvik could support and participate in the development and implementation of Alternative 3, ***provided that reprocessing or chemical separation was not*** an integral part of the approach. Reprocessing of the SNF is not an acceptable option for Studsvik since it involves relinquishing control of the fuel to a foreign nation(s). *258-1* *258-2*

RESPONSE TO COMMENT
COMMENTOR NO. 258: STUDSVIK

Response to Comment No. 258-1

The commentor's support for Management Alternative 1, as described in Section 2.2 of the EIS, is noted.

Response to Comment No. 258-2

The commentor's qualified support for Management Alternative 3 as long as no reprocessing or chemical separation is included, is noted. Management Alternative 3 is described in Section 2.4 of the EIS.

ONSE TO COMMENT
). 258: STUDSVIK (CONT'D.)

'8-3

l for any spent nuclear fuel management activities that too high, some research reactor operators would choose ing this issue by studying ways to keep the cost of any ctivities as low as a possible, including possible fee to use the EIS as the vehicle through which to establish DOE does decide to implement foreign research reactor tivities. Instead, the fee would be specified in a Federal e Off-Site Fuels Policy.

'8-4

ls of the RERTR program have been to convert research easing their safety and without significantly affecting

oint study on LEU conversion of the R2 reactor was onne National Laboratory. The study involved analyses el cycle economics, and the testing of LEU fuels in the l that an LEU fuel element containing 400 grams of U- f 24 days and would be a good comparison between nd performance. This fuel element was used for LEU 990's. For comparison purposes, the HEU fuel element as used in the R2 reactor for many years had a cycle ide future options for more economical operation, an 0 grams of U-235 was successfully tested in the R2

uishes between the acceptance costs for HEU and LEU vered by the proposed action would not be practical. ne conversion has different fuel cycle economic ocumentation of operating costs would be required. e serious consideration to increasing the U-235 loading o make both the front end and the back end of the R2

COMMENTOR NO. 258: STUDSVIK (CONT'D.)

RESPONSE TO COMMENT
COMMENTOR NO. 258: STUDSVIK (CONT'D.)

Response to Comment No. 258-5

DOE is considering a number of options for final disposal of spent nuclear fuel that may be accepted into the United States under the proposed action. While no decisions on final disposition have been made, initial analyses indicate that many of the final disposition costs are related to the weight of a spent nuclear fuel element, rather than to its volume. On this basis, DOE plans to continue to use the final delivered weight of the spent nuclear fuel elements for purposes of costing the actions that might be undertaken subsequent to completion of this EIS.

Response to Comment No. 258-6

The commentor's statement that Studsvik needs to ship HEU elements by February 1996 because the elements have decayed to a point where their radiation level will no longer be self-protecting is noted.

COMMENTOR NO. 261: MULL AND IONA WASTE WATCHERS

MULL AND IONA WASTE WATCHERS

Hazel O'Leary,
Energy Secretary
USA Department of Energy,
1090 Independence Avenue SW.
Washington. DC. 20585

Kinloch Steadings,
Isle of Mull.
Scotland. PA70 6HB.

19 June 1995

Dear Hazel O'Leary,

Proposal to Re-process Highly Enriched Uranium at Dounreay, Scotland

We understand that the US Department of energy is considering options for dealing with the spent fuel rods constituting the balance of the highly enriched uranium which the USA supplied to various countries during the Atoms for Peace Era. Since 1988 it has not, of course, been possible to re-process this material in the USA following action by environmental groups.

We are one such group in the UK and are perturbed to learn that one of the options under consideration is to contract for the re-processing of part of this material at Dounreay in Scotland.

We can only assume that you are unaware of the problems at this installation, some of which were revealed in the second report of the UK Committee on Medical Aspects of Radiation in the Environment, published on 13 June. The original Fast Reactor, which ceased operation in 1977, still contains jammed fuel rods, and no way has yet been found to remove these or the fuel coolant. Areas surrounding Dounreay, including the cliffs to the east and the slipway are contaminated with radio-active material and radio-active particles have been found on the foreshore. There is also a 65 metre shaft in which radio-active wastes were dumped and in which there was an explosion in 1977 caused by sodium and potassium reacting with water seeping through the fractured rock: test bores have found contamination in this rock. There is no record of what the shaft contains and no safe way of clearing it has yet been identified. Nevertheless the management is now applying for planning permission for new waste pits. There have been safety violation incidents at Dounreay in six of the last seven months. Further, the re-processing installation is now 40 years old and said to be in poor shape. We have, therefore, no confidence in the safety of future operations on this site. 261-1

If this were not enough, we understand that the proposal calls for the transport of twenty shipments a year of highly radio-active fuel rods across the UK by narrow and congested roads or by rail through thickly populated areas in which most people would oppose such an operation. Transport by sea would involve the passage of dangerous and environmentally sensitive waters.

We accordingly write to urge you to reject the option of re-processing the fuel rods at Dounreay. We further urge you to bear in mind that such a course would add to the existing stock-pile of nuclear waste, and to recognise that whilst no environmentally benign means of its disposal has been found every effort should be made to avoid its further accumulation.

Yours sincerely,

A.B. Gardner,
Hon. Secretary.

RESPONSE TO COMMENT
COMMENTOR NO. 261: MULL AND IONA WASTE WATCHERS

Response to Comment No. 261-1

The commentor's opposition to reprocessing at Dounreay (Management Alternative 2, Subalternative 1b) is noted. This alternative is discussed in Sections 2.3 and 4.4.2 of the EIS. If any foreign research reactor spent nuclear fuel were to be sent to Dounreay for reprocessing as a result of decisions made after completion of this EIS, that action would be subject to regulation and oversight under the laws of the United Kingdom, including consideration and any required resolution of issues such as those discussed by the commentor.

COMMENTOR NO. 268: JAPAN ATOMIC ENERGY RESEARCH INSTITUTE

Japan Atomic Energy Research Institute

2-2, Uchisaiwai-cho 2-chome, Chiyoda-ku, Tokyo 100
Telephone: (03) [illegible]
Facsimile: (03) [illegible]
Telex: [illegible]
Cable: JAERINIPPON TOKYO
Our ref.:

June 9, 1995

Mr. Charles Head
Office of Spent Nuclear Fuel Management(EM-37)
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
U.S.A.

Dear Mr. Head,

Enclosed please find a copy of our comments on the Department of Energy's Draft Environmental Impact Statement on a Proposed Nuclear Weapons Nonproliferation Policy concerning Foreign Research Reactor Spent Nuclear Fuel.

I would appreciate your kind consideration of the above.

Sincerely yours,

Eiji Shirai

Eiji Shirai
Director
Office of Safety and Control
Japan Atomic Energy Research Institute

Telephone: (03)3592-2190
Facsimile: (03)3592-2199

[BRANCH]
•TOKAI RESEARCH ESTABLISHMENT, Tokai, Ibaraki 319-11 Tel. [illegible], Fax. [illegible]
•NAKA FUSION RESEARCH ESTABLISHMENT, Naka, Ibaraki 311-02 Tel. [illegible], Fax. [illegible]
•TAKASAKI RADIATION CHEMISTRY RESEARCH ESTABLISHMENT, Takasaki, Gunma 370-12 Tel. [illegible], Fax. [illegible]
•OARAI RESEARCH ESTABLISHMENT, Oarai, Ibaraki 311-13 Tel. [illegible], Fax. [illegible]
•MUTSU ESTABLISHMENT, Mutsu, Aomori 035 Tel. [illegible], Fax. [illegible]

RESPONSE TO COMMENT COMMENTOR NO. 268: JAPAN ATOMIC ENERGY RESEARCH INSTITUTE

Response to Comment
ENTOR No. 268: Japan Atomic
Y Research Institute (Cont'd.)

nt No. 268-1

t components of the program are based on information received
ver Site, the Idaho National Engineering Laboratory, the United
gy Authority, shippers of spent nuclear fuel (including Edlow
DOE's Office of Civilian Radioactive Waste Management.
, the final EIS shows that the overall costs for chemical separation
ite and geologic disposal of high-level waste in the United States
me as reprocessing at Dounreay and geologic disposal outside the

nt No. 268-2

, Section F.6.5 of the EIS, both sound and damaged spent nuclear
1. However, any damaged spent nuclear fuel would have to be
it. The canning process would ensure that any damaged spent
be shipped is mechanically sound by sealing the damaged elements
stainless steel can.

nt No. 268-3

ot offered at this time and is not addressed in this EIS.

nt No. 268-4

ve 2, Subalternative 1b, involves U.S. assistance in overseas
cussed in Sections 2.3 and 4.4.2 of the EIS. One of the options
includes the acceptance of the vitrified high-level waste from
nited States. The commentor's support for this option is noted.

nt No. 268-5

14 of the EIS identifies representative casks that might be used
el transport. Other casks could be used if they become available
e U.S. Department of Transportation.

COMMENTOR NO. 270: INTERNATIONAL ATOMIC ENERGY AGENCY

INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)
WAGRAMERSTRASSE 5, P.O. BOX 100, A-1400 VIENNA (AUSTRIA)
Telephone: +43 1 2360-0 (or ext.) Telex: 112645 ATOM A Facsimile: +43 1 23 45 64

762065 DIVISION OF NUCLEAR FUEL CYCLE AND WASTE MANAGEMENT
NUCLEAR MATERIALS AND FUEL CYCLE TECHNOLOGY SECTION

FACSIMILE + 43 1 20697, TELEPHONE: +43 1 2060, Ext. 22759

TO: Mr. Charles Head
Program Manager
Office of Spent nuclear Fuel Management (EM-37)
US Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
USA

INFO COPIES:

DATE:1995-06-19

TOTAL NO. OF PAGES 4

Fax: 202 586 3256

File Ref. 641.T1-T10

MESSAGE:

Dear Charles,

I have only just returned to my Office after the trip that I made to D.C. and on to the Hanford site. I believe that I promised to send you a fair copy of the statement that I made at the Public Hearing on the EIS and a copy of the letter from Mr. Blix to Mr. Michailov.

I hope that the EIS stays on track and is followed by a positive ROD and then promptly by shipments of spent fuel. Congratulations on the excellent job that you did in presenting the EIS in Washington. I look forward to meeting you again, perhaps at the RERTR meeting in Paris next September.

Yours sincerely,

Iain Ritchie

Iain Ritchie
Division of Nuclear Fuel Cycle and
Waste Management

[redacted]

RESPONSE TO COMMENT COMMENTOR NO. 270: INTERNATIONAL ATOMIC ENERGY AGENCY

COMMENTOR NO. 270: INTERNATIONAL ATOMIC ENERGY AGENCY (CONT'D.)

Statement made by Dr. I. G. Ritchie of the IAEA at the Public Meeting on the Draft Environmental Impact Statement on a Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel, held 31 May 1995 at the Omni Shoreham Hotel, Washington D.C.

My name is Iain Ritchie and I am a Nuclear Engineer in the Nuclear Materials and Fuel Cycle Technology Section in the Department of Nuclear Energy and Safety of the International Atomic Energy Agency (IAEA). The IAEA has supported the Reduced Enrichment for Research and Test Reactors (RERTR) programme since its inception and it goes without saying that the IAEA supports all of the non-proliferation goals of RERTR. When it looked as though RERTR was in jeopardy two years ago, the Director General of the IAEA, Dr. Hans Blix, wrote to Secretary O'Leary urging the Department of Energy to reinstate the lapsed Off-Site Fuels Policy that was threatening to slow down or even reverse RERTR. One of the crisis reactors at that time was Astra, located in Sieberadorf, Austria, which the IAEA has relied upon for the training of safeguards inspectors. Fortunately, Astra was able to ship its spent fuel of US origin under the Emergency Environmental Assessment (EA) last September and is still operating. Other research reactors with similar crises were not as lucky and their crises continue.

