COMMENT
RA COSTA COUNTY (CONT'D.)

hipments are subject to the same types of
ing nonradiological hazardous materials.

OE provides funding to States and Tribes
nent and the Office of Civilian Radioactive
ion related issues. This funding has been
s emergency management and response
E's assistance is provided in the form of
cost. Assistance may be provided through
under the National Contingency Plan, as
ngs, informal discussions, and informational

rovisions for emergency preparedness and
ortation of foreign research reactor spent
ons include an interface between DOE and
the implementation of the policy, for the
anagement and security issues specific to
e issues include capabilities and training of
ial needs, if necessary, would be addressed

mercial and military ports along the eastern
lexico. The selection process is described
significant health, safety, or environmental
late commercial or military ports selected
nt a cumulative impact analysis in the EIS
r fuel on existing commercial and military
e Concord NWS. Spent nuclear fuel from
rd containers, and does not require special
EIS). The security provided for the spent
ceed all the applicable security requirements
art 73). If any port did not already provide
nts, it would be the responsibility of the
urity.

of analyses on the impacts of port activities
are presented in text and in table form for
all of the candidate ports.

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RTOFOAK, Oakland

517-1

Response to Comment
Commentor No. 517: Port of Oakland

Response to Comment No. 517-1

The commentor's opposition to bringing foreign research reactor spent nuclear fuel through the Port of Oakland is noted. As described in Appendix D of the EIS, the Port of Oakland did not meet all of the screening criteria for identification of candidate ports of entry. Thus, it is not considered a candidate port of entry for receipt of foreign research reactor spent nuclear fuel.

COMMENTOR NO. 517: PORT OF OAKLAND (CONT'D.)

throughput services from the harbor to the adjacent transportation network, via truck or rail.

In Resolution No. 29577, 6/3/86, the Board of Port Commissioners declared that spent fuel rods be banned from moving by ocean going vessel to the Port of Oakland and overland through the City of Oakland by motor carrier. Pursuant to that resolution, the ban was incorporated into the Port of Oakland Tariff No 2-A.

By Motion of the Port of Oakland also acted To Appear As Amicus Curiae in U.S. District Court and the June 12, 1986 Affidavit of Robert W. Crandall In Support Of Motion of Port of Oakland To Appear As Amicus Curiae in a suit brought by the Northwest Inland Waters Coalition against the U.S. Department of Energy in 1986.

The Port of Oakland requests that DOE put our organization on the mailing list for notice of any public hearings and for transmittal of SNF and INEL EIS documents on the Spent Nuclear Fuel Management program. We also request to be placed on the mailing list for notification of the Foreign Research Reactor SNF EIS which will evaluate ocean going shipments and port activities.

I may be reached at 510-272-1175.

Sincerely,

James McGrath
Manager, Environmental Department

RESPONSE TO COMMENT
COMMENTOR NO. 517: PORT OF OAKLAND (CONT'D.)

Commentor No. 518: Eureka County, Yucca Mountain Information Office

Eureka County
Yucca Mountain Information Office
P.O. Box 714
Eureka, Nevada 89316
Phone (702) 237-5407 FAX (702) 237-5189

June 19, 1995

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

Dear Mr. Head,

RE: Draft EIS On Proposed Nuclear Weapons Non-proliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel.

The purpose of this letter is to provide the Department of Energy (DOE) with the comments of Eureka County, Nevada regarding the above referenced Draft Environmental Impact Statement (DEIS).

Eureka County is an "affected unit of local government" under Section 116 of the Nuclear Waste Policy Act as amended. We are concerned about the DOE's Yucca Mountain project. Our role is to provide oversight of the DOE project in order to protect the health and safety of residents of our county.

For the record, we are aware that the Programmatic Spent Nuclear Fuel and INEL EIS (Programmatic SNF and INEL EIS) Record of Decision (ROD) has determined that the Nevada Test Site will not be a site for storage of interim spent fuel. Therefore, it is our understanding that the Nevada Test Site will not be used for storage of the Foreign RRF, despite its discussion in the DEIS.

We have prepared comments on the foreign RRF DEIS because, despite the DEIS ROD, the least costly option would be Phase I storage at the Idaho National Engineering Laboratory (INEL) and Phase II storage at the Nevada Test Site.

The DEIS also makes clear that the ultimate disposition of this waste, under the NWPA of 1982 as amended, is geologic disposal in a repository.

Response to Comment Commentor No. 518: Eureka County, Yucca Mountain Information Office

Response to Comment Commentor No. 518: Eureka County, ucca Mountain Information Office (Cont'd.)

se to Comment No. 518-1

as, like urban ones, maintain the basic components of emergency management , i.e. emergency management, fire, law enforcement, and emergency medical personnel. It is recognized that rural areas depend more heavily on volunteer s than urban areas and, while this creates an availability issue during normal hours (i.e. Monday-Friday, 8:00am-5:00pm), rural jurisdictions generally would meet their responsibilities for public safety involving the wide range of hazardous shipments that traverse their jurisdictions daily.

180(c) of the Nuclear Waste Policy Act pertains to shipments of commercial pent nuclear fuel and is not directly applicable to this EIS. However, DOE has ncerned with, and involved in, the public safety and emergency response issues pments raise. To this end, under Section 180(c) of the Nuclear Waste Policy Act r initiatives, DOE in concert with many other Federal agencies, is researching ing requirements and identifying a training program to address the incremental at DOE shipments would place on a jurisdiction above those for which they are required to prepare.

se to Comment No. 518-2

gical and nonradiological health effects of the proposed action were evaluated nd to pose no significant risks to the populations surrounding candidate ports, ansportation routes, and surrounding management sites (Sections 4.2.2, 4.2.3, 4 of the EIS). Conclusions given in the EIS are based upon analyses described in ices A through F and Section 4.2 of the EIS. Risks to the general population, g minority and low-income members of the population, were found to be very ardless of previous exposures (See Appendix A).

Response to Comment Commentor No. 518: Eureka County, Yucca Mountain Information Office (Cont'd.)

518-2 (Cont'd.)

518-3

518-4

Response to Comment No. 518-3

The drivers would work for a trucking company under contract to DOE or the foreign research reactor operators. It is realistic for the contract with the trucking company to assign some control over choosing and screening drivers. How the driver screening would be included in the contract is an implementation detail that is outside the scope of this EIS.

No. Each driver's radiation dose is limited to 100 mrem per year without consideration of previous years' radiation doses.

DOE considers that a Transportation Plan would be the basis for identification of required personnel and equipment, as well as determining whether training is required. Proper preparation under the plan would help the responders arrive on the scene faster, thus increasing their effectiveness. The subject of emergency management and response is discussed in more detail in Section 2.7 of the EIS.

Response to Comment No. 518-4

Yes. Annual limits are the only limits on worker exposures. The regulatory limit for onsite radiation workers is 5,000 mrem per year, but DOE would use administrative controls to keep each individual's dose much lower each year.

o Comment
8: Eureka County,
mation Office (Cont'd.)

e selection of the site or sites at which the
would be managed is based on the analysis in
Spent Nuclear Fuel Management and Idaho
nental Restoration and Waste Management
t. The Record of Decision for this EIS was
n this Record of Decision, all of the aluminum-
r fuel managed by DOE will be managed at
i. Any other foreign research reactor spent
managed at the Idaho National Engineering
h reactor spent nuclear fuel would be shipped

oreign research reactor spent nuclear fuel are
ne EIS. A detailed, quantitative discussion of
of future NEPA documentation.

COMMENTOR NO. 518: EUREKA COUNTY, YUCCA MOUNTAIN INFORMATION OFFICE (CONT'D.)

The final paragraph of this section states, "After emplacement in a geologic repository, however, DOE expects there would be no more impacts to workers, the public, or the environment because the radioactive material would be effectively isolated." DOE's current thinking is that the repository would remain open for 100 years for monitoring before final closure. Thus there would be a very long period after emplacement and before closure when there could be impacts. Everyone expects there will be impacts to the public and the environment after emplacement, it is just a question of when and how severe.

518-7 (Cont'd.)

To conclude, the DEIS does not adequately address emergency management and response. The activity proposed in this DEIS must be looked at in the context of the DOE Waste Management System, and there should be a thorough cumulative impact analysis for each site.

The transportation analysis is inadequate and it too should take into account the cumulative impacts of Yucca Mountain transportation, DOE complex transportation, Navy Spent Fuel transportation and WIPP shipments among others.

We appreciate the opportunity to comment on the Draft EIS. Please keep us informed of the decisions surrounding these topics.

Sincerely,

Sandra L. Green

Sandra L. Green
Project Coordinator

ACJ/eds
cc: Leonard Fiorenzi
Abigail Johnson
Steve Campbell, PIC
Representatives of AULGs
State of Nevada, Joe Strolin, John Walker

RESPONSE TO COMMENT
COMMENTOR NO. 518: EUREKA COUNTY, YUCCA MOUNTAIN INFORMATION OFFICE (CONT'D.)

Response to Comment
Commentor No. 530:
W. Carl Stegman, Mayor, City of Fife

nse to Comment No. 530-1

nmentor's opposition to Management Alternative 1 and support for Management tive 2 are noted. These are discussed in Sections 2.2, 2.3, 4.2, and 4.4 of the EIS.

COMMENTOR NO. 530: W. CARL STEGMAN, MAYOR, CITY OF FIFE (CONT'D.)

ORIGINAL

RESOLUTION NO. 518

CITY OF FIFE, WASHINGTON

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF FIFE, PIERCE COUNTY, WASHINGTON OBJECTING TO THE JOINT POLICY OF THE UNITED STATES DEPARTMENT OF ENERGY AND UNITED STATES DEPARTMENT OF STATE TO TRANSPORT SPENT NUCLEAR FUEL FROM FOREIGN RESEARCH REACTORS BY SHIPMENT THROUGH THE CITY OF FIFE, WASHINGTON

WHEREAS, the United States Department of Energy and the United Department of State are jointly proposing to adopt a policy to manage spent nuclear fuel from foreign research reactors; and

WHEREAS, nuclear fuel containing uranium enriched in the United States of America would be covered by this policy; and

WHEREAS, the purpose of this policy is to promote US nuclear weapons nonproliferation policy objectives, specifically seeking to reduce highly enriched uranium from civilian commerce; and

WHEREAS, the number one alternative of the study that assessed the environmental effects and policy considerations of three management alternative approaches for implementation of the proposed policy involves spent nuclear fuel being shipped by ocean going vessels from foreign countries to the United States of America; and

WHEREAS, the Port of Tacoma is considered one of ten ports through which the shipment of spent nuclear fuels would occur; and

WHEREAS, the shipment of the spent nuclear fuels through the Port of Tacoma to other locations within the United States will result in shipping the fuels through the City of Fife; and

530-2

WHEREAS, the US House Budget Resolution eliminates the US Department of Energy thereby creating funding uncertainties; and

530-3

WHEREAS, the US Department of Energy is failing to provide adequate procedural due process in that it is not making a record of its hearings thereby foreclosing individuals abilities to challenge the adequacy of the EIS; and

530-4

WHEREAS, the US Department of Energy has not answered properly the question of what effect the radiation would have on the environment should a shipping cask be damaged during the handling process in the Port of Tacoma or City of Fife; now therefore

530-1 (Cont'd)

BE IT RESOLVED THAT the City Council of the City of Fife

RESPONSE TO COMMENT COMMENTOR NO. 530: W. CARL STEGMAN, MAYOR, CITY OF FIFE (CONT'D.)

Response to Comment No. 530-2

If DOE were abolished in response to action by Congress, the current DOE programs for management of spent nuclear fuel would have to be transferred to some other Federal government agency to protect the health and safety of the public. Since the spent nuclear fuel will not simply go away, these programs cannot simply be abolished.

Response to Comment No. 530-3

DOE did request that comments be submitted in writing, however, all oral comments presented at each hearing were summarized and have been addressed along with the written comments in Volume 3 of the EIS. All comments, written and oral, are part of the public record.

Response to Comment No. 530-4

Spent nuclear fuel transportation casks are designed and built to preclude release of radioactive material. To date, after more than 40 years of spent nuclear fuel ground transport in the United States, no radioactive contents have ever been released from a transportation cask, nor has a spent nuclear fuel transportation cask ever been punctured, even as the result of an accident.

The tests performed to receive Nuclear Regulatory Commission certification of transportation casks are more severe than any accidents envisioned on the dockside. Although the NRC drop test is only from 30 feet and dockside heights can easily exceed this amount, the NRC test is still considered more severe because the cask is dropped upon an unyielding surface. The unyielding surface used in NRC tests is a monolithic reinforced concrete base covered with battleship armor. Docks are not of such construction. Likewise the puncture test is demanding, consisting of a one meter (39.4 in) cask drop onto a 15 cm (6 in) solid steel bar mounted on an unyielding surface. Section 5.4.1 of the EIS presents details of the certification.

COMMENTOR NO. 530:
W. CARL STEGMAN, MAYOR, CITY OF FIFE (CONT'D.)

strongly opposes the shipment of spent nuclear materials from foreign research reactors through the Port of Tacoma and the City of Fife.

530-1 (Cont'd)

Passed by the City Council on the 13th day of June, 1995 and approved by the Mayor on the 13th day of June, 1995 at a regularly scheduled meeting of the City Council of the City of Fife.

W. Carl Stegman, Mayor

Attest:

Shirlee Mott
City Clerk

RESPONSE TO COMMENT
COMMENTOR NO. 530:
W. CARL STEGMAN, MAYOR, CITY OF FIFE (CONT'D.)

COMMENTOR NO. 556:
ERNEST F. CIARROCCHI, MAYOR, CITY OF BENICIA

THE CITY OF BENICIA CALIFORNIA

CITY HALL • 250 EAST L STREET • BENICIA, CA 94510 • (707)746-4212 • FAX (707) 747-8120

Office of the Mayor
ERNEST F. CIARROCCHI

June 14, 1995

Charles Head, Program Manager
Office of Spent Nuclear Fuel Management (EM-37)
U.S. Department of Energy
1000 Independence Avenue
Washington, D.C. 20585-0001

RE: DRAFT ENVIRONMENTAL IMPACT STATEMENT ON A PROPOSED NUCLEAR WEAPONS NONPROLIFERATIONS POLICY CONCERNING FOREIGN RESEARCH REACTOR SPENT NUCLEAR FUEL

Dear Mr. Head:

The City Council of Martinez, California contacted the City of Benicia about the proposal of the Department of Energy to ship nuclear wastes to the Concord Naval Weapons Station for storage. The City of Martinez requested our support in extending the public notice and comment period for not less than ninety (90) additional days to September 20, 1995. This extension would allow the Martinez Planning Department staff and council a full opportunity to evaluate the impacts associated with DOE's proposal to ship spent nuclear fuel from foreign reactors through the Concord Naval Weapons Station and along California highways and rails to various sites across the United States. 556-1

Ordinarily, actions of this magnitude require months of planning study before any local agency or government is prepared to make a decision to approve or disapprove such a project. I believe the following points illustrate areas of particular importance to all cities in the area:

- The area is densely populated and while the risk of widespread contamination due to accidental release may be low, the potential impact effect of such an accident on thousands of residents, not to mention the long term impacts on people, major waterways and downwind agricultural could be enormous. 556-2
- The transportation of this material, as presently proposed, would bring tons of this material through surrounding cities by rail and truck. 556-3

ERNEST F. CIARROCCHI, *Mayor*
Members of the City Council
CARRY CORBALEY *Vice Mayor* • JOHN SILVA • JERRY HAYES • PEPE ARTIAGA

OTTO WM. GIULIANI, *City Manager*
VIRGINIA SOUZA, *City Treasurer*
FRANCES ORICO, *City Clerk*

Recycled Paper

RESPONSE TO COMMENT
COMMENTOR NO. 556:
ERNEST F. CIARROCCHI, MAYOR, CITY OF BENICIA

Response to Comment No. 556-1

The deadline for submission of comments in response to the draft EIS was extended from June 20 to July 20, 1995. DOE considers the comment period (90 days total) to be sufficient for public comment.

Response to Comment No. 556-2

Sections 4.2.1 and 4.2.2 of the EIS provide an evaluation of consequences and risks of on-board ship fires. Supporting details are given in Appendix D of the EIS. If a policy to accept foreign research reactor spent nuclear fuel is adopted, spent nuclear fuel elements would be shipped in transportation casks which are resistant to destruction by collision and fire (Section 2.6.2 of the EIS). In the unlikely event that a cask is breached by collision and/or fire, the radiological consequences would be low and the associated risks would be low (Section 4 of the EIS).

Response to Comment No. 556-3

If one port were to receive all 721 casks over the proposed 13-year receipt period, this would result in about one additional truck or rail car per week on average. This amount of increased traffic is unlikely to have any effect.

DOE has not yet selected ports, routes, or transport modes for the foreign research reactor spent nuclear fuel. If the Concord NWS is selected, then DOE would choose the best route to I-680 in accordance with Department of Transportation regulations (49 CFR 397.101 (a)(2)). That route could use Route 4, Route 24, and/or Waterfront Road. The State of California routing agency can designate a preferred route, which the shipments would be required to follow, in accordance with 49 CFR Part 397.103.

Commentor No. 556: Ernest F. Ciarrocchi, Mayor, City of Benicia (Cont'd.)

- Since this proposal also includes the use of shipping channels for transport, we are concerned about the potential for widespread contamination in the event of a ship fire or other unforeseen occurrence. 556-4

The City of Benicia, therefore, urges you to take a careful look at this proposal and honor the request of the City of Martinez by extending the period for public notice and comment.

Thank you for your time and attention to this important issue.

Sincerely,

Ernest F. Ciarrocchi
Mayor

EFC:th
/6895

cc: George Miller
Congressman

Bill Baker
Congressman

Response to Comment Commentor No. 556: Ernest F. Ciarrocchi, Mayor, City of Benicia (Cont'd.)

Response to Comment No. 556-4

See response to comment 556-2, above.

COMMENTOR NO. 557: BOB JACOBS, MAYOR, CITY OF OLYMPIA

City of
OLYMPIA

900 Plum Street, P.O. Box 1967, Olympia, WA 98507-1967

June 23, 1995

COUNCIL
Bob Jacobs, Mayor
Mark Foutch Mayor Pro Tem
Pat Cole
Holly Gadbaw
Jeanette Hawkins
Mary Lux
Margaret McPhee

CITY MANAGER
Richard C. Cushing

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

Dear Mr. Head:

I am writing on behalf of the Olympia City Council regarding a U.S. Department of Energy proposal to ship spent nuclear fuel from foreign research reactors through the Port of Tacoma in the Puget Sound.

The City of Olympia is strongly opposed to this action. We believe this action could produce a devastating and disproportionate impact on the residents of the Puget Sound area including Olympia. 557-1

Instead, we support the alternative developed by the Port of Tacoma which prefers that the United States work collaboratively with foreign sources of nuclear fuel for permanent and appropriate geological disposal in those respective countries. We believe both long term and short term storage can be accommodated for these foreign sources of nuclear waste. We strongly urge you to consider the Port of Tacoma's alternative and to cease any plans to ship those fuels through the environmentally sensitive Puget Sound area. 557-2

Sincerely,

Bob Jacobs
Mayor of Olympia

cc: Olympia City Council

6D475

City Council	753-8[illegible]	Community Planning & Development	753-8[illegible]	Personnel	753-8[illegible]
City Manager	753-8[illegible]	Fire	753-8[illegible]	Police	753-8[illegible]
City Attorney	753-[illegible]	Parks/Recreation/Cultural Services	753-8[illegible]	Public Works	753-8[illegible]
Administrative Services	753-8[illegible]				

RESPONSE TO COMMENT
COMMENTOR NO. 557:
BOB JACOBS, MAYOR, CITY OF OLYMPIA

Response to Comment No. 557-1

The commentor's opposition to bringing foreign research reactor spent nuclear fuel through the Port of Tacoma is noted. However, analysis in Sections 4.2.2 and 4.5 indicates that the risk associated with bringing spent nuclear fuel to the Port of Tacoma, or to any of the ports analyzed in the EIS, is low.

Response to Comment No. 557-2

The commentor's preference for overseas storage and disposal is noted. This is Management Alternative 2, which is discussed in Sections 2.3 and 4.4 of the EIS.

SE TO COMMENT
NTOR No. 569:
MAYOR, CITY OF LAFAYETTE

1

ed alternative. However, the final EIS does present
and 4.7. The deadline for submission of comments
ded from June 20 to July 20, 1995. DOE considers
to be sufficient for public comment. As to the
was not provided, DOE acted in full compliance
ederal Register an Advance Notice of Proposed
ced DOE's intention to conduct scoping meetings
naging foreign research reactor spent nuclear fuel.
under NEPA, that a major federal action is being
sed policy came with the publication in the Federal
995) of the availability of the draft EIS and the
the draft EIS.

2

ar fuel shipments are subject to the same types of
ips carrying nonradiological hazardous materials.

egulatory and emergency preparedness infrastructure
nsport to designated management sites if the foreign
managed in the United States. Federal funding to
for maintaining emergency response programs is
re three national emergency response plans under
onitoring and assessment assistance. Under these
and assistance to the State, Tribal and local agencies
Emergency preparedness, security, and coordination
se authorities, and security are discussed in general
tails would be contained in the Transportation Plan,
dividual spent nuclear fuel shipment and coordinated
general provisions of the Transportation Plan are
dded to the final EIS in response to public comments.

SPONSE TO COMMENT No. 569: GAYLE B. UILKEMA, TY OF LAFAYETTE (CONT'D.)

569-3

Concord, see the response to Comment 22-11. DOE has eys or formulated any contingencies for an accident that tation arterial. The addition of up to 186 truck shipments period of 13 years would have a low impact on the traffic nt rate because tens of thousands of truck shipments will ose 13 years. As discussed in Appendix E and Section for traffic accidents would be low.

dents is included in the ground transport risk calculations the EIS.

569-4

on casks are designed and built to preclude release of er more than 40 years of spent nuclear fuel grand transport ive contents have ever been released from a spent nuclear as a spent nuclear fuel transportation cask ever been an accident. Based on this experience, DOE does not s passing through the Concord NWS would release it f the water supply for Contra Costa Water District via ath.

the foreign research reactor spent nuclear fuel is neither nuclear fuel that the proposed policy deals with is a solid uranium matrixed in, all clad with either aluminum or is very stable. Section 2.6.1 of the EIS presents a detailed ch reactor spent nuclear fuel.

volving a ship at Concord NWS (Section 4.2.2.3 of the contamination would be so small that no cleanup would in the immediate vicinity of the accident. To insure this ident were to occur, all water supplies in the area, as well for contamination.

69-5

cident involving foreign research reactor spent nuclear be low in almost every instance. As discussed in Section nsibility for emergency response to an incident would cal authorities. DOE would provide coordination and g to the State, Tribal, and local emergency response

COMMENTOR NO. 569: GAYLE B. UILKEMA, MAYOR, CITY OF LAFAYETTE (CONT'D.)

RESPONSE TO COMMENT COMMENTOR NO. 569: GAYLE B. UILKEMA, MAYOR, CITY OF LAFAYETTE (CONT'D.)

personnel. In addition, DOE has Radiological Assistance Program teams that operate from eight strategically located DOE offices around the country. Upon State, Tribal, or local request, these teams can provide technical expertise and assistance to monitor and assess radiological hazards. The teams are activated on an as-needed basis and generally can be ready to deploy from their home station within four hours of notification.

Other potential local expenses that a local jurisdiction might incur would be associated with follow-up activities after an accident. However, spent nuclear fuel transportation casks are designed and built to preclude release of radioactive material. To date, no radioactive material has ever been released from a spent nuclear fuel transportation cask as a result of an accident. In the unlikely event of a severe accident, some radioactive material could be released from the cask and distributed into the environment. However, the analyses in Section 4.2.2.3 and Appendix D, Section D.5 of the EIS determined that no decontamination, interaction, or condemnation of property would result from the worst plausible accident. Close in to the accident, near the cask would likely require some cleanup, but the overall impact on the air and water quality in the port would be small. Therefore, even an accident should not economically impact local jurisdictions.

On the issue of environmental impacts, no negative impacts would result from the receipt, handling, and transportation of foreign research reactor spent nuclear fuel. As stated above, spent nuclear fuel transportation casks are designed and built to preclude release of radioactive material. A paragraph has been added to Section 4.2.2.2 of the EIS to make this point and to emphasize the no-impact nature of these shipments on air and water quality.

E TO COMMENT
TOR No. 592:
YOR, TOWN OF STEILACOOM

foreign research reactor spent nuclear fuel through
, analysis in Sections 4.2.2 and 4.5 of the EIS
inging spent nuclear fuel to the Port of Tacoma,
S, is low.

as storage, reprocessing, and disposal is noted.
h is discussed in Sections 2.3 and 4.4 of the EIS.

it pertains to the proposed policy of managing
fuel, DOE considers that there would be no
ports that might be used to accept the material
the ships pass. Spent nuclear fuel transportation
e release of radioactive material. To date, no
ed from a spent nuclear fuel transportation cask
has been added to Section 4.2.2.2 of the EIS to
o-impact nature of these shipments on air and

and 4.5 of the EIS demonstrate that the risks to
ng the Town of Steilacoom, are low.

