NUCLEAR FUEL TRANSFER FOR REPROCESSING: PENDING CASES

HEARINGS

BEFORE THE

SUBCOMMITTEE ON INTERNATIONAL ECONOMIC POLICY AND TRADE

OF THE

COMMITTEE ON INTERNATIONAL RELATIONS HOUSE OF REPRESENTATIVES

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NUCLEAR FUEL TRANSFER FOR REPROCESSING: PENDING CASES

TUESDAY, SEPTEMBER 26, 1978

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERNATIONAL RELATIONS,
SUBCOMMITTEE ON INTERNATIONAL
ECONOMIC POLICY AND TRADE,
Washington, D.C.

The subcommittee met at 2 p.m. in room 2200, Rayburn House Office Building, Hon. Jonathan B. Bingham (chairman of the subcommittee) presiding.

Mr. BINGHAM. The Subcommittee on International Economic Policy and Trade will be in order.

In view of the fact that we expect a series of votes on the floor shortly, I think we had better proceed. Other members are expected.

We meet today for the first of two public hearings on pending applications for transfers of U.S.-origin spent nuclear fuel. Section 131 of the Atomic Energy Act of 1954 provides for U.S.-origin spent fuel assemblies to be transferred for storage or reprocessing subject to U.S. approval. However, the standard set forth under the Nuclear Nonproliferation Act of 1978 applies, that such transfers must assure timely warning of possible diversion of weapons-grade materials. Presidential statements have indicated that such transfers would only be approved on a case-by-case basis, as a "last resort" involving immediate and pressing need.

On August 17, 1978, the committee received its first notification of such a proposed transfer. In that submission, the executive branch outlines its intention to approve the transfer of 126 spent fuel assemblies from Tokyo Electric Power Co. (TEPCO) to the Windscale Works in England for reprocessing. The 15 legislative days required by the law for such cases to remain before the Congress expired September 21, but on the basis of a letter which I sent to the President on September 15, expressing certain concerns about the basis for the proposed Executive approval, and my intention to convene these hearings, final action on that transfer request has been deferred.

A second transfer of U.S.-origin spent fuels is known to be under consideration by the executive branch. We had hoped and expected to have received by now formal notification of that case, proposed transfer of spent fuels from Japan's Kansai facility to La Hague for reprocessing. Since we have not, and since the committee has reason to believe that this notification will be forthcoming by the end of this week, we have postponed the hearing scheduled for tomorrow at which the executive branch agencies involved were to have testified. That hearing will now be held at 2 p.m. Tuesday, October 3, in room 2200, this building, by which time the subcommittee will have had an opportunity to study the Kansai documents.[1]

[1] Copies of these notifications appear in appendix 3.

Finally, the retransfer question arises with respect to discussions with Austria and presumably other nations concerning eventual disposal of U.S. origin fuels. In the case of Austria, a national referendum is scheduled for early November to decide whether to put into operation a nuclear plant containing fuel supplied by the United States. The committee wishes to be brought up to date concerning what policies and specific commitments or assurances with respect to such future transfer and disposal govern such situations.

We are pleased to have with us today representatives of two public interest organizations that take an active interest in nuclear proliferation issues. From the Natural Resources Defense Council, we have Dr. Thomas B. Cochran and S. Jacob Scherr. From the Environmental Policy Center we have Janet Hieber.

Welcome to you, and we will start with Mr. Cochran.

Mr. COCHRAN. Mr. Scherr will begin.

Mr. BINGHAM. All right.

STATEMENT OF S. JACOB SCHERR, SENIOR PROJECT ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL

Mr. SCHERR. Thank you, Chairman Bingham.

I am Jacob Scherr, an attorney with the Natural Resources Defense Council (NRDC). My colleague, Dr. Thomas Cochran, NRDC staff scientist, and I appreciate this opportunity to appear before you regarding the administration's handling of recent requests to retransfer U.S.-origin spent nuclear fuels for reprocessing abroad and the implications of those requests for U.S. nonproliferation efforts.

We have prepared a written statement which we would like to submit with your approval for inclusion in the record.

Mr. BINGHAM. Without objection, it will be incorporated in full in the record.

Mr. SCHERR. Thank you.