The IAEA commends DOE on the draft EIS and trusts that the Record of Decision will be positive and promptly followed by the resumption of shipments of spent fuel of US origin back to the US. The IAEA stands ready to help in any way that it can consistent with its mandate and budgetary constraints.

Once the shipments of fuel from the crisis reactors identified in the Emergency EA have taken place, the IAEA believes that if the driving force for the take-back programme is non-proliferation, the priorities should be the following:

1. Return of fresh (unirradiated) highly enriched uranium (HEU) fuel elements.
2. Return of spent HEU that has lost much of its self-protection through decay of the radioactive species present during long storage times.
3. Return of spent fuel from facilities thought to have inadequate levels of physical security.
4. Return of spent fuel in poor physical condition from corrosion of the fuel cladding.

270-1

The IAEA would very much like to see both RERTR and fuel take-back programmes become universal with the goal of reducing and eventually eliminating all civil commerce in HEU for research reactors. Towards these ends, the Director General of the IAEA, Dr. Hans Blix, wrote a letter on 2 February 1995 to Mr. Victor Michailov, Minister of Atomic Energy of the Russian Federation, suggesting that his country, as a full partner in RERTR, consider taking back spent fuel of Russian origin from foreign research reactors.

RESPONSE TO COMMENT
COMMENTOR NO. 270: INTERNATIONAL ATOMIC ENERGY AGENCY (CONT'D.)

Response to Comment No. 270-1

The commentor's suggestion for prioritization of foreign research reactor spent nuclear fuel shipments is noted. The only prioritization considered in the EIS is for foreign research reactor operators who possess both HEU and LEU fuel, the HEU would have priority (Section 2.1). Any further prioritization is not considered for the purposes of the EIS. DOE would consider the merit of the suggestion, if contractual agreements are made for shipments under a new policy.

RESPONSE TO COMMENT
COMMENTOR NO. 270: INTERNATIONAL ATOMIC ENERGY AGENCY (CONT'D.)

TERNATIONAL (CONT'D.)

ATOMIC ENERGY AGENCY

1995-02-02

ed Enrichment for Research and
e United States and has become
rticipation of your country. The
on of highly enriched uranium

erators to convert their reactor
at is less than or equal to 20%
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h reactors in two steps, firstly
to 20% enrichment. It was
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the RERTR programme, the
search reactor fuel of Russian

ussian origin are experiencing
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nt spent fuel repositories for
nding it back to Russia is not
much greater than the cost of
the cost of transportation and
be reprocessed in its country

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COMMENTOR NO. 270: INTERNATIONAL ATOMIC ENERGY AGENCY (CONT'D.)

of origin could be an attractive proposition for the research institute in question. Some of the research facilities concerned by this question are the only sources of radioisotope production for medical uses in these countries and their closure would limit the benefits of nuclear medicine and hinder the progress of fundamental science in many disciplines.

I am fully aware that certain legislative difficulties will be encountered when trying to address the issue of foreign research reactors returning their spent fuel to Russia. Nevertheless, the Agency hopes that your Ministry will manage to present convincing political, non-proliferation and economical arguments to overcome such difficulties and initiate appropriate changes in legislation. On 1 July 1993, I wrote a similar letter to the Secretary of Energy of the United States of America urging the Department of Energy to reinstate its Off-Site Fuels Policy for the return of foreign research reactor fuel of U. S. origin. There are also legal barriers in the U. S. that have to be overcome before the acceptance of foreign research reactor fuel can take place. To comply with the National Environmental Policy Act the U. S. Department of Energy is legally bound to prepare a full Environmental Impact Statement (EIS), leading to a Finding of No Significant Impact, before acceptance of foreign research reactor spent fuel can be reinstated. The preparation of such an EIS is well advanced.

If the RERTR programme goals could be achieved and both major supplier countries, the U. S. and Russia, take back spent research reactor fuel, international trade in HEU for research reactors will almost completely disappear and spent HEU fuel will be safely stored in only a few locations.

The Agency stands ready to help in this worthwhile international endeavour in any way it can, consistent with its mandate and budgetary constraints.

Accept, Sir, the expression of my highest consideration.

With best personal regards

Yours sincerely,

Hans Blix

Hans Blix

RESPONSE TO COMMENT
COMMENTOR NO. 270: INTERNATIONAL ATOMIC ENERGY AGENCY (CONT'D.)

COMMENTOR NO. 272: EMBASSY OF THE FEDERAL REPUBLIC OF GERMANY

EMBASSY
OF THE
FEDERAL REPUBLIC OF GERMANY
WASHINGTON, D.C.

Dear Mr. Head:

I have the honor of presenting to you the enclosed message from the German Foreign Office regarding nuclear weapons nonproliferation policy.

Peter Wenzel-Constabel

(Counselor, Science and Technology)

Washington, D.C., June 19, 1995

Mr. Charles Head, Program Manager
Office of Spent Nuclear Fuel, Management (EM-37)
US Department of Energy
1000 Independece Avenue, SW
Washington, DC 20585, USA

RESPONSE TO COMMENT
COMMENTOR NO. 272: EMBASSY OF THE FEDERAL REPUBLIC OF GERMANY

Response to Comment Commentor No. 272: Embassy of the Federal Republic of Germany (Cont'd.)

sponse to Comment No. 272-1

e commentor's support of policies for the nonproliferation of nuclear weapons is noted.

sponse to Comment No. 272-2

e commentor's support for Management Alternative 1, as described in Section 2.2 of EIS, is noted.

sponse to Comment No. 272-3

e commentor's qualified support for Management Alternative 3 is noted. Management ernative 3 is discussed in Section 2.4 of the EIS.

sponse to Comment No. 272-4

e commentor's position on reprocessing or shutting down reactors is noted. nagement Alternative 2, Subalternative 1b, involves U.S. assistance in overseas rocessing and is discussed in Sections 2.3 and 4.4.2 of the EIS. Under this alternative, U.S. would encourage the reprocessor to blend down the recovered HEU and encourage research reactor operators to use LEU fuel in their reactors.

sponse to Comment No. 272-5

e 13 July 1993 letter from Secretary O'Leary to Secretary Christopher announced that)E would be preparing this EIS. The decision on whether DOE will or will not plement any of the alternatives analyzed in this EIS will be announced in a Record of cision no sooner than 30 days after issuance of this final EIS.

COMMENTOR NO. 283: GREENPEACE INTERNATIONAL

GREENPEACE
international

Keizersgracht 176
1016 DW Amsterdam
The Netherlands
Telephone (31) 20-523 6222
Fax (31) 20-523 6200
ABN-Amro: 54.03.03.909
email: greenpeace.international@green2.dat.de

June 16 1995

Dear Sir,

Please find enclosed copies of articles from the UK press related to the Dounreay nuclear installation. These are submitted as supporting information for Greenpeace International's comment on the Department of Energy and Department of State draft Environmental Impact Statement (EIS) on Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel. 283-1

Our comments will be submitted on June 20th, 1995.

Yours sincerley,

Shaun Burnie
Research Coordintor
Greenpeace International

STICHTING GREENPEACE COUNCIL

GREENPEACE OFFICES: ARGENTINA, AUSTRALIA, AUSTRIA, BELGIUM, BRAZIL, CANADA, CHILE, CZECHOSLOVAKIA, DENMARK, FINLAND, FRANCE, GERMANY, GREECE, GUATEMALA, IRELAND, ITALY, JAPAN, LUXEMBOURG, MEXICO, NETHERLANDS, NEW ZEALAND, NORWAY, RUSSIA, SPAIN, SWEDEN, SWITZERLAND, TUNISIA, UKRAINE, UNITED STATES OF AMERICA, UNITED KINGDOM

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RESPONSE TO COMMENT
COMMENTOR NO. 283: GREENPEACE INTERNATIONAL

Response to Comment No. 283-1

DOE appreciates the articles submitted by the commentor regarding the Dounreay Facility.

ISE TO COMMENT
ENTOR No. 284:
RCH CENTRE SEIBERSDORF

1

nagement Alternative 1, with a policy duration of 10
f the EIS and a price based on cost is noted. Financing
on 2.2.2.3 of the EIS.

MENTOR No. 284:
I CENTRE SEIBERSDORF (CONT'D.)

ad
el Management, EM-37
f Energy
DC 20585-0001

ept spent nuclear fuel only from developing countries), 284-2
action alternative) are extremely unfair, since we relied
ion on the repeated assurances of the U.S. government,
the return of our spent fuel elements.

e first reactors, which was converted from HEU-fuel to
ost of our fuel inventory is consisting of high density
rocessed at Dounreay nor would be taken back by the

years policy duration) gives practically no chance to
causes a quick decision to shut down our reactor and we 284-3
actors. Such a decision would cause transport problems
ns with the RA transport and the lack of suitable
l elements could be shipped in a time period of 8 years.

Reactors in the draft EIS and we found a mistake in table
-Graz (line 18 in table B-3) has two reactor cores

of 90 % enriched fuel plates (125 plates, total amount of 284-4

20 % enriched fuel plates (234 plates, total amount of

ed in the column "Initial Enrichments, Enr. 3". The
which is attached to the comments.

ompletes the final EIS.

RESPONSE TO COMMENT
COMMENTOR No. 284:
AUSTRIAN RESEARCH CENTRE SEIBERSDORF (CONT'D.)

Response to Comment No. 284-2

The commentor's opposition to Implementation Subalternative 1a (Section 2.2.2.1 of the EIS, accepting spent nuclear fuel only from developing countries), to Implementation Subalternative 1b (Section 2.2.2.1 of the EIS, accepting only highly enriched uranium), and the No Action Alternative (Section 2.5 of the EIS) is noted. The bases for the opposition were also noted.

Response to Comment No. 284-3

The commentor's opposition to Implementation Subalternative 2a for Management Alternative 1, wherein the policy period for receipt would be 5 years (Section 2.2.2.2 of the EIS), is noted.

Response to Comment No. 284-4

Based on the commentor's information on SAR-Graz research reactor nuclear fuel usage, Tables 2-1 and 2-4 of Volume 1 and Tables B-1, B-3, B-9, B-11 and B-12 of Appendix B of the EIS have been revised.

Commentor No. 442: United Kingdom Atomic Energy Agency

UKAEA

Government
Division
Nuclear Site
Operations

Dounreay
Thurso
Caithness KW14 7TZ
United Kingdom
Telephone 0847 802131

Mr Charles Head
Programme Manager
Office of Spare Nuclear Management (EM37)
US Department of Energy
1000 Independence Ave SW
Washington DC 20585

Dear Charles,

Appendix F to the Draft Environmental Impact Statement DOE/EIS-0218D contains some inaccuracies relating to the UKAEA reprocessing option. These inaccuracies are reflected elsewhere in the draft EIS.