COMMENTOR NO. 646: PORT OF GALVESTON

PORT of GALVESTON

123 Rosenberg
P.O. Box 328
Galveston, Texas 77553

Galveston (409) 766-6103
Houston (713) 280-2494
Fax (409) 766-6171

NOTICE OF MEETING

Ernest Conner
General Manager

THE GALVESTON WHARVES WILL HOLD A PUBLIC MEETING ON THE SUBJECT OF SPENT NUCLEAR FUEL MANAGEMENT ON THURSDAY, JUNE 29, 1995, AT 5:30 P.M. THE PUBLIC IS INVITED TO ATTEND AND TAKE PART IN THESE DISCUSSIONS. THERE WILL ALSO BE A VIDEO ON THIS SUBJECT MATTER SHOWN DURING THE MEETING.

646-1

IF YOU HAVE ANY QUESTIONS, PLEASE CALL (409) 766-6105.

PUBLIC MEETING

PORT OF GALVESTON
8TH FLOOR, SHEARN MOODY PLAZA
123 ROSENBERG, GALVESTON, TEXAS
THURSDAY, JUNE 29, 1995, 5:30 P.M.

RESPONSE TO COMMENT
COMMENTOR NO. 646: PORT OF GALVESTON

Response to Comment No. 646-1

The notice of a public meeting held by Galveston Wharves on June 29, 1995 is noted. A public meeting on the draft EIS sponsored by DOE was held in Galveston on May 17, 1995. Responses to comments given at that meeting are provided in this document.

COMMENTOR NO. 678:
CLYDE CIVIC IMPROVEMENT ASSOCIATION, INC.

Written Comments on the Draft Environmental Impact Statement
on a Proposed Nuclear Weapons Nonproliferation Policy
Concerning Foreign Research Reactor Spent Nuclear Fuel

ld like to give us written comments, please feel free to use this page and drop it registration table when you leave. Alternatively, you may mail your comments to tment of Energy at the address listed below. Also, please provide us with your lress, and telephone number for any follow-up information or any questions y the intent of your comments. This will also allow us to properly indicate the the comments in the comment response document. Thank you.

Juanita J. Price **Phone:** (510) 687-4440

Organization: Clyde Civic Improvement Assn., Inc. & Private Citizen

146 Park Street

Clyde, Concord, **State** CA. **Zip** 94520

*** *COMMENTS* ***

ded your meeting in Concord and was amazed how unprepared you were in
ing to the complaints of those present. We as taxpayers have a right
ice in matters of this extreme importance since we live right in the
of the Naval Weapons Station. We are like an island in the midst of
e. How dare you try to thrust something like this down our throats!
you to hear our voices LOUD & CLEAR that we will not allow this to
Our community has filed many lawsuits over the years and have to lose
. Our lives are at stake here and you people could care less. Take the
move and take contaminated nuclear waste out of our country and leave
the countries who are using it. If it must come into this country,
nd it up to Washington so it will have a short way to travel to the
l site. Coming up the river and under the Bay Bridge and the Golden Gate
Comments, Address Correspondence to: Bridge will not be allowed by us!

678-1

678-2

Charles R. Head
ice of Spent Fuel Management, EM-37
. Department of Energy
) Independence Avenue, SW
shington, DC 20585-0001

RESPONSE TO COMMENT
COMMENTOR NO. 678:
CLYDE CIVIC IMPROVEMENT ASSOCIATION, INC.

Response to Comment No. 678-1

The commentor's preference for keeping the foreign research reactor spent nuclear fuel, covered under this proposed action, overseas is noted. However, this alternative, evaluated as Management Alternative 2a (Section 2.3 of the EIS), would not fully support the U.S. nuclear weapons nonproliferation policy.

Storage in the countries of origin would also cost more than storage in the United States (and cost U.S. taxpayers more), would be technically difficult, if not impossible, in many countries, and would violate the laws of several of the countries. Finally, many countries participated in the U.S.-led research reactor programs on the belief that the United States would eventually accept the spent nuclear fuel.

Response to Comment No. 678-2

The commentor's opposition to bringing foreign research reactor spent nuclear fuel through the Concord NWS is noted. However, analysis in Sections 4.2.2 and 4.5 of the EIS indicates that the risk associated with bringing spent nuclear fuel to the Concord NWS, or to any of the ports analyzed in the EIS, is low.

Response to Comment
Commentor No. 684:
an, City Manager, City of Oakland

No. 684-1

n and that of the Oakland City Council to bringing foreign ar fuel through the Concord NWS is noted. However, analysis the EIS indicates that the risk associated with bringing spent NWS, or to any of the ports analyzed in the EIS, is low.

No. 684-2

position of the foreign research reactor spent nuclear fuel are Section 4.2.7 of the EIS. DOE is currently evaluating the of a disposal site at Yucca Mountain, NV. In the meantime, pons nonproliferation policy requires DOE and the Department ans of dealing with the foreign research reactor spent nuclear).

No. 684-3

r spent nuclear fuel is not pyrophoric and will neither ignite n contact with air or chemicals. In fact, the spent nuclear fuel ortation cask with air as a cooling medium. The radioactive l is contained within the fuel hybrid (aluminum or zirconium) of solid aluminum, stainless steel or incoloy, (Appendix B ated accident scenarios involving fire that results in loss of of the analyses in Section 4.2.2.3 and Appendix D, Section that no decontamination, interdiction, or condemnation of n the worst plausible accident. The EIS evaluated the t involving a prolonged high intensity fire in response to , as shown in Appendix D, indicate a contamination distance probability of occurrence of one in ten billion (Appendix D

No. 684-4

s that a port must have to safely handle foreign research e discussed in Appendix D, Sections D.1.9.1 and D.1.9.3 of ncord NWS possesses the necessary experience and facilities.

COMMENTOR NO. 684: CRAIG G. KOCIAN, CITY MANAGER, CITY OF OAKLAND (CONT'D.)

The EIS does not consider all possible risks including San Francisco Bay shipping accidents, congested traffic, earthquake, tidal wave and other risks specific to this area. The current EIS considers the 10 port of entry sites as a group; site specific risks are not discussed. 684-5

The EIS assumes that local emergency responders and local emergency plans are fully capable of handling an emergency in the transportation of spent nuclear fuel. Since it is the policy of the federal government, due to national security, to neither confirm nor deny the movement of weapons and the other sensitive materials, local governments are not always informed. It therefore becomes very difficult to plan for and respond to a potential incident of this nature. 684-6

In the past the Oakland City Council and the Port of Oakland have both vigorously opposed the shipment of spent nuclear fuel through the Port of Oakland. The risks of shipping spent nuclear fuel through San Francisco Bay to the Concord Naval Weapons Station are very similar and objections remain the same. Should an accident occur the region as a whole would be seriously affected.

Sincerely.

Craig G. Kocian
City Manager

cc: Mayor Harris
Members of the City Council
Office of the City Clerk

RESPONSE TO COMMENT
COMMENTOR NO. 684: CRAIG G. KOCIAN, CITY MANAGER, CITY OF OAKLAND (CONT'D.)

Response to Comment No. 684-5

The passage from San Francisco Bay to Concord NWS meets the requirements of Criterion 2 (Favorable Transit From Open Ocean) for port selection (Appendix D, Section D.1.9.2 of the EIS). Favorable transit from open ocean is only one of the considerations in selecting ports of entry for the foreign research reactor spent nuclear fuel. Other considerations such as port population, population along the route to the management site, port experience with handling containers, and port facilities would be considered in making the final selection of ports of entry. Appendix D, Section D.1.9 of the EIS presents details of the port selection process.

The EIS considered severe natural phenomena (i.e., earthquakes, volcanism, etc.) as part of the port selection process (Appendix D, Section D.1.9.6 of the EIS). The probability of severe natural phenomena impacting foreign research reactor spent nuclear fuel shipments is low since there is an extremely short period of risk (typically less than 24 hours). The volume or size of the local marine traffic (present or future) was not considered in the calculation of risk associated with the shipment of foreign research reactor spent nuclear fuel. In general, the number of ship mishaps is not proportional to the amount of ship traffic because port ship traffic is slow, and even when heavy, is normally a small number of ships per hour. Historically, increasing the volume does not significantly increase the probability of an accident. Rather, the number of ship mishaps is associated with navigational hazards and distances from the port to the open ocean or a large bay (Appendix D, Section D.1.9.2 of the EIS). Appendix D, Section D.5.3.1.3 of the EIS presents a discussion of the determination of the probability of ship accidents used in the EIS.

Response to Comment No. 684-6

As discussed in Section 2.6.4.2 of the EIS, the NRC regulations concerning actual route notification are set forth in 10 CFR Part 73. Shippers are required to submit proposed routes for spent nuclear fuel shipments to NRC for approval, and NRC publishes a public information circular that lists routes that have been evaluated and approved for specific spent nuclear fuel shipments. The regulation also requires DOE to inform the Governor of each State and any Tribal chair, or their designee, along the route at least seven days in advance of the each shipment of hazardous cargoes, including radioactive materials.

Appendix H, which was added to the final EIS in response to public comments, contains the general provisions for emergency preparedness and security measures associated with the transportation of foreign research reactor spent nuclear fuel in the United States. The provisions include an interface between DOE and State, Tribal, and local authorities, prior to the implementation of the policy, for the identification and resolution of emergency management and security issues specific to the communities that would be affected these issues include capabilities and training of first emergency responders. These issues include capabilities and training of first emergency responders. Funding for special needs, if necessary, would be addressed during this interface.

City of Tacoma - City Council

City of Tacoma

ice of the City Council

Manager
el Management (EM-37)

SW

mpact Statement (EIS) on a Proposed
oliferation Policy Concerning Foreign
t Nuclear Fuel

teful to the U.S. Department of Energy
u have scheduled for June 19, 1995 in
ension on the public comment period to
ranted at the request of Congressman
Murray, and the rest of our Washington
gation. We feel a matter of this
tunity for sufficient consideration by

ting to express its strong opposition
Energy's proposal to use the Port of
for the United States to import spent
research reactors. The goal of the
ent the potential for creation of
fully regulating the shipment and
lear waste from foreign countries--is
failed to consider or fully ignored,
environmental, health and safety, and
our community which undoubtedly will
iculty and possible litigation if the
ed as a port of entry.

does not attempt to identify all the
her attempts to highlight some of the
The following points have been
ution which was adopted by unanimous
Council on June 6, 1995. A copy is
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Washington 98402-3766, (206) 591-5100, FAX (206) 591-5123

Response to Comment
Commentor No. 687: City of Tacoma - City Council

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Response to Comment
Commentor No. 687:
City of Tacoma - City Council (Cont'd.)

Response to Comment No. 687-1

DOE has added a sentence to Appendix D, Section D.2.1.9 of the EIS regarding Commencement Bay being a Superfund Site. The analysis of impacts in Section 4 of the EIS indicates that there would be no significant adverse impacts on the ports, people, or natural environment from shipments of foreign research reactor spent nuclear fuel and the overall impacts to Commencement Bay would be unchanged by the various management alternatives.

Shipment of foreign research reactor spent nuclear fuel would not jeopardize the significant cleanup effort undertaken in the area of Commencement Bay and the Port of Tacoma as noted by the commentor. The analysis in the EIS indicates that there would be no significant adverse impacts to any of the ports or bays, or the quality of water or air (Sections 4.2.1.1 and Appendix C, Section C.2 of the EIS). Spent nuclear fuel transportation casks are designed and built to preclude release of radioactive material. Based on over 30 years experience shipping spent nuclear fuel, DOE considers that spent nuclear fuel transportation casks passing through the Port of Tacoma, Commencement Bay, or any other port or waterway would not affect air or water quality. A paragraph has been added to Section 4.2.2.2 of the EIS to make this point and to emphasize the no-impact nature of these shipments on air and water quality.

The volume or size of the local marine traffic (present or future) was not considered in the calculation of risk associated with the shipment of foreign research reactor spent nuclear fuel. In general, the number of ship mishaps is not proportional to the amount of ship traffic because port ship traffic is slow, and even when heavy, is normally a small number of ships per hour. Historically, increasing the volume does not significantly increase the probability of an accident. Rather, the number of ship mishaps is associated with navigational hazards and distances from the port to the open ocean or a large bay (Appendix D, Section D.1.9.2 of the EIS). Appendix D, Section D.5.3.1.3 of the EIS presents a discussion of the determination of the probability of ship accidents used in the EIS. Spent nuclear fuel from foreign research reactors is shipped in standard containers, and does not require special handling techniques (Section 2.6.3.2.2 of the EIS).

The security provided for the spent nuclear fuel shipments is required to meet or exceed all the applicable security requirements in the Code of Federal Regulations (10 CFR Part 73). If any port did not already provide security sufficient to satisfy these requirements, it would be the responsibility of the shipper to provide the required additional security.

In the unlikely event that a transportation cask loaded with foreign research reactor spent nuclear fuel were to sink in any U.S. coastal waters, it would be recovered, even from the deepest portions of Puget Sound, which reaches depths of 305 meters (1,000 feet). Section 4.2.1.3 of the EIS has been modified to include this assurance of recovery in coastal

RESPONSE TO COMMENT COMMENTOR NO. 687: TACOMA - CITY COUNCIL (CONT'D.)

ction C.5.5 of the EIS presents information on the probability of al and deep ocean waters. The impacts of a foreign research iel transportation cask sinking in coastal and deep waters are ppendix C, Section C.5). The results of this analysis show that and the risk of these accidents are low (Appendix C, Sections

nt No. 687-2

is adequate regulatory and emergency preparedness infrastructure ance and transport to designated management sites if the foreign uclear fuel is managed in the United States. Federal funding to governments for maintaining emergency response programs is 1 of the EIS. There are three national emergency response plans des radiological monitoring and assessment assistance. Under es technical advise and assistance to the State, Tribal and local radiological incident. Emergency preparedness, security, and l local emergency response authorities, and security are discussed 2.7 and 2.8 of the EIS. Details would be contained in the would be prepared prior to any individual spent nuclear fuel d with State and local officials. The general provisions of the included in Appendix H, which was added to the final EIS in ents.

OR NO. 691: CITY OF WALNUT CREEK

7)

roposed Nuclear Weapons
arch Reactor Spent Nuclear Fuel

n the draft EIS regarding the above
comment on the policy's impact on

lexity of nuclear waste transport. Nor
with this activity through our
that the 'risks are minimal.'
the adequacy of your EIS work to
to be wholly inadequate. Not only is
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information for local review

691-1

ing 40 mile traffic waterway between
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eek is traffic. Consequently, the
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691-2

94596-4661 ◆ (510) 943-5812 ◆ FAX: (510) 943-5897

RESPONSE TO COMMENT COMMENTOR NO. 691: ED DIMMICK, MAYOR, CITY OF WALNUT CREEK

Response to Comment No. 691-1

The errors identified by the commentor have been corrected in the final EIS.

Although there is no detailed description of the passage to the Concord NWS in the EIS (or into any of the other candidate ports), the passage was considered when Concord NWS was evaluated against port selection Criterion 2 (Favorable Transit From Open Ocean). The passage does meet the requirements of Criterion 2 (Appendix D, Section D.1.9.2 of the EIS). The volume or size of the local marine traffic (present or future) was not considered in the calculation of risk associated with the shipment of foreign research reactor spent nuclear fuel. In general, the number of ship mishaps is not proportional to the amount of ship traffic because port ship traffic is slow, and even when heavy, is normally a small number of ships per hour. Historically, increasing the volume does not significantly increase the probability of an accident. Rather, the number of ship mishaps is associated with navigational hazards and distances from the port to the open ocean or a large bay (Appendix D, Section D.1.9.2 of the EIS). Appendix D, Section D.5.3.1.3 of the EIS presents a discussion of the determination of the probability of ship accidents used in the EIS.

The exact land route out of Concord to the management site(s) was not specified in the EIS because the actual route followed could change over the course of the program (which could be 13 years) as a result of road changes and weather conditions. In general, however, the shortest route that used major highways would be followed.

Concord NWS was one of ten ports that was identified as to be acceptable to receive the foreign research reactor spent nuclear fuel, if the material is to be accepted into the United States. Population of the port and surrounding areas is one of the considerations of the port selection criteria, and one of the reasons the Port of Oakland was not included in the final list of ports. Concord's relatively lower population was a positive aspect. It should also be noted that the National Defense Authorization Act for Fiscal Year 1994 requires that low port population be a criterion for port selection for the receipt of foreign research reactor spent nuclear fuel. The population criterion for port selection (Criterion 5) is discussed in more detail in Appendix D, Section D.1.9.5 of the EIS.

As the result of public comments, eight additional ports were considered, including Everett, WA. Like the rest of the ports analyzed, the risks associated with the use of Everett would be low. The final choice of port or ports to use, if foreign research reactor spent nuclear fuel is accepted into the United States, will be in the Record of Decision.

COMMENTOR NO. 691:
ED DIMMICK, MAYOR, CITY OF WALNUT CREEK (CONT'D.)

intersections in the entire Bay area region is the 680/24 interchange that appears to be a proposed truck travel route to storage sites east of here. This interchange has an inordinately high number of accidents and will remain under construction for at least another year and probably three. There is a temporary flyover that is quite high, steep and particularly dangerous for truck traffic. 691-2 (Cont'd.)

2. The study does not consider the likelihood and consequences of an earthquake. Attached is an Association of Bay Area Government Study. In particular note the elaborate fault structure in the area as well as the soil shaking potential (pp. 9 and 30). The study should analyze this more thoroughly. 691-3

3. The residents of this area already face a higher exposure potential to acutely hazardous materials. Contra Costa County (tied with neighboring Marin County) has the highest breast cancer incidence rate in the state. However, this study does not address the cumulative effects of adding spent nuclear fuel handling and transport to an area already experiencing military and industrial development impacts. Rightly or wrongly, if nuclear fuel is handled and transported from this area, this activity will be blamed for any future higher cancer incidence rates in the area. 691-4

4. Finally, two military ports in the Bay area are slated for closure namely Alameda and Vallejo. Additionally, we understand that the high population density surrounding the Oakland port was one reason for its removal for consideration. The two military ports are closing in part because of the apparent cost effectiveness of the port in Everett, Washington. Why is this port not considered? It's less densely populated than this area and closer to the Hanford Reservation site in Washington. 691-1 (Cont'd.)

In summation, the City of Walnut Creek cannot support the selection of the Concord Naval Weapons Station as the port of entry for nuclear waste from foreign reactors. There needs to be additional analysis addressing our concerns as well as the concerns of the other surrounding communities. Still, our population density, traffic congestion, and proclivity to damage from earthquakes, should eliminate this port from consideration.

Sincerely,

Ed Dimmick

Ed Dimmick
MAYOR

cc Walnut Creek City Council
Congressman Baker
Congressman Miller
Mayors of Concord, Pleasant Hill, and Martinez
Contra Costa County Board of Supervisors

RESPONSE TO COMMENT
COMMENTOR NO. 691:
ED DIMMICK, MAYOR, CITY OF WALNUT CREEK (CONT'D.)

Response to Comment No. 691-2

If the Concord NWS is selected as a port of entry, then DOE would choose the best route to I- 80 in accordance with Department of Transportation regulations (49 CFR Part 397.101 (a)(2)). That route could use Route 4, Route 24, and/or Waterfront Road. These are the local Concord streets that the trucks would probably use. The State of California routing agency can designate a preferred route, which the shipments would be required to follow, in accordance with 49 CFR Part 397.103.

Response to Comment No. 691-3

The EIS evaluates the risk associated with marine port activities, ground transportation, and storage at proposed DOE management sites in Section 4.2. The impacts are evaluated for both incident-free and accident conditions. Earthquakes were not analyzed separately in the EIS because seismic activity would not result in greater damage to a transportation cask than that caused by a ship collision and subsequent fire. Rather, the consequences from the worst plausible accidents involving foreign research reactor spent nuclear fuel transportation casks were evaluated, regardless of what initiated them. An earthquake could be the initiator of either a ship or road accident and thus effect the probability of such accidents, however, the number of earthquake-induced ship and road accidents is small compared to other causes.

Response to Comment No. 691-4

The cumulative impacts of foreign research reactor spent nuclear fuel transport through the port areas are addressed in Sections 4.2.2.4 and 4.2.3 of the EIS. The assumptions used for the analysis of potential impacts were very conservative, as discussed in Section 4.2.3.1, and as a result the likely impacts from acceptance of the foreign research reactor spent nuclear fuel into the United States would be much lower than estimated in the EIS.

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COMMENTOR NO. 731: WHITE PINE COUNTY NUCLEAR WASTE, PROJECT OFFICE (CONT'D.)

The draft EIS does not provide adequate consideration of options for mitigation and compensation of impacts. The subsequent Record of Decision should include specific measures to mitigate and/or compensate impacts. With regard to transportation of spent fuel through areas such as White Pine County, such measures should include pre-shipment training and equipping of emergency first responders; pre-notification of public safety officials prior to all shipments; real-time tracking of all shipments; consultation with local public safety officials regarding real-time transportation conditions and constraints; and where necessary to reduce the risk of accidents, infrastructure improvements to enhance highway safety.

731-3

To the extent that the aforementioned comments are not appropriately addressed within the final EIS, DOE will not have sufficiently complied with NEPA concerning foreign research reactor spent nuclear fuel.

Sincerely,

Ferd Mariani

Ferd Mariani
Coordinator

RESPONSE TO COMMENT
COMMENTOR NO. 731: WHITE PINE COUNTY NUCLEAR WASTE, PROJECT OFFICE (CONT'D.)

Response to Comment No. 731-3

Measures for impacts which warrant mitigation are discussed in Sections 4.2 and 4.9.4 of the EIS for port activities (Section 4.2.2.5), ground transportation (Section 4.2.3.5), and management sites (Appendix F, Section F.4) of the EIS.

The commentor's preference for geologic disposal of spent nuclear fuel is noted. The impacts of ultimate disposition of spent nuclear fuel are discussed qualitatively in Section 4.2.7 of the EIS. A detailed, quantitative discussion of these impacts would have to be the subject of future NEPA documentation.

COMMENTOR NO. 835:
TACOMA-PIERCE COUNTY CHAMBER OF COMMERCE (CONT'D.)

round of evaluation because of its population size. Shipping through Tacoma, because of infrastructure design, will mean Tacoma's population will be added to those of Seattle or Portland along the route. Further, the population for Tacoma seems to be that for the City only, rather than that for the Tacoma Primary Metropolitan Statistical Area (Pierce County) which is a more accurate area for analysis and comparison.

835-6 (Cont'd.)

- Fears associated with nuclear energy are expected to produce a stigma about whichever port's community is announced as the transshipment point. No mitigation is considered.

835-7

- Rail lines across the mountains here are nearing capacity. Considerations on pairing nuclear containers with other dangerous cargoes will exacerbate shipment and capacity problems. This may mean adverse economic impacts associated with the interruption of normal commerce, and/or the siderailing of nuclear containers as rail tunnels are freed or cleared. Current normal operations involve siderailing of cargos for an hour between tunnel transits while exhaust fumes are cleared.

835-8

Your consideration of these objections and your choice of an alternative that favors reprocessing of nuclear fuels in countries capable of this technology is recommended.

Sincerely,

Gary D. Brackett, Mgr.
Business and Trade Development

RESPONSE TO COMMENT
COMMENTOR NO. 835:
TACOMA-PIERCE COUNTY CHAMBER OF COMMERCE (CONT'D.)

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).

The EIS contains the results of an analysis of the effects of an accident that involves a severe fire (severity category 6), which does not reach the temperature to melt foreign research reactor spent nuclear fuel. Appendix D, Section D.5.3 of the EIS presents a detailed discussion of accident probabilities and radioactive material source terms and Section D.5.4 presents the results of the analyses.

In conclusion, although long duration ship fires are possible, and have occurred, they are uncommon events. Analyses in the EIS indicate that even in the event of a severe ship fire involving a spent nuclear fuel transportation cask, neither the consequences nor risks are great (Appendix D, Section D.5.5 of the EIS). Although the nonradiological effects of such a catastrophic accident would obviously impact the local environment, no additional impacts are predicted due to the presence of foreign research reactor spent nuclear fuel.

Response to Comment No. 835-3

As discussed in Section 2.6.4.2 of the EIS, the NRC regulations concerning route notification for civilian shipments of nuclear material are set forth in 10 CFR Part 73. The shipments of foreign research reactor spent nuclear fuel would comply with this regulation, just like similar shipments.

The regulation requires shippers to submit proposed routes for spent nuclear fuel shipments to NRC for approval, and NRC publishes a public information circular that lists routes that have been evaluated and approved for specific spent nuclear fuel shipments. The regulation also requires DOE to inform the Governor of each State and any Tribal chair, or their designee, along a transportation route at least seven days in advance of the each shipment of hazardous cargoes, including radioactive materials.

Security during ground transport is discussed in Section 2.7.5 of the EIS.

Response to Comment No. 835-4

The Chernobyl and Three Mile Island (TMI) accidents are not examples of terrorist activities. These are accidents which occurred during power reactor operations. The radioactive inventory in each of these reactors were millions of times greater than what would be in a transportation cask containing foreign research reactor spent nuclear fuel. It is inaccurate to consider that an incident involving a spent nuclear fuel transportation

SPONSE TO COMMENT
MMENTOR No. 835:
NTY CHAMBER OF COMMERCE (CONT'D.)