NRDC is a public interest environmental organization with membership of over 38,000 persons in the United States and in 21 foreign countries. Over the past several years we have been actively involved and concerned about nuclear proliferation issues. We have had a particular and continuing interest in U.S. policy and procedure regarding requests to retransfer U.S. origin spent nuclear fuel for reprocessing in facilities overseas. Such requests are known in the trade as MB10 requests.

On March 9, 1977, NRDC, along with the Union of Concerned Scientists, Friends of the Earth, United Kingdom, and Les Amis de la Terre petitioned ERDA to adopt new, much strengthened procedures for handling MB10 requests, and to prohibit completely the reprocessing abroad of spent nuclear fuel of U.S. origin. Drawing upon the 45-page petition that we submitted to ERDA, I submitted testimony on April 4, 1977, to this subcommittee and the Subcommittee on International Security and Scientific Affairs. NRDC continues to consider U.S. policy on retransfer requests as one of the most crucial elements of our nonproliferation strategy.

TEPCO TRANSFER SIGNIFICANCE

Today we will focus on the administration's proposed approval of a request by the Tokyo Electric Power Co. (TEPCO) to retransfer 126 spent fuel assemblies to the United Kingdom for the purpose of reprocessing by British Nuclear Fuels, Ltd., at Windscale. We agree with Chairman Bingham that this retransfer is a highly significant one. It is the first subsequent arrangement involving reprocessing to be proposed under section 1301(B) of the Atomic Energy Act of 1954 as amended by the Nuclear Non-Proliferation Act of 1978. It is an important decision with ramifications for several of the Carter administration's nonproliferation initiatives.

As in the past, U.S. action on this retransfer request will be watched closely by not only Japan and the United Kingdom, but other nations throughout the world. As you noted, a companion request for the retransfer of U.S.-origin spent fuel from the Kansai Electric Power Co. to France for the purpose of reprocessing is now under consideration by the administration.

Also very interested in the TEPCO and Kansai decisions will be a number of countries intent upon establishing their own large-scale national reprocessing capabilities, including India, Pakistan, Brazil, and Germany. The approval of the TEPCO subsequent arrangement will be cited as a precedent by a number of other nations such as Austria, Sweden, Denmark, Switzerland, and Spain, where reprocessing in the United Kingdom or France is portrayed as the solution to the radioactive waste disposal problem.

The proposed TEPCO subsequent arrangement was the subject of a letter of notification and an analysis submitted by the Department of Energy to Congressman Zablocki, Chairman of the House Committee on International Relations, dated August 7, 1978. In order to obtain more adequate documentation of this and the pending Kansai retransfer request, we filed Freedom of Information Act (FOIA) requests on August 30 with the Departments of Energy and State and on September 5 with the Nuclear Regulatory Commission and the Arms Control and Disarmament Agency. Only the ACDA has now fully complied with our FOIA request. The other agencies, particularly the State Department, have not been forthcoming with the requested information.

DEFICIENCIES IN TEPCO REQUEST

A number of important documents, particularly those related to Kansai, remain classified. The records we have obtained nonetheless confirm that there were serious deficiencies and misjudgments in the administration's processing of the TEPCO MB10 request. Perhaps the most damaging error was the determination in the DOE analysis that the yet unconstructed thermal oxide reprocessing plant at Windscale was "grandfathered" by the Non-Proliferation Act. As a result, the TEPCO subsequent arrangement was to be exempted from the "no significant increase in risks of proliferation" and "timely warning" tests under section 131(B) of the amended Atomic Energy Act.

We would like to express our appreciation to you for noticing this flaw and calling it to the attention of the President in a letter dated September 15, 1978. We fully concur in the view that congressional intention was to grandfather only reprocessing plants which were in operation before March 10, 1978, which is the date of the passage of the Nuclear Non-Proliferation Act.

Our understanding is that the administration is now reexamining this question as well as a number of other issues addressed in its analysis of August 17. We further understand that a revised analysis of the TEPCO subsequent arrangement will be provided either today or very soon to the subcommittee. Thus, we would appreciate it very much if we might have an opportunity to present further testimony if that would be appropriate.