1. Para F.7 Page F258

A more correct statement would be:

"The UKAEA have yet to develop proposals for waste substitution in respect of reprocessing MTR fuels. BNFL have developed some proposals for the substitution of waste from THORP (substituting vitrified waste for cemented waste). However these proposals are currently under discussion and have not yet been accepted by the UK Government. If they are accepted they might form the basis for the development of waste substitution proposals that will be applied to MTR fuel reprocessing". 442-1

2. Para F.7.1 Page F.271

Comments as above.

3. Para F.7.3 Page F.298

Comments as above.

4. Para F.7.3 Page F.298

The UKAEA price of $5000 to $6000 does not relate to 100 element batches but is the price range that would apply to a substantial campaign extending over several years, reprocessing some 600-700 elements per year.

The United Kingdom Atomic Energy Authority

Response to Comment
Commentor No. 442: United Kingdom Atomic Energy Agency

Response to Comment No. 442-1

Appendix F, Section F.7 of the EIS has been modified to reflect the commentor's concerns.

ONSE TO COMMENT
Vo. 442: UNITED KINGDOM
IERGY AGENCY (CONT'D.)

12-2

mmentor has been added to Appendix F, Section F.7.4

12-3

ness of United Kingdom Atomic Energy Authority's iers to potential diversion. Nevertheless, HEU from ly more desirable to a potential proliferator than spent HEU, so the concern about illegal proliferation would the commentor has been revised in the final EIS to oncern stems only from the physical properties of the omic Energy Authority's export procedures.

ed Kingdom Atomic Energy Authority's capability to l separated HEU is blended down to LEU inside the States' nuclear weapons nonproliferation policy is

laced strict limitations on the export of HEU by the IS). Since passage of this Act, no new export licenses United States. Therefore, it is unlikely that the United U stockpile, as suggested by the commentor.

T
D KINGDOM
(CONT'D.)

COMMENTOR NO. 445: CHALK RIVER LABORATORIES

AECL EACL

RESEARCH AND PRODUCT DEVELOPMENT
Nuclear Operations
Radioactive Materials Services
Chalk River & Whiteshell

RECHERCHE ET DÉVELOPPEMENT DES PRODUITS
Exploitation nucléaire
Services des matières nucléaires
Chalk River et Whiteshell

Chalk River Laboratories
Chalk River Ontario
Canada K0J 1J0
Tel (613) 584-3311
Fax (613) 584-1394

Laboratoires de Chalk River
Chalk River (Ontario)
Canada K0J 1J0
Tél (613) 584-3311
Fax (613) 584-1394

1995 June 20
RMSC-95-192

Mr. C.R. Head
Office of Spent Fuel Management
Department of Energy
Washington, DC 20585

Dear Mr. Head:

ATOMIC ENERGY OF CANADA'S COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) ON A PROPOSED NUCLEAR WEAPONS NONPROLIFERATION POLICY CONCERNING FOREIGN RESEARCH REACTOR SPENT NUCLEAR FUEL

Atomic Energy of Canada (AECL) and a representative from the Canadian Embassy in Washington, attended the 1995 May 31 public hearing in Washington, DC on the above EIS. At the hearing, AECL presented both verbal and written comments to the EIS process, comments which we wish to restate, emphasize and add to.

Canada has embraced the aims of non proliferation through the RERTR from its inception and after many years of fuel development, finally completed the conversion of the NRU reactor (130 MW) from HEU driver fuel to LEU. In that period, use of US origin HEU has been reduced from 96 Kg/a to approximately 25 Kg/a. This 25 kg HEU is largely used as target material for medical isotope production, i.e. Mo^{99}. Most of the diagnoses and treatments, ~90%, using these isotopes, are carried out in the US. Spent target wastes, containing HEU at about 91% U-235, are produced as a result of this Mo^{99} production. Canada has the largest accumulation of these low burnup spent target fuels, i.e. 0.525 MTHM out of a world total of 0.555 MTHM.

In the Draft EIS, Section 4.3.1.3 is an implementation subalternative 1c, "Accept Target Material in Addition to Foreign Research Reactor Spent Fuel". It is important that serious consideration is given to incorporating management of this material, as a preferred management alternative. Return of spent target wastes will be in the spirit of RERTR, and DOE has a responsibility under these RERTR and non proliferation umbrella's, to reopen the spent fuel return agreements and take back this fuel.

445-1

RESPONSE TO COMMENT
COMMENTOR NO. 445: CHALK RIVER LABORATORIES

Response to Comment No. 445-1

The commentor's support for accepting target materials in addition to foreign research reactor spent nuclear fuel is noted. Acceptance of target materials is discussed in Section 2.2.2.1 of the EIS.

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RESPONSE TO COMMENT
COMMENTOR NO. 445: CHALK RIVER LABORATORIES (CONT'D.)

Response to Comment No. 445-2

DOE considers that any fee that might be charged for foreign research reactor spent nuclear fuel management activities conducted by DOE, however determined, should be based on current conditions rather than on those prevailing at the expiration of the previous spent nuclear fuel acceptance policy. Nevertheless, DOE recognizes the need to find a compromise that would allow all parties to any future foreign research reactor spent nuclear fuel policy to consider the fee to be fair. Determination of any competitive fee would have to include consideration of such concepts.

Response to Comment No. 445-3

The commentor's support for accepting the foreign research reactor spent nuclear fuel into the United States is noted. The commentor's opposition to including chemical separation as an alternative (Implementation Alternative 6) is also noted. NEPA requires that the environmental impacts of reasonable alternatives be evaluated, regardless of political opposition or potential litigation.

Response to Comment No. 445-4

DOE considers the commentor's suggestion to be consistent with the overall nuclear weapons nonproliferation policy of the United States and with the fuel type acceptance detailed in the EIS. The booster rod spent nuclear fuel elements have similar design characteristics to that of the NRU reactor fuel pins and contain a total of almost 17 kilograms of uranium-235. They have been irradiated to a very low burnup similar to that of the target materials that have been considered for inclusion in the EIS. This addition of 16 spent nuclear fuel rods is not expected to change the total number of shipments estimated for Canada. In addition, if McMaster research reactor were to shutdown as announced during the May 25, 1995 public meeting in Washington D.C., there would be less fuel available to be brought back from Canada.

RESPONSE TO COMMENT

COMMENTOR NO. 450: NUCLEAR FREE LOCAL AUTHORITIES

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450-1

Response to Comment No. 450-1

Complete copies of the draft and final EIS's have been sent to the commentor. The commentor's opposition to reprocessing at Dounreay (Management Alternative 2, Subalternative 1b) is noted. This alternative is discussed in Sections 2.3 and 4.4.2 of the EIS.

While some of the facilities at the Dounreay Site are old, the United Kingdom has complete modern fuel cycle facilities at the Sellafield Site. The point of the statement in the EIS is that the technical expertise to reprocess already exists in France and the United Kingdom. Thus, contracting for reprocessing services in one or both of those countries would not increase the risk of proliferation.

The subjects of airborne and liquid releases from reprocessing operations in foreign countries are outside the scope of this EIS. Please see Section 4.4.2.1 of the EIS and the response to Comment 484-11. The subject of fast reactor spent nuclear fuel reprocessing is also outside the scope of this EIS.

DOE is considering a wide range of alternatives for the management of the foreign research reactor spent nuclear fuel and cannot eliminate an alternative for reasons that are outside the scope of the EIS.

COMMENTOR NO. 450:
EAR FREE LOCAL AUTHORITIES (CONT'D.)

Board (HRPB) and obtain consent, which it has not done and

structed its Legal Adviser to review, inter alia:

judicial review of the decision to reprocess PFR fuel as
ssible, even though this increases environmental discharges in
of the current authorisations which require Dounreay to adopt
tical means to minimise discharges of activity from the site.

judicial review of the decision by the DTI to reprocess fast
with resulting environmental discharges, including illegal
ischarges, when there is no longer any need for the separated
fabricate new fuel. The Government withdrew funding from the
reactor programme last year because it was a waste of money.

terim interdict (injunction) should be sought to stop
. reprocessing of fast reactor fuel) which result in illegal
radioactive nitric acid until a neutralising plant is built
od of neutralising the discharges is implemented, or a consent
ed by regulatory authorities.

judicial review of the decision by HRPB to allow Dounreay to
harges of illegal nitric acid.

judicial review of the decision to allow Dounreay to begin
fuel reprocessing -

on the basis of old authorisations despite there being a substantial change in circumstances ie. closure of the fast reactor and no need for the plutonium, and when revised authorisations are already overdue;

despite the fact the fuel reprocessing from the shutdown fast reactor core represents a significantly different scale of operation from previous activity and should be subject to full and separate regulatory and public scrutiny;

when the proposed reprocessing should be subject to the test of justification according to European and UK laws (HMIPI inspectors for Dounreay say they entirely accept that the English THORP ruling about the need to justify harm caused by discharges to the environment in terms of the benefits a proposed practice will bring, applies in Scotland and should be applied to Dounreay's application for revised discharge authorisations.

450-1 (Cont'd.)

ces it is irresponsible to consider Dounreay a fit place to elements. Further, it is vital that you be aware of the two Government Advisory Bodies which serve to underscore our ls are as follows:

450-2

nagement Advisory Committee (RWMAC) and Committee on the Radiation in the Environment (CoMARE) Joint Report on Possible ive Particles near Dounreay

RESPONSE TO COMMENT
COMMENTOR NO. 450:
NUCLEAR FREE LOCAL AUTHORITIES (CONT'D.)

Response to Comment No. 450-2

If the Record of Decision for this EIS results in foreign research reactor spent nuclear fuel being sent to Dounreay for reprocessing, that action would be subject to regulation and oversight under the laws of the United Kingdom. It is DOE's understanding that the radioactive particles mentioned in the CoMARE/RWMAC report are already being surveyed and cleaned up at the Dounreay Site. This issue, however, is outside the scope of this EIS.

OMMENT
. 450:
TORITIES (CONT'D.)

ch reactor spent nuclear fuel involved
-2 in Section 2.2.1.3 of the EIS. The
ental impacts in the United Kingdom
e United Kingdom are subject to the
se of the United States. The accident
ies are also outside the scope of this

COMMENT
ISTITUT MAX VON LAUE

ible B-3 in Appendix B of the EIS places
category is that of the BR-2 and ORPHEE
annot be converted with current technology.

COMMENTOR NO. 487: SCOTLAND AGAINST NUCLEAR DUMPING

SCOTLAND AGAINST
NUCLEAR DUMPING

S.A.N.D.

4 Fountainhead,
Bunessan,
Isle of Mull,
Argyll PA67 6DF
tel/fax 01681 700 431

19th June 1995

Charles Head,
Office of Spent Fuel Management (EM-37),
US Department of Energy,
1000 Independence Ave., S.W.,
Washington D.C. 20585

Dear Mr Head,

SPENT FUEL TO DOUNREAY?

I am writing on behalf of an umbrella organization with affiliated groups from Shetland to Dumfries in Scotland, S.A.N.D., to give the US Department of Energy our views on the transport and reprocessing of spent fuel rods from European MTRs.

There is shock here in Scotland, that no non governmental organisations have been asked to contribute their views, which is the protocol ratified at the Rio Summit in Agenda 21.

There has been a public consultation in the form of a draft Environmental Impact Assessment in the USA seeking to ascertain the future of this spent fuel. It appears that representations have been made to your department by the UK Department of Trade and Industry and by the management of Dounreay for the contract of reprocessing up to 9,000 fuel rods over a period of 10-12 years. This is re-enforced by the quotation from a memo from your Department dated 9th February saying that "We need Dounreay as a partner to accomplish the mission of minimising the civil use of HEU worldwide."