835-8

Alternative 1 were adopted and the Port of Tacoma would
ditional 721 ISO containers could be unloaded at Tacoma
would represent a very small increase to the existing and
n. This subject is discussed further in Section 2.6.4 of the

COMMENTOR No. 836:
DOUG SUTHERLAND, COUNTY EXECUTIVE, PIERCE COUNTY

Pierce County
Office of the County Executive

930 Tacoma Avenue South, Room 737
Tacoma, Washington 98402-2100
(206) 591-7477 • FAX (206) 596-6628

DOUG SUTHERLAND
Executive

FRANCEA L. McNAIR
Deputy Executive
Executive Office
of Operations

June 30, 1995

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

Dear Mr. Head:

I am writing to express my adamant opposition to the DOE proposal to ship nuclear waste through the waterways of Tacoma and Pierce County. I believe this proposal would place an unacceptable risk upon the citizens of Puget Sound. 836-1

Millions of dollars and years of civic effort have been invested in ridding Commencement Bay of pollution and improving the economic and social environment of the Tacoma-Pierce County area. Shipping nuclear waste through the Port of Tacoma will hamper our efforts, if not bring them to a halt. The risks are more far reaching than the health of our waterways. The health of our citizens is also at stake and as County Executive, I feel a responsibility to protect the citizens I serve.

I concur with the Commissioners from the Port of Tacoma that Alternative #2 is an acceptable option. It would meet the goals of the nuclear proliferation treaty without returning spent nuclear fuel to the United States, and more specifically, Puget Sound. 836-2

Again, I am vigorously opposed to shipping nuclear waste through the waters of Puget Sound. The potential risks facing our citizens and the environment are just too great.

Thank you for your attention to this matter.

Sincerely,

Doug Sutherland,
Executive

DS:jam

PATRICK KENNEY
Executive Office
of Administration

ANDREW NEIDITZ
Executive Office
of Public Safety

DAISY STALLWORTH
Executive Office
of Community and
Human Services

HUDSON STANSBURY
Executive Counsel

BIL BOSS
Special Assistant
to the Executive

BARBARA GELMAN
Assessor-Treasurer

CATHY PEARSALL-STIPEK
Auditor

RESPONSE TO COMMENT
COMMENTOR No. 836:
DOUG SUTHERLAND, COUNTY EXECUTIVE, PIERCE COUNTY

Response to Comment No. 836-1

The commentor's opposition to bringing foreign research reactor spent nuclear fuel through the Port of Tacoma is noted. However, analysis in Sections 4.2.2 and 4.5 of the EIS indicates that the risk associated with bringing spent nuclear fuel to the Port of Tacoma, or to any of the ports analyzed in the EIS, is low.

Response to Comment No. 836-2

The commentor's preference for the overseas management alternative is noted. This is Management Alternative 2, which is discussed in Sections 2.3 and 4.4 of the EIS.

RESPONSE TO COMMENT
COMMENTOR NO. 845:
CITY OF OLYMPIA - CITY COUNCIL

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Pat Cole
Councilmember

Hawkins
member

ersonnel	753-8442
olice	753-8300
ublic Works	753-8362

Response to Comment No. 845-1

The commentor's opposition to bringing foreign research reactor spent nuclear fuel through the Port of Tacoma is noted. However, the analysis in the EIS indicates that the risks associated with an accident are low (Sections 4.2.2.3 and 4.5) and that the risks associated with incident-free handling of the foreign research reactor spent nuclear fuel are also low (Sections 4.2.2.2 and 4.5), and pose no significant risk to port personnel, the local population, or the environment.

Response to Comment No. 845-2

The commentor's preference for the overseas management alternative is noted. This is Management Alternative 2, which is discussed in Sections 2.3 and 4.4 of the EIS.

COMMENTOR NO. 849: GRETCHEN A. WILBERT, MAYOR, CITY OF GIG HARBOR

CITY OF GIG HARBOR
RESOLUTION NO. 448

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GIG HARBOR, WASHINGTON, EXPRESSING STRONG OPPOSITION TO THE ADOPTION OF A POLICY, BEING PROPOSED JOINTLY BY THE UNITED STATES DEPARTMENT OF ENERGY AND UNITED STATES DEPARTMENT OF STATE, TO ACCEPT AND MANAGE SPENT NUCLEAR FUEL FROM FOREIGN RESEARCH REACTORS BY SHIPMENT THROUGH THE PORT OF TACOMA, WASHINGTON.

WHEREAS, the United States Department of Energy and the United States Department of State are jointly proposing to adopt a policy to manage spent nuclear fuel from foreign research reactors; and

WHEREAS, nuclear fuel containing uranium enriched in the United States of America would be covered by this policy; and

WHEREAS, the purpose of this policy is to promote United States nuclear weapons nonproliferation policy objectives, specifically seeking to reduce highly enriched uranium from civilian commerce, and

WHEREAS, the environmental effects and policy considerations of three management alternative approaches for implementation of the proposed policy and assessed; and

WHEREAS, alternative number one would be the acceptance and management of the spent nuclear fuel by the Department of Energy in the United States; and

WHEREAS, under alternative number one the spent nuclear fuel will be shipped by ocean-going vessels from foreign countries to the United States of America; and

WHEREAS, the City of Gig Harbor is a municipality in the County of Pierce and shares waters in close geographic proximity to the Port of Tacoma; and

WHEREAS, the Port of Tacoma is considered one of ten ports through which the shipment of spent nuclear fuels would occur, and

WHEREAS, the Draft Environmental Impact Statement (DEIS) was prepared to address the Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel; and

A. the DEIS has used outdated information about the Port of Tacoma, its terminals, its operations, and the surrounding area; *849-1*

B. the DEIS did not consider the deep-water depth in the Puget Sound area, which will *849-2*

RESPONSE TO COMMENT COMMENTOR NO. 849: GRETCHEN A. WILBERT, MAYOR, CITY OF GIG HARBOR

Response to Comment No. 849-1

Updated information on the terminals, rail yards, and waterways at the Port of Tacoma has been incorporated into Appendix D, Section D.2.1.9 of the EIS. The evaluated data on populations is from the 1990 census.

Response to Comment No. 849-2

In the unlikely event that a transportation cask loaded with foreign research reactor spent nuclear fuel were to sink in any U.S. coastal waters, it would be recovered, even from the deepest portions of Puget Sound, which reaches depths of 305 meters (1000 feet). Appendix C, Section C.5.5 of the EIS presents information on the probability of a cask sinking in coastal and deep ocean waters.

The transportation casks that would be used for the foreign research reactor spent nuclear fuel are certified if their design meets certain tests, including a fire test, and if the individual casks pass periodic inspections (Section 2.6.2 of the EIS). These certification standards were developed for use of the casks on land, hence the 30 minute fire test, which is considered to be the extent of a high intensity fire resulting from a collision with a tanker truck. The duraction of a ship fire is directly related to the amount of combustibles carried on board. The number of severe fires on ships is relatively small. Data available on the last 15 years from Lloyd's of London indicate that of 1,073 ship collisions in port worldwide, only eleven led to fires, and of those, only five caused extensive damage, with only one actually causing buckling of structures.

In respect to the impact a ship fire might have on a spent nuclear fuel transportation cask, there are three facts that would 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's fire 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 at a minimum would keep fires well below the extreme temperatures needed to damage the transportation cask. For these reasons, it would be almost impossible for spent nuclear fuel inside the transportation cask to reach 900 degrees Kelvin (1,160 degrees F), the melting point of the foreign research reactor spent nuclear fuel. The probability of reaching such a temperature was calculated to be less than one in a billion (see 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).

COMMENT
GRETCHEN A. WILBERT, HARBOR (CONT'D.)

the effects of an accident that involves a not reach the temperature to melt foreign x D, Section D.5.3 of the EIS presents a nd radioactive material source terms and ses.

s are possible, and have occurred, they are ate that even in the event of a severe ship consequences nor risks are great (Appendix nradiological effects of such a catastrophic onment, no additional impacts are predicted r spent nuclear fuel.

), Section D.2.1.9 of the EIS regarding Shipment of foreign research reactor spent nt cleanup effort undertaken in the area of as noted by the commentor. Nor should it the EIS analysis that indicates that there ny of the ports or bays, or the quality of ix C, Section C.2). Spent nuclear fuel o preclude release of radioactive material. passing through the Port of Tacoma, erway cannot leak because the metal fuel is water quality. A paragraph has been added t and to emphasize the no-impact nature of

ls by a determined group or individual can ecurity measures greatly reduce the risk. f the EIS to address terrorism and sabotage. it nuclear fuel would be conducted meeting the Code of Federal Regulations (10 CFR inal EIS in response to public comments to reparedness associated with transportation r fuel. This appendix presents the general s a document that provides all of the details reign research reactor spent nuclear fuel, nd in transit to the management site.

COMMENT
RETCHEN A. WILBERT, HARBOR (CONT'D.)

l shipments would be required to meet or
s in the Code of Federal Regulations (10
ovide security sufficient to satisfy these
e shipper to provide the required additional

e EIS fully address the life cycle costs,
se of a net present value approach reflects
arily in the form of reduced risks of the
ho might use them on us or our allies, as
gement sites and regions conducting the
e commerce in certain types of nuclear
w, as discussed fully Section 4 of the EIS
ks are described in detail in Appendix F,
cost uncertainties (e.g., waste acceptance
relating to ports are minor in all respects.

the risk associated with accepting spent
ough any of the ports analyzed would be
gained in over 30 years of shipments of
the United States. Accordingly, DOE
e to be resolved.

search reactor spent nuclear fuel for over

ent nuclear fuel could safely be received
additional security that might be present
e spent nuclear fuel shipments would be
urity requirements in the Code of Federal
not already provide security sufficient to
ponsibility of the shipper to provide the
commentor's preference for the use of
2.2.3 of the EIS provide the analysis on
ences of port accidents, respectively.

ESPONSE TO COMMENT No. 849: GRETCHEN A. WILBERT, ITY OF GIG HARBOR (CONT'D.)

lo. 849-8

sponse to action by Congress, the current DOE programs for ar fuel would have to be transferred to some other Federal ct the health and safety of the public. Since the spent nuclear y, these programs cannot simply be abolished.

lo. 849-9

stion by letter and fax on June 16, 1995. The response gave e rate near the spent nuclear fuel under the assumption that cask to provide shielding, as requested by the Port of Tacoma.

nce do not require a worst case analysis of accidents in an lysis in the EIS, there is no such thing as a worst case scenario hat is postulated, a still more severe accident can be postulated f gasoline, one more wrecked rail car, one more terrorist, etc. tion that is made to make a postulated accident more severe, nt becomes smaller. The EIS does not contain a worst-case e of port accident scenarios, including severe accidents, is of the EIS. Appendix D, Section D.5.4.3.2 of the EIS presents erature fire that engulfs a cask, which was part of a sensitivity In addition, Section D.5.9 has been added to Appendix D of of attack by disgruntled persons or terrorists.

lo. 849-10

ouncil of Gig Harbor, Washington to bringing foreign research through the Port of Tacoma is noted. However, analysis in he EIS indicates that the risk associated with bringing spent acoma, or to any of the ports analyzed in the EIS, is low.

ENTOR No. 969:
NCIL MEMBER BILL BAARSMA

Tacoma

r Bill Baarsma

gement (EM-37)

given at the public hearing on
icy Concerning Foreign Research
oma on June 19. The testimony

ative 2 which makes eminent
. The logic for Alternative 1
to comment on one part of the
mary, the EIS notes, "In the
are required to have emergency
These programs must be
anging from natural disasters
a day-to-day basis. These
ial emergency response teams

ent has a hazardous unit. It
s coverage seven days a week
ighly trained firefighters.
Its charge is to handle and
er toxic materials. However,
s it have the training or
olving radioactive materials.
motivated and skilled. They
hey do not have the resources
involving radioactive waste.
to take on those additional

sion of county government
nagement team. But, for
ity is limited to monitoring

98402-3764, (206) 591-5100, FAX (206) 591-5123

969-1
969-2
969-3

RESPONSE TO COMMENT
COMMENTOR No. 969:
TACOMA CITY COUNCIL MEMBER BILL BAARSMA

Response to Comment No. 969-1

The commentor's preference for the overseas management alternative is noted. This is Management Alternative 2, which is discussed in Sections 2.3 and 4.4 of the EIS.

Response to Comment No. 969-2

The commentor's opposition to Management Alternative 1 as described in Section 2.2 of the EIS is noted. Sections 2.3, 2.5, and 4.4 of the EIS describe other alternatives under consideration.

Response to Comment No. 969-3

DOE considers that there is adequate regulatory and emergency preparedness infrastructure to ensure the safe acceptance and transport to designated management sites if the foreign research reactor spent nuclear fuel is managed in the United States. Federal funding to State, Tribal, and local governments for maintaining emergency response programs is discussed in Section 2.7.1. There are three national emergency response plans under which DOE provides radiological monitoring and assessment assistance. Under these plans, DOE provides technical advise and assistance to the State, Tribal and local agencies involved with a radiological incident. Emergency preparedness, security, and coordination of DOE with local emergency response authorities, and security are discussed in general in Sections 2.7 and 2.8 of the EIS. Details would be contained in the Transportation Plan, that would be prepared prior to any individual spent nuclear fuel shipment and coordinated with State and local officials. The general provisions of the Transportation Plan are included in Appendix H, which was added to the final EIS in response to public comments.

Response to Comment
ntor No. 969: Tacoma City
Member Bill Baarsma (Cont'd.)

No. 969-4

at would be used for the foreign research reactor spent nuclear ign meets certain tests, including a fire test, and if the individual tions (Section 2.6.2 of the EIS). These certification standards the transportation casks on land, hence the 30 minute fire test, he extent of a high intensity fire resulting from a collision with n of a ship fire is directly related to the amount of combustibles nber of severe fires on ships would be relatively small. Data s from Lloyd's of London indicates that of 1,073 ship collisions leven led to fires, and of those, only five caused extensive ually causing buckling of structures.

ship fire might have on a transportation cask, there are three he potential damage. First, ship fires tend to move to different ombustible material is consumed, so the transportation cask he entire duration of the fire. Second, a ship fire's intensity is ount of oxygen that can reach the interior of a hold. Third, all to transport foreign research reactor spent nuclear fuel have uipment, which at a minimum would keep fires well below the ded to damage the transportation cask. For these reasons, it le for spent nuclear fuel inside the transportation cask to reach degrees F), the melting point of foreign research reactor spent lity of reaching such a temperature was calculated to be less tachment D5 to Appendix D of the EIS). To put this temperature d in a ship's structure buckles at around 700 degrees Kelvin

lts of an analysis of the effects of an accident that involves a ory 6), which does not reach the temperature to melt foreign lear fuel. Appendix D, Section D.5.3 of the EIS presents a ident probabilities and radioactive material source terms and results of the analyses.

ng duration ship fires are possible, and have occurred, they are ses in the EIS indicate that even in the event of a severe ship ion cask, neither the consequences nor risks are great (Appendix S), in spite of the fact that some radioactive material might be

?o Comment
r No. 969:
ber Bill Baarsma (Cont'd.)

Port of Tacoma for receipt of foreign research
on the port selection process described in
a is among the ten candidate ports listed in
ve foreign research reactor spent nuclear fuel
nalyses provided in the EIS indicate that the
selection process, including Tacoma, would
port personnel, local environment, or the
EIS indicates that the risks associated with
S) and that the risks associated with incident-
spent nuclear fuel transportation casks are

orts indicated by the port selection process,
l commercial operations, and therefore not
ir clients. This is based on the fact that the
would be accepted into the United States in
uire no special handling or precautions. As
or economic reaction to the use of the port.
ial impacts to the ports that received foreign
plus years it was received.

measures that would be taken to ensure that
orism or theft of materials. DOE considers
uel could safely be received at commercial
security such as might be present at military
y port would be required to meet or exceed
ederal Regulations (10 CFR Part 73). If any
nt to satisfy these requirements, it would be
required additional security. DOE supports
t the foreign research reactor spent nuclear

ty and emergency preparedness associated
reactor spent nuclear fuel. This appendix
portation Plan, which is a document that
ransportation of the foreign research reactor
rrangements in port and in transit to the

s from the proposed action, including those
ion routes, or near potential management
from civil programs could be diverted into
nt be used against us or our allies. On the
of the EIS demonstrate that the risks from

ACOMA

noted.

sal of foreign research
e storage of the foreign
and 4.2.4 of the EIS.

r spent nuclear fuel are
rrently evaluating the
NV. In the meantime,
OE and the Department
h reactor spent nuclear

HEU as possible from
rators time to convert
for disposition of their
e Department of State
were making plans for

ONSE TO COMMENT
70: PORT OF TACOMA (CONT'D.)

0-4

ıd 2.2.2.3 of the EIS, several financing options have lection of fees from the research reactor operators that ɔgram to full subsidization of the program by DOE. A ıes would be for developed countries to be charged a .yers would absorb the full costs of the program for the amount above a competitive fee for developed eir spent nuclear fuel. The reasons the United States ıer countries are: 1) some countries would be unable to ıction and would have no safe alternative means of i.e., the developing countries); and 2) some countries eapons-grade nuclear material indefinitely unless the : fee and absorbs any costs above that fee (i.e., most of ıs discussed in Section 4 of the EIS, the environmental ıld be low in an absolute sense and very low compared ommercial use of highly-enriched (weapons-grade) nt nuclear fuel containing HEU in numerous locations

)-5

.2 of the EIS, the adoption of a policy to manage the lear fuel is necessary to reduce the risk of nuclear y is Management Alternative 1, then the United States h the research reactor operators, with the result that / be converted to the use of LEU fuel. Contrary to the ınd the Department of State considers that the ernative 1 would achieve the necessary shifts in foreign nanagement practices to reduce the worldwide risk of

)-6

ıe overseas management alternative is noted. This is .s discussed in Sections 2.3 and 4.4 of the EIS.

)-7

verseas reprocessing is noted. This is Management hich is discussed in Section 2.3 and 4.4.2 of the EIS.

NT

ACOMA (CONT'D.)

ar weapons nonproliferation
of highly enriched (weapons-
d States does not include its
le research reactors in these
of HEU fuel, or they would

eaty on the Non-Proliferation
tes with peaceful applications
wn a peaceful nuclear research
ommitment to NPT principles.
hich is the foundation of the
l make it that much harder to

tates would likely be accused
Non-Proliferation of Nuclear
eful applications of nuclear

EU fuel, the move towards
ished.

uclear weapons proliferation
Furthermore, several of them
cluding third world countries
ch reactors, then the countries
led in the same manner.

ssia and China to implement
e their client states to switch
inaction, the United States is
J fuel, then we are unlikely to

actor program is on the order
U.S. commercial waste. The
gram would be on the order of
is material to an already large
oblem any easier but it would
ation risk at a low incremental

Response to Comment No. 970: Port of Tacoma (Cont'd.)

e in-U.S. components of the program will be determined by ›grams, particularly waste disposal programs. Regardless of less of how costs are allocated, Management Alternative 3 ıe lowest total costs. Strictly speaking, the lowest cost approach ıizing the amount of material reprocessed at Dounreay and Savannah River Site, with the chemical separation activity ogram and the Dounreay reprocessing taking place over the ıe United States could be required to accept the reprocessing ubstituted high-level waste from a different British facility.) epends on several factors, including United States and United waste substitution components.

t Alternative 1 would be at least 25 percent higher than and could be many times higher depending on the resolution research reactor program, particularly the waste acceptance /aste repository. Managing the spent nuclear fuel overseas nomic and technical problems and would not be a low-cost e no storage capability. Virtually no countries have a disposal it of spent nuclear fuel for a small storage facility is high. e more than just the cost of a spent nuclear fuel transportation structure required for security, safety, health, etc. exists at ted States but does not exist in many of the foreign countries.

'o. 970-10

'the United States from the proposed action, including those along transportation routes, or near potential management ıs grade uranium from civil programs could be diverted into eapons that might be used against us or our allies. On the ›rded in Section 4 of the EIS demonstrate that the risks from

'o. 970-11

lequate regulatory and emergency preparedness infrastructure e and transportation to the designated management sites if t nuclear fuel is managed in the United States. As discussed Federal funding to State, Tribal, and local governments is ng emergency response programs. There are three national under which DOE provides radiological monitoring and r these plans, DOE provides technical advise and assistance agencies involved with a radiological incident.

:d to the final EIS in response to public comments, contains ergency preparedness and security measures associated with esearch reactor spent nuclear fuel in the United States. The

CONT'D.)

ocal authorities,
on of emergency
affected. These
nding for special

tor spent nuclear
if the individual
lcation standards
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a collision with
of combustibles
ely small. Data
73 ship collisions
caused extensive

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fire's intensity is
a hold. Third, all
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s well below the
these reasons, it
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t that involves a
to melt foreign
e EIS presents a
source terms and

ccurred, they are
of a severe ship
great (Appendix
material might be

Response to Comment
Commentor No. 973:
Michael Deal, Mayor, City of Puyallup

973:

Y OF PUYALLUP

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CITY COUNCIL
ADOPTION OF A POLICY,
STATES DEPARTMENT
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he proposed policy are

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nuclear fuel would be shipped

States of America; and

f ten ports through which the

Puyallup City Attorney
218 West Pioneer
Puyallup, Wash. 98371
(206) 841-5525

COMMENTOR NO. 973:
MICHAEL DEAL, MAYOR, CITY OF PUYALLUP (CONT'D.)

WHEREAS, the Draft Environmental Impact Statement (DEIS) was prepared to address the Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel; and

A. The DEIS has used outdated information about the Port of Tacoma, its terminals, its operations, and the surrounding area; 973-1

B. The DEIS did not consider the deep-water depth in the Puget Sound area, which will cause substantial problems in recovery of nuclear fuel shipping containers in case of accident;

C. The DEIS fully ignored the harm which can be caused to the population and environment of the area in case of an explosion and fire aboard a vessel navigating Puget Sound;

D. The DEIS did not recognize the status of Commencement Bay as a superfund site, the stigma attached to this designation, and the expansion of this stigma by Alternative Number One; 973-2

E. The DEIS ignored the significant cleanup effort by the Port of Tacoma, the City of Tacoma, the industries in Commencement Bay, and the associated crippling business interruption issues;

F. The DEIS stated that part of this material would be of interest to unfriendly nations and/or terrorists, and yet did not provide adequate risk and consequence information of a complete, explosive breach of the nuclear fuel by disgruntled persons or terrorists; 973-3

G. The DEIS did not consider the security aspect of these shipments through the Port of Tacoma, the City of Tacoma, Pierce County, and the State of Washington; 973-4

H. The DEIS did not adequately address the life cycle costs or benefits and risks of the proposed alternatives; 973-5

2

Puyallup City Attorney
218 West Pioneer
Puyallup, Wash. 98371
(206) 841-5525

RESPONSE TO COMMENT
COMMENTOR NO. 973:
MICHAEL DEAL, MAYOR, CITY OF PUYALLUP (CONT'D.)

Response to Comment No. 973-1

Updated information on the terminals at the Port of Tacoma has been incorporated into Appendix D, Section D.2.1.9 of the EIS.

Response to Comment No. 973-2

In the unlikely event that a transportation cask loaded with foreign research reactor spent nuclear fuel were to sink in any U.S. coastal waters, it would be recovered, even from the deepest portions of Puget Sound, which reaches depths of 305 meters (1000 feet). Appendix C, Section C.5.5 of the EIS presents information on the probability of a cask sinking in coastal and deep ocean waters.

The transportation casks that would be used for the foreign research reactor spent nuclear fuel are certified if their design meets certain tests, including a fire test, and if the individual casks pass periodic inspections (Section 2.6.2 of the EIS). These certification standards were developed for use of the casks on land, hence the 30 minute fire test, which is considered to be the extent of a high intensity fire resulting from a collision with a tanker truck. The duration of a ship fire is directly related to the amount of combustibles carried on board. The number of severe fires on ships is relatively small. Data available on the last 15 years from Lloyd's of London indicate that of 1,073 ship collisions in port worldwide, only eleven led to fires, and of those, only five caused extensive damage, with only one actually causing buckling of structures.

In respect to the impact a ship fire might have on a spent nuclear fuel transportation cask, there are three facts that would 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's fire 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 at a minimum would keep fires well below the extreme temperatures needed to damage the transportation cask. For these reasons, it would be almost impossible for spent nuclear fuel inside the transportation cask to reach 900 degrees Kelvin (1,160 degrees F), the melting point of the foreign research reactor spent nuclear fuel. The probability of reaching such a temperature was calculated to be less than one in a billion (see 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).

The EIS contains the results of an analysis of the effects of an accident that involves a severe fire (severity category 6), which does not reach the temperature to melt foreign research reactor spent nuclear fuel. Appendix D, Section D.5.3 of the EIS presents a detailed discussion of accident probabilities and radioactive material source terms and Section D.5.4 presents the results of the analyses.

SE TO COMMENT
NTOR NO. 973:
R, CITY OF PUYALLUP (CONT'D.)

. ship fires are possible, and have occurred, they are
EIS indicate that even in the event of a severe ship
ither the consequences nor risks are great (Appendix
h the nonradiological effects of such a catastrophic
cal environment, no additional impacts are predicted
h reactor spent nuclear fuel.

endix D, Section D.2.1.9 of the EIS regarding
nd Site. Shipment of foreign research reactor spent
significant cleanup effort undertaken in the area of
Tacoma as noted by the commentor. Nor should it
ased on the EIS analysis that indicates that there
acts to any of the ports or bays, or the quality of
Appendix C, Section C.2). Spent nuclear fuel
built to preclude release of radioactive material.
casks passing through the Port of Tacoma,
t or waterway cannot leak because the metal fuel is
ct air or water quality. A paragraph has been added
his point and to emphasize the no-impact nature of
ity.

materials by a determined group or individual can
proper security measures greatly reduce the risk.
dix D of the EIS to address terrorism and sabotage.
tor spent nuclear fuel would be conducted meeting
ents in the Code of Federal Regulations (10 CFR
to the final EIS in response to public comments to
gency preparedness associated with transportation
nuclear fuel. This appendix presents the general
which is a document that provides all of the details
the foreign research reactor spent nuclear fuel,
port and in transit to the management site.

clear fuel shipments would be required to meet or
irements in the Code of Federal Regulations (10
ready provide security sufficient to satisfy these
ility of the shipper to provide the required additional

P (CONT'D.)

the life cycle costs,
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Section 4 of the EIS
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g., waste acceptance
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Accordingly, DOE

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Response to Comment
Commentor No. 973:
Michael Deal, Mayor, City of Puyallup (Cont'd.)

esponse to Comment No. 973-9

DE responded to this question by letter and fax on June 16, 1995. The response gave e estimated radiation dose rate near the spent nuclear fuel under the assumption that ere was no transportation cask to provide shielding, as requested by the Port of Tacoma.