Pending an examination of new DOE information, we believe that the TEPCO retransfer request should be denied. The retransfer here in question does not meet the "physical need" criteria previously established by the administration, nor does it meet the "no significant increase in risk of proliferation" test under section 131(B)(2).

The administration's policy on retransfer requests for reprocessing was first articulated by Joseph Nye, who is the Deputy to the Under Secretary of State for Security Assistance at the IAEA Salzburg Conference in May 1977. Nye said the transfers would be approved on a case-by-case basis, where there was a showing of clear need. At that time, he defined "need" as involving those cases where ability to continue power generation is at stake because of spent fuel congestion.

NEED FOR RETRANSFER

The House International Relations Committee, in its consideration of the Nuclear Anti-Proliferation Act of 1977, has also underlined the importance of showing physical need for retransfers. In a letter dated January 25, 1978, to Chairman Zablocki, Joseph Nye set out the following as a minimum criteria for retransfer requests: "A near term need for transfer of the fuel must exist. That is, limitations on spent fuel storage capacity could result in reactor shutdown and possibility of alternative storage arrangements does not currently exist, although we would expect that such possibility was being actively pursued."

Nye further stated in that letter that the administration anticipated that this criteria would remain in effect until the end of the international fuel evaluation, which is to be completed by the end of 1979. Although the DOE analysis of the TEPCO subsequent arrangement has generated considerable uncertainty as to the present state of the administration's policy on retransfers, physical need for the transfer is still identified as one of the considerations for decisions on MB10 requests, yet the discussion in the analysis of the physical need for the TEPCO retransfer is woefully inadequate.

NRC Commissioners Gilinsky and Bradford advised against approval because there was no clear showing of need. Their views, which were submitted to DOE in early August, are still classified. We were also denied access to some of the information submitted by TEPCO to DOE, which DOE claims is company confidential or proprietary.

Within the last week or so, DOE has obtained additional data and is now revising its analysis, but not its conclusions.

Mr. Chairman, if I may, I would like to turn our discussion of the critical issue of physical need over to my colleague, Dr. Cochran.

STATEMENT OF THOMAS B. COCHRAN, SENIOR STAFF SCIENTIST, NATURAL RESOURCES DEFENSE COUNCIL

Mr. COCHRAN. Our review of the physical need issue is based on materials we obtained under the Freedom of Information Act; namely, a letter from TEPCO to Mr. Sievering at DOE dated March 31, 1978, and other information we have obtained from administration officials. Since the public record on this is incomplete—some of the information is still not available, and the new analysis of DOE that we had presumed we would get today is not available—our findings must be considered preliminary. Nevertheless, on the basis of what we now know, we do not believe that this retransfer can meet the need test.

TEPCO STORAGE CAPABILITY

DOE, in its previous analysis—and we do not think this argument will change with the new data—in the submission to Chairman Zablocki, argued that TEPCO needs to transfer the spent fuel in order to maintain operation of the reactor and at the same time maintain a capability for discharging a full core's worth of fuel into the spent fuel pool, which they stated was a Japanese regulatory requirement, or something to that effect.

In the March 31 letter from TEPCO to Mr. Sievering, the requirement for full core discharge is set forth. On page 8 of our prepared statement we provide that statement, which is from article 25 of the "order to specify technical criteria with respect to nuclear power generating facilities," of the Japanese Ministry of International Trade and Industry. It says: "Facilities shall be provided with the storage capacity to store fuel produced by the normal operation of the plant and to store fuel necessary to maintain normal operation of the plant."

Notice that that does not say that there must be a full core discharge capability at all times, only that one must have the capability to maintain normal operation of the plant.

TEPCO argues that this statement implies that they must maintain at all times excess storage capacity equal to one full core. We will show that that is not a credible condition, particularly when there is no fuel in the core. That is basically where we part ways with the DOE analysis. The DOE analysis, we believe, implies that you must maintain a full core discharge capability even when you do not have a full core in the reactor to utilize that emergency capability. If one allows for the fact that one does not need a full core discharge capability when there is no fuel in the reactor, then one has a longer period of time in order to complete the reracking or other alternative arrangements that could provide the full core discharge capability when the reactor starts up after the shutdown period.

RERACKING

Mr. BINGHAM. Would you explain to me what "reracking" means in this instance?