There has not been, nor will there be, any form of public consultation or Environmental Assessment in Scotland, or elsewhere in the U.K. into a controversial commercial deal which will have a significant impact on the environment, and the potential for an accident for which no technology exists to remedy.

487-1

RESPONSE TO COMMENT COMMENTOR NO. 487: SCOTLAND AGAINST NUCLEAR DUMPING

Response to Comment No. 487-1

The commentor's opposition to reprocessing at Dounreay (Management Alternative 2, Subalternative 1b) is noted. This alternative is discussed in Sections 2.3 and 4.4.2 of the EIS. The subject of public consultation in Scotland is outside the scope of this EIS.

RESPONSE TO COMMENT
COMMENTOR NO. 487:
SCOTLAND AGAINST NUCLEAR DUMPING (CONT'D.)

'7:
IPING (CONT'D.)

the objections
ultation process.

487-1 (Cont'd.)

pent fuel rods
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could cause death,
, and render whole
ivatable for

487-3

Response to Comment No. 487-2

Any actions in the United Kingdom resulting from decisions made after completion of this EIS will be subject to the laws and regulations of the United Kingdom and oversight by appropriate regulatory authorities in the United Kingdom. Accordingly, the subject of ground transport in the United Kingdom is outside the scope of this EIS.

Response to Comment No. 487-3

It is inaccurate to state that the spent nuclear fuel transportation casks are licensed only to operate to the limit of a 9 meter drop, as the commentor suggested. The rigorous tests of representative transportation casks have shown that the casks would survive (not lose confinement) even with broadside crashes at 84 miles per hour, or the equivalent of a 70 meters free fall drop. The cask immersion test to a depth of 200 meters for half an hour, as required by the International Atomic Energy Agency, does not mean that the sunken cask has to be retrieved in half an hour. The test is to determine the tightness of the cask seals, and is not for structural damage evaluation.

In respect to the impact a ship fire might have on a spent nuclear fuel transportation cask, there are three facts that mitigate the potential damage. First, ship fires tend to move to different areas of the ship as the combustible material is consumed, so the cask would not be exposed for the entire duration of the fire. Second, a ship fire's intensity is normally limited by the amount of oxygen that can reach the interior of a hold. Third, all ships that would be used to transport foreign research reactor spent nuclear fuel have built-in fire suppression equipment, which as a minimum would keep fires well below the extreme temperatures needed to damage the transportation cask. For these reasons, it is almost impossible for spent nuclear fuel inside the transportation cask to reach 900 degrees Kelvin (1,160 degrees F), the melting point of research reactor spent nuclear fuel. The probability of reaching such a temperature was calculated to be less than one in a billion (Attachment D5 to Appendix D of the EIS). To put this temperature into perspective, steel used in a ship's structure buckles at around 700 degrees Kelvin (800 degrees F).

ıENTOR No. 487:
· NUCLEAR DUMPING (CONT'D.)

-3

ops to the sea and the air from
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tating its permits from Her
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ronment.
pha discharges into the sea by over
nd plutonium by over 400%.
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ess of leukaemia cases in Thurso,
y, which mirrors the situation at
plant at Sellafield, therefore
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487-4

e that the HEU must be reprocessed
spread of HEU. Dounreay are
blend the HEU to LEU, and thereby

to your department and government
commercial operation, and will of
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nergy should know that on the best
to S.A.N.D., it is technologically
blend HEU to LEU, if not nigh on
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ish to reconfigure any MTRs that we
in the future. Under EURATOM the
ess of down blending, so it is more
that the HEU will remain HEU< as
ption. Furthermore, Dounreay's
ccountability and transparency is
ting appended. It would indeed be
USA. government choose to trust an
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487-5

from the reprocessing of HEU are
the country of origin for disposal
re few such facilities at present,
bstitution would be agreed. This

RESPONSE TO COMMENT
COMMENTOR No. 487:
SCOTLAND AGAINST NUCLEAR DUMPING (CONT'D.)

Response to Comment No. 487-4

The subjects of airborne and liquid releases from reprocessing operations in foreign countries are outside the scope of this EIS. Please see Section 4.4.2.1 of the EIS and the response to Comment 484-11.

Response to Comment No. 487-5

DOE disagrees with the commentor's assertion that it is extremely difficult to blend down HEU to LEU. This operation has been performed successfully in the past at the Dounreay Site (see the figure attached to Comment Document 442).

As discussed in Appendix B, Section B.1.1 of the EIS, many MTRs are presently configured to use LEU and others are being converted. It is true that the U.S. cannot enforce the process of downblending, but the U.S. can encourage the foreign research reactor operators to use only LEU and the fuel reprocessors (such as United Kingdom Atomic Energy Authority) to supply only LEU. (See Section 2.3 of the EIS.)

The commentor's opposition to a waste substitution arrangement is noted. This possibility is described briefly in Section 4.4.2.3 of the EIS.

The commentor's speculation about curtailed nuclear transports in Europe is outside the scope of this EIS.

COMMENTOR NO. 487:
SCOTLAND AGAINST NUCLEAR DUMPING (CONT'D.)

It is also likely, given the public concern and increased environmental knowledge throughout Europe, that nuclear transports will be curtailed in the future, leaving high and intermediate level nuclear waste in Scotland which does not belong here.

** There is already serious public concern about the US Dept. of Energy proposal, and should the proposal become fact, the USA and Dounreay must face massive public and political outcry and opprobrium, not just in Scotland, nor just the U.K., but across the whole of Europe.

I trust that these objections to the proposal to reprocess HTR spent fuel at Dounreay will be taken fully into account in the decision making process. If there is any further information you require, I will be happy to assist.

I look forward to your response.

Yours sincerely,

Anne E. Baxter.

Anne Baxter,
Convener

487-5
(Cont'd.)

RESPONSE TO COMMENT
COMMENTOR NO. 487:
SCOTLAND AGAINST NUCLEAR DUMPING (CONT'D.)

H, SCOTLAND

This is Management
and 4.4.2 of the EIS.

to the Prototype Fast
t(s) to use would be
rs, not DOE.

proximately 22,700
Under Management
cessed at Dounreay.
nt would be sent to
to 750 elements per
ection S.4.10 of the

n Section 2.3 of the
nducted in the past,
by reactors that are
in civil programs, in
icy goals. However,
essing at Dounreay,
proliferation policy
s approach might be
with counterparts in

COMMENTOR NO. 490:
FRIENDS OF THE EARTH, SCOTLAND (CONT'D.)

Whichever figure is used, it represents a massive increase on previous reprocessing of overseas spent fuel elements at Dounreay. Between 1968 and 1994 Dounreay reprocessed a total of 3,415 spent fuel elements from overseas research reactors.

490-1 (Cont'd.)

It is claimed in the EIS that Dounreay is "currently reprocessing foreign reactor fuel", this is not the case.

Finally, we do not believe that reprocessing of spent HEU fuel at Dounreay is the best option for reducing the proliferation risks associated with HEU. Rather, it is likely to perpetuate the use of weapons grade HEU.

We trust that you will take on board our comments in considering your future policy on dealing with spent HEU.

Yours sincerely

Graham Stein

Graham Stein
Safe Energy Project Co-ordinator

RESPONSE TO COMMENT
COMMENTOR NO. 490:
FRIENDS OF THE EARTH, SCOTLAND (CONT'D.)

TO COMMENT
EST LOTHIAN DISTRICT COUNCIL

ssing at the Dounreay Site is noted. This is
ve 1b, which is discussed in Sections 2.3 and

countries, allowed airborne and liquid releases
over safety in foreign countries are outside the
he EIS and the response to Comment 484-11.

storage at facilities near the research reactors
ment Alternative 2, Subalternative 1a, which is
EIS.

'o. 730: Forskningsministeriet, inistry of Research

:RIET

Ministry
of Research

Brestgade 43
DK-1850 København K.

Tel. + 45 3392 6700
Fax + 45 3392 3601
Telex 16089 ld

15 JUNI 1995

rnmental Management

B.W.

tal Impact Statement on a Pro-
n-Proliferation Policy Con-
ecator Spent Nuclear Fuel, US
h 1995, DOE/EIS-0218D

rch, under whose auspices Risø
longs, would like to submit the fol-
e mentioned Draft Environmental

ciation of the great effort, which
epartment of Energy and the De-
his very comprehensive and de-
e strong commitment by the US
earlier policy for return of US ori-
eign research reactors.

supported all international initia-
ofiferation Treaty, and Denmark
o ratify this treaty in January 1969.
, actively supported and participa-
r Fuel Cycle Evaluation, INFCE,
ssich policy Risø as operator of the
actively joined the US-initiated
is programme, Risø developed its
r low-enriched uranium-silicide fuel
r.

Response to Comment Commentor No. 730: Forskningsministeriet, Ministry of Research

ONSE TO COMMENT
730: FORSKNINGSMINISTERIET,
OF RESEARCH (CONT'D.)

0-1

agement Alternative 1, management of foreign research
nited States, as described in Section 2.2 of the EIS, is

RESPONSE TO COMMENT
COMMENTOR NO. 857: GUNN, JOHN

857-1

Response to Comment No. 857-1

The subjects of airborne and liquid releases from reprocessing operations in foreign countries are outside the scope of this EIS. Please see Section 4.4.2.1 of the EIS and the response to Comment 484-11. Nevertheless, the commentor's opposition to reprocessing at the Dounreay Site is noted.

COMMENTOR NO. 857: GUNN, JOHN (CONT'D.)

Sending spent fuel rods to Dounreay for reprocessing would be hazardous in transporting it the length of Scotland, and would cause more nuclear waste to be dumped into the sea and the air in the reprocessing. There is a cluster of child Leukemia cases around Dounreay, it is obvious that it is caused by the nuclear plant, but they just deny everything.

I understand that the USA. is consulting with their public on whether to or send your spent fuel rods here to our country. Nobody here consults the Scottish people about such things, the UK government just imposes what it wants on us, everybody I talk to is against the plan to send your spent fuel rods from Europe to Scotland. The USA is very concerned for the environment, please show some concern for ours. Would it not be a better plan to send the spent fuel rods to their nearest nuclear facility for safe, above ground storage, and monitoring?

Yours sincerely John Gunn

857-1 (Cont'd.)

RESPONSE TO COMMENT
COMMENTOR NO. 857: GUNN, JOHN (CONT'D.)

COMMENTOR NO. 865: AUSTRALIAN DEPARTMENT OF FOREIGN AFFAIRS AND TRADE (CONT'D.)

on such stocks for nuclear power generation, this fissile material is clearly excess to requirements and should desirably be removed.

The Draft Statement analyses in some detail the possible effects on the environment of the return of US-origin spent nuclear fuel. It notes the return of the spent fuel under Management Alternative 1 would be carried out according to strict international safety regulations relating to transport of radioactive material by ship and over land. Additionally, the various proposed ports of entry, management sites and storage technologies are canvassed with a view to minimising the impact on the environment and any possible risks to human health. We note that the Draft Statement concludes that the potential impact on the environment of Management Alternative 1 would be small.