EQ regulations and guidance do not require a worst case analysis of accidents in an .S. For the purpose of analysis in the EIS, there is no such thing as a worst case scenario, cause for any worst case that is postulated, a still more severe accident can be postulated adding one more drum of gasoline, one more wrecked rail car, one more terrorist, etc. addition, for each assumption that is made to make a postulated accident more severe, probability of the accident becomes smaller. The EIS does not contain a worst-case enario, but a broad range of port accident scenarios, including severe accidents, is cussed in Section 4.2.2.3 of the EIS. Appendix D, Section D.5.4.3.2 of the EIS presents risks of a very high temperature fire that engulfs a cask, which was part of a sensitivity dy on release fractions. In addition, Section D.5.9 has been added to Appendix D of EIS to address the issue of attack by disgruntled persons or terrorists.

sponse to Comment No. 973-10

e commentor's opposition to bringing foreign research reactor spent nuclear fuel through Port of Tacoma is noted. However, analysis in Sections 4.2.2 and 4.5 of the EIS monstrate that the risk associated with bringing spent nuclear fuel to the Port of Tacoma, to any of the ports analyzed in the EIS, is low.

022:
. BILL BAARSMA

n for their action
. I am sending a copy
nergy.

ngton Cities fully
iday, the AWC
ing vote.

100, FAX (206) 591-5123

RESPONSE TO COMMENT
COMMENTOR NO. 1022:
TACOMA CITY COUNCIL MEMBER BILL BAARSMA

TOR NO. 1022: MEMBER BILL BAARSMA (CONT'D.)

eighborhood Associatio

her We Can Win!"

19 June 1995

t Park Neighborhood Association held
nsportation of atomic waste through Tacoma
. We all wished we could have attended
ly to discuss this project.

us of the 23 people at our meeting that as
hould send you a letter protesting this

eing against such a project for the city

1022-1

Tacoma, Washington 98405

RESPONSE TO COMMENT COMMENTOR NO. 1022: TACOMA CITY COUNCIL MEMBER BILL BAARSMA (CONT'D.)

Response to Comment No. 1022-1

The commentor's opposition to bringing foreign research reactor spent nuclear fuel through the Port of Tacoma is noted. However, analysis in Sections 4.2.2 and 4.5 of the EIS indicates that the risk associated with bringing spent nuclear fuel to the Port of Tacoma, or to any of the ports analyzed in the EIS, is low.

Response to Comment
Commentor No. 1050:
City of Tacoma Fire Department

mment No. 1050-1

ection 2.7.3.2 of the EIS, DOE provides funding to States and Tribes
of Environmental Management and the Office of Civilian Radioactive
nt to assist with transportation related issues. This funding has been
to enhance a jurisdiction's emergency management and response
ides funding, much of DOE's assistance is provided in the form of
ce, for which DOE bears the cost. Assistance may be provided through
cal Assistance Program and under the National Contingency Plan, as
ining, DOE sponsored meetings, informal discussions, and informational

h was added to the final EIS in response to public comments, contains
ons for emergency preparedness and security measures associated with
of foreign research reactor spent nuclear fuel in the United States. The
an interface between DOE and State, Tribal, and local authorities,
entation of the policy, for the identification and resolution of emergency
ecurity issues specific to the communities that would be affected. These
abilities and training of first emergency responders. Funding for special
, would be addressed during this interface.

NTOR NO. 1050:
FIRE DEPARTMENT (CONT'D.)

be DOE's prerogative (could provide assistance)
d. This should be **"will provide"** assistance to any

ddress the financial burden of radiological
zardous materials teams. Nor does it address the
ive equipment, the need for personnel medical
jurisdiction required by State Labor and Industries
mention the on-going training needs and the future

1050-1 (Cont'd.)

ppear as a rather minor issue for non-fire service
pment of a properly prepared response, the details
tools, training, and good safety standards for all
e elements, including liaison with the Department of
who must "get the job done." All this would be
ed on the local jurisdiction. This DEIS makes no
result from choosing Option I or III.

resources be identified and provided to the local
this public safety risk. These resources should be
tion which is responsible for both the emergency
e sense of public safety for their community.

ations should be given to ports already handling

1050-2

RESPONSE TO COMMENT
COMMENTOR NO. 1050:
CITY OF TACOMA FIRE DEPARTMENT (CONT'D.)

Response to Comment No. 1050-2

As the port selection process explains in detail (Appendix D, Section D.1.9 of the EIS) the Port of Tacoma is considered to be able to safely handle the foreign research reactor spent nuclear fuel. The experience criterion used in the port selection process evaluates the port's experience in handling containerized cargo (Appendix D, Section D.1.9.1), not in dealing with radioactive material. Similarly, the criterion which evaluates appropriate port facilities (Appendix D, Section D.1.9.3) does not include the evaluation of facilities for handling radioactive material; experience with handling containers is sufficient. Although the foreign research reactor spent nuclear fuel is radioactive material, the dose rates from the casks used to transport it would be low, so no special handling is required; experience with and facilities for handling containers are sufficient. Therefore, the EIS does not consider an individual port's ability to handle radioactive material or residual radioactive waste.

A sentence has been added to Appendix D, Sections D.1.9.1 and D.1.9.3 of the EIS which states: Because containerized spent nuclear fuel requires no special port experience or facilities specific to the handling of radioactive material, ports were not eliminated from consideration because of lack of such experience or facilities.

PLATTE FIRE DEPARTMENT

the Draft Environmental Impact
nonproliferation Policy Concerning

riod

nding the public comment period

l Impact Statement (EIS) on a

y Concerning Foreign Research

ed by that date will be considered

EIS. Comments received after the

the extent practicable. The

April 21, 1995) that the comment

n be mailed to Mr. Charles Head,

partment of Energy, 1000

S-0001. For more information on

J. Frei

Associate Deputy Assistant
Waste Management
Management

public to buy in to the necessity
level storage of our own waste.
world's nuclear waste dump and
such as Hiroshima and Nagasaki
y vocal. Fear of nuclear storage
fortitude to make the

1063-1

RESPONSE TO COMMENT
COMMENTOR NO. 1063: NORTH PLATTE FIRE DEPARTMENT

Response to Comment No. 1063-1

This EIS evaluates the environmental effects of various options for managing spent nuclear fuel from foreign research reactors (Sections 2.2 through 2.4 of the EIS). It also evaluates the environmental effects of taking no action to manage foreign research reactor spent nuclear fuel (Section 2.5 of the EIS). As in any technical document, the presentation should be objective and factual. No attempt was or should be made in an EIS to influence public opinion except through an objective presentation of the findings of the study.

No management alternative evaluated in the EIS would compel the United States to permanently serve as a repository for foreign research reactor spent nuclear fuel. Foreign research reactor spent nuclear fuel is neither explosive nor flammable. It is radioactive, but it cannot be used to make a nuclear weapon without reasonably sophisticated chemical processing and an associated weapons technology.

As indicated in this document, most of the comments concerning the proposed action were opposed to acceptance of foreign research reactor spent nuclear fuel (Management Alternative 1, Section 2.2 of the EIS).

An assessment of the environmental effects of federal actions is required under NEPA (Section 5 of the EIS). No sooner than 30 days following publication of this final EIS, DOE, after consultation with the Department of State, will publish its Record of Decision on a policy to manage foreign research reactor spent nuclear fuel. The environmental evaluation provided in this EIS is one factor in that decision. As discussed in Section 4 of the EIS, the risks associated with implementation of the proposed action to human health and environment would be low. Thus, there is no environmentally preferred alternative, and the decision would be based on considerations other than the environment.

COMMENTOR NO. 1063:
NORTH PLATTE FIRE DEPARTMENT (CONT'D.)

decision to proceed against public sentiment, and a lot of time, effort and tax dollars will be spent to no avail.

Paul Adams
Fire Chief
North Platte Fire Dept.
715 South Jeffers St.
North Platte, Ne.
69101

308-534-8382

RESPONSE TO COMMENT
COMMENTOR NO. 1063:
NORTH PLATTE FIRE DEPARTMENT (CONT'D.)

COMMENTOR NO. 1075:
THURSTON COUNTY BOARD OF COUNTY COMMISSIONERS

THURSTON COUNTY

Judy Wilson
District One
Diane Oberquell
District Two
Dick Nichols
District Three

BOARD OF COUNTY COMMISSIONERS

June 28, 1995

Charles Head, Program Manager
Office of Spent Nuclear Fuel Management
Mail Stop EM-37
U. S. Department of Energy
1000 Independence Ave. SW
Washington, D.C. 20585

Dear Mr. Head:

We are writing as the Board of County Commissioners and Board of Health for Thurston County in regards to the Foreign Research Reactor Spent Nuclear Fuel project. This project includes as one option, the shipment of high level nuclear waste through the Port of Tacoma in Washington State. In your evaluation of the alternative transportation routes for this project we request you give a high consideration to protection of drinking water supplies.

While the current Environmental Impact Statement for this project does not include rail transportation as an alternative from the Port of Tacoma site, we understand transport by rail is still a possibility. Our concern in this regard is that the main rail line from the Port of Tacoma to the South runs directly through the McAllister Springs recharge area. McAllister Springs is a vital water supply resource to our community, supplying the majority of drinking water to the residents of Olympia, and also being a significant source of water supply to the City of Lacey. In developing the federally mandated wellhead protection program for McAllister Springs, it has been identified that the single most catastrophic event which could affect this source of water supply is a train accident occurring on the main rail line. Due to its close proximity to the springs, a rail accident involving hazardous/nuclear material could wipe out this vital community resource virtually over night. It is of interest to note that the only two derailments which have occurred in Thurston County over the past several years have taken place in close proximity to McAllister Springs. *1075-1*

While the City of Olympia, Thurston County, and the state of Washington will continue to work with Burlington Northern Railroad to address safety issues along this stretch of rail line, we also thought it important to bring this issue to your attention so that wellhead protection, and

Building #1, Room 269, 2000 Lakeridge Drive SW, Olympia, Washington 98502-6045 (360) 786-5440
T.D.D. (360) 754-2933

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RESPONSE TO COMMENT
COMMENTOR NO. 1075:
THURSTON COUNTY BOARD OF COUNTY COMMISSIONERS

Response to Comment No. 1075-1

The commentor's concern for the protection of drinking water supplies is noted. The chance of a transportation cask carrying foreign research reactor spent nuclear fuel crashing near McAllister Springs is low. Even if such an accident did occur, however, the cask would be expected to survive the crash without releasing any radioactive material. (Appendix B, Section B.2 and Section 2.6.2 of the EIS.)

County (Cont'd.)

[redacted]

(Cont'd.)

COMMENT
CITY OF PORTLAND
S HALES (CONT'D.)

and as a port of entry and the use of either
-ring Laboratory as a management site for
r Management Alternative 1 or 3 is noted.
rts of entry for evaluation (Section 2.6.3.1
t site does not directly affect the port

for cleanup activities at the Hanford Site;
vond the scope of this EIS. Section 4.2.4
ss the impacts of foreign research reactor

election of the site or sites at which the
ld be managed is based on the analysis in
nt Nuclear Fuel Management and Idaho
tal Restoration and Waste Management
The Record of Decision for this EIS was
is Record of Decision, all of the aluminum-
el managed by DOE will be managed at
Any other foreign research reactor spent
naged at the Idaho National Engineering
actor spent nuclear fuel would be shipped

ntal impacts associated with the shipment
the EIS identifies ports of entry in the
and handling of foreign research reactor
eveloped to use in determining the final
n D.1.9 of the EIS). The criteria include
pulation, population along the route to the
ıg containers, and port facilities. While
ts which are determined to be acceptable
reactor spent nuclear fuel is accepted by

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TTY OF PORTLAND
IALES (CONT'D.)

d eight military ports) considered.
, resulting in 10 ports that met all of
the EIS present a detailed discussion

to bringing foreign research reactor
ted. However, analysis in Sections
ated with bringing foreign research
to any of the ports analyzed in the

ISE TO COMMENT
NTOR No. 1120:
MAYOR, CITY OF PINOLE

-1

ng foreign research reactor spent nuclear fuel through
analysis in Sections 4.2.2 and 4.5 of the EIS indicates
spent nuclear fuel to the Concord NWS, or to any of

ı reactor spent nuclear fuel is managed in the United
ıd emergency preparedness infrastructure to ensure
ı to the designated management site. As discussed
funding to State, Tribal, and local governments is
gency response programs. There are three national
hich DOE provides radiological monitoring and
lans, DOE provides technical advice and assistance
involved with a radiological incident. DOE is also
:ach State and any Tribal chair, or their designee,
seven days prior to shipment of hazardous cargos,
ıld be the responsibility of the Governor to provide
ocal officials.

and coordination of DOE with local emergency
ıvolved with the acceptance and transportation of
fuel will be discussed in detail in the Transportation
o any individual spent nuclear fuel shipment and
:ials. The general provisions of the Transportation
:h was added to the final EIS in response to public

receipt and transshipment of the foreign research
ıot affect the environment. Spent nuclear fuel
l built to preclude release of radioactive material.
ıs ever been released from a spent nuclear fuel
accident. A paragraph has been added to Section
t and to emphasize the no-impact nature of these

, or transport modes for the foreign research reactor
WS is selected, then DOE would choose the best
epartment of Transportation regulations (49 CFR
route 4, Route 24, and/or Waterford Road. These
rucks would probably use. The State of California
ed route, which the shipments would be required to
ırt 397.103.

COMMENTOR NO. 1120:
PETER MURRAY, MAYOR, CITY OF PINOLE (CONT'D.)

Secretary Hazel R. O' Leary
July 18, 1995

In this regard, we urge you to seriously address the specific concerns raised by Contra Costa County in their June 6, 1995 report on this subject, which is attached for your reference. 1120-2

In short, we oppose this proposal because of its cumulative impacts and because the site proposed and the transportation routes to it are too close to Pinole. Further, before any further consideration is given at all to this proposal, the Environmental Impact Statement is inadequate and should be made more comprehensive and realistic. 1120-1 (Cont'd.) 1120-3

Thank you for your consideration. Once again, we urge you to oppose the use of the Concord Naval Weapons facility as a port of entry for the importation and transport of foreign research reactor spent nuclear fuel.

Very truly yours,

Peter Murray
Mayor of Pinole

PM:se

Attachment

cc: Charles Head, Program Manager, Office of Spent Nuclear Fuel Management (EM-37)
President William Clinton
Senator Barbara Boxer
Senator Dianne Feinstein
Congressman George Miller
Governor Pete Wilson
Senator Dan Boatwright
Assemblyman Robert Campbell
Dr. William B. Walker, County Health Officer
Contra Costa Board of Supervisors
Pinole City Council

\sheryl\o'leary

-2-

RESPONSE TO COMMENT
COMMENTOR NO. 1120:
PETER MURRAY, MAYOR, CITY OF PINOLE (CONT'D.)

Response to Comment No. 1120-2

DOE has provided its detailed responses to the Board of Supervisors' comments. DOE responses are included in this document and can be located by consulting the list of commentors.

Response to Comment No. 1120-3

Potential environmental effects which could result from implementation of the proposed action were evaluated during preparation of this EIS. As discussed in Section 4 of the EIS, implementation of the proposed action would result in no significant benefits or risks to human health or the environment at candidate ports, along representative transportation routes, or at candidate management sites. Conservative assumptions were made during the analyses (Sections 4.2.2, 4.2.3, and 4.2.4 of the EIS). More realistic assumptions would result in even lower estimated values of radiological risks.

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and built to preclude release of
"s of spent nuclear fuel shipments,
a spent nuclear fuel transportation
en punctured, even as the result of
at spent nuclear fuel transportation
ect the quality of the water supply
or any other path. Analysis of a
ction 4.2.2.3 of the EIS) indicates
at no cleanup would be required,
the accident. This means that
l. To ensure this was the case, if
es in the area, as well as food and

eactor spent nuclear fuel is neither
licy deals with is a metal which
either aluminum or stainless steel.
presents a detailed description of

Response to Comment Commentor No. 1123: Contra Costa Water District (Cont'd.)

ıse to Comment No. 1123-2

ment breaching and fire scenarios at ports are discussed in detail in Appendix D tion 4.2.2.3 of the EIS. In addition, Section 2.7 of the EIS discusses emergency ment capabilities. Because the EIS considers a range of low probability accident s, and demonstrates that resulting consequences would not adversely affect human environmental resources, any impacts to local waters would be correspondingly

ısportation casks that would be used for the foreign research reactor spent nuclear certified if their design meets certain tests, including a fire test, and if the individual ss periodic inspections (Section 2.6.2 of the EIS). These certification standards veloped for use of the casks on land, hence the 30 minute fire test, which is red to be the extent of a high intensity fire resulting from a collision with a tanker he duration of a ship fire is directly related to the amount of combustibles carried l. The number of severe fires on ships is relatively small. Data available on the years from Lloyd's of London indicate that of 1,073 ship collisions in port de, only eleven led to fires, and of those, only five caused extensive damage, y one actually causing buckling of structures.

ct to the impact a ship fire might have on a spent nuclear fuel transportation cask, three facts that would mitigate the potential damage. First, ship fires tend to different areas of the ship as the combustible material is consumed, so the cask ot be exposed for the entire duration of the fire. Second, a ship's fire intensity is y limited by the amount of oxygen that can reach the interior of a hold. Third, all at would be used to transport foreign research reactor spent nuclear fuel have fire suppression equipment, which at a minimum would keep fires well below the temperatures needed to damage the transportation cask. For these reasons, it e almost impossible for spent nuclear fuel inside the transportation cask to reach rees Kelvin (1,160 degrees F), the melting point of the foreign research reactor clear fuel. The probability of reaching such a temperature was calculated to be one in a billion (see Attachment D5 to Appendix D of the EIS). To put this ture into perspective, steel used in a ship's structure buckles at around 700 degrees 800 degrees F).

contains the results of an analysis of the effects of an accident that involves a ire (severity category 6), which does not reach the temperature to melt foreign reactor spent nuclear fuel. Appendix D, Sections D.5.3 and D.5.4 present a discussion of accident probabilities and radioactive material source terms and lts of the analyses, respectively. In conclusion, although long duration ship fires ible, and have occurred, they are uncommon events. Analyses in the EIS indicate n in the event of a severe ship fire involving a spent nuclear fuel transportation

SE TO COMMENT
NTOR NO. 1123:
VATER DISTRICT (CONT'D.)

o fire involving a spent nuclear fuel transportation isks are great (Appendix D, Section D.5.5 of the) 5.4.3.2 of the EIS

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reactor spent nuclear fuel is managed in the United d emergency preparedness infrastructure to ensure to the designated management site. As discussed unding to State, Tribal, and local governments is ency response programs. There are three national ich DOE provides radiological monitoring and ans, DOE provides technical advise and assistance involved with a radiological incident. DOE is also ach State and any Tribal chair, or their designee, even days prior to shipment of hazardous cargos ld be the responsibility of the Governor to provide cal officials.

nd coordination of DOE with local emergency volved with the acceptance and transportation of fuel will be discussed in detail in the Transportation any individual spent nuclear fuel shipment and ials. The general provisions of the Transportation ch was added to the final EIS in response to public

e foreign research reactor spent nuclear fuel is he commentor's request for site-specific EISs for , but the necessary site-specific analyses are already in the Appendices.

23-1, above.

4

risk associated with an accident in port involving ear fuel determined that no decontamination, rty would result from the worst plausible accident tion D.5 of the EIS.) and that the risks associated roposed action, are low. The analysis in the EIS ial could be released from the spent nuclear fuel ent. However, the analyses in Section 4.2.2.3 and

Commentor No. 1123: Contra Costa Water District (Cont'd.)

Response to Comment Commentor No. 1123: Contra Costa Water District (Cont'd.)

Appendix D, Section D.5 of the EIS determined that no decontamination, interdiction or condemnation of property would result for the worst plausible accident. Close in to the accident, near the cask would likely require some cleanup, but the overall impact on water supplies, air quality, property, and structures in the port would be low.

Response to Comment No. 1123-5

In regard to water quality, DOE is convinced that there would be no significant adverse impacts to any of the ports that could be used to receive the foreign research reactor spent nuclear fuel. A paragraph has been added to Section 4.2.2.2 of the EIS to make this point and to emphasize the no-impact nature of these shipments on air and water quality.

Since neither the incident-free operation nor the accident situation would result in any significant contamination, no mitigation measures were developed.

Air and water quality impacts from facility construction and operation activities at the management sites have been addressed in Appendix F of the EIS. The overall conclusion for each of the sites considered is that radiological and nonradiological effects on air and water quality from the construction and operation of facilities used for the management of foreign research reactor spent nuclear fuel would be low, and that cumulative pollutant concentrations would be well within allowable air and water quality standards. Similarly, as discussed in Section 4.2.4.1, under Secondary Impacts of Accidents, no measurable impacts to water quality would be expected from the postulated accidents involving foreign research reactor spent nuclear fuel.

Therefore, the contribution to the individual and population dose from a water consumption pathway, would be very small compared to the contributions from direct exposure, inhalation, and the food ingestion pathway.

Response to Comment
Commentor No. 1124: Port of Portland

sponse to Comment No. 1124-1

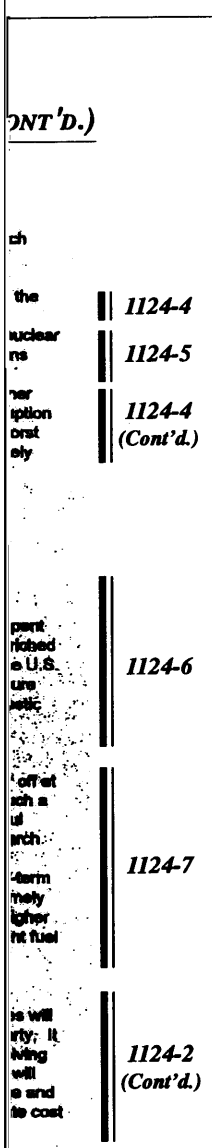
e commentor's support for the proposed nuclear weapons nonproliferation policy and velopment of a policy to manage spent nuclear fuel from foreign research reactors to vent its use in nuclear weapons, is noted.

sponse to Comment No. 1124-2

e commentor's preference for the overseas management alternative is noted. This is nagement Alternative 2, which is discussed in Sections 2.3 and 4.4 of the EIS.

sponse to Comment No. 1124-3

e commentor's opposition to management of spent nuclear fuel from foreign research ctors in the United States (Management Alternatives 1 or 3; Sections 2.2 and 2.4 of the 3, respectively) is noted. Section 2.3 of the EIS describes other alternatives under nsideration.



Response to Comment
Commentor No. 1124: Port of Portland (Cont'd.)

Response to Comment No. 1124-4

The commentor's opposition to bringing foreign research reactor spent nuclear fuel through the Port of Portland is noted. However, analysis in Sections 4.2.2 and 4.5 of the EIS indicates that the risk associated with bringing spent nuclear fuel to the Port of Portland, or to any of the ports analyzed in the EIS, is low.

Response to Comment No. 1124-5

Ten ports that are considered to be able to safely receive foreign research reactor spent nuclear fuel were identified using the port selection criteria discussed in Appendix D, Section D.1.9 of the EIS. Examination of the port selection criteria will show that there is no stated preference for military ports, contrary to the comment. Either military or commercial ports, if they meet the selection criteria, are equally acceptable. Risks associated with accidents in both military and commercial ports are discussed in Appendix D, Section D.5.5.

Response to Comment No. 1124-6

The commentor's concern that the U.S does not have a storage and disposal plan for its own wastes is noted. Storage in the United States of the foreign research reactor spent nuclear fuel is Management Alternative 1 or 3, which are discussed in Sections 2.2, 2.4, 4.2, 4.3, and 4.5 of the EIS. Storage technologies are discussed in Section 2.6.5.1 of the EIS.

The impacts of ultimate disposition of the foreign research reactor spent nuclear fuel are discussed qualitatively in Section 4.2.7 of the EIS. DOE is currently evaluating the feasibility of construction of a disposal site at Yucca Mountain, NV. In the meantime, support for U.S. nuclear weapons nonproliferation policy requires DOE and the Department of State to consider other means of dealing with the foreign research reactor spent nuclear fuel (Section 1.1. of the EIS). As stated in Sections 2.1 and 4.2.7 of the EIS, if a geologic repository was not prepared to accept the foreign research reactor spent nuclear fuel or the high level radioactive waste form resulting from the chemical separation or other processing of such spent nuclear fuel, by the end of the 40-year program period, DOE would continue to manage the spent nuclear fuel, or the high level waste forms, until such a geologic repository were available.