Mr. COCHRAN. Well, at the time the reactors were built, most utilities, I believe, felt that they would be able to send the spent fuel off to be reprocessed somewhere, and they would not have to build up substantial inventories of spent fuel in the pools. So there was no effort made to maximize the use of the spent fuel storage capability within the pool. Now, the utilities have found it necessary to provide more storage capability for spent fuel due to the limited availability of reprocessing. They have made efforts to go back and see if they can maximize the amount of spent fuel they can store safely in existing pools. That entails taking out the old racks and modifying them in such a way that you can pack the spent fuel in more densely but still not run into safety problems in the process.

If you could follow with me on page 9—what I believe to be the latest data on the fuel storage situation at unit No. 2—these data reflect a modification of the earlier data that were presented by TEPCO to DOE in the March 31 letter to Mr. Sievering. The reactor itself contains 548 fuel assemblies, that is, bundles of fuel rods. The spent fuel pool had a design capacity of 820 assemblies, and there are already 151 assemblies in the pool.

It is our impression that there are some 118 additional spaces in the pool that in some way cannot be utilized. During the next refueling—between December 1, 1978, and June 1, 1979—TEPCO plans to exchange 96 old assemblies in the reactor for new fuel assemblies, and store the 96 old assemblies in the pool. During the same period of time, and this is also the reason for the extended 6-month shutdown period, it is our impression that TEPCO plans to remove all of the assemblies from the reactor and put them in the pool temporarily in order that they may do maintenance in the reactor core.

At the bottom of page 9, we look at the situation after they have removed all of the assemblies from the reactor, and we see now there are no assemblies left in the reactor. The pool now has 699 assemblies. That is, the 548 that were in the reactor plus 151 that were already in the spent fuel pool. There are still the 118 damaged positions, so there would be at that time three usable unfilled storage slots in the pool.

According to TEPCO, and also the DOE analysis is consistent with this, they would be in violation of the regulations because there would not be the full core storage requirement in the pool, even though in fact there is no fuel in the reactor, and we believe that defies logic, but it was nonetheless accepted without question, apparently, by DOE.

Now, after the maintenance in the reactor, they will reload the reactor with 452 assemblies which they had just removed from the reactor, plus, they would put in presumably 96 fresh fuel assemblies to make up a total of 548 that they had to begin with.

At this time, there are now 151 old assemblies, plus 96 that they have just removed, or a total of 247 assemblies in the spent fuel pool. Again, we note the 118 damaged slots, and therefore the unused capacity in the pool, the unused but usable capacity in the pool

would be 455 assemblies. Therefore, there would be three more than a full core discharge—excuse me, three more than the number of hot fuel elements in the reactor.

This, I think, is an important point. They would argue here, you do not have a full core discharge capability. But you have not turned the reactor on, and made the new fuel rods radioactive. If you ran into a problem before you turned the reactor on, you could remove the cold rods you have just put in and put them on the floor. You would not need to put them in the spent fuel pool. They are not hot, radioactively.

The point is, you do not need to have that full core discharge capability until the end of the shutdown period when you turn the reactor on. You only need, we believe, under the regulations, sufficient space to handle the hot fuel rods in the reactor. When you turn the reactor back on, some time around June 1, of next year, in order to meet the regulatory requirement, stated on page 8, you could argue that you would need to have provided in the interim, space for these extra 93 fuel assemblies.

In other words, we have 8 months in order to take the necessary steps to avoid this dilemma. We have the period between now and June 1, 1979, and there are a number of things that could be done. The first and obvious one is reracking. Now, as of last March, Tepco had scheduled to rerack the spent fuel pool in the 3 months prior to December 1, the date of the shutdown. We believe that this is being modified and they are now arguing that they will not do any reracking prior to December 1, and wish to postpone the reracking until next June.

In the United States, it takes a utility approximately 2 weeks to rerack a spent fuel pool. We have been told by regulatory officials it has never taken a utility in the United States longer then 1 month to rerack a pool. The initial request, or the initial analysis by DOE reflected in the August 17 enclosure to the letter to Congressman Zablocki, suggests the reason for the retransfer was that they might not complete the reracking in time, prior to December 1, and therefore they would not have this full core discharge capability by December 1, as opposed to next June.