The right of the United States to recover excess HEU (including irradiated HEU) supplied to Australia is clearly established in the United States-Australia Agreement concerning the Peaceful Uses of Nuclear Energy of 5 July 1979. The United States gave an undertaking that it would exercise that right when in January 1987 the DOE concluded a contract with the Australian Nuclear Science and Technology Organisation (ANSTO) for the return and reprocessing, on a commercial basis, of all its (then) US-origin holdings of spent fuel. Since then, Australia's consideration of the management of its spent fuel has been based upon the assumption that at least that material would be returned to the US. The spent fuel is held in storage at ANSTO pending a decision by DOE to proceed with its return. Since 1987, the inventory of spent research reactor fuel at ANSTO has grown close to filling the available storage facilities. Uncertainty about the United States' long-term position has undermined the basis for ANSTO pursuing its spent fuel management strategies. 865-3

The Department of Foreign Affairs and Trade considers the above factors should be taken fully into account in considering the various management alternatives in the EIS. They lead us to the clear conclusion that our common interests in effective and sound non-proliferation policies and practices would be best served by the implementation of Management Alternative 1.

Yours sincerely

Les Luck
Assistant Secretary
Nuclear Policy Branch

RESPONSE TO COMMENT
COMMENTOR NO. 865: AUSTRALIAN DEPARTMENT OF FOREIGN AFFAIRS AND TRADE (CONT'D.)

Response to Comment No. 865-3

It is DOE's position that neither DOE nor the United States Government has any legal obligation to accept spent nuclear fuel from foreign research reactors.

COMMENTOR NO. 1012: GILMOUR, M.

27 MacRae St.,
Wick,
Caithness KW1 5QN.
Scotland.

24.6.95

Dear Sir,

The public in U.S.A. have been consulted on their views regarding the sending of 9000 spent fuel rods to Dounreay (Scotland). As there is no such opportunity in the U.K. I would like to give my objection to the scheme.

The major hazard involved in the transporting of this highly enriched uranium half way round the world seems ludicrous and with the end result being more nuclear waste to contend with, unacceptable.

1012-1

RESPONSE TO COMMENT
COMMENTOR NO. 1012: GILMOUR, M.

Response to Comment No. 1012-1

The commentor's opposition to reprocessing at the Dounreay Site is noted. This is part of Management Alternative 2, Subalternative 1b, which is discussed in Sections 2.3 and 4.4.2 of the EIS.

COMMENTOR NO. 1012: M. GILMOUR (CONT'D.)

As you are probably aware, the problems with disposal of the nuclear waste, especially in this part of the county have reached disturbing conclusions, with leaks being found on the shore & surrounding areas. 1012-1 (Cont'd.)

For the sake of future generations please do not agree to this alarming project but approve the spent fuel rods being sent to their nearest facility for safe, above ground storage where they can be monitored, until they can be dealt with safely. 1012-2

Sincerely
M Gilmour.

RESPONSE TO COMMENT
COMMENTOR NO. 1012: M. GILMOUR (CONT'D.)

Response to Comment No. 1012-2

The commentor's preference for the alternative of overseas storage is noted. This is Management Alternative 2, Subalternative 1a, which is discussed in Sections 2.3 and 4.4.1 of the EIS.

COMMENTOR NO. 1021: HEATH, BERNARD J.

TELEPHONE (0847) 85664

Bernard and Betty Heath
"Little Clett"
Brough, DUNNET
Caithness
KW14 8XR

Charles Head
Office of Spent Fuel
U.S. Dept of Energy
1000 Independence Ave SW
WASHINGTON DC 20585

30-6-95

Dear Sir

The majority of the people up here in the NORTH of SCOTLAND have no faith in Dounreay's self styled 'Centre of Excellence'. There have been some terrible cock-ups over the years — many of these incidents are just now coming to light — you must be aware of these.

1021-1

Space age technology may come up with the final disposal answer, Meantime please don't send your dangerous materials over here to our tiny island, store it safely meantime.

Yours sincerely
Bernard J Heath BEM
E.B. Heath BEM

RESPONSE TO COMMENT
COMMENTOR NO. 1021: HEATH, BERNARD J.

Response to Comment No. 1021-1

The commentor's opposition to reprocessing at the Dounreay Site is noted. This is part of Management Alternative 2, Subalternative 1b, which is discussed in Sections 2.3 and 4.4.2 of the EIS.

NUCLEAR FREE LOCAL AUTHORITIES

City of Aberdeen

SOLICITOR'S DIVISION
Town House, Aberdeen, AB9 1AQ
Telephone: 01224 276276
Fax: 01224 522991
DX: AB52

CONFIRMATION OF FAX.

...ronmental Impact Assessment

...e Local Authorities (Scotland). NFLA(S) is ...egional, District and Islands Councils in ...thorities in membership presently represent ...pulation. NFLA (Scotland) is part of ...thorities, an International Organisation of ...ng all major continents and recognised by ...mental organisation. In this way, local ...national governments to do more to reduce ... associated with the continued use and

...eir meeting in Aberdeen on 19th June, ...lf a response to the consultation presently ...Energy on proposals which may, inter alia, ...from overseas reactors at UK AEA's Dounreay ...he response is enclosed with this letter.

...n period was to have expired on 20th June, ...tended to 20th July.

...u would acknowledge timeous receipt of this ... enclosed herewith will be taken fully into ...ur Department's report on the issues which, ...mber, although perhaps you would confirm

...vide me with a copy of the final EIS at the

ALAN T TOWNS
CITY SOLICITOR

RESPONSE TO COMMENT
COMMENTOR NO. 1117: NUCLEAR FREE LOCAL AUTHORITIES

COMMENTOR NO. 1117: NUCLEAR FREE LOCAL AUTHORITIES (CONT'D.)

SUBMISSION OF NUCLEAR FREE LOCAL AUTHORITIES (SCOTLAND)

to

US DEPARTMENT OF ENERGY CONSULTATION

on

REPROCESSING OF HEU FUEL

1. **Proposals**

In order to facilitate the reprocessing of approximately 22,700 US-origin weapons grade spent highly enriched uranium (HEU) fuel rods from research reactors in 41 countries, it has been proposed that 5,613 rods be reprocessed at UK AEA's Dounreay Nuclear Establishment in Caithness, Scotland.

2. **Timescale for Consultation**

A draft Environmental Impact Statement (EIS) concerning this and other proposals for the reprocessing of HEU fuel from overseas research reactors was published by the US Department of Energy in April, 1995. Responses to the statement were invited as part of a consultation exercise which expired originally on 20th June, 1995, but which is now due to expire on 20th July, 1995.

NFLA(S) are concerned that, whilst the EIS was published for consultation in the United States in April, the Statement did not become available in Scotland until the beginning of June thereby allowing insufficient time for the significant proposals contained therein to be assessed and evaluated.

Accordingly, NFLA(S) are concerned that the Department of Energy may be seeking to hasten the consultation process by allowing less time for the preparation of submissions from this Country than those from the US. *1117-1*

NFLA(S) further feel that the effect of the shorter time available for preparation of submissions will be that the concerns of many organisations in Scotland may either go unheard, or may be stated hastily with the result that the Consultation may be concluded without the benefit of the best information presented in a rational, unhurried manner.

2. **The Suitability of Dounreay as a Venue for Intensive Spent Fuel Reprocessing**

NFLA(S) understands that the Department of Energy has proposed using plant at Dounreay associated with the Prototype Fast Reactor (PFR) and not the Materials Testing Reactor (MTR) which has carried out such work in the past. *1117-2*

RESPONSE TO COMMENT COMMENTOR NO. 1117: NUCLEAR FREE LOCAL AUTHORITIES (CONT'D.)

Response to Comment No. 1117-1

DOE regrets any delay that may have occurred in the commentor's receipt of the draft EIS. Notice of the proposed policy was provided with the publication in the *Federal Register* (60 FR 19899, April 21, 1995) of the availability of the draft EIS. In order to ensure that an interested party (e.g., a foreign nation) has adequate time to review a document prepared under NEPA, it is recommended that attempts be made to secure access to the *Federal Register* so that such interested parties may review, at the earliest opportunity, announcements by a Federal agency (e.g., DOE) of proposed major Federal actions.

Response to Comment No. 1117-2

The text in the Summary has been revised to eliminate the reference to the Prototype Fast Reactor Reprocessing Plant. The decision of which Dounreay plant(s) to use would be up to the plant operators and United Kingdom government regulators, not DOE. The discussion about current reprocessing activities at the Dounreay Site has also been revised in Section 2.3 of the EIS. (See the response to Comment 490-1.)

SE TO COMMENT TOR No. 1117: CAL AUTHORITIES (CONT'D.)

reay Site are old, the United Kingdom has complete afield Site. The point of the statement in the EIS, se to reprocess already exists in France and the for reprocessing services in one or both of those f proliferation.

releases from reprocessing operations in foreign IS. See Section 4.4.2.1 of the EIS and the response

policy is to discourage reprocessing is incorrect. the U.S. Government does not encourage the civil ted to being a reliable nuclear trading partner and clear programs.

be reprocessed at the Dounreay Site under each of mment 490-1.

'D.)

spent nuclear
the individual
tion standards
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collision with
combustibles
Data available
lisions in port
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COMMENTOR NO. 1117: NUCLEAR FREE LOCAL AUTHORITIES (CONT'D.)

NFLA(S) has campaigned vigorously for many years against the transportation of radioactive waste materials and in this regard the Organisation is concerned by proposals contained in the EIS for intensive transportation of considerable quantities of radioactive wastes to the Dounreay site for remediation.

4. Conclusions

NFLA(S) recognises the importance of reducing and ultimately eliminating the threat of proliferation of nuclear weapons through proper management of spent fuel from foreign research reactors. 1117-4

In this regard, NFLA(S) is of the view that "proper management" should not include the option of remediation either in the US or abroad but should concentrate instead, on high security above-ground storage and monitoring of waste materials. 1117-5

NFLA(S) believes Dounreay will not be a suitable site for the intensive waste remediation proposed by the Department of Energy because 1117-2 (Cont'd.)

- risks associated with an accident in transportation may not be minimised.
- the Dounreay site is elderly and may not be able to safely handle an intensive programme of reprocessing work.
- the Dounreay site has a very poor safety record.
- UK Government bodies believe radioactive hotspots in and around the plant are most likely to have originated from an unstable waste shaft although the fuel handling area cannot be ruled out as a possible source.
- Dounreay management has demonstrated a cavalier attitude to regulatory and safety requirements.

NFLA(S) would be grateful to receive a copy of the final EIS as soon as it is available.

John A. Marr
Solicitor and Secretary
on behalf of Nuclear Free Local Authorities (Scotland)

RESPONSE TO COMMENT COMMENTOR NO. 1117: NUCLEAR FREE LOCAL AUTHORITIES (CONT'D.)

Response to Comment No. 1117-4

The commentor's support for the nonproliferation of nuclear weapons is noted.

Response to Comment No. 1117-5

The commentor's preference for storage over reprocessing, whether in the U.S. or abroad, is noted. Storage is included under Management Alternatives 1, 2, and 3, which are discussed in Sections 2.2, 2.3, 2.4, 4.2, 4.3, 4.4, and 4.5 of the EIS.

COMMENTOR NO. 1119: GREENPEACE, NETHERLANDS

Stichting GREENPEACE Nederland

Mr. Charles Head, Program Manager
Office of Spent Nuclear Fuel Management (EM-37)
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
U.S.A.
FAX: 00.1.202.586.5256

Amsterdam, July 18th, 1995.