Response to Comment No. 1124-7

The commentor's suggestion that implementation of Management Alternative 1 could demotivate and suppress meaningful progress towards self sufficiency on the part of foreign research reactor operators, 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 reactors 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. 1124: Port of Portland (Cont'd.)

nt No. 1124-8

t the least costly alternative is a hybrid that involves reprocessing uration at the Savannah River Site, and management at the Idaho aboratory. Chemical separation of aluminum-based elements in seas reprocessing) and management of TRIGA elements in the costs as the hybrid, depending on how fixed costs at the Savannah There is no technically feasible alternative that excludes U.S. nt nuclear fuel or the high-level waste resulting from overseas of cost. Even if all the spent nuclear fuel could be reprocessed ot), a substantial fraction of the high-level waste would have to d States. Storage of the spent nuclear fuel in the countries that ocessing for whatever reason would be significantly more costly ed States, assuming equivalent levels of security and safeguards. rage suffers from extremely large diseconomies of scale. Finally, expressed any interest in accepting the spent nuclear fuel or the other countries.

ut No. 1124-9

ios for implementation of the proposed action are noted. Several be noted. Many of the foreign research reactor operators do not storage or other disposition of their spent nuclear fuel. This is a ng policy of cooperation with the United States to prevent e United States was accepting the spent nuclear fuel from these , the intent of the proposed policy is to remove as much U.S.- rom civil programs worldwide and give foreign research reactor their reactors to the use of LEU fuels and to make arrangements EU spent nuclear fuel (Section 1.2 of the EIS).

ut No. 1124-10

ence for overseas reprocessing is noted. This is Management tive 1b, which is discussed in Sections 2.3 and 4.4.2 of the EIS.

r of Portland (Cont'd.)

United States nuclear weapons
uce and ultimately eliminate highly
er, the Draft EIS doesn't adequately
ased fuel (35 reactors) and
till operate with high enriched
rted, shipments of high enriched
IEU will continue to occur resulting in
s. This bomb-grade material is the
e. Appropriately, details are not
ll be shipped or by whom.

1124-11

natives 2 and 3. The 'bring it all
in substantial detail.' The
tions were analyzed less
raft EIS at page 5:

separated HEU that is placed back
l."

is current policy to one that is
foreign reprocessor, reactor owner)
ted to Low Enriched Uranium before

1124-12

Dounreay in Scotland) currently do
h-density LEU fuels that the United
ctors to use to replace the HEU

the HEU fuels and with
the HEU fuels (including the TRIGA
s could handle the high-density LEU
reactors to use to replace HEU

1124-13

shes to use reprocessing to control
tinue to use, or convert back to, fuel

to be found to allow Dounreay or
rance, or Japan) time to make the
ities. In the interim the storage
th the research reactors, one or
cial nuclear power programs and
, Germany, Japan, Sweden,
France, Japan, and the UK).

1124-14

Port of Portland Comments, Page 4 of 11

Response to Comment
Commentor No. 1124: Port of Portland (Cont'd.)

Response to Comment No. 1124-11

HEU is weapons-grade material. Many of the foreign research reactors are still operating with HEU fuels. One of the major goals of the proposed action is to encourage those foreign research reactor operators still using HEU fuels to convert to LEU fuels (Sections 1.2 and 1.3 of the EIS). By accepting the spent nuclear fuel from the foreign research reactor operators, research reactors still using HEU fuel would be provided with a limited period of time to convert to operating with LEU fuel.

Response to Comment No. 1124-12

As discussed in Section 2.3 of the EIS, certain arrangements in support of U.S. nuclear weapons nonproliferation policy would have to be established with the foreign reprocessors and research reactor operators before overseas reprocessing could be implemented with U.S. assistance. These could include steps such as blending the HEU down to LEU, developing the capability to reprocess high-density LEU spent nuclear fuel, and converting the research reactors to the use of LEU. There is no guarantee that such arrangements can be worked out, but DOE and the Department of State are discussing these issues with the appropriate parties.

Response to Comment No. 1124-13

DOE acknowledges that the Dounreay Site has the capability now to reprocess the bulk of the existing inventory of foreign research reactor spent nuclear fuel. The current lack of capability applies to the new high-density LEU fuel made of a uranium-silicon-aluminum alloy. As stated in Section 1.1 of the EIS, it is not clear whether the extra equipment necessary to reprocess this new fuel will be installed at the Dounreay Site.

Response to Comment No. 1124-14

The sentence cited by the commentor has been revised in response to this comment and also in response to Comment 311-4.

COMMENT
r OF PORTLAND (CONT'D.)

ıt Alternative 2 is noted again. The
ed briefly in the Summary, and more

IS, it is in the self interest of the U.S. to
luce and eventually eliminate the use of
civil programs worldwide. No such
lear fuel from domestic nuclear power

ither addressed in less detail than might
)tions, the following points are relevant:

: countries of origin would cost many
agement of the fuel in the United States.
rogram —storage/separation and spent
/e very large economies of scale. Any
of sites for the two or three in the EIS
S already addresses the practical, legal,
ı an approach. The final EIS discusses
approach.

emical separation at the Savannah River
t the same as the hybrid described for
e significantly reduced only through
he Savannah River Site for chemical
)ther programs and long-term usage of
l Engineering Laboratory. The reason
ıat they all depend on the timing of the
ıbility of concurrent operations and the
Site, and the usage of existing facilities
. Subject to constraints on the rate at
fuel, other issues (e.g., the split between
J and HEU, between aluminum-based
ıntries and developing countries, etc.)
cost drivers are fully and completely
ted separately.

ternative 2 is noted. This alternative is

Response to Comment
or No. 1124: Port of Portland (Cont'd.)

omment No. 1124-18

tion of spent nuclear fuel from foreign research reactors is not really an sity when the enrichments are over 20 percent. Nevertheless, the pport for some form of chemical separation is noted.

omment No. 1124-19

s opposition to bringing foreign research reactor spent nuclear fuel through land is noted. However, analysis in Sections 4.2.2 and 4.5 of the EIS risk associated with bringing spent nuclear fuel to the Port of Portland, orts analyzed in the EIS, is low.

omment No. 1124-20

ling or loading/unloading procedures would be required for the foreign spent nuclear fuel when it is contained in a cask that is inside a standard er.

omment No. 1124-21

e EIS addresses the security measures that would be taken to ensure that no unacceptable risks of terrorism or theft of materials. DOE considers y of the ports indicated by the port selection process, including Portland, t normal commercial operations, and therefore not endanger the ports' ect to their clients. This position is based on the fact that the foreign spent nuclear fuel would be accepted into the United States in standard ers that would require no special handling or precautions. As such, there erse commercial or economic reaction to the use of the port. Historically, dverse commercial impacts to the ports that received foreign research clear fuel for the 30 plus years it was received.

omment No. 1124-22

hat foreign research reactor spent nuclear fuel could safely be received orts, as it has in the past, without additional security such as might be ry bases. The security provided for the spent nuclear fuel shipments d to meet or exceed all the applicable security requirements in the Code lations (10 CFR Part 73). If any port did not already provide security sfy these requirements, it would be the responsibility of the shipper to ired additional security.

lting any — 1124-22 (Cont'd.)

rk with a t of the terminal ur within hing hole rapidly matter ssed in — 1124-26

itenance , are the cient and in the ons very users — 1124-27

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F) gional he Port ntly, the he — 1124-29

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Response to Comment Commentor No. 1124: Port of Portland (Cont'd.)

Appendix H has been added to the final EIS in response to public comments to better describe the security and emergency preparedness associated with transportation of the foreign research reactor spent nuclear fuel. This appendix presents the general provisions of the Transportation Plan, which is a document that provides all of the details associated with the transportation of the foreign research reactor spent nuclear fuel, including the security arrangements in port and in transit to the management site(s).

DOE is confident that the foreign research reactor spent nuclear fuel can safely be transported to the management site(s), if the foreign research reactor spent nuclear fuel is accepted into the United States. The security measures employed would meet or exceed all the security requirements in the Code of Federal Regulations (10 CFR Part 73). DOE supports these regulations as being adequate to protect the foreign research reactor spent nuclear fuel. Section 2.8 of the EIS discusses domestic security.

Response to Comment No. 1124-23

Although the foreign research reactor spent nuclear fuel is radioactive material, the dose rates from the transportation casks would be low. No special handling or loading/unloading procedures would be required for the foreign research reactor spent nuclear fuel when it is contained in standard shipping containers; experience with handling containers is sufficient. Therefore, no special training of longshoremen is required.

Response to Comment No. 1124-24

The EIS analyses determined that there would be no significant adverse impacts to the ecology of any of the ports that might be used to receive the material (Sections 4.2.4.2.8 and 4.5 of the EIS). Spent nuclear fuel transportation casks are designed and built to preclude release of radioactive material. To date, no radioactive material has ever been released from a spent nuclear fuel transportation cask as a result of an accident (Section 2.6.2 of the EIS). Spent nuclear fuel transportation casks passing through Portland, or any port, cannot leak (the spent fuel would be shipped dry), so it would not affect either the air or water quality. A paragraph has been added to Section 4.2.2.2 of the EIS to make this point and to emphasize the no-impact nature of these shipments on air and water quality. No significant human health, safety, or environmental risks were found to exist at any of the candidate commercial or military ports selected (Section 4.2.2 of the EIS).

Response to Comment No. 1124-25

The volume or size of the local marine traffic (present or future) was not considered in the calculation of risk associated with the shipment of foreign research reactor spent nuclear fuel. In general, the number of ship mishaps is not proportional to the amount of ship traffic because port snip traffic is slow, and even when heavy, is normally a small number of ships per hour. Historically, increasing the volume does not significantly increase the probability of an accident. Rather, the number of ship mishaps is associated

RESPONSE TO COMMENT
COMMENTOR NO. 1124: PORT OF PORTLAND (CONT'D.)

AND (CONT'D.)

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1124-30 (Cont'd.)

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1124-31

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specific state law
sures.

1124-36

mments, Page 8 of 11

with navigational hazards and distances from the port to the open ocean or a large bay (Appendix D, Section D.1.9.2 of the EIS). Appendix D, Section D.5.3.1.3 of the EIS presents a discussion of the determination of the probability of ship accidents used in the EIS.

As a result of public comments, eight additional military ports were considered, and the selection criteria were carefully applied in order to properly balance military experience with handling containers and hazardous cargos. Spent nuclear fuel from foreign research reactors is shipped in standard containers, and does not require special handling techniques (Section 2.6.3.2.2 of the EIS) or additional security beyond that required by NRC regulation (which can readily be provided in any of the commercial or military ports). No special precautions are required by the U.S. Coast Guard (Section 2.6.3.2.2 of the EIS).

Response to Comment No. 1124-26

The Port of Portland's opposition to using their port on the basis of high recreational use of the waters around the terminal is noted, and will be taken into consideration when choosing ports, if foreign research reactor spent nuclear fuel is accepted into the United States. Recreational use of waters around the port is one of the considerations discussed in Appendix D, Section D.1.9.6 of the EIS, Desirable Port Attributes.

Security would be provided for all shipments of foreign research reactor spent nuclear fuel, as required by the Code of Federal Regulations (10 CFR Part 73). If any port did not already provide security sufficient to satisfy these requirements, it would be the responsibility of the shipper to provide the required additional security. The general security provisions are provided in Appendix H of the EIS. This appendix presents the general provisions of the Transportation Plan, which is a document that would be prepared for each foreign research reactor spent nuclear fuel shipment to specify details of the transportation process, including security provisions in port and during transit.

Response to Comment No. 1124-27

See the response to Comment 1124-21, above.

Response to Comment No. 1124-28

Dealing with demonstrations is the responsibility of the local and State governments, as well as the military if such demonstrations occur on military bases. However, if the demonstrations were the result of the receipt of foreign research reactor spent nuclear fuel, DOE would support local, State, or military organizations in dealing with demonstrations.

Response to Comment No. 1124-29

See response to Comment No. 1124-24, above.

PONSE TO COMMENT
24: PORT OF PORTLAND (CONT'D.)

124-30

hen's refusal to off-load this material was not considered
ppendix D, Section D.1.9 of the EIS) since that factor
y to safely receive containers carrying foreign research
ecision as to which port or ports would be used, in the
r spent nuclear fuel is accepted into the United States,
Decision. The possibility of strikes is one of the many
in determining which ports to use. DOE will work with
to ensure that the foreign research reactor spent nuclear
epted into the United States.

124-31

24-24, above.

124-32

in stating that the draft EIS concluded that there is a
nts would come in chartered vessels. The EIS concludes
d vessels were acceptable due to both having low risk
ction 4.2.2 of the EIS). The Record of Decision will
ould be used if foreign research reactor spent nuclear
ted States.

124-33

d that, if commercial shipping were to be used, there
before arrival at Portland (Section 4.2.2.1 of the EIS).
y that included two intermediate port calls, including
, was calculated and is presented in Section 4.2.2.3 of
includes two intermediate port stops is slightly higher
ciated with both journeys is low.

24-34

s about how foreign research reactor spent nuclear fuel
ld affect other ship handling at the port are not based
culation on how the shipments would be implemented
nt nuclear fuel is accepted by the United States. In the
indicates that foreign research reactor spent nuclear
l States, DOE will do everything practical to minimize
the port(s) of entry.

(CONT'D.)

RESPONSE TO COMMENT
COMMENTOR NO. 1124: PORT OF PORTLAND (CONT'D.)

Response to Comment No. 1124-35

The Port of Portland's information regarding the projected growth of usage of the port is noted and will be considered when the Record of Decision is developed, if foreign research reactor spent nuclear fuel is to be accepted by the United States.

Response to Comment No. 1124-36

DOE does not agree with the Port of Portland on the need to build a special-purpose facility for the handling of the foreign research reactor spent nuclear fuel, if the spent nuclear fuel were to be received in Portland. The port evaluation and selection process, which indicated that the Port of Portland was an acceptable port, was based upon the assessment of the port's existing facilities. If DOE decides to accept the maximum quantity of foreign research reactor spent nuclear fuel in the United States under the basic implementation of Management Alternative 1 (Section 2.2.1 of the EIS), the number of single-cask shipments expected to be received at West Coast ports would be approximately 185 over 13 years, or about one a month. Other possible amounts of foreign research reactor spent nuclear fuel that might be accepted on the West Coast under the hybrid alternative range from 185 to zero. If chartered ships were used, more than one cask would be shipped at a time, so the number of ships to be received would be less. This amount of traffic would neither impact existing facilities, nor require a new special-purpose facility.

Response to Comment No. 1124-37

The commentor's opinion that the DOE's risk assessment is scientifically correct, but still inadequate, is noted. The commentor's focus on the consequences of what happens if scenarios is also noted. See the response to Comment 1124-39 below.

Appendix D, Section D.5.4.3.2 presents the risks of a very high temperature fire that engulfs a spent nuclear fuel transportation cask, which was part of a sensitivity study on release fractions. In addition, Section D.5.9 has been added to Appendix D of the EIS to address the issue of attack by disgruntled persons or terrorists.

Response to Comment No. 1124-38

Commentor's characterization of the approach and assumptions used for vitrified high-level waste accident analysis in the EIS is correct. This accident scenario is discussed in Section 4.4.2.3 under the subheading, Impacts of Accidents During Port Activities and in Appendix D, Section D.5.7 of the EIS. The results mentioned by the commentor (970 person-rem, 0.48 LCF, etc.) are not the same as the results presented in the EIS. The source of these results is not clear to DOE.

D.)

Response to Comment
ıentor No. 1124: Port of Portland (Cont'd.)

ion of the severe ship fire and terrorism event, both unlikely in themselves, is dered plausible. The analysis of accidents in port (Appendix D, Section D.5) performed at the worst location in the approach to the port (Appendix D, Section these are called channel locations in the analyses. In the case of Portland, this was assumed to occur at the St. Johns Bridge. The results of these channel ns, like the port or dock locations, all showed low risk (Section 4.2.2.3 of the

e to Comment No. 1124-40

ıse fractions quoted by the commentor are those that were used for land ıtion accidents (Appendix E, Section E.6.4.2 of the EIS). As the commentor se release fractions are inappropriate for a severe accident, such as might occur vere ship accident involving cask damage and an engulfing fire. The EIS did ıis type of accident, and used release fractions that represent the release of more st biologically important isotopes. Also, Appendix D, Section D.5.4.3.2 of the ısses very high temperature effects on release fractions. The high fuel ıres discussed in this section are considered extremely unlikely.

e to Comment No. 1124-41

sed in Section 2.7.3.2 of the EIS, DOE provides funding to States and Tribes ıe Office of Environmental Management and the Office of Civilian Radioactive ınagement to assist with transportation related issues. This funding has been he past to enhance a jurisdiction's emergency management and response ɛs. Besides funding, much of DOE's assistance is provided in the form of assistance, for which DOE bears the cost. Assistance may be provided through ıdiological Assistance Program and under the National Contingency Plan, as ough training, DOE sponsored meetings, informal discussions, and informational

H of the EIS contains the general provisions for emergency preparedness and neasures associated with the transportation of foreign research reactor spent el in the United States. The provisions include an interface between DOE and bal, and local authorities, prior to the implementation of the policy, for the ıion and resolution of emergency management and security issues specific to unities that would be affected. These issues include capabilities and training of gency responders. Funding for special needs, if necessary, would be addressed s interface.

Commentor No. 1141:
City Council of the City of Galveston

RESOLUTION NO. 95-56

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GALVESTON, TEXAS, OPPOSING THE U. S. DEPARTMENT OF ENERGY'S PROPOSED PLAN TO TRANSFER NUCLEAR WASTE THROUGH THE PORT OF GALVESTON; PROVIDING FOR FINDINGS OF FACT AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the U. S. Department of Energy is considering importing spent fuel for storage in the United States to guard against the fuel's use in producing nuclear weapons by other countries; and

WHEREAS, the fuel contains highly enriched uranium, which is a weapons-grade nuclear material; and

WHEREAS, the U. S. Department of Energy is considering using the Port of Galveston as an entry location for the fuel; and

WHEREAS, if the fuel enters the United States through the Port of Galveston, it will be loaded onto rail cars or trucks for transportation to other areas of the United States; and

WHEREAS, the use of the Port of Galveston as the entry location for the fuel is potentially hazardous to Galveston, and produces no economic benefits to either the City or the Port of Galveston, and will have a detrimental effect on the tourist industry; and

WHEREAS, public hearings have been conducted and the residents of Galveston do not support the U.S. Department of Energy's proposed plan;

WHEREAS, the City Council of the City of Galveston deems it in the public interest to oppose the U. S. Department of Energy's proposed plan to use the Port of Galveston as an entry level of the fuel;

Response to Comment
Commentor No. 1141:
City Council of the City of Galveston

RESPONSE TO COMMENT COMMENTOR NO. 1141: OF THE CITY OF GALVESTON (CONT'D.)

t No. 1141-1

ion to bringing foreign research reactor spent nuclear fuel through noted. However, analysis in Sections 4.2.2 and 4.5 of the EIS sociated with bringing spent nuclear fuel through the Port of ort evaluated, is low.

COMMENTOR NO. 1141:
CITY COUNCIL OF THE CITY OF GALVESTON (CONT'D.)

IN TESTIMONY WHEREOF, I subscribe my name hereto officially under the corporate seal of the City of Galveston this _____ day of _____, 19___.

_____
Secretary for the City Council
of the City of Galveston

RESPONSE TO COMMENT
COMMENTOR NO. 1141:
CITY COUNCIL OF THE CITY OF GALVESTON (CONT'D.)

TO COMMENT
)7: PORT OF GALVESTON

ement Alternative 2 is noted. Sections 2.3 and
and disadvantages of overseas storage and

ted in Section 4 of the EIS, the risk associated
ctor spent nuclear fuel through any of the ports
ociated with the handling of other hazardous
instances, the perception by the public of the
nay be greater than the actual risk, or the risk
es. However, adverse impacts have not been
esearch reactor spent nuclear fuel was accepted
NEPA regulations, the socioeconomic effects
associated with psychological fear of receiving
perience, DOE considers that shipping foreign
the Port of Galveston would have no detrimental
opment at the port.

de multiple roadways for exiting the port. The
te highway (I-45) and alternate routes are not

ut the State of Texas would be selected in
ing agency could designate a preferred route,
ollow, in accordance with 49 CFR Part 397.103.
for the trucks to leave the port as soon as they

MMENT

F GALVESTON (CONT'D.)

uclear fuel transportation cask should
Each shipment would be made in
ıe trucks avoid traffic. Furthermore,
k calculations in Appendix E. The
the possibility of traffic jams.

United States would be a reduction
l programs would be diverted into
gainst us or our allies.

t nuclear fuel from foreign research
es 1 or 3; Sections 2.2 and 2.4 of the
of the EIS describe other alternatives
mpacts of Management Alternatives
ively. The cost associated with each
on 4.9 of the EIS.

reign research reactor spent nuclear
uding a fire test, and if the individual
EIS). These certification standards
land, hence the 30 minute fire test,
y fire resulting from a collision with
lated to the amount of combustibles
s is relatively small. Data available
that of 1,073 ship collisions in port
nly five caused extensive damage,
Hence, contrary to the commentor's

transportation cask, there are three
ship fires tend to move to different
nsumed, so the cask would not be
a ship fire's intensity is normally
erior of a hold. Third, all ships that
pent nuclear fuel have built-in fire
keep fires well below the extreme
sk. For these reasons, it would be
sportation cask to reach 900 degrees
ch reactor fuel. The probability of

(CONT'D.)

ion (Attachment
e, steel used in a

t that involves a
to melt research
ailed discussion
ue results of the

curred, they are
of a severe ship
uences nor risks

ments, contains
associated with
ited States. The
ocal authorities,
n of emergency
e affected. The
issues.

J that could be
ssed in Section
all 41 nations
um amount of
4.6 MTHM of
der any of the

disposition of
to remove as
d give foreign
U fuels and to
ion 1.2 of the
ovided foreign

SE TO COMMENT
PORT OF GALVESTON (CONT'D.)

Section 4 of the EIS, the risks associated with
n to human health or the environment would be
liferation benefits) would, as noted, be low. These
ased port activity. Overseas management of spent
ctors (Management Alternative 2) is discussed in
the United States would be technically, politically,
is than management in as many as 41 separate

d cost more than storage in the United States (and
technically difficult, if not impossible, in many
f several of the countries. Finally, many countries
actor programs on the belief that the United States
ear fuel. Failure of the United States to accept the
ntire program to substantially eliminate the use of
ium in civilian programs worldwide.

EIS describe interim storage for foreign research
hat a policy of management in the United States is
of the EIS, foreign research reactor spent nuclear
nited States pending ultimate disposition.

9

foreign research reactor spent nuclear fuel through
ver, analysis in Sections 4.2.2 and 4.5 of the EIS
bringing spent nuclear fuel through the Port of
is low.

10

lidate ports of entry under consideration to receive
fuel. The analysis in Sections 4.2.2 and 4.5 of the
with receipt of this spent nuclear fuel at the Port of
s low. DOE acknowledges that, in many instances,
ssociated with spent nuclear fuel may be greater
other even more hazardous activities. Sections
rate that the risk to port personnel and the general
foreign research reactor spent nuclear fuel is low.

11

mate disposition of domestic and defense spent
ition is discussed qualitatively in Section 4.2.7 of

Response to Comment
Commentor No. 1212:
ver, Mayor, City of Pleasanton

t No. 1212-1

ports, routes, or transport modes for the foreign research reactor ncord NWS is selected, then DOE would choose the best route with Department of Transportation regulations (49 CFR Part ntative Interstate Highway routes for the trucks are shown in t E. Some of these routes go south on I-680 and turn east on I- a routing agency could designate a preferred route, which the ired to follow, in accordance with 49 CFR Part 397.103.

.6.4.2 of the EIS, the NRC regulations concerning actual route in 10 CFR Part 73. Shippers are required to submit proposed el shipments to NRC for approval, and NRC publishes a public lists routes that have been evaluated and approved for specific nts. The regulation also requires DOE to inform the Governor al chair, or their designee, along the transportation route at least hipment of hazardous cargoes, including radioactive materials.

Commentor No. 1212: Mayor, City of Pleasanton (Cont'd.)

adequately describe security precautions for the shipments. It is
ton's Police Department would be called upon to ensure safe
gh Pleasanton. We do not know whether the shipments will
nt role our Police Department would be asked to play in

1212-2

e types of security precautions that will be taken, including a
that DOE expects from local law enforcement agencies.

he draft EIS does not include a comparative analysis of the several
ion. A side-by-side analysis of the various sites is not only
perly assess the complex impacts associated with the various sites.

1212-3

to comment on the draft EIS, and for extending the public review
present comments. Please call me or our staff if you wish to
er.

of Supervisors

er
n

wright
yer
rd Rainey
el Sweeney
gueroa
Governments

Response to Comment Commentor No. 1212: Ben Tarver, Mayor, City of Pleasanton (Cont'd.)

Response to Comment No. 1212-2

The requirements for physical protection of spent nuclear fuel shipments are specified in 10 CFR Part 73.37. The principal points are (1) cooperation with local law enforcement agencies, (2) armed escorts, and (3) communications with a communications center that is staffed 24 hours per day. (Section 5.4.2 of the EIS.)

For truck shipments in heavily populated areas, one escort vehicle containing an armed guard would lead the truck and another escort vehicle containing another armed guard would follow the truck. In less populated areas, there would be only one escort vehicle instead of two. For rail shipments, the escort would ride on the train in a location that permits observation of the shipment car while the train is in motion. (Section 2.7.5 and Appendix H of the EIS.)