They had allowed 3 months to do a job which in the United States takes 2 weeks, and DOE was arguing that there was still uncertainty that they would meet that date. Well, they, in fact, only have to rerack one-fourth of the pool to get the 100 additional slots they need by next June.

So, in summary, with respect to reracking, they have 8 months to do a job, to do 25 percent of a job that it takes U.S. utilities 2 weeks to do, and they, in fact, had even allowed themselves 3 months to do it. Now, in addition, I want to call your attention to the fact that reracking is not an all or nothing proposition. You can rerack part of the pool, stop, do something else, come back, and rerack some more of the pool. So they have 2 months between now and the proposed shutdown date to do some reracking. They can come back in March, April, and May of next year and do some more reracking. That is 5 months in which to rerack one-fourth of the pool to alleviate this problem.

TRANSFER TO ADJACENT SITES

That is the principal reason we think there is no justification on the basis of need for this retransfer.

A second option is, they can transfer some of the spent fuel to one of the other two reactors on the site, units 1 or 3. Units 1 and 3 were scheduled to have completed their reracking by about now. They argued—TEPCO argued that they could not transfer spent fuel from unit 1 to either of the other two reactors, because there were overlapping shutdown periods, there would be all sorts of complications—not enough people and so forth. But in fact during March, April, and May of next year the shutdown periods do not overlap. The other two reactors are humming along, assuming they complete their shutdowns in time, so there is a period of 3 months next year when they could transfer these 93 assemblies, and they would not have the manpower problems that they claim to have before December 1 of this year.

Well, that in summary is the reason we believe that this retransfer should be denied on the basis of need.

Now, there is one other option that I left out. The third option is, they can remove the damaged materials from the 118 unusable slots in the pool. I have not done enough analysis to know how long it takes, but I am hard pressed to believe that if you can rerack the whole pool in 2 weeks, that you cannot remove the damaged materials from these 118 assembly slots in 8 months, and I would urge you to inquire as to whether that can be done with the appropriate officials in the Department of Energy.

That concludes my analysis of the need, and I will turn it back over to Mr. Scherr.

Mr. SCHERR. Chairman Bingham, I see it is getting very late, so I will summarize the last two sections of our presentation.

PROLIFERATION RISK

It is our belief that the proposed TEPCO retransfer request will result in a significant increase in the risk of proliferation. A significant increase in the risk of proliferation is the standard set out in the Non-Proliferation Act in section 131(B)(2). The maintenance of timely warning is supposed to be the foremost consideration. Now, the DOE analysis that has been submitted so far we believe incorrectly interprets this test. Its review of the risks inherent in this particular subsequent arrangement is unduly narrow and, we believe, inconsistent with the legislative history of the Non-Proliferation Act.

On September 28, 1977, you explained on the floor of the House of Representatives the meaning of this term, and you stated that the intent of this language is to direct the Secretary of Energy not to confine his inquiry exclusively to increased proliferation risks in the country concerned, but also to consider the potential impact of his determination upon other countries.

The TEPCO subsequent arrangement has implications for several other nonweapons countries, yet DOE has failed to provide any analysis of those risks. You also cited the providing of a major additional source of weapons—usable material, as an example of a significant increase in the risk of proliferation resulting from a proposed arrangement. We believe this is the case here.

Approval of the TEPCO retransfer will signal the Government's acquiescence to the start of Purex reprocessing in an entirely new commercial facility at Windscale. It will be a precedent for the use of "political need" as the standard for U.S. retransfer approvals and will make it very difficult for the United States not to grant retransfer requests for reprocessing submitted from other nonweapons states, such as Austria.

The TEPCO MB10 request also contemplates the return of pure separated plutonium to Japan subject to U.S. approval.

ALTERNATIVES TO REPROCESSING

Once reprocessing services have been paid for and the spent fuel has been reprocessed, it would be virtually impossible for the United States to deny Japan access to the plutonium. Now, even if the plutonium were to be held for storage in the United Kingdom, this arrangement will still weaken our efforts to persuade other nonnuclear states to forgo national reprocessing capabilities.