Dear Sir,

Please find below our comments on the "Draft Environmental Impact Statement on a Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Fuel".

General information

In the Netherlands there are three research reactors using high enriched uranium (HEU) of US origin:

1. High Flux Reactor (HFR of pool type) of 45 Megawatt using 93% HEU. This reactor is located near the village Petten and operated by the Joint Research Center of the European Commission (EC). The EC (Euratom) is the formal owner.

2. Low Flux Reactor (LFR of Argonaut type) of 30 Kilowatt using 90% HEU. This reactor is owned and operated by the state-owned Netherlands Energy Research Foundation (ECN) which is also a major client of the HFR. The LFR is also on the premises of ECN near Petten.

3. Hoger Onderwijs Reactor (HOR of pool type) of 2 Megawatt using 93% HEU. This reactor is owned by the University of Delft and operated by the Interuniversity Reactor Institute (IRI). The HOR is the only reactor in the Netherlands to be converted in the near future to use LEU.

RESPONSE TO COMMENT
COMMENTOR NO. 1119: GREENPEACE, NETHERLANDS

COMMENTOR NO. 1119: GREENPEACE, NETHERLANDS (CONT'D.)

Nonproliferation objectives

As it comes to US nonproliferation policies the main concern of Greenpeace Netherlands is the High Flux Reactor (HFR) since this reactor is one of the most powerful multi-purpose research and test reactors in the world.

In short, the main reason for this concern is the actual transformation of the HFR as a reactor for scientific research into a production reactor for commercial purposes.

Recently the ECN asked for new licences in order to exploit the HFR for more commercial use in the medical field. One of the main activities of the HFR in the near future is the production of Molybdenum-99 which will be separated in a special ECN laboratory from HFR's irradiated fuel elements.
This molybdenum-99 (Mo-99) is the 'raw material' for the production of technetium-99m (Tc-99) by the US firm Mallinckrodt Medical BV, also based at the premises of ECN at Petten. TC-99 is a decay product of Mo-99.
Although the owner, the European Commission, seems to be willing to convert the HFR to LEU according to the US RERTR program, it is in the commercial interest of ECN and of the US company Mallinckrodt to continue the irradiation and fission of HEU targets (Ual) in the HFR since production of molybdenum-99 is much more effective and cheaper from HEU than from LEU.

1119-1

Production of Mo-99 from LEU is possible by using U3Si2 targets instead of Ual targets. Separation of Mo-99 from Silicate targets, however, needs a different dissolution technology, new installations and a new development process. It is, therefore, not in the interest of the US company Mallinckrodt to promote a rapid conversion program. So the ongoing delay of a conversion program of the HFR - conversion studies have been carried out already from 1985 onwards -is not only the responsability of Euratom and the ECN, but also of the US company Mallinckrodt.
Since the purpose of the proposed US policy is to promote nonproliferation objectives by seeking reduction of HEU from civilian commerce, Greenpeace Netherlands believes the US government should address the proliferation issue also to the US company Mallinckrodt which, as the major client of ECN, is also responsable for the present deadlock situation in respect to conversion plans of the HFR.

In the near future governmental responsabilities of the HFR might shift more and more from the European level to the national level, in casu to the Dutch government. At the moment, for a four-year period (1992-1996), the HFR is financed via Euratom by government subsidies from Germany (42.5 million Ecu or 85 million Dutch guilders) and the Netherlands (75 million Dutch guilders).
The German government has indicated it will not renew its subsidies for the next four-year period. As part of a nuclear phase-out

RESPONSE TO COMMENT
COMMENTOR NO. 1119: GREENPEACE, NETHERLANDS (CONT'D.)

Response to Comment No. 1119-1

The commentor's reiteration of the fact that some foreign research reactors are used to produce medical isotopes, and the commentor's emphasis on the importance of converting foreign research reactors from using HEU to LEU, are noted. The intent of the proposed policy is to remove as much U.S.-origin HEU as possible from civil programs worldwide and give foreign research reactor operators time to convert their reactors to the use of LEU fuels and to make arrangements for disposition of their LEU spent nuclear fuel (Section 1.2 of the EIS).

At a power rating of 45 MW, this reactor is one of the most powerful research reactors fueled by HEU enriched in the United States. The commentor's concern about the HFR and support for its quick conversion are noted. As shown in Appendix B, Table B-3, this reactor can be converted to the use of LEU fuel and this conversion is expected to begin before 2001.

DOE and the Department of State are also promoting the conversion of HEU targets to LEU targets in foreign research reactors by offering the same incentives for target material as for spent nuclear fuel from foreign research reactors. These incentives apply to the reactor owners, reactor operators, or whoever else may be responsible for management of target material. If Mallinckrodt Medical BV is responsible, directly or indirectly, for the management of target material that was enriched in the United States, then it could benefit from these incentives. DOE and the Department of State cannot, however, apply any additional or direct pressure on Mallinckrodt Medical BV, as suggested by the commentor. Consideration of U.S. corporations' roles as clients to foreign research reactor owners/operators is outside the scope of this EIS.

The issue of funding for HFR is also outside the scope of this EIS.

policy the Dutch government has already cut subsidies for nuclear research by ECN and is encouraging the ECN to find funding from commercial sources. At the moment it is not clear if the Dutch government will continue to fund the HFR.

In this situation, where continued exploitation of the HFR has become very controversial in the Netherlands, where there have been discussions with the Russian company Minatom as an alternative supplier of HEU, and where there is a real threat of sending HFR's spent fuel to the ill-managed Dounreay reprocessing plant in Scotland, Greenpeace Netherlands concludes that the proliferation risks of the use of HEU of US origin can only be solved by a quick conversion process.

1119-1 (Cont'd.)

Yours sincerely,

Jaap Bodenburg

Greenpeace Netherlands
Nuclear Campaign

COMMENTOR NO. 1131: DEJONGHE, PAUL

DR. IR. PAUL DEJONGHE

8400 OOSTENDE
KAROL JANSSENSLAAN 5, BUS 7
TEL. 059/50 19 08

Oostende, 23.05.1995

Edlow International Company
1666 Connecticut Ave., N.W. Suite 500
Washington D.C. 20009, USA

Fax 00.1.202.483.4959

Dear Jack,

conc. : meeting of the "Edlow Group" May 30 and 31 inWashington D.C.

Please find herewith two notes which we prepared after we received your messages in view of the meeting of next week and which were submitted to the new management at SCK/CEN. I will try to have at hand a new version of the table which summarizes our needs in shipping or reprocessing during the coming years.

Looking again at page 3 of the EIS Summary document, which illustrates Uses and Benefits of Research Reactors, I am surprised finding no single reference towards a major use of research reactors, which is the testing of materials and fuels. In recent years, more and more attention is being paid to testing various modern fuel forms, not only MOX (safety experiments) but also NPT more friendly fuels such as cermets and fuels for actinide burning programmes; Reactor safety is also a major subject requiring irradiations. Ignoring such uses of research reactors can sound very good if one wants to illustrate that research reactors mainly serve objectives of scientific research, medicine and quality control in industry. However, it does not necessarily reflect the total truth and this might become counterproductive at some time. 1131-1

I am looking forward to our meeting.

Sincerely,

Paul Dejonghe

encl : 2
Total # of pages : 3

RESPONSE TO COMMENT
COMMENTOR NO. 1131: DEJONGHE, PAUL

Response to Comment No. 1131-1

In Section 1.1 of the EIS, testing of materials was attributed to the research reactor benefits. Testing of materials and fuels has been added to Figure S-1 of the EIS Summary to highlight further the research reactors' usefulness and benefits.

132: JAPAN ATOMIC
ARCH INSTITUTE

May 19, 1988

01

welcome letter dated April
work with you for research

for the draft EIS which was
t in the attached paper. I
ize the these comments into

ashington office will attend
shington on May 31, as well
n May 30.

rely yours.

Tsuruta

uruta
al Manager
n of Nuclear Fuel Management
n of Safety and Control
Atomic Energy Research Inst.

RESPONSE TO COMMENT
COMMENTOR NO. 1132: JAPAN ATOMIC
ENERGY RESEARCH INSTITUTE

COMMENTOR NO. 1132: JAPAN ATOMIC ENERGY RESEARCH INSTITUTE (CONT'D.)

JAPAN ATOMIC ENERGY RESEARCH INSTITUTE
OFFICE OF SAFETY AND CONTROL

FUKOKU-SEIMEI BLDG
2-2-2 UCHISAIWAI-CHO
CHIYODA-KU, TOKYO 100
JAPAN

FAX 81-3-3592-2198
PHONE 81-3-3592-2881

TO : FAX 202-483-4840

MRS. MARILENA CONDE
ASSISTANT TO THE PRESIDENT

EDLOW INTERNATIONAL COMPANY
1666 CONNECTICUT AVE., N.W., SUITE 201
WASHINGTON, D.C. 20009
U.S.A.

FROM : HARUMICHI TSURUTA
OFFICE OF NUCLEAR FUEL MANAGEMENT

DATE : JUNE 20, 1995

TOTAL PAGES INCLUDING THIS COVER PAGE: 2

SUBJECT : COMMENTS BY JAERI AND KYOTO UNIV. ON DRAFT EIS

TEXT : FOR YOUR REFERENCE, ATTACHED IS A COPY OF OUR COMMENTS ON DOE'S DRAFT EIS UNDER JOINT SIGNATURE OF JAERI AND KYOTO UNIV. THE COMMENTS WERE SUBMITTED TO MR. CHARLES HEAD, PROGRAM MANAGER OF U.S.DOE, ON JUNE 19, 1995.

AS STATED IN ITEM 5 OF THE COMMENTS, WE THINK THAT JAERI'S TRANSPORTATION CASKS CAN BE USED FOR OUR TEST AND RESEARCH REACTORS, SUCH AS JMTR, JRR-2, JRR-3 AND JRR-4. ACCORDING TO OUR REPRESENTATIVE AT EDLOW'S CONFERENCE HELD AT WASHINGTON D.C. ON MAY 30, 1995, HOWEVER, MR. JACK EDLOW MENTIONED THAT JAPAN IS NOT LIKELY SHARE THE CASKS AND A NEW CASK TYPE IS NEEDED. I WOULD APPRECIATE IT IF YOU WOULD KINDLY EXPLAIN MORE DETAILS WHY OUR CASKS ARE NOT APPLICABLE.

WE LOOK FORWARD TO HEARING FROM YOU. TANK YOU.

1132-1

1132-2

RESPONSE TO COMMENT COMMENTOR NO. 1132: JAPAN ATOMIC ENERGY RESEARCH INSTITUTE (CONT'D.)

Response to Comment No. 1132-1

The attachment which contains additional specific comments on the draft EIS has been received by DOE and is identified as document 268. Responses have been provided to each of the attached comments in the response to document 268.

Response to Comment No. 1132-2

Table B-14 of the EIS identifies representative transportation casks that might be used during spent nuclear fuel transport. Other casks could be used if they become available and are approved by the U.S. Department of Transportation.

COMMENTOR NO. 1132: JAPAN ATOMIC ENERGY RESEARCH INSTITUTE (CONT'D.)

Comments by Japan Atomic Energy Research Institute
and Kyoto University
on
The Department of Energy's Draft Environmental Impact Statement
on a Proposed Nuclear Weapons Nonproliferation Policy
concerning Foreign Research Reactor Spent Nuclear Fuel

June 1995

We are filing written comments on the draft Environmental Impact Statement (EIS). Although we generally support its analysis, we have great concerns in the following points:

1. The cost estimates by DOE are tremendously high. Statements on the items of the costs, namely, the basis of actual cost, are necessary to be categorized.