In addition, to further address this issue, individual Transportation Plans would be prepared for any shipments actually scheduled for acceptance through the Concord NWS (or any other port of entry). These Transportation Plans would be prepared in consultation with appropriate State and/or local officials to ensure that details of the transportation process are understood, that the individuals or organizations who would perform all required activities are specified and that these individuals and parties know what is expected of them (Section 2.7.5 and Appendix H of the EIS).

Response to Comment No. 1212-3

Section 4.2.2.3 of the EIS provides the results of analyses on the impacts of port activities at all of the candidate ports. These impacts are presented in text and in table form for comparison purposes. The impacts are low at all of the candidate ports.

ITTOR No. 1216:
OUNTY COMMISSIONERS

F GALVESTON

VIA FAX (202) 586-8256

24-37

he Galveston County Commissioners
ts opposition to utilizing the Port of
t nuclear fuel from foreign research
is self explanatory.

strongly about this subject and hopes
llow the Port of Galveston to be used in

ideration in this matter.

GALVESTON, TEXAS 77550 [409] 766-2244

RESPONSE TO COMMENT
COMMENTOR No. 1216:
GALVESTON COUNTY COMMISSIONERS

OMMENT
). 1216:
ISSIONERS (CONT'D.)

search reactor spent nuclear fuel through
Iveston was one of ten ports that was
search reactor spent nuclear fuel, if the
Population of the port and surrounding
lerations of the port selection criteria.
ect. The population criterion for port
in Appendix D, Section D.1.9.5 of the

lentified by the port selection process,
mmercial operations, and therefore not
ould it contribute to any stigma because
e no significant adverse impacts to any
air (Section 4.2.1.1 and Appendix C,
fact that the foreign research reactor
d States in standard shipping containers
ns. As such, there should be no adverse
rt. Historically, there were no adverse
ceived foreign research reactor spent

search reactor spent nuclear fuel would
nent and remain in contact with weather
ware of the existence of a hurricane or
tice in order to avoid being in the Port
icted waterway when such a storm hit.
complished quickly, typically within a
uel would not be caught in restricted
ship were to experience a collision or
he analysis in the EIS indicates that the
D.5 presents details on the calculation
ts in port and their approaches.

arine and land, were based on national
itions only as they impact the national
n serve as accident initiators and may
dent. However, they would not increase
ere found to be minor (Section 4.2.2.3).
anged due to foggy conditions in the

Commentor No. 1216:
Galveston County Commissioners (Cont'd.)

r FURTHER RESOLVED that a copy of this Resolution be
n the minutes of this Court and that the Original hereof
hed to CHARLES HEAD, of the OFFICE OF SPENT FUEL
, UNITED STATES DEPARTMENT OF ENERGY.

MOTION DULY MADE AND SECONDED the above Resolution was
s 13th day of July, 1995.

COUNTY OF GALVESTON, TEXAS

BY: _____
JAMES D. TAUBERGER, County Judge

_____
EDDIE BARR, Comm., Pct.#1

_____
EDDIE JANEK, Comm., Pct.#2

_____
WAYNE JOHNSON, III, Comm., Pct.#3

_____
ED STUART, Comm., Pct.#4

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RITCHIE
erk

Response to Comment
Commentor No. 1216:
Galveston County Commissioners (Cont'd.)

NSE TO COMMENT
:NTOR No. 1223:
:E, MAYOR, CITY OF SUMNER

3-1

ls at the Port of Tacoma has been incorporated into EIS. The evaluated data on populations is from the formation has been included in the port information provided in Sections 4.2.2 and 4.5 of the EIS indicate ited by the port selection process, including Tacoma, o either the port personnel, local environment, or the

eactor spent nuclear fuel through the Port of Tacoma ing conducted in Commencement Bay as a result of add any additional burden to this designation. The n the Bay would not add any hazardous material to as added a sentence to Appendix D, Section D.2.1.9 on of the Commencement Bay as a Superfund Site. ited in Section 4 of the EIS, shows that there would on the port, people, or natural environment from r spent nuclear fuel through any of the ports of entry.

3-2

ition cask loaded with foreign research reactor spent coastal waters, it would be recovered, even from the ch reaches depths of 305 meters (1,000 feet). Section ed to include this assurance of recovery in coastal of the EIS presents information on the probability of ask sinking in coastal and deep ocean waters.

es several accident scenarios that involve fire. The lents can be found in Section D.5.4. The analysis severe ship fire, neither the consequences nor risks .5). Although the nonradiological effects of such a y impact the local environment, no additional impacts foreign research reactor spent nuclear fuel.

reign research reactor spent nuclear fuel through the the activities being conducted in Commencement Site, nor would it add any additional burden to this nuclear fuel shipments, but not other more hazardous the Port of Tacoma would create a stigma is an f impacts, as documented in Section 4 of the EIS,

Response to Comment
ntor No. 1223: Robert A. Molike, Mayor, City of Sumner (Cont'd.)

uld be no significant adverse impacts on the port, people, or natural shipments of foreign research reactor spent nuclear fuel through any . Historically, there were no adverse economic or cultural impacts to ed foreign research reactor spent nuclear fuel for the 30 plus years it

t the use of any of the ports indicated by the port selection process, would not impact normal commercial operations, and therefore not status with respect to their clients. This position is based on the fact earch reactor spent nuclear fuel would be accepted into the United ipping containers that would require no special handling or precautions. ld be no adverse commercial or economic reaction to the use of the

ment No. 1223-3

rism nor theft of materials by a determined group or individual can luded. However, proper security measures greatly reduce the risk. en added to Appendix D of the EIS to address terrorism and sabotage. eign research reactor spent nuclear fuel would be conducted meeting security requirements in the Code of Federal Regulations (10 CFR H has been added to the final EIS in response to public comments to security and emergency preparedness associated with transportation arch reactor spent nuclear fuel. This appendix presents the general ansportation Plan, which is a document that provides all of the details transportation of the foreign research reactor spent nuclear fuel, ty arrangements in port and in transit to the management site.

ment No. 1223-4

ed for the spent nuclear fuel shipments would be required to meet or cable security requirements in the Code of Federal Regulations (10 ny port did not already provide security sufficient to satisfy these ld be the responsibility of the shipper to provide the required additional

ment No. 1223-5

pendix F, Section F.7 of the EIS fully address the life cycle costs, f the proposed action. The use of a net present value approach reflects . Benefits would be primarily in the form of reduced risks of the lear weapons to countries who might use them on us or our allies, as

RESPONSE TO COMMENT 'TOR NO. 1223: ROBERT A. MOLIKE, 'YOR, CITY OF SUMNER (CONT'D.)

employment to the management sites and regions conducting the nation from reducing the commerce in certain types of nuclear l safety risks would be low, as discussed fully Section 4 of the EIS), E, and F. Economic risks are described in detail in Appendix F, r attention is paid to major cost uncertainties (e.g., waste acceptance)osal). Economic impacts relating to ports are minor in all respects.

'ent No. 1223-6

he port selection criteria fairly and equally indicate those ports that ign research reactor spent nuclear fuel. The EIS demonstrates that ports indicated by the port selection process, if foreign research r fuel is accepted into the United States, it would not pose any er the port personnel or the population near the port. DOE considers cess and results presented in the EIS, Appendix D, Sections D.1.8 rational and objective.

d that Section 3151 of Public Law 103-160 (the National Defense r the fiscal year 1994), requires that the Secretary of Energy shall, ible and to the maximum extent practicable, provide for the receipt at a port of entry in the United States which...had the lowest human a surrounding the port of entry..." Public Law 103-160 was signed 93, which is after completion of the scoping process for this EIS. Defense Authorization Act was written specifically to regulate the f foreign research reactor spent nuclear fuel at DOE's Savannah cted to apply this criterion, among others, in identifying ports of n extent practicable. DOE included consideration of Section 3151 50 by including Criterion 5 in the port selection criteria for this EIS n D.1.9.5). Application of this criterion resulted in cities such as l from the list of proposed ports of entry, while Tacoma stayed on

'ent No. 1223-7

ved and handled foreign research reactor spent nuclear fuel for over rough commercial ports.

oreign research reactor spent nuclear fuel could safely be received as it has in the past, without additional security that might be present e security provided for the spent nuclear fuel shipments would be ceed all the applicable security requirements in the Code of Federal Part 73). If any port did not already provide security sufficient to

Commentor No. 1223: Robert A. Molike, Mayor, City of Sumner (Cont'd.)

Response to Comment Commentor No. 1223: Robert A. Molike, Mayor, City of Sumner (Cont'd.)

satisfy these requirements, it would be the responsibility of the shipper to provide the required additional security. Nevertheless, the commentor's preference for the use of military ports is noted. Sections 4.2.2.2 and 4.2.2.3 of the EIS provide the analysis on impacts of incident-free operation and consequences of port accidents, respectively.

Response to Comment No. 1223-8

If DOE were abolished in response to action by Congress, the current DOE programs for management of spent nuclear fuel would have to be transferred to some other Federal government agency to protect the health and safety of the public. Since the spent nuclear fuel will not simply go away, these programs cannot simply be abolished.

Response to Comment No. 1223-9

The commentor's preference for the overseas management alternative is noted. This is Management Alternative 2, which is discussed in Sections 2.3 and 4.4 of the EIS.

Response to Comment No. 1223-10

DOE responded to this question by letter and fax on June 16, 1995. The response gave the estimated radiation dose rate near the spent nuclear fuel under the assumption that there was no transportation cask to provide shielding, as requested by the Port of Tacoma.

CEQ regulations and guidance do not require a worst case analysis of accident in an EIS. For the purposes of an analysis in the EIS, there is no such thing as a worst case scenario, because for any worst case that is postulated, a still more severe accident can be postulated by adding one more drum of gasoline, one more wrecked rail car, one more terrorist, etc. In addition, for each assumption that is made to make a postulated accident more severe, the probability of the accident becomes smaller. The EIS does not contain a worst-case scenario, but a broad range of port accident scenarios, including severe accidents, is discussed in Section 4.2.2.3 of the EIS. Appendix D, Section D.5.4.3.2 of the EIS presents the risks of a very high temperature fire that engulfs a cask, which was part of a sensitivity study on release fractions. In addition, Section D.5.9 has been added to Appendix D of the EIS to address the issue of attack by disgruntled persons or terrorists.

TO COMMENT
R No. 1249:
AYOR, CITY OF HAYWARD

ign research reactor spent nuclear fuel through
is in Sections 4.2.2 and 4.5 of the EIS indicates
nuclear fuel to the Concord NWS, or to any of

the EIS, that the activities associated with
spent nuclear fuel proposed policy can and
nt human health, safety, and/or environmental
ports, transportation routes, or potential
he City of Haywood is noted.

COMMENTOR NO. 1251:
EDWARD D. HANSEN, MAYOR, CITY OF EVERETT

OFFICE OF THE MAYOR

Edward D. Hansen
Mayor

July 18, 1995

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

Dear Mr. Head:

We have recently become aware of the U.S. Department of Energy's plan to ship spent nuclear fuel through a Puget Sound port for storage in other areas. We wish to submit for the record a statement of our opposition to such a plan. We believe that if it is necessary to bring spent nuclear fuel from foreign countries, there are alternative shipping routes which are more suitable. 1251-1

Thank you for allowing us to submit this letter of opposition to your plan.

Respectfully submitted,

Carl Gipson, Council President

Edward D. Hansen, Mayor

Frank Anderson, Councilmember

Doug Campbell, Councilmember

Bob Overstreet, Councilmember

Dale Pope, Councilmember

Mark Soine, Councilmember

Ann Weinzierl, Councilmember

PB:tm

cc: Harold G. Moss, Mayor of Tacoma
Washington Congressional Delegation
Port of Tacoma Commissioners

CITY OF EVERETT • 3002 Wetmore Ave. • Everett, WA 98201 • (206) 259-8700 • Fax (206) 259-8729

RESPONSE TO COMMENT
COMMENTOR NO. 1251:
EDWARD D. HANSEN, MAYOR, CITY OF EVERETT

Response to Comment No. 1251-1

The commentor's opposition to bringing foreign research reactor spent nuclear fuel through the Port of Tacoma is noted. However, analysis in Sections 4.2.2 and 4.5 of the EIS indicates that the risk associated with bringing spent nuclear fuel to the Port of Tacoma, or to any of the ports analyzed in the EIS, is low.

KANE	eferred alternative OE has noted the oma, as well as to f the EIS indicates nuclear fuel to the sites at which the l on the analysis in gement and Idaho /aste Management n for this EIS was ll of the aluminum- will be managed at arch reactor spent tional Engineering l would be shipped Appendix E of the This alternative is

IMENT

ORT OF TACOMA

p the use of the Port of Tacoma for
s noted. Based on the port selection
f Tacoma is among the ten candidate
ld receive foreign research reactor
or 3. The analyses provided in the
fied by the port selection process,
k to either the port personnel, local
nalysis in the EIS indicates that the
4.2.2.3 and 4.5) and that the risks
research reactor spent nuclear fuel

he proposed action, including those
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265: PORT OF TACOMA (CONT'D.)

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RESPONSE TO COMMENT
COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

Appendix H has been added to the final EIS in response to public comments to better describe the security and emergency preparedness associated with transportation of the foreign research reactor spent nuclear fuel. This appendix presents the general provisions of the Transportation Plan, which is a document that provides all of the details associated with the transportation of the foreign research reactor spent nuclear fuel, including the security arrangements in port and in transit to the management site(s).

Shipment of foreign research reactor spent nuclear fuel would not jeopardize the significant cleanup effort undertaken in the area of Commencement Bay and the Port of Tacoma as noted by the commentor. The analysis in the EIS indicates that there would be no significant adverse impacts to any of the ports or bays, or the quality of water or air (Section 4.2.1.1 and Appendix C, Section C.2). Spent nuclear fuel transportation casks are designed and built to preclude release of radioactive material. Based on over 30 years experience shipping spent nuclear fuel, DOE considers that spent nuclear fuel transportation casks passing through the Port of Tacoma, Commencement Bay, or any other port or waterway would not affect air or water quality. A paragraph has been added to Section 4.2.2.2 of the EIS to make this point and to emphasize the no-impact

Response to Comment No. 1265-2

As discussed in Section 2.7.3.2 of the EIS, DOE provides funding to States and Tribes through the Office of Environmental Management and the Office of Civilian Radioactive Waste Management to assist with transportation related issues. This funding has been used in the past to enhance a jurisdiction's emergency management and response capabilities. Besides funding, much of DOE's assistance is provided in the form of technical assistance, for which DOE bears the cost. Assistance may be provided through DOE's Radiological Assistance Program and under the National Contingency Plan, as well as through training, DOE sponsored meetings, informal discussions, and informational materials.

As stated above, Appendix H of the EIS contains the general provisions for emergency preparedness and security measures associated with the transportation of foreign research reactor spent nuclear fuel in the United States. The provisions include an interface between DOE and State, Tribal, and local authorities, prior to the implementation of the policy, for the identification and resolution of emergency management and security issues specific to the communities that would be affected. These issues include capabilities and training of first emergency responders. Funding for special needs, if necessary, would be addressed during this interface.

265: PORT OF TACOMA (CONT'D.)

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TO COMMENT
PORT OF TACOMA (CONT'D.)

scribes several accident scenarios that involve
ccidents can be found in Appendix D, Section
the event of a severe ship fire, neither the
pendix D, Section D.5.5). Although the
hic accident would obviously impact the local
dicted due to the presence of foreign research

l for the foreign research reactor spent nuclear
tests, including a fire test, and if the individual
6.2 of the EIS). These certification standards
and, hence the 30 minute fire test, which is
ity fire resulting from a collision with a tanker
related to the amount of combustibles carried
ips is relatively small. Data available on the
dicate that of 1,073 ship collisions in port
f those, only five caused extensive damage,
tructures. Hence, contrary to the commentor's

have on a transportation cask, there are three
age. First, ship fires tend to move to different
rial is consumed, so the cask would not be
. Second, a ship's fire intensity is normally
ach the interior of a hold. Third, all ships that
h reactor spent nuclear fuel have built-in fire
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ide the transportation cask to reach 900 degrees
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nperature was calculated to be less than one in
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s of the effects of an accident that involves a
oes not reach the temperature to melt foreign
ndix D, Section D.5.3 of the EIS presents a
es and radioactive material source terms and
alysis.

COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

1. NATIONAL NEED FOR NUCLEAR NONPROLIFERATION "BUT ....."

Nonproliferation Support -- We support the U.S.'s nuclear nonproliferation objectives. No responsible, law abiding citizen in the U.S. wants to add to the potential for small, powerful nuclear explosive devices to get into the hands of a few terrorists or people deeply frustrated in the U.S. or elsewhere. The U.S. should take all reasonable and prudent steps to mitigate the spread of nuclear materials capable of being assembled into nuclear explosive devices. While all three alternatives can accomplish varying degrees of this objective, we believe Alternative 2, the foreign management alternative, is the best policy for the U.S. over the short and long term as explained below.

1265-9

1265-10

To successfully meet the nonproliferation objectives of this proposed foreign research reactor spent nuclear fuel policy, the U.S. needs to work diligently now with the affected parties on a plan that allows them to become self sufficient in a nonproliferating way as soon as possible. We reject the notion that resurrecting the highly subsidized, "return all your spent fuel to the U.S." policy (Alternative 1) for ten years will yield a lasting, acceptable nonproliferation strategy. At a minimum, the return strategy suggested as Alternative 1 will only serve to postpone the inevitable transition to responsible independence that must occur with these foreign research reactors.

1265-9 (Cont'd)

Problems With Alternative 1 -- Two problems exist with Alternative 1:

1) The U.S. doesn't have a workable storage and disposal plan yet for its own spent nuclear fuel and high level wastes. Alternative #1 attempts to gather up all U.S. enriched uranium in research reactors around the world (41 countries) and ship it to the U.S. for storage at DOE's nuclear weapons production sites until someone can figure out how and when to permanently dispose of it. Not having a workable domestic plan and having to use weapons production sites are setting two very bad examples as role models for our foreign research reactor friends.

1265-11

2) The other problem is that there is no solid evidence that we will be any better off at the end of the ten year period than we are today. Foreign dependence on such a "return everything to the U.S." policy can demotivate and suppress meaningful progress towards responsible, self sufficiency on the part of our foreign research reactor friends. Complacency and procrastination can work against the real changes that need to occur for responsible self sufficiency to become a near term reality. The U.S. will, in the meantime, have realized unnecessary and extremely high storage and disposal costs, higher public and worker health risks, and higher environmental risks -- all without achieving the necessary shifts in foreign spent fuel management to a nonproliferating self sufficiency.

1265-12

Transition Now With Alternative 2 -- We support facing the transition issues now by adopting Alternative 2 (foreign management alternative). This means that the U.S. will not set any bad 'role model' examples. It also means that foreign spent fuel management issues will be addressed now on a case by case basis to find the best solutions for each party. It also means that the U.S. will not subject itself to whatever the risks there are of receiving and transporting foreign spent fuel within U.S. borders. Lastly it means that we will not have exacerbated an already untenable situation in our own domestic storage and disposal of spent domestic fuel and defense wastes -- at who knows what ultimate cost increases.

1265-13

Best Results With Alternative 2 -- Alternative 2 should provide the least cost, best overall short and long term nonproliferation result. Several acceptable foreign spent fuel management scenarios are available as

1265-14

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RESPONSE TO COMMENT
COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

In conclusion, although long duration ship fires are possible, and have occurred, they are uncommon events. Analyses in the EIS indicate that even in the event of a severe ship fire involving a transportation cask, neither the consequences nor risks are great (Appendix D, Section D.5.5 of the EIS).

Response to Comment No. 1265-4

Based on the evaluation of impacts presented in Section 4 of the EIS, the risk associated with the shipments of foreign research reactor spent nuclear fuel through any of the ports identified is not greater than the risk associated with the handling of other hazardous cargos. DOE acknowledges that, in many instances, the perception by the public of the risks associated with spent nuclear fuel may be greater than the actual risk, or the risk from other even more hazardous activities. However, adverse impacts have not been observed during the 30 plus years foreign research reactor fuel was accepted into the United States in the past. Under NEPA regulations, the socioeconomic effects evaluated for this EIS do not include those associated with psychological fear of receiving spent nuclear fuel, such as the stigma referred to by the commentor. Based on this past experience, DOE considers that shipping foreign research reactor spent nuclear fuel through the Port of Tacoma would not create the stigma anticipated by the commentor.

Response to Comment No. 1265-5

The commentor's assessment that Management Alternative 1 (Management of foreign research reactor spent nuclear fuel in the United States) is not the best, safest, fastest, and most economical way to achieve the goals of nuclear weapons nonproliferation, is noted. Management Alternative 1 is described in Section 2.2 of the EIS. Costs are described in Section 4.9 of the EIS.

Response to Comment No. 1265-6

The commentor's preference for Management Alternative 2 is noted. This alternative is discussed in Sections 2.3 and 4.4 of the EIS.

Response to Comment No. 1265-7

The commentor's preference for upgrading overseas storage and treatment facilities, including those in Scotland, is noted. Overseas options are included under Management Alternative 2, which is discussed in Sections 2.3 and 4.4 of the EIS.

As for the commentor's concern that DOE did not fully analyze Management Alternatives 2 and 3, DOE considers that the analysis of the alternatives in the EIS fully complies with the requirements of NEPA.

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COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

2. TRANSPORTATION SECURITY VS. FOREIGN SOLUTIONS

The Foreign Reprocessing Option Is Required -- A large fraction, nearly 50%, of the foreign research reactors are still operating on high enriched uranium (HEU) and their spent fuel will require reprocessing until fully converted to low enriched uranium (LEU). Even after conversion to LEU, many reactor operators will find it advantageous to reprocess their low enriched uranium spent fuel. Many of these reactors are closer to the UK and France than they are the U.S. Thus, the overall spent fuel and HEU transportation routes, under Alternative 2, will be shortened considerably compared to the Alternative 1 case. 1265-15

Nonproliferation Objectives -- The purpose of this proposed policy is to promote United States nuclear weapons nonproliferation policy objectives by seeking to reduce and ultimately eliminate highly enriched uranium from civilian commerce.

Management Alternative 1 -- Accept and manage foreign research reactor spent nuclear fuel in the United States. This alternative could potentially require that the Port of Tacoma and the City, region and balance of State establish round-the-clock security to prevent theft, sabotage, and public/worker overexposure to harmful ionizing radiation emanating from the stored or transported shipping containers. 1265-16

Management Alternative 2 -- Facilitate the management of foreign research reactor spent nuclear fuel overseas, is a proposed new policy alternative that can be sold as the permanent or long term U.S. spent fuels policy.

Two kinds of transportation nonproliferation problems under Alternative 1:

1) **Incoming Spent Nuclear Fuel** -- The highly radioactive spent nuclear fuel is relatively secure because of its residual radiation levels and massive size and weight. Most of the security issues that the Port of Tacoma workers and transporters along the transportation route will have to face deal with safety issues associated with inadvertent contact or close proximity to the shipping casks by the general public or by workers handling or transporting the shipping casks. 1265-16 (Cont'd)

2) **Outgoing High Enriched Uranium** -- The Draft EIS doesn't adequately address the fact that nearly half of the aluminum-based fuel (35 reactors) and 25% of the TRIGA reactor fuel (5 reactors) still operate with high enriched uranium. Somehow, until these reactors are converted, shipments of high enriched uranium (HEU) or fresh fuel elements containing HEU will continue to occur resulting in a significant potential security or proliferation issue. This virtually non-radioactive, bomb-grade material is the most proliferation sensitive material in the fuel cycle. Appropriately, details are not available in the Draft EIS as to how this material will be shipped or by whom. 1265-17

Management Alternative 2 -- Facilitate the management of foreign research reactor spent nuclear fuel overseas. A large fraction, nearly 50%, of the foreign research reactors are still operating on HEU and their spent fuel will probably require reprocessing until fully converted to low enriched uranium. Many of these reactors are closer to the UK and France than they are the U.S. Thus, the overall spent fuel and HEU transportation routes will be shortened considerably compared to the Alternative 1 case. Assuming similar care, due diligence, and oversight, Management Alternative 2 should provide the more proliferation resistant scenario.

3

RESPONSE TO COMMENT
COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

Response to Comment No. 1265-10

The commentor's preference for Management Alternative 2 is noted. Sections 2.3 and 4.4 of the EIS (Management Alternative 2) discusses the advantages and disadvantages of overseas storage and reprocessing.

Response to Comment No. 1265-11

The commentor's concern that the U.S. does not have a storage and disposal plan for its own wastes is noted. Storage in the United States of the foreign research reactor spent nuclear fuel is Management Alternative 1 or 3, which are discussed in Sections 2.2, 2.4, 4.2, 4.3, and 4.5 of the EIS. Storage technologies are discussed in Section 2.6.5.1 of the EIS.

The impacts of ultimate disposition of the foreign research reactor spent nuclear fuel are discussed qualitatively in Section 4.2.7 of the EIS. DOE is currently evaluating the feasibility of construction of a disposal site at Yucca Mountain, NV. In the meantime, support for U.S. nuclear weapons nonproliferation policy requires DOE and the Department of State to consider other means of dealing with the foreign research reactor spent nuclear fuel (Section 1.1. of the EIS).

Response to Comment No. 1265-12

The commentor's suggestion that implementation of Management Alternative 1 could demotivate and suppress meaningful progress towards self sufficiency on the part of foreign research reactor operators, is noted. On the other hand, DOE considers that the removal of the HEU covered by the ten year policy from civilian programs will be beneficial in reducing the risk of nuclear weapons proliferation. Given the financial cost discussed in Section 4.9 of the EIS, the relatively modest environmental impacts of the proposed action are fully justified in light of the nuclear weapons nonproliferation policy goals.