We feel that the approval of the TEPCO subsequent arrangement will prejudice the outcome of INFCE by undermining U.S. efforts to postpone a global commitment to a plutonium economy and to build toward a wide acceptance of more proliferation-resistant alternatives to reprocessing. We have been very disappointed by the failure of the administration to move ahead quickly with the development of alternatives to reprocessing, including the expansion of spent fuel storage capacity at foreign reactor sites, storage of foreign spent fuel in the United States, and the establishment of international spent fuel storage facilities.

Now, in instant TEPCO case, there is no evidence so far of any U.S. offer to assist TEPCO with reracking or repairing its spent fuel storage pond. Either reracking or repairing, as my colleague, Dr. Cochran, has pointed out, would easily satisfy their alleged need for additional storage capacity.

REVIEW PROCESS

We have also examined the process used by the administration in reviewing the TEPCO subsequent arrangement. It was our view that it was seriously deficient. I would like to point out that the Congress in the Non-Proliferation Act set out a very extensive procedure for handling subsequent arrangements, which involves the participation of six concerned Federal agencies and an opportunity for congressional review. These provisions were further implemented by procedures established by the Departments of Energy, State, and Commerce. One of the important elements of these procedures is that if there is a disagreement amongst the agencies concerning a proposed retransfer request, the disagreement would be referred for settlement to the National Security Council, and, if necessary, to the President.

In the TEPCO case, this elaborate review process simply did not work properly so as to assure a reasoned, sound decision on the proposed subsequent arrangement. We think the mishandling of this request is evidenced by the fact that DOE recently decided to submit to you a new revised analysis.

First, it is not clear that all of the commenting agencies had adequate information concerning the proposed retransfer or even the same criteria in mind when they were preparing their views. This is particularly distressing in light of the fact that the DOE analysis submitted on August 17 contains a new formulation of the criteria for U.S. retransfer approvals. However, it does not appear that this revision of U.S. policy on retransfer approvals was the result of a thorough reevaluation by the administration.

Second, DOE failed to make use of the interagency procedures which I just alluded to for resolving the physical need issue raised by NRC Commissioners Gilinsky and Bradford. It would seem that as a matter of sound administrative practice, DOE should not have submitted this proposed subsequent arrangement to Congress without the concurrence of at least a majority of the Commissioners and the settlement of all outstanding questions.

Finally, we believe that the ACDA has erred in its determination not to prepare a nonproliferation assessment statement for the TEPCO retransfer and that it has inadequately justified its decision not to do so. The ACDA flatly states it does not intend to prepare a nuclear nonproliferation assessment for the subsequent arrangement. We have obtained no documentation or analysis demonstrating this decision was made after careful consideration.

As I have noted, the TEPCO subsequent arrangement is a significant one. Also, the DOE analysis might signal a possible shift in U.S. policy on reprocessing abroad. This would appear to be precisely the situation in which Congress would want the Arms Control and Disarmament Agency to undertake a thorough and public assessment of all of the risks involved. We sincerely hope that the ACDA's decision not to prepare a nonproliferation assessment statement here does not portend an inability on the part of the agency to hold the rest of the administration to a rigorous standard for review of retransfer requests.

This subcommittee might consider next session amending the procedures for handling retransfer requests. It is our feeling that DOE's handling of the TEPCO subsequent arrangement suggests that this decisionmaking process should be centered elsewhere. Our view is that it would be best to give this authority over retransfer requests to the Nuclear Regulatory Commission. Given the Nuclear Regulatory Commission's expertise and experience, we believe there would be a greater assurance of competent, consistent decisions regarding U.S. retransfer approvals.

In conclusion, we recommend that the subcommittee strongly urge DOE to withdraw its approval of the TEPCO subsequent arrangement. There has been no clear showing of need for the retransfer, and the proposed subsequent arrangement poses unacceptable proliferation risks. The administration should take immediate steps to improve its handling of MB10 requests and to articulate a clear policy on retransfers of U.S.-supplied fuel.

Thank you very much.