2. Although we are willing to pay a truly cost-based price, any additional fee which would come from the change of the management, is difficult to be paid for budgetary clarification.

3. A failed fuel which would be sealed in a can, needs to be accepted by the U.S.

4. The Department of Energy shall compensate the reactor operator for uranium in the spent nuclear fuel accepted in the U.S. Such compensation by DOE will consists of providing LEU of equivalent value or financial settlement.

5. When DOE decided to promote reprocessing of the U.S. origin spent nuclear fuel outside of the U.S., such as the United Kingdom or France, the United States should accept the radioactive wastes resulting from the processing.

6. Typical transportation casks are illustrated in the EIS. Unfortunately, JAERI's casks, such as JRC-60Y-20T and JMS-87Y-0.5T, are not found in Volume 1 or Appendix B.
These casks were licensed in the past, and their certificate number were USA/0208/B(U)F and USA/0401/B(U)F-85, respectively. We think that these casks approved by the U.S. competent Authority, can be used for the transportation of our research reactor spent nuclear fuel.

Japan Atomic Energy Research Institute is joining in the RERTR Group which is an association of 14 foreign research reactors facilities. We believe that our comments mentioned above, are fundamentally in conformity RERTR's and we support them, firmly.

Finally, we would like to request that a Record of Decision followed by the final EIS will be issued by the end of December 1995 as scheduled.

RESPONSE TO COMMENT COMMENTOR NO. 1132: JAPAN ATOMIC ENERGY RESEARCH INSTITUTE (CONT'D.)

Response to Comment
ntor No. 1133: Paul Scherrer Institut

omment No. 1133-1

s position that the United States is legally obligated to accept spent nuclear ul Scherrer Institut is noted. It is DOE's position that neither DOE nor s Government has any legal obligation to accept spent nuclear fuel from reactors.

omment No. 1133-2

tal Assessment of Urgent-Relief Acceptance of Foreign Research Reactor uel covers 409 spent nuclear fuel elements, of which 153 have been nited States as of September 1995. Shipment of the remainder of the ing.

omment No. 1133-3

ion 2.2.1, Volume 1) and B-1 (Appendix B) of the EIS show the total uclear fuel elements from Switzerland that are estimated for management d action. Totals shown include elements to be accepted under the Urgent- ental Assessment (Section 1.5 of the EIS).

COMMENTOR NO. 1134: NATIONAL CENTRE FOR SCIENTIFIC RESEARCH "DEMOKRITOS"

ONAL CENTRE FOR SCIENTIFIC RESEARCH "DEMOKRITOS"
153 10 AG. PARASKEVI ATTIKIS POB 60228 TEL. 6513111-9 6518811-9 TLX 216199 ATOM

search Reactor Laboratory
: 6514118
c: 6533451

Aghia Paraskevi, 26/5/95

To: Edlow International Company
1666 Connecticut Ave.,
N.W. Suite 500
Washington, D.C. 20009
U.S.A.

ar Jack,

Unfortunately I cannot attend the meeting of May 30th. I hope that Mr. ronopoulos will represent us like last time did.

We agree with your arguments stated on the "Statement" on the DOE's and the whole text is very solid and sound. 1134-1

Additionally we send you some comments on the draft EIS.

Finally we would like you to make clear the situation concerning the nsportation cask for our case. In the draft EIS, vol. 2, ap. B, page B36, it is ad that NAC-LWT cask is "NA for MTR", but in page B45 it is stated that the k "could be used with a proper basket design". Since we have signed a ntract to use NAC-LWT casks please explain if there is any problem. On the er hand Transnucleaire shows a strong interest to undertake the nsportation although we have repeatedly stated to them that we already e signed the above mentioned contract. 1134-2

I hope that the meeting will be quite successful and that the Public hearing turn to be very favourable for all of us.

Best regards,

RESPONSE TO COMMENT
COMMENTOR NO. 1134: NATIONAL CENTRE FOR SCIENTIFIC RESEARCH "DEMOKRITOS"

Response to Comment No. 1134-1

The commentor's support for the proposed action and the acknowledgment for the soundness of the analysis presented in the EIS is noted.

Response to Comment No. 1134-2

As indicated in Appendix B, NAC LWT cask could be used with a proper basket to ship foreign research reactor spent nuclear fuel. At the time of the draft EIS, NAC LWT did not have a certificate of compliance to be used for shipment of HEU spent nuclear fuel. Recently the cask manufacturer has received a certificate from the U.S. Department of Transportation. Appendix B of the EIS has been revised to accommodate the changes regarding the new certification.

COMMENTOR NO. 1134: NATIONAL CENTRE FOR SCIENTIFIC RESEARCH "DEMOKRITOS" (CONT'D.)

Comments on the draft EIS from GRR-1

1. ***Application of draft EIS***

The draft EIS gives a solution to the problem for GRR-1 for the future.
The situation now is quite critical.
The reactor is operating only two or three days per week (9 hours/day) due to high burn-up of HEU fuel in use. LEU fuel has already been delivered but the conversion procedure has stopped for the present, due to lack of availability of storage for spent fuel.

2. ***Programmatic and regulatory aspects***

GRR-1 is the sole nuclear research reactor operating in the country.
It is used for basic and applied research, as well as for radioisotope production and other applications in medicine, agriculture, industry e.t.c.

We consider the operation of our reactor quite valuable for the country.
The accumulation of big number of spent fuel assemblies produces not only operational problems for the reactor, but also troubles with the regulatory authorities.

In the past, the regulatory authorities were demanding us to ensure about the shipment of the spent fuel in order to issue the import licence for the LEU fuel which was about to be delivered.

1134-3

RESPONSE TO COMMENT
COMMENTOR NO. 1134: NATIONAL CENTRE FOR SCIENTIFIC RESEARCH "DEMOKRITOS" (CONT'D.)

Response to Comment No. 1134-3

The commentor's acknowledgment that the proposed action would resolve problems with the continued operation of the Greek research reactor GRR-1 is noted.

COMMENTOR NO. 1134: NATIONAL CENTRE FOR SCIENTIFIC RESEARCH "DEMOKRITOS" (CONT'D.)

3. Needs during 1996-1997

The Needs for shipment during the transition period 1996-97 depend on the court decision for "urgent relief". If the decision is favourable for "Edlow Group" and the shipment of 66 spent fuel assemblies from GRR-1 takes place in the near future (in 1996), then we can program shipment under EIS in 1997. In case the decision is not favourable, we must program a shipment of 60-70 assemblies in 1996 or a shipment of 30-35 assemblies in 1996 and one equal shipment in 1997. 1134-4

4. Reprocessing at Dounreay

The lack of a high radiation waste disposal site in Greece makes the Dounreay solution unapplicable for our case if we have to take back and store the highrad waste. 1134-5

For GRR-1,

C. Papastergiou

Reactor Manager

RESPONSE TO COMMENT
COMMENTOR NO. 1134: NATIONAL CENTRE FOR SCIENTIFIC RESEARCH "DEMOKRITOS" (CONT'D.)

Response to Comment No. 1134-4

The commentor's position that court decisions for urgent relief shipments could affect shipping schedules under this EIS is noted. If a policy to manage foreign research reactor spent nuclear fuel in the United States is adopted, the Record of Decision for this action would be scheduled for publication no sooner than 30 days after publication of this document.

Response to Comment No. 1134-5

DOE acknowledges the lack of high-level waste handling, storage, and disposal capabilities in Greece.

Response to Comment
Commentor No. 1218: Atomic Energy Bureau, Science and Technology Agency

Response to Comment No. 1218-1

218-1 The commentor's support for the restarting of acceptance of foreign research reactor spent nuclear fuel by DOE is noted.

Response to Comment No. 1218-2

218-2 The acceptance of foreign research reactor spent nuclear fuel types, as detailed in Section B.1.1.1 of Appendix B, include those types of fuel that were accepted under the Offsite Fuels Policy which was in effect until 1988. The HTR reactor spent nuclear fuels are of the UO2 rodded type that have never been accepted back under any previous policy of the United States, and there has never been an expectation that these fuels were going to be accepted into the United States under this proposed action.

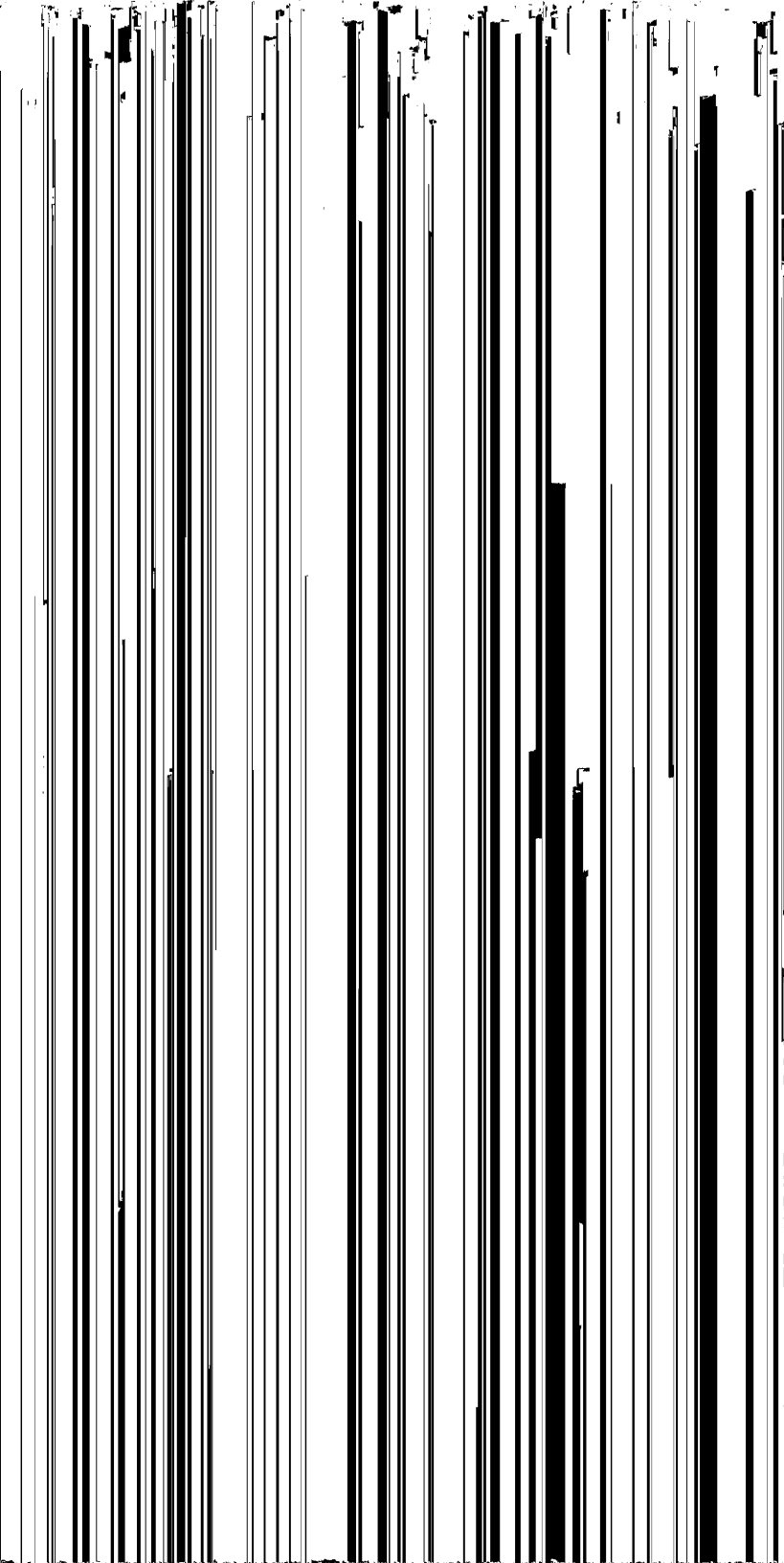
: Atomic Energy Bureau, ology Agency (Cont'd.)