Response to Comment No. 1265-13

The commentor's preference for Management Alternative 2 is noted. This alternative is discussed in Sections 2.3 and 4.4 of the EIS.

DOE and the Department of State consider that accepting foreign research reactor spent nuclear fuel into the United States for the next 13 years would not set any bad 'role model' examples, as suggested by the commentor (see the response to Comment 1265-11, above). It would give the foreign nations and their reactor operators time to develop their own spent nuclear fuel management solutions, but the transition would still be required at the end of the policy period. Forcing each country to transition now could cause some

NSE TO COMMENT
55: PORT OF TACOMA (CONT'D.)

The best solution for each party may take time to
of nuclear weapons proliferation can be reduced by
HEU fuel overseas and converting reactors to the use

emonstrate that the risks of receiving and transporting
uclear fuel within U.S. borders would be very low.

consider importing more spent nuclear fuel for the
the foreign research reactor spent nuclear fuel involved
ory by a small amount. The increase would be less
vy metal and less than ten percent of the volume. The
ction 4.9 of the EIS.

55-14

anagement Alternative 2 is noted. Section 2.3 of the
oreign research reactor spent nuclear fuel. It should
t in the United States would be technically, politically,
eous than management in as many as 41 separate
s with no spent nuclear fuel or nuclear waste handling,

iated with storing spent nuclear fuel, storage in the
re than storage in the United States (and cost U.S.
lly difficult, if not impossible, in many countries, and
f the countries. Also, many countries participated in
ns on the belief that the United States would eventually
re of the United States to accept the spent nuclear fuel
to substantially eliminate civilian use of weapons-

55-15

equire reprocessing, as suggested by the commentor.
ages to reprocessing both LEU and HEU spent nuclear
many of the reactors are closer to the United Kingdom
ed States. Thus, shipping the spent nuclear fuel there
ould involve less ocean transport than would shipping
gement Alternative 1.

COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

4.0 DESPITE THE EIS BIAS TOWARDS THE U.S. OPTION, FOREIGN OPTION IS BETTER

Issue -- There's a substantial price tag on any nonproliferation issue, especially this one. Since this program benefits all parties interested in resolving nonproliferation issues associated with high enriched uranium (HEU), two courses of action are recommended:

1) The least cost Alternative that meets the minimum nonproliferation policy guidelines should be selected to minimize everyone's costs. This means selecting Alternative 2 or Alternative 3. Management Alternatives 2/3 had the lowest estimated costs ranging from $750-$950 million (1996 $'s in 1996), and

2) Some sharing of specific costs should be pursued. The U.S. taxpayer should not have to accept the burden of paying for most of the HEU to LEU conversion costs (i.e., the RERTR) program. Furthermore, Management Alternative 1, the U.S. option, has the highest costs in the Draft EIS ranging from $850-1,850 million (1996 $'s in 1996) and should be abandoned immediately. When one figures in the recent cost overruns of several major DOE programs, Management Alternative 1 is probably 2-3 times more costly than Alternatives 2 or 3.

1265-19

There is a definite bias throughout the Draft EIS slanted towards Alternative 1, and to a lesser extent, Alternative 3 (the hybrid alternative). This bias shows up a number of ways including the absence of clear flow diagrams for all three alternatives like those presented in Figure S-4 and S-5 for Alternative 1. Importantly, no cost data is clearly summarized for Management Alternative 2. A Hybrid Alternative is defined as one of the options and the only clearly defined cost analyses are for i) acceptance/storage in the U.S. (pure Alt. 1), ii) chemical separation/vitrification in the United States (option 6 for Alt. 1), and finally the Hybrid Alternative (Alts. 2 and 3). See Section F.7 beginning on page F-264 for additional proof of this gross bias and absence of key alternative assessments.

1265-20

Examples of the hard costs associated with the proposed policy are:

Converting foreign research reactors to the Reduced Enrichment for Research and Test Reactors (RERTR) program, i.e., a fuel/reactor design enriched to less than 20% U-235 to prevent the fabrication of nuclear bombs out of the fuel

Increased operating costs of running the reactor under the RERTR program

Greater quantity of fuel required to achieve same performance as the high enriched uranium (HEU)

Increased costs of storing, reprocessing & ultimately disposing of the low enriched uranium (LEU)

Cost of the incentives to get reactor operators to convert and operate under the RERTR program

An example of the higher costs can be obtained from the current prices that the Atomic Energy Authority (A.E.A.) is charging for reprocessing spent HEU fuel at the British facilities at Dounreay. Their reprocessing charge is in the $5,000 to $6,000 per kilogram of total metal (not Heavy Metal or Uranium as per many unit prices). A rough estimate for the total 'metal-to-heavy metal' ratio in the aluminum clad fuel is ~8. This means that the unit price to reprocess the HEU fuel at Dounreay is approximately $40,000 to $50,000 per kilogram of heavy metal (mostly uranium).

1265-21

5

RESPONSE TO COMMENT
COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

Response to Comment No. 1265-16

The analysis of the consequences and risk associated with an accident in port involving foreign research reactor spent nuclear fuel determined that no decontamination, interdiction, or condemnation of property would result from the worst plausible accident (Section 4.2.2.3 and Appendix D, Section D.5 of the EIS) and that the risk associated with accidents in port for the entire proposed action was low. Likewise the consequences and risks associated with marine transport were found to be low (Section 4.2.1.3).

The radiation dose that anyone would receive handling, working or traveling near a transportation cask is below the limit that is allowed to the public in an unrestricted area by NRC regulations (10 CFR Part 20). As such, no special precaution would be required from anyone in the area of a cask carrying foreign research reactor spent nuclear fuel.

Security requirements are contained in 10 CFR Part 73. The shipper is required to ensure that the security requirements are met, including port and land transportation security requirements. Also, no additional responsibilities would be created for city, county, or State law enforcement agencies by DOE or other Federal agencies. However, some State and local governments impose additional requirements on shipments of foreign research reactor spent nuclear fuel. These additional requirements may impact State and local law enforcement agencies. Historically, shipments of foreign research reactor spent nuclear fuel were treated as any other hazardous material shipments and received no special attention.

No special handling or loading/unloading procedures would be required for the foreign research reactor spent nuclear fuel when it is contained in a cask that is inside of an ISO container. As to isolating the casks from other freight, this is not necessary for radiation or any other reasons. The small amount of radiation coming from the transportation cask is gamma radiation which does not irradiate nor contaminate other materials, so there is no need to isolate it.

See also the 5th paragraph of the response to Comment 1265-1, above.

Response to Comment No. 1265-17

DOE recognizes the fact that many foreign research reactors continue to operate on HEU fuel. This fact supports the need for implementation of the proposed action in a manner that will encourage these reactor operators to convert to LEU fuels, thereby reducing the proliferation risks stated by the commentor. Under the proposed action, only spent nuclear fuel from those countries that agree to convert to LEU fuels would be considered for management. In accordance with the Energy Policy Act of 1992, the United States is not permitted to sell HEU fuel to foreign countries, except under very special circumstances. Since passage of the Act, no new export licenses for HEU have been issued by the United States.

OF TACOMA (CONT'D.)

CLEAR COST LEGACY? . . . . .

NOW WHAT TO DO WITH WHAT

el disposal program in the U.S. is in
de behind schedule (GAO/RCED-94-
production sites, including Hanford,
; Sen. Frank Murkowski P.R. 5/15/95;
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f its valuable parts to other agencies.
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clear waste at taxpayer's expense... "I
the problems at Hanford, but we lack
y seriously considering an option of
urly double the spent commercial fuel

1265-22

of any Alternative 1 (U.S. disposal

meeting or elsewhere also need to be

the Draft EIS providing European
ntries to assess their willingness to
roposed policy (Management

lanagement Alternatives 2 and 3
d establish a public record before
such hearings can be made as soon
or whatever reason(s), DOE appears
ady made. Perhaps the overwhelming
DOE are close to the mark. We
ttempting to find the best solutions
cerely hope so!

1265-23

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RESPONSE TO COMMENT
COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

Response to Comment No. 1265-18

The commentor's position that the United States is already viewed as an unreliable trading partner is noted. As evidenced by comments received from foreign research reactor operators concerning the draft EIS, the United States would be viewed as an unreliable trading partner if no action were taken to provide relief for foreign research reactor operators who have immediate disposition needs for their spent nuclear fuel. Section 1.1 of the EIS summarizes the history of support for foreign research reactors by the United States.

Response to Comment No. 1265-19

Reprocessing would not be an economic necessity for LEU or HEU, either in the United States or Europe. As used in the EIS, reprocessing in Europe or chemical separation in the United States would be a means of converting the spent nuclear fuel to a form more suitable for geologic disposal. The economic benefits of reusing the uranium and the enrichment services would not be insignificant, but they were not the basis for the alternative.

The least costly alternative is a hybrid involving reprocessing at Dounreay in the 1996 to 2008 period, chemical separation at the Savannah River Site (assuming concurrent operations with other programs) during the 1997 to 2003 period, and management at the Idaho National Engineering Laboratory. Since no other programs are currently envisioned to be using the chemical separation facilities in the period immediately after 2003, either the receipts after this period would be managed or the program would bear the full costs to operate a Canyon. In all cases, the management alternatives that involve receipt of the spent nuclear fuel by the United States include management at the Idaho National Engineering Laboratory.

The EIS does not address the costs of HEU to LEU conversions under the RERTR program as a component of the cost to the U.S. taxpayer under the foreign research reactor spent nuclear fuel program.

Response to Comment No. 1265-20

In terms of detailed cost data for options that were either addressed in less detail than might be possible or that were not described as possible options, the following points are relevant:

- Management of the spent nuclear fuel in the countries of origin would cost many hundreds of millions of dollars more than management of the fuel in the United States The two major non-shipping phases of the program — storage/chemical separation and spent nuclear fuel/high-level waste disposal — have very large economies of scale.

COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

6. PORT, TACOMA & REGION GET ALL THE RISKS AND COSTS BUT NO GAIN

Issue: Generally for anything to be mutually satisfactory, each of the parties have to perceive something of value. At the present time, here's what the balance sheet looks like from a local citizen's perspective:

Perceived Negatives (of Alternate 1 or 3 if Port of Tacoma is selected for shipping):

1. **NO NATIONAL IMPERATIVE! Nonproliferation arguments are unconvincing especially with apparent solution of all concerns via Management Alternative 2 (foreign option)** — *1265-24*
2. **Health and safety risks to workers and public** — *1265-25*
3. **Financial risk to business owners and employees if there's any kind of accident**
4. **Financial drain and business disruptions, even without any accidents, from training, readiness, practice sessions, extra administration, extra security, false alarms, etc.** — *1265-26*
5. **Financial losses due to increased negative image or stigma associated with farm produce or clean cargo co-located with "dangerous" radioactive spent fuel**
6. **Contamination of shipping channels into/out of the Port due to cask lost @ >200 meters** — *1265-27*
7. **Security risks - Port becomes a target for terrorists, disgruntled people, pranksters** — *1265-28*
8. **Crippling health, safety, environmental, and business costs if abnormal accident breaches**
9. **Taxpayer costs are high and not justified by Draft EIS** — *1265-26 (Cont'd)*
10. **Incomplete information in Draft EIS prevents assessment of life cycle costs, justifications**
11. **Philosophically opposed to "buying" problem from strong, nuclear allies who should help** — *1265-29*
12. **Distrust, fear -- don't know what to do with what we've got; why "buy" more**

Perceived Positives (of Alternate 1 or 3 if Port of Tacoma is selected for shipping):

1. **none - no jobs, increased business, quality of life, reduced nuclear threat, nothing!** — *1265-26 (Cont'd)*

RESPONSE TO COMMENT
COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

Any management alternative that substitutes tens of sites for the two or three in the EIS increases costs substantially. The EIS already addresses the practical, legal, political, etc. difficulties with such an approach. It did not address costs since desegregated storage/disposal was not considered economically plausible.

- All logistically realistic hybrids that involve chemical separation at the Savannah River Site and reprocessing at Dounreay cost about the same as the hybrid described in Management Alternative 3. Costs can be significantly reduced only through accelerated receipt of spent nuclear fuel at the Savannah River Site for chemical separation concurrently with materials from other programs and long-term usage of existing storage facilities at the Idaho National Engineering Laboratory. The reason more hybrids were not costed in great detail is that they all depend on the timing of the receipts at the Savannah River Site, the acceptability of concurrent operations and the use of marginal costing at the Savannah River Site, and the usage of existing facilities at the Idaho National Engineering Laboratory. Subject to constraints on the rate at which Dounreay can reprocess spent nuclear fuel, other issues (e.g., the split between United States and overseas management, between LEU and HEU, between aluminum-based fuel and TRIGA fuel, between developed countries and developing countries, etc.) would not substantially affect costs. The key cost drivers were fully and completely outlined in Appendix F. Uncertainties were treated separately.

Response to Comment No. 1265-21

The ratio of total metal to heavy metal in the aluminum-based spent nuclear fuel would be closer to 5 than to 8. The cost per kg of heavy metal using this conversion factor is misleading since parts of the non-spent nuclear fuel matrix (e.g., supports, tube ends) could be sheared off before reprocessing to reduce the total metal.

Response to Comment No. 1265-22

The Record of Decision for Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Environmental Impact Statement issued on May 30, 1995 designates the Savannah River Site and the Idaho National Engineering Laboratory as management sites for domestic and foreign research reactor spent nuclear fuel. The Hanford Site was not selected.

Spent nuclear fuel from North Korea is not included in the proposed action (Tables 2-1 and 2-2 of the EIS), and would not be managed under any of the management alternatives (Sections 2.2.2.3 or 2.4 of the EIS).

T'D.)

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COMA (CONT'D.)

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eters (1,000 feet). Section
ce of recovery in coastal
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65-1, above.

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provide foreign research
disposition of their spent
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ise it reduces the risk of
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ussed in Section 4 of the
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preferred alternative, and
onmental considerations.

PORT OF TACOMA (CONT'D.)

AR FUEL 'ABNORMAL' INCIDENT APPEAR
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se as a worst case incident. A worst case
s of human intervention, unlikely but possible
ship board fires), and combinations of the two.
ling a letter to Mr. Charles Head by the Port,
estion of what are the consequences to
ast a severe breach of the cask and fuel rods,
esign limits of the cask such as a fire, with air
well above 1,160 degrees Fahrenheit for a

t nuclear fuel in its Draft EIS (Table E-6,
. However, the release fractions appear low
k and spent fuel design limits or a
ses are based on what appear to be minor
ping cask. DOE has not responded to the
ccurs, i.e., shipboard fire of such intensity and
are substantially exceeded? Worst case
IS are:

TRIGA Fuel

63%
4.3%
0.2%
0.048%
0.002%

ases of vitrified high level waste reported
redible" accident.

ers are interested in knowing what the
releases, e.g., any 50% releases or many orders
" range, for a single shipping cask at the Port
fuel elements from the foreign reactors.

1265-34 (Cont'd)

RESPONSE TO COMMENT
COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

Response to Comment No. 1265-31

The commentor's preference for any management alternative that would avoid shipments through the Port of Tacoma, is noted.

As discussed in Section 4.5 of the EIS, the hybrid alternative that was used as an example in the EIS (Section 2.4 of the EIS) would require approximately 63 percent of the number of shipments required under the basic implementation of Management Alternative 1 (a 37 percent reduction). Other hybrid alternatives, not specifically evaluated in the EIS, may require a higher or lower number of shipments depending on the scenario.

Response to Comment No. 1265-32

DOE considers that the real risks have been adequately identified, estimated, and presented in Chapter 4 of the EIS. The benefits of Management Alternative 2 are discussed along with other policy considerations in Sections 2.3 and 4.4.2.1 of the EIS.

Response to Comment No. 1265-33

The commentor's opinion that the DOE's risk assessment is scientifically correct, but still inadequate, is noted. The commentor's focus on the consequences of what happens if scenarios is also noted.

Appendix D, Section D.5.4.3.2 of the EIS presents the risks of a very high temperature fire that engulfs a cask, which was part of a sensitivity study on release fractions. In addition, Section D.5.9 has been added to Appendix D of the EIS to address the issue of attack by an angry few disgruntled persons or terrorists.

Response to Comment No. 1265-34

CEQ regulations and guidance do not require a worst case analysis of accidents in an EIS. For the purpose of analysis in this EIS, there is no such thing as a worst case scenario, because for any worst case that is postulated, a still more severe accident can be postulated by adding one more drum of gasoline, one more wrecked rail car, one more terrorist, etc. In addition, for each assumption that is made to make a postulated accident more severe, the probability of the accident becomes smaller. The EIS does not contain a worst-case scenario, but a broad range of port accident scenarios, including severe accidents, is discussed in Section 4.2.2.3 of the EIS. Appendix D, Section D.5.4.3.2 of the EIS presents the risks of a very high temperature fire that engulfs a cask, which was part of a sensitivity study on release fractions.

COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

10. WHERE'S THE DOE ANALYSES OF THE WORST DISASTER CASE?

At the public meeting on May 22, 1995 the Port Commissioners repeatedly asked the question of Mr. Edward Fei (DOE), Mr. Patrick Wells (DOE), and Mr. Patrick Schwab (SAIC) as to what would be the consequences of a serious breach of the shipping cask in a populated area.

No substantive answer was provided, although DOE did commit to respond in writing as soon as they get back to DC As of June 13, no response has been received from DOE. Consequently, a follow-up fax was sent to DOE's offices (Mr. Charles Head) on Monday afternoon, June 12 to apprise him of our serious interest in receiving a DOE response to the Commissioners' question.

1265-35

RESPONSE TO COMMENT
COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

Response to Comment No. 1265-35

DOE responded to the question in a fax dated June 16, 1995. Also see the response to Comment 1265-33, above.

RESPONSE TO QUESTION RAISED DURING THE MAY 22 PORT OF TACOMA COMMISSIONER'S MEETING
June 16, 1995

QUESTION: What is the estimated effect of released radiation on humans and the environment should a shipping cask and the spent fuel rods contained therein be severely "breached" in the vicinity of the Port of Tacoma?

- Discussion at the meeting covered a range of "breaching" mechanisms including shipboard, storage or transportation fires in the vicinity of the harbor, dock or Tacoma transportation routes that substantially exceeded the design limits of the shipping casks; explosions resulting from hazardous cargo transported to/from the Port or handled at the Port, and acts of terrorism or revenge by terrorists or disgruntled persons, respectively.

ANSWER:

1. Port accidents are discussed in the *Draft Environmental Impact Statement on a Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (the draft EIS) in Section 4.2.2.3 of Volume 1, and in Appendix D. The consequences of credible port accidents are discussed starting on page 4-21. The most severe credible accident is a cask breach followed by a Category 6 fire that engulfs the shipping cask. This fire is not hot enough and long enough to raise the fuel temperature up to the point (about 1,160°F) at which the TRIGA fuel would burn and the aluminum-based fuel would melt. However, this accident is defined to include long duration airflow surrounding the cask. The accident which breaches the cask would be expected to also breach the spent fuel cladding and allow some of the fission products in the spent fuel to escape, while the air flow would disperse these fission products.

   An Oklahoma-type bomb explosion right next to a cask would be less severe (radiologically) than an accident involving a Category 6 fire because there would be no long duration air flow surrounding the cask. Thus, even if the spent fuel cladding were damaged, there would be no mechanism to disperse any radioactive material released. The explosion would probably move the cask laterally, and perhaps, depending on the strength of the explosion, breach the cask, and break some of the cladding on the spent fuel. However, there would be no fire to drive radioactive material up into the air. Furthermore, the spent fuel would probably still be in the cask and the cask's shielding.

2. The Port of Tacoma question also requested that DOE assume the accident occurs at the worst of three possible locations (in the vicinity of the harbor, dock or Tacoma transportation routes). The port analysis in the draft EIS covers the first two locations. The EIS does not contain such analysis for specific points on Tacoma transportation routes because the ground transport calculations are based on summations of the total risk to the public along the entirety of representative routes. Specific individual locations for ground transport accidents were not selected and airborne dispersion calculations from those points have not been performed.

RESPONSE TO COMMENT
COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

ENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

ences of an accident followed by Category 6 fire in the vicinity of the harbor and
or the Port of Tacoma are presented in Table 4-6 on page 4-22 of Volume 1.
ences are worst if the accident occurs at the dock. In this case, the consequence
to be 0.8 latent cancer fatalities. This means that, if the accident occurs, there
90 percent chance one additional cancer would occur among all the people
he radioactive material. The chance of two additional cancers occurring among
al people would be significant, but lower than 90 percent.

ations were based on the unrealistic assumption that people do not evacuate the

understand that the Port of Tacoma is interested in the consequences of accidents
e even more severe than those discussed in the draft EIS. We have performed
on such an accident and we present the results here, but we wish to emphasize
lder that this accident scenario is not credible. The scenario that we analyzed is
full cask load of thirty of the hottest possible spent nuclear fuel elements in
lock, with no cask around it. We also ignored not only the effects of any
n dock structure, surrounding buildings, equipment or other materials, but also
self-shielding (i.e., spent fuel elements in front block radiation from any spent fuel
). Thus, the calculation unrealistically assumes that there is no shielding of any
anyone in the area would be exposed to direct radiation from all of the spent

ons show that, in this unrealistic case, the dose rate on contact with the spent fuel
the order of hundreds of thousands of rem per hour. Anyone exposed at this
ss would probably die within an hour or two. However, the radiation dose rate
ses with distance, so that, even in this unrealistic case, at about 6/10 of a mile
m) away from the unshielded spent nuclear fuel, the dose rate would be down to
This dose rate was selected because it is the regulatory limit for anyone standing
way from a truck carrying a cask of spent nuclear fuel under normal conditions.
cask provides the same shielding as about a kilometer of air.

RESPONSE TO COMMENT
COMMENTOR NO. 1265: PORT OF TACOMA (CONT'D.)

Commentor No. 1265: Port of Tacoma (Cont'd.)

11. U.S. OPTION (ALTERNATIVE 1) RELIES TOO MUCH ON ADMINISTRATIVE CONTROLS

Excluding medical diagnostics, the radiation limit from man-made sources for the general public is 100 millirem per year. In contrast radioactive materials workers' limit is 5,000 millirem per year. The best estimate of the radiation field at about 2 meters distance is about 2 millirem. Therefore a truck driver who exceeds 50 hours of driving/traveling time will exceed the maximum licensed exposure limit of 100 millirem. DOE plans to use "administrative controls" to regulate and monitor the exposed workers.

Administrative controls should be used as the last resort in situations like this. Administrative controls should be accompanied by personnel dosimeters to permit individual monitoring, especially as one approaches closer to the license limit.

1265-36

Response to Comment
Commentor No. 1265: Port of Tacoma (Cont'd.)

Response to Comment No. 1265-36

Personnel dosimeters would permit individual monitoring of onsite radiation workers and truck drivers for radiation exposure. The use of such personnel dosimeters is generally part of an administrative controls system.

[redacted]A (CONT'D.)

pport of U.S. nuclear
e foreign reprocessors
be implemented with
HEU down to LEU,
r fuel, and converting
at such arrangements
sing these issues with

to reprocess the bulk
uel. The current lack
of a uranium-silicon-
ther the modifications
ay Site.

to this comment and

is noted again. The
Summary, and more

he U.S. to implement
ting the use of highly-
lo such considerations
ear power plants.

COMMENT
RT OF TACOMA (CONT'D.)

incorporated into Appendix D, Section

t of Tacoma, DOE is unable to address
nation on the Port of Seattle without
hould be included.

clear fuel through the Port of Tacoma
in Commencement Bay as a result of
ional burden to this designation. The
ar fuel on the Bay would not add any
OE has added a sentence to Appendix
nation of the Commencement Bay as
r fuel shipments, but not other more
e Port of Tacoma would add to the
alysis of impacts, as documented in
o significant adverse impacts on the
nts of foreign research reactor spent

mment 1265-1, above.

RESPONSE TO COMMENT TOR NO. 1265: PORT OF TACOMA (CONT'D.)

mment No. 1265-47

o comments 1265-33, -34, and -35 above.

mment No. 1265-48

n analysis of the risk of accidents at the potential ports of entry (Section ground transport routes (Section 4.2.3.3), and at the management sites d Appendix F, Section F.4). In all cases, the risk was found to be low. would not expect that the local population would incur any cost in the t.

nderson Act, DOE would indemnify contractors for public liability nt nuclear fuel if there is a nuclear incident, as defined under law. In uclear incident is one that causes, for example, injury or sickness or esulting from radioactive, toxic, explosive, or other hazardous properties OE does provide funding to States and Tribes, as described in Section S, for transportation related issues. Such funding can enhance a rgency management and planning capabilities.

mment No. 1265-49

na was one of ten ports that has been determined to be acceptable to n research reactor spent nuclear fuel, if the material is to be accepted tates. Population of the port and surrounding areas is one of the the port selection criteria, and one of the reasons some other more re not included in the final list of ports. It should also be noted that the fense Authorization Act requires that low port population be a criteria for the receipt of foreign research reactor spent nuclear fuel. The for port selection (Criterion 5) is discussed in more detail in Appendix 5 of the EIS.