科学技術庁
〒100 東京都千代田区霞が関２－２－１

this reactor, I will be pleased to provide

Sincerely yours,

Shinichiro Izumi
Director,
Nuclear Fuel Division,
Atomic Energy Bureau,
Science and Technology Agency



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Greenhead,
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1282-1

RESPONSE TO COMMENT
COMMENTOR NO. 1282: SHETLAND ISLANDS COUNCIL, ENVIRONMENTAL SERVICES DEPARTMENT

Response to Comment No. 1282-1

The commentor's opposition to foreign research reactor spent nuclear fuel being transported to, and reprocessed at, the Dounreay Site is noted. If any foreign research reactor spent nuclear fuel were to be sent to Dounreay for reprocessing as a result of decisions made after completion of this EIS, that action would be subject to regulation and oversight under the laws of the United Kingdom. The cleanup of the Dounreay Shaft mentioned by the commentor is being regulated by the United Kingdom authorities, but no waste from the reprocessing of foreign research reactor spent nuclear fuel would be placed down that shaft anyway.

The subjects of airborne and liquid releases from reprocessing operations in foreign countries are outside the scope of this EIS. See Section 4.4.2.1 of the EIS and the response to Comment 484-11.

No. 1282: Shetland Islands Council, ...ntal Services Department (Cont'd.)

...igh standard and reputation for clean environmental ...mination entering the North Sea has potential to be carried ... area with consequential detrimental impact to Shetland's

1282-2

...regulatory bodies are investigating the current discharges ...nd this Council believes it would be precipitous in the ... expanding the site capabilities prior to publication of the

1282-1 (Cont'd.)

...e account of these comments within your consultation ...uest a copy of the final EIS report.

...Services

...onment Department, 27 Perth Street, Edinburgh
...se of Commons, Westminster, London

Response to Comment Commentor No. 1282: Shetland Islands Council, Environmental Services Department (Cont'd.)

Response to Comment No. 1282-2

The commentor's concern with the potential environmental effects on the North Sea of reprocessing at the Dounreay Site is noted. Overseas reprocessing is Management Alternative 2, Subalternative 1b, which is discussed in Sections 2.3 and 4.4.2 of the EIS. The EIS includes analysis of impacts on the global commons in accordance with Executive Order 12114, but not analysis of impacts in foreign countries. The subject of environmental impacts in foreign countries is outside the scope of this EIS.

UMPING

Aldoxgate House
Fearn
Rossshire
V20 1RP

2 July 1995

Research Reactor

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1283-1

Response to Comment Commentor No. 1283: Scotland Against Nuclear Dumping

Response to Comment No. 1283-1

The MTR reprocessing plant has not been mothballed as suggested by the commentor. It is not currently operating, but would be capable of operating if necessary. Nevertheless, the text of the EIS (Section 2.3) has been revised to indicate that the facilities are currently capable of reprocessing foreign research reactor spent nuclear fuel. Also see the response to Comment 1137-10.

The age of the facilities at Dounreay does not necessarily imply unsafe operating conditions. All decisions on safety of the facilities would be made by the UKAEA and the regulatory authorities in the United Kingdom.

The text in the Summary has been revised to eliminate the reference to the Prototype Fast Reactor Reprocessing Plant. The decision of which Dounreay plant(s) to use would be up to the plant operators and the United Kingdom government regulators, not DOE or the Department of State.

With regard to the revision of discharge authorizations, UKAEA has submitted the required document to the Scottish Office. The document is titled, "Social and Economic Effects of Dounreay's Projected Programme of Work 1995-2005" and is dated 15 September 1995. The discharge authorizations and the public consultation process in the United Kingdom, however, are outside the scope of this EIS. The cleanup of old waste pits and the operation of new waste pits at Dounreay are also outside the scope of this EIS.

SE TO COMMENT
TOR NO. 1283:
NUCLEAR DUMPING (CONT'D.)

2

planning and legal issues is noted. These issues are
..5 of the EIS). It would be inappropriate for DOE
ues in Scotland.

COMMENTOR NO. 1283:
SCOTLAND AGAINST NUCLEAR DUMPING (CONT'D.)

There is likely to be considerable resistance to proposals for such large increases in discharges to the environment. The issue of justification will also be a rather fraught one and it is difficult to see how it is possible to formulate reasonable social and economic justifications for such large increases in discharges. There will be particular concern that the last time discharges were a high as this, they were followed by a ten-fold increase in the incidence of childhood leukaemia within 12.5 kilometres of Dounreay.

Dounreay has already started discharging the increased levels in advance of receiving the appropriate consents. It argues that it can do this under current consents as the permitted limits currently stand at about thirty times the highest level of actual historical usage. When revised limits are finally agreed, however, Dounreay may require to reduce substantially its level of reprocessing activity in order to keep within the new regime. This would, effectively, rule out the reprocessing of foreign research reactor fuel.

Waste Pits

In 1993 Dounreay submitted a planning application to Highland Regional Council for the construction of a new low-level-waste pit at the Dounreay site.

It is important to note that the UK's classification of wastes depend solely on concentration rather than on half-life or type of disintegration (alpha, beta, etc). We do not have the restrictions which apply in the States which require the separate classification of transuranic wastes. Therefore, extraordinary as it may seem, Dounreay is allowed to dispose of materials that are contaminated with plutonium directly into low level waste pits and also to discharge plutonium into the sea and air. A recent accident involving the release of 20 million becquerels of plutonium into the atmosphere did not contravene the site's discharge limits!

Highland Regional Council has refused planning permission for the waste pit, following an unexpected site visit where the council saw for the first time the way waste is kept at Dounreay. In the open trenches, they saw rusting drums and barrels of waste. Some had holes in the side you could put your fist through. In others the lids had fallen off. The drums were scattered in a haphazard way in the pit. The pit was open to the air and chicken wire had recently been stretched across the top in an attempt to stop the wind, birds and vermin picking up the waste and distributing it around the countryside. Stacks of rusting drums were also sitting at the side of the pits. These stacks were about 4- 5 metres high and were badly corroded having stood in the sea air close to the pits (which are right on the shore) for about seven years. Several hundred drums were stacked in this way. In another pit, the council saw an example of "tumble tipping". Dounreay had simply been driving a tipper truck loaded with loose items of radioactive waste to the pit and tipping them in. It was hardly surprising that, in the light of all this, they refused planning permission for another pit.

Dounreay has now dealt with some of the stacks of waste and has made cosmetic improvements to the pits; basically covering them with ground and planting grass seed on the top so that you can't actually see what sort of condition they are in underneath. Having invited councillors to have a look around their nice neat site, they will shortly submit a fresh planning application for the new pit.

Again, it is by no means certain that councillors will be taken in by the cosmetic improvements there have been and it is far from certain that the new application will fare any better than the old one. If planning permission is, again, refused then the issue will revert to the Secretary of State and to a Public Inquiry, as outlined in the section on Legal Action (above).

Competence

1283-1 (Cont'd.)

RESPONSE TO COMMENT
COMMENTOR NO. 1283:
SCOTLAND AGAINST NUCLEAR DUMPING (CONT'D.)

MMENTOR NO. 1283:
NST NUCLEAR DUMPING (CONT'D.)

ious doubts as to the competence of the staff and
have been brought into sharp focus recently by the
amination both on and off site.

en found off site. The most serious contamination
ich range from 10^6 to 10^7 becquerels each. The
ment Advisory Committee has estimated that there is
the top of a disused waste shaft and that the number
ed the number which have already been found. The
sult of an explosion in the waste shaft. While most of
foreshore at Dounreay which, while a public area, is
und on a local public beach. Particles continue to be
onth.

dical Aspects of Radiation in the Environment has
ing the leukaemia excess around Dounreay they were
Total figures which they were given by Dounreay
than the levels of radioactivity in a single particle.
thought to have originated in the MTR reprocessing
ds to use for the reprocessing of foreign spent research

und Dounreay Castle, a historic building near the
cliff top area east of the Dounreay site and in a "non-
. These have varying levels of contamination, though
ore problem.

found on the foreshore - have been found in various
beside the site roads. These were discovered when

icised by the regulatory bodies for the inadequacy of
the foreshore particles, and Dounreay's current
eport of the shaft accident to the public.

to be found in buildings on the site. Yesterday (12th
worker's chair in the administration building, a non-
mination was low but as the contamination has been
s no saying the sort of damage cleaners or office staff
on to be learned from this contamination is that the
t off alarms as soon as any radioactivity is transported
. The other conclusion of both this incident and the
ges is that Dounreay's current monitoring regime is
monitoring work in buildings is on-going but it is
nd, and an announcement is due next week.

ecently in the PFR reprocessing plant including two
ich workers were exposed to plutonium dust. In the
onium dust were released up the Dounreay chimney
he contamination was contained within the building.

consideration when you produce your final EIS.

1283-1
(Cont'd.)

RESPONSE TO COMMENT
COMMENTOR NO. 1283:
SCOTLAND AGAINST NUCLEAR DUMPING (CONT'D.)

COMMENTOR NO. 1283:
SCOTLAND AGAINST NUCLEAR DUMPING (CONT'D.)

I further request that:-

1) as the effects of the proposals in the EIS have such fundamental importance for Scotland, the Draft EIS should be consulted upon in Scotland as well as in the US. Copies of the Draft EIS should be sent to all parties with a locus in the matter and placed in public libraries. In addition, responses should be requested from the planning authority and from the public via newspaper advertisements.

2) work should be commissioned to assess the environmental impact in Scotland of reprocessing foreign research reactor fuel at Dounreay;

3) the deadline for the consultation should be extended as required to allow points 1 and 2 to be implemented.

1283-3

Yours sincerely,

Lorraine Mann
Scotland Against Nuclear Dumping

RESPONSE TO COMMENT
COMMENTOR NO. 1283:
SCOTLAND AGAINST NUCLEAR DUMPING (CONT'D.)

Response to Comment No. 1283-3

It would not be feasible, nor does U.S. environmental law require, that hearings be conducted in foreign nations which might be affected by this action. All nations who elect to participate in the proposed action would do so voluntarily. It is the responsibility of each participant to comply with their own laws and regulations. Copies of the draft and final EIS were mailed to all potentially affected foreign nations. An evaluation of potential environmental benefits and burdens which could affect Scotland are the responsibility of the appropriate authorities in Scotland. DOE and the Department of State would cooperate with the Government of Scotland should Scottish authorities conduct an environmental evaluation in this matter. No plans currently exist to extend the period for public comment beyond the ninety days ending on July 20, 1995.