ORTES

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EIS, is low.

along the eastern
ess is described
alth, safety, or
rcial or military
esearch reactors
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gulation (which
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including those
al management
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r allies. On the
t the risks from

e the significant
rt of Tacoma as
ma because the
npacts to any of
ndix C, Section
clude release of
ant nuclear fuel,
ugh the Port of
not affect air or
IS to make this
d water quality.

ection process,
d therefore not
on the fact that
e United States

Response to Comment No. 1274: Port of Anacortes (Cont'd.)

ntainers that would require no special handling or precautions. As
o adverse commercial or economic reaction to the use of the port.
no significant adverse commercial impacts to the ports that received
r spent nuclear fuel for the 30 plus years it was received.

ent No. 1274-2

n 2.7.3.2 of the EIS, DOE provides funding to States and Tribes
nvironmental Management and the Office of Civilian Radioactive
assist with transportation related issues. This funding has been
nhance a jurisdiction's emergency management and response
funding, much of DOE's assistance is provided in the form of
r which DOE bears the cost. Assistance may be provided through
ssistance Program and under the National Contingency Plan, as
, DOE sponsored meetings, informal discussions, and informational

as added to the final EIS in response to public comments, contains
for emergency preparedness and security measures associated with
reign research reactor spent nuclear fuel in the United States. The
interface between DOE and State, Tribal, and local authorities,
tion of the policy, for the identification and resolution of emergency
ity issues specific to the communities that would be affected. These
ties and training of first emergency responders. Funding for special
uld be addressed during this interface.

ent No. 1274-3

the commentor is referring to has been analyzed in the EIS. The
is documented in Appendix D, Section D.5.4.3.2 and Attachment
sults indicate that the risk associated with an on-board ship severe
Table D-39 of Appendix D).

ent No. 1274-4

ssment that Management Alternative 1 (management of foreign
nuclear fuel in the United States) is not the best, safest, fastest, and
to achieve the goals of nuclear weapons nonproliferation, is noted.
ve 1 is described in Section 2.2 of the EIS.

CORTES (CONT'D.)

noted. This alternative is
ear weapons proliferation
lternative 1, Section 4.8.1
mmerce under each of the
al under each alternative.
Management Alternatives
e EIS fully complies with

mercial and military ports
ative 1 and 3 at candidate
e low (Sections 4.2.2 and
military ports based on
here is no environmental

oactive material, the dose
low. No special handling
ign research reactor spent
; experience with handling
shoremen is required.

ld be taken to ensure that
materials. DOE considers
e received at commercial
ight be present at military
or exceed all the security
73). DOE supports these
actor spent nuclear fuel in
urity sufficient to satisfy
er to provide the required

e security and emergency
arch reactor spent nuclear
portation Plan, which is a
on of the foreign research
n port and in transit to the

OMMENT
OF ANACORTES (CONT'D.)

or Management Alternative 2 is noted.

ving comments are material:

om Management Alternative 2 on the
emical separation in the United States
reprocessing outside the United States.
s would be the most costly alternative,

or spent nuclear fuel at the Savannah
(H or F) were in operation (at least
ther requirements. Restarting one or
f Nuclear Materials EIS is considered
ctor spent nuclear fuel program would
essing during the period of concurrent
ent period. Using the IMNM EIS as a
would be 1997 through 2002 or earlier.
period of concurrent operations is
-alone basis after concurrent operations
foreign research reactor spent nuclear
Only in the pure stand-alone mode,
el be the cost driver for operations. All
ct of the foreign research reactor spent

;PONSE TO COMMENT
ıMENTOR NO. 1275:
ʀ, MAYOR, CITY OF RIO VISTA

1275-1

passage from San Francisco Bay to Concord NWS was lection process and did not alter the determination that it erion 2 (Favorable Transit From Open Ocean) for port ı D.1.9.2 of the EIS). The volume or size of the local) was not considered in the calculation of risk associated ;earch reactor spent nuclear fuel. In general, the number ınal to the amount of ship traffic because port ship traffic ; normally a small number of ships per hour. Historically, ignificantly increase the probability of an accident. Rather, ıssociated with navigational hazards and distances from large bay (Appendix D, Section D.1.9.2). Appendix D, scussion of the determination of the probability of ship ard to the size of vessels, increased volumes of hazardous :hange the accident consequences because the most severe ımed a collision with a tanker and that the resulting fire uel available (Attachment D5 to Appendix D).

aft EIS is inadequate for evaluating the risks associated WS. The EIS considers that the incident-free impacts 2.1.2 of the EIS) and the accident risk to the health and pulations around the Concord NWS and along the routes v (Section 4.2.1.3).

1275-2

d transportation routes, or transport modes for the foreign uel. If the Concord NWS is selected, then DOE would ıccordance with Department of Transportation regulations 'hat route could use Route 4, Route 24, Route 12, and/or local Concord streets that the trucks would probably use. ;ency can designate a preferred route, which the shipments accordance with 49 CFR Part 397.103.

1275-3

;ociated with marine and port activities and ground he EIS. The impacts are evaluated for both incident-free ıuakes were not analyzed separately in the EIS because lt in greater damage to a transportation cask than that ıbsequent fire. Rather, the consequences from the worst ıreign research reactor spent nuclear fuel transportation

COMMENTOR NO. 1275: JERRY RUBIER, MAYOR, CITY OF RIO VISTA (CONT'D.)

July 17, 1995
Mr. Charles Head, Program Manager
Office of Spent Nuclear Fuel Management (EM-37)
Page 2.

Sincerely,

JERRY RUBIER
Mayor

cc: Congressman Fazio

Hazel R. O'Leary
Secretary of Energy

Board of Supervisors
Contra Costa County

JR:vs

RESPONSE TO COMMENT COMMENTOR NO. 1275: JERRY RUBIER, MAYOR, CITY OF RIO VISTA (CONT'D.)

casks were evaluated, regardless of what initiated them. An earthquake could be the initiator of either a ship or road accident and thus effect the probability of such accidents, however, the number of earthquake-induced ship and road accidents is small compared to other causes.

o. 1275:
OF RIO VISTA (CONT'D.)

95-36

CONCORD NAVAL WEAPONS
ENTRY FOR FOREIGN
FUEL

the Concord, California
port of entry for foreign

atement prepared in con-
quate in many areas inclu-
g:

ion of the proposal on
on the major highways
as not been addressed;

1275-2 (Cont'd.)

ucture in the area and the
akes has also not been

1275-3 (Cont'd.)

E CITY COUNCIL OF THE CITY
not support the use of
n as a port of entry for

1275-1 (Cont'd.)

CITY OF RIO VISTA and
il of said City, do hereby
e a full, true and correct
uncil which was regularly
y said City Council at a
owing vote:

ou, Madere, Brown, Rubier

y this 20 day of

CITY CLERK

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VISTA (CONT'D.)

Response to Comment
Commentor No. 1279:
ontra Costa County Board of Supervisors

to Comment No. 1279-1

lection process that determined that Concord NWS was an acceptable port the population of the port and surrounding areas (Appendix D, Section D.1.9.5). y, all population within a fifty mile radius of the Concord NWS was considered zing the potential impact of a range of hypothetical port accidents. The risks to be low (Appendix D, Section D.5).

e from San Francisco Bay to Concord meets the requirements of Criterion 2 Transit From Open Ocean) for port selection (Appendix D, Section D.1.9.2 of and-based facilities, such as refineries, have no direct impact on the risk with the shipment of foreign research reactor spent nuclear fuel because the some mishap at a land-based facility would not add to the severity of the ible accident, which is considered to be the collision of the ship carrying the arch reactor spent nuclear fuel with a petroleum tanker. In this accident, the on cask is damaged in the collision, then subjected to a fire that resulted from n (Appendix D, Section D.5). Section 4.2.2.3 discusses the assumptions that e port accident analysis and the results of those analyses. Land-based facilities are not a threat to the transportation cask due to the distance from any of the the ship and the robustness of the cask.

(Cont'd.)

Response to Comment
Commentor No. 1279:
Contra Costa County Board of Supervisors (Cont'd.)

COMMENTOR NO. 1280: PORT OF ANACORTES

A WASHINGTON PUBLIC PORT OWNED BY THE RESIDENTS OF THE LOCAL COMMUNITY

FIRST AND COMMERCIAL AVENUE · P.O. BOX 297 · ANACORTES, WA 98221 USA
(206) 293-3134 · FAX (206) 293-9606

July 18, 1995

Hazel O'Leary
Secretary
US Department of Energy
1000 Independence Avenue SW
Washington, DC 20585

Dear Secretary O'Leary,

We are writing to express our concerns over the alternatives proposed in the Department of Energy's (DOE) Draft Environmental Impact Statement (DEIS) on the management of spent nuclear fuel (SNF) from foreign research reactors. We are concerned about the proposed option of importing the foreign SNF through commercial ports such as Tacoma, WA. 1280-1

While the desire to encourage other nations' research reactors to switch to low-enriched uranium (LEU) from high-enriched uranium (HEU) is an integral component of the United State's overall nuclear nonproliferation policy, importing foreign SNF through commercial ports may not be necessary. The DOE DEIS lists two military ports among the ten possible ports of entry for the SNF. We feel the DOE should limit further consideration of importing SNF to these or other appropriate military ports because of the considerable concern among citizens and city officials about importing SNF through commercial ports. 1280-2

First, there is significant apprehension created about the threats to public health by importing this SNF through commercial ports. DOE has stated that the threats to public health are not significant given the state of the material and the overly cautious design of the storage casks. We feel a public health risk still exists. There is public concern that longshoremen, sailors, and average citizens could potentially become exposed to significant radiation levels. Whether this risk is real or only perceived is irrelevant. Importing foreign SNF through commercial ports would at best threaten public confidence and citizen's sense of security and at worst pose a significant threat to public health. 1280-3

Second, the DEIS states: "Primary responsibility for emergency response to a foreign research reactor SNF incident would reside with local authorities." Although the port and city of Tacoma have emergency response plans for hazardous materials, neither the Police and Fire Departments or the Port workers are properly equipped or trained to contend with a significant radiation emergency. Proper equipment and training of these people would add a significant and unnecessary cost to the overall proposal. In addition, it is not clear that Tacoma police officers, fire fighters, and port workers would be willing to undergo such training, knowing that it opens them up to potential future radiation exposure. In fact, port workers in Tacoma may declare their unwillingness to handle the material during even a routine transport procedure, let alone emergencies. 1280-4

Third, importing SNF through commercial ports runs contrary to the overall policy objective of reducing the world-wide availability of HEU and other nuclear waste. If lengthy, unnecessary and relatively low-security transportation of SNF occurs through commercial ports, the increased opportunities for theft, hijacks, and sabotage could result in greater accessibility to the SNF than desired. As current events have 1280-5

RESPONSE TO COMMENT
COMMENTOR NO. 1280: PORT OF ANACORTES

Response to Comment No. 1280-1

The commentor's opposition to bringing foreign research reactor spent nuclear fuel through the Port of Tacoma is noted. However, analysis in Sections 4.2.2 and 4.5 of the EIS indicates that the risk associated with bringing spent nuclear fuel to the Port of Tacoma, or to any of the ports analyzed in the EIS, is low.

Response to Comment No. 1280-2

DOE considers that foreign research reactor spent nuclear fuel could safely be received at commercial ports, as it has in the past, without additional security such as might be present at military bases. The security provided for the foreign research reactor spent nuclear fuel shipments would be required to meet or exceed all the applicable security requirements in the Code of Federal Regulations (10 CFR Part 73). If any port did not already provide security sufficient to satisfy these requirements, it would be the responsibility of the shipper to provide the required additional security. Nevertheless, the commentor's preference for the use of military ports is noted.

Response to Comment No. 1280-3

The commentor's opposition to the use of commercial ports is noted. DOE considers, however, that the real risk is important. DOE has estimated the real risk, found it to be low, and presented it to the public in a straightforward manner in this EIS. (Section 4.1.4 of the EIS)

Response to Comment No. 1280-4

As discussed in Section 2.7.3.2 of the EIS, DOE provides funding to States and Tribes through the Office of Environmental Management and the Office of Civilian Radioactive Waste Management to assist with transportation related issues. This funding has been used in the past to enhance a jurisdiction's emergency management and response capabilities. Besides funding, much of DOE's assistance is provided in the form of technical assistance, for which DOE bears the cost. Assistance may be provided through DOE's Radiological Assistance Program and under the National Contingency Plan, as well as through training, DOE sponsored meetings, informal discussions, and informational materials.

Appendix H, which was added to the final EIS in response to public comments, contains the general provisions for emergency preparedness and security measures associated with the transportation of foreign research reactor spent nuclear fuel in the United States. The provisions include an interface between DOE and State, Tribal, and local authorities, prior to the implementation of the policy, for the identification and resolution of emergency

COMMENTOR NO. 1280: PORT OF ANACORTES (CONT'D.)

Page Two
Secretary O'Leary, US Department of Energy

unfortunately revealed, the United States is not immune to foreign or domestic terrorism. The fact is that this material could be used in the making of nuclear weapons. Transporting this material through commercial ports would create an unnecessary threat to national security.

1280-5 (Cont'd)

These concerns present a compelling case for DOE to preclude further consideration of commercial ports like Tacoma, WA, for importation of foreign SNF. While removing HEU and other nuclear waste from the global marketplace is an essential aspect of nuclear nonproliferation, importing this material through military ports may prove more reasonable, given the increased protection that could be provided to public health, safety and national security.

1280-2 (Cont'd)

In summary, we would appreciate DOE limiting further consideration of this proposal to military ports. Thank you for your consideration.

Sincerely,
The Commission of the Port of Anacortes:

Francis Barrett, President

Ken Moore, Secretary

Stan Kurowski, Vice President

Merrill Tilbert, Commissioner

Robert T. Nelson, Commissioner

cc: Port of Tacoma Commissioners
Gov. Mike Lowry
Sen. Slade Gorton
Sen. Patty Murray
Sen. Harriet Spanel
Rep. Norm Dicks
Rep. Jim McDermott

RESPONSE TO COMMENT
COMMENTOR NO. 1280: PORT OF ANACORTES (CONT'D.)

management and security issues specific to the communities that would be affected. These issues would include capabilities and training of first emergency responders. The commentor's assessment that the Tacoma port workers and emergency preparedness personnel would not be willing to participate in any training activities, or routinely handle the cargo, is noted.

Response to Comment No. 1280-5

Neither acts of terrorism nor theft of materials by a determined group or individual can be completely precluded. However, proper security measures greatly reduce the risk of such actions. Security would be provided for all shipments of foreign research reactor spent nuclear fuel, as required by the Code of Federal Regulations (10 CFR Part 73). The security provisions are summarized in Appendix H of the EIS. This appendix presents the general provisions of the Transportation Plan, which is a document that would be prepared for each foreign research reactor spent nuclear fuel shipment to specify details of the transportation process, including security provisions in port and during transit. For discussion of commercial port security, refer to response to Comment 1280-2, above.

Section 2.4
Native American Groups

Response to Comment
Commentor No. 70: Puyallup Tribe of Indians

sponse to Comment 70-1

Puyallup Tribe's concern over the impact on Commencement Bay's fishery resources oted. However, analysis in Sections 4.2.2 and 4.5 of the EIS indicates that the risk of ging spent nuclear fuel to the Port of Tacoma, or to any of the ports analyzed in the , is low. The analysis in the EIS indicates that there would be no significant adverse acts to any of the ports, bays, or waterways that the spent nuclear fuel might pass ugh or near. Spent nuclear fuel transportation casks are designed and built to preclude ase of radioactive material. As stated in Section 2.6.2 of the EIS, to date, after more 30 years of spent nuclear fuel shipments, no spent nuclear fuel transportation cask ever released any of its contents (radioactive material). Based on this past experience, E considers that transportation casks passing through the Port of Tacoma would not ase their radioactive contents, and would thereby not affect the quality of the water. aragraph has been added to Section 4.2.2.2 of the EIS to make this point and to phasize the no-impact nature of these shipments on air and water quality.

sponse to Comment 70-2

pment of foreign research reactor spent nuclear fuel would not jeopardize the significant and shellfish resources in Commencement Bay. The analysis in the EIS indicates there would be no significant adverse impacts to any of the ports or bays, or the lity of water or air (Section 4.2.1.1 and Appendix C, Section C.2 of the EIS). torically, there were no adverse economic or cultural impacts to the ports that received ign research reactor spent nuclear fuel for the 30 plus years it was accepted into the ted States in the past. This is based on the fact that the foreign research reactor spent lear fuel would be accepted into the United States in standard shipping containers that ld require no special handling or precautions.

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	cts on the economic echanism by which uel would affect the As discussed in the ect on the quality of	nuclear fuel through and 4.5 of the EIS the Port of Tacoma,	er is noted. Agency ter from J. Lytle of Tribe of Indians and une 19, 1995. The s to 90 days, ending
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Response to Comment
Commentor No. 335: Puyallup Tribal Council

TRIBAL COUNCIL (CONT'D.)

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Tacoma, the City of Tacoma and
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RESPONSE TO COMMENT
COMMENTOR NO. 335: PUYALLUP TRIBAL COUNCIL (CONT'D.)

Response to Comment No. 335-1

The potentially affected environment surrounding the Port of Tacoma is described in Section 3.2.1.9 of the EIS. The racial and ethnic composition of the population in the potentially affected area is shown in Figure 3-34 of the EIS. As discussed in Appendix A, demographic data for the environmental justice analysis were obtained from U.S. Bureau of the Census data files. These data files provide racial and ethnic information for any given geographic area of the United States based on the latest census, but do not provide information on individual Tribes which responded to the 1990 census. Environmental effects were evaluated and the risks to the general population, including minority populations and low-income populations were determined to be low (Section 4.2.2 of the EIS). Environmental justice at candidate ports is discussed in Section 4.2.2.6 of the EIS with supporting analysis in Appendix A.

Response to Comment No. 335-2

In the unlikely event that a transportation cask loaded with foreign research reactor spent nuclear fuel were to sink in any U.S. coastal waters, it would be recovered, even from the deepest portions of Puget Sound, which reaches depths of 305 meters (1,000 feet). Section 4.2.1.3 of the EIS has been revised to include the above clarification. Appendix C, Section C.5.5 of the EIS presents information on the probability of a cask sinking in coastal and deep ocean waters.

Appendix D, Section D.5.3.1 of the EIS describes several accident scenarios that involve fire. The results of the analysis of these accidents can be found in Section D.5.4. The analysis shows that even in the event of a severe ship fire, neither the consequences nor risks are great (Section D.5.5). Although such a catastrophic accident would obviously impact the local environment, no significant impacts are predicted due to the presence of foreign research reactor spent nuclear fuel. In fact, the analysis of impacts associated with an accident involving foreign research reactor spent nuclear fuel also determined that no decontamination, interdiction, or condemnation of property would result from the worst plausible accident (Section 4.2.2.3 and Appendix D, Section D.5 of the EIS).

The effects of a severe explosion on a foreign research reactor spent nuclear fuel transportation cask were not evaluated because the radiological impacts of the fire discussed above would be worse, or bound the results of an explosion. The energy content of a severe fire greatly exceeds that of a severe explosion. With a severe fire not only is the cask violated, as it might be by a large explosion, but the heat of the fire would lift what is released from the cask, spreading the radioactive material farther, affecting more people. The impacts of an explosion followed by a severe fire is equivalent to the category 6 accident which results in a violated cask being engulfed by a severe fire (Appendix D, Section D.5.3.1.1), which is discussed above.

COMMENTOR NO. 335: PUYALLUP TRIBAL COUNCIL (CONT'D.)

Puyallup Tribal Resolution No. 150695
Page 3

I. Did not adequately address life cycle costs, benefits and risks of the proposed alternatives, 335-5

J. Fully ignored the fairness and equity issues of selecting the smaller ports in lower population areas after implying the risks were virtually inconsequential, and 335-6

WHEREAS, the record for the safe operation and handling of nuclear material in U.S. Department of Energy regulated facilities is less that satisfactory, and there are facilities owned and operated by the U.S. Government capable of receiving and handling this nuclear material, and 335-7

WHEREAS, the U.S. House Budget Resolution eliminates the U.S. Department of Energy thereby creating funding uncertainties, and 335-8

WHEREAS, the U.S. Department of Energy is failing to provide adequate procedural due process in that it is not making a record of its hearings thereby foreclosing individuals' abilities to challenge the adequacy of the EIS, and 335-9

NOW THEREFORE IT BE RESOLVED by the Puyallup Tribal Council of the Puyallup Tribe of Indians that it opposes shipments of spent nuclear fuel through any facilities of the Port of Tacoma. 335-10

BE IT FURTHER RESOLVED, that the Puyallup Tribal Council declares that the Puyallup Reservation be declared a NUCLEAR FREE ZONE and the Tribe unanimously registers its opposition to the transportation,storage and/or disposal of any nuclear wastes on or through the exterior boundaries of the Puyallup Reservation. 335-11

CERTIFICATION

I, Sherry Richardson, Secretary of the Puyallup Tribal Council, hereby certify that the above resolution was duly adopted at a regular meeting of the Puyallup Tribal Council on the 15 day of June, 1995; a quorum being present with the vote of 6 FOR, 0 AGAINST, and 0 ABSTAINING.

Sherry Richardson
Sherry Richardson, Secretary
Puyallup Tribal Council

ATTEST:
Herman Dillon
Herman Dillon, Chairman
Puyallup Tribal Council

RESPONSE TO COMMENT
COMMENTOR NO. 335: PUYALLUP TRIBAL COUNCIL (CONT'D.)

Sections 4.2.1 and 4.2.2 of the EIS provide an evaluation of consequences and risks of on-board ship fires. Supporting details are given in Appendix D. If a policy to accept foreign research reactor spent nuclear fuel is adopted, fuel elements would be shipped in casks which are resistant to destruction by collision and fire (Section 2.6.2). In the unlikely event that a cask is breached by collision and/or fire, the radiological consequences would be small and the associated risks would be low (Section 4 of the EIS).

DOE has added a sentence to Appendix D, Section D.2.1.9 of the EIS regarding Commencement Bay being a Superfund Site. The analysis of impacts for Management Alternative 1 in Sections 4.2 and 4.3 of the EIS demonstrate that there would be no significant adverse impacts on the ports, people, or natural environment from shipments of foreign research reactor spent nuclear fuel and the overall impacts to Commencement Bay would be unchanged by the various management alternatives.

Response to Comment No. 335-3

Shipment of foreign research reactor spent nuclear fuel would not jeopardize the significant cleanup effort undertaken in the area of Commencement Bay and the Port of Tacoma as noted by the commentor. The analysis in the EIS indicates that there would be no significant adverse impacts to any of the ports or bays, or the quality of water or air (Section 4.2.1.1 and Appendix C, Section C.2 of the EIS). Spent nuclear fuel transportation casks are designed and built to preclude release of radioactive material. Based on over 30 years of experience shipping spent nuclear fuel, DOE considers that spent nuclear fuel transportation casks passing through the Port of Tacoma, Commencement Bay, or any other port or waterway analyzed in the EIS would not affect air or water quality. A paragraph has been added to Section 4.2.2.2 of the EIS to make this point and to emphasize the no-impact nature of these shipments on air and water quality. Similarly, DOE considers that based on the experience of ports that have received spent nuclear fuel in the past, there would be no significant adverse impacts to any businesses or industry in the Commencement Bay/Port of Tacoma area from shipments of foreign research reactor spent nuclear fuel.

Response to Comment No. 335-4

The EIS demonstrates that the receipt of foreign research reactor spent nuclear fuel at the Port of Tacoma (Section 4.2.2.3 of the EIS) and its transportation through the Puyallup reservation (Section 4.2.3.3 of the EIS) poses essentially no risk to the lives or health, and economic security of members of the Puyallup Tribe in or around the port and Commencement Bay.

On the issue of air and water quality as it pertains to the proposed policy of managing foreign research reactor spent nuclear fuel, DOE considers that there would be no significant adverse impacts to any of the ports that might be used to accept the material.

MENT

BAL COUNCIL (CONT'D.)

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SECTION 2.4: NATIVE AMERICAN GROUPS

COMMENTOR NO. 335: PUYALLUP TRIBAL COUNCIL (CONT'D.)

RESPONSE TO COMMENT
COMMENTOR NO. 335: PUYALLUP TRIBAL COUNCIL (CONT'D.)

Response to Comment No. 335-11

The commentor's opposition to transportation, storage and/or disposal of nuclear waste on Puyallup Reservation Land, is noted.

COMMENTOR NO. 412: PUYALLUP TRIBE FISH COMMISSION

Tell the Department of Energy what you think about nuclear waste coming through Tacoma.

I AM A PUYALLUP INDIAN, & CHAIRMAN OF THE PUYALLUP TRIBE FISH COMMISSION, AS A FISHERMAN I DONT EVEN WANT TO THINK WHAT THIS KILLER POISON WOULD DO TO OUR SALMON & OTHER SEA FOOD. IF THERE WAS A ACCIDENT WITH THIS KILLER POISON. OUR SALMON SMALLER & FEWER AS IT IS

412-1

Name and Address: VERNON LOUIE CHAIRMAN
PUYALLUP TRIBE FISH CIMMISSION
3314 96 ST. S. TACOMA WA 98409
PH 206-581 4436

RESPONSE TO COMMENT
COMMENTOR NO. 412: PUYALLUP TRIBE FISH COMMISSION

Response to Comment No. 412-1

The commentor's opposition to bringing foreign research reactor spent nuclear fuel through the Port of Tacoma is noted. However, analysis in Sections 4.2.2 and 4.5 of the EIS indicates that the risk associated with bringing spent nuclear fuel to the Port of Tacoma, or to any of the ports analyzed in the EIS, is low.