[The prepared statement of the Natural Resources Defense Council follows:]

PREPARED JOINT STATEMENT OF S. JACOB SCHERR, SENIOR PROJECT ATTORNEY, AND THOMAS B. COCHRAN, SENIOR STAFF SCIENTIST, NATURAL RESOURCES DEFENSE COUNCIL

I am S. Jacob Scherr, an attorney with the Natural Resources Defense Council (NRDC). My colleague, Dr. Thomas B. Cochran, NRDC staff scientist, and I appreciate this opportunity to appear before you regarding the Administration's handling of recent requests to retransfer U.S.-orgin spent nuclear fuels for reprocessing abroad and its implications for U.S. nonproliferation efforts.

NRDC is a public-interest environmental organization, with a membership of over 38,000 persons in the United States and in 21 foreign countries.[1/] Over the past several years, NRDC has been actively concerned about nuclear weapons proliferation. NRDC has been involved in a series of important administrative and judicial proceedings related to nuclear export controls, and has presented its views to Congress numerous times concerning legislation leading to the Nuclear Non-Proliferation Act of 1978 (NNPA).

1/ NRDC's principle place of business is 122 E. 42nd Street, New York, New York 10017, with additional offices in Washington, D.C., and Palo Alto, California.

We have had a particular and continuing interest in U.S. policy and procedure regarding requests to retransfer U.S.-origin spent nuclear fuel for reprocessing in facilities overseas (MB-10 requests). In January 1977, NRDC first drew Congressional and public attention to this issue with documents obtained through the Freedom of Information Act (FOIA) from the then U.S. Energy Research and Development Administration (ERDA). We found ERDA's review of MB-10's requests to be cursory and informal, lacking even written criteria for decisions in this sensitive area.

On March 9, 1977, NRDC, along with the Union of Concerned Scientists, Friends of the Earth--United Kingdom, and Les Amis de la Terre of France, petitioned ERDA: (1) to adopt new, strengthened procedures for MB-10 requests, (2) to prohibit the reprocessing abroad of spent nuclear fuel of U.S.-origin, and (3) to permit retransfers only for the purpose of storage of the fuel in the U.S., or other weapons states or in facilities under international auspices.

Drawing upon the 45-page petition we submitted to ERDA, I submitted testimony on April 4, 1977 to this Subcommittee and the Subcommittee on International Security and Scientific Affairs.[2/] We continue to consider U.S. policy on retransfer requests as one of the most crucial elements of our nonproliferation strategy.

2/ House Committee on International Relations, Subcommittees on International Security and Scientific Affairs and on International Economic Policy and Trade, Hearings on H.R. 8638, The Nuclear Anti-Proliferation Act of 1977, 95th Congress, 1st Session, at 6-61 (1977).

Today we will focus upon the Administration's proposed approval of a request by the Tokyo Electric Power Company (TEPCO) of Japan to retransfer 126 spent-fuel assemblies to the United Kingdom for the purpose of reprocessing by British Nuclear Fuels Limited at Windscale (MB-10 Request No. RDT/EU(JA)-20). We agree with Chairman Bingham that the retransfer in question is a highly significant one. It is the first "subsequent arrangement" involving reprocessing to be proposed under Section 131b of the Atomic Energy Act of 1954, as amended by the NNPA. It is an important decision with ramifications for several of the Carter Administration's nonproliferation initiatives. As in the past, U.S. action on this retransfer request will be watched closely by not only Japan and the United Kingdom but by other nations throughout the world.

A companion request for the retransfer of U.S.-origin spent nuclear fuel from the Kansai Electric Power Company to France for the purposes of reprocessing at La Hague, is now under consideration. Also very interested will be a number of countries intent upon establishing large-scale national reprocessing capabilities including India, Pakistan, Brazil, and Germany. The approval of the TEPCO subsequent arrangement would be cited as precedent by a number of other countries,such as Austria, Sweden, Denmark, Switzerland, and Spain, where reprocessing in the United Kingdom or France is portrayed as a "solution" to the radioactive waste problem.

The proposed TEPCO subsequent arrangement was the subject of a letter of notification and an analysis submitted by Nelson F.

Sievering, Jr., Deputy Assistant Secretary for International Programs, Department of Energy, on August 17, 1978, to Congressman Zablocki, Chairman, the House Committee on International Relations, (DOE August 17 Analysis). In order to obtain more adequate documentation of the Administration's review of this and the pending Kensai retransfer request, we filed FOIA requests on August 30 with the Departments of Energy and State and, on September 5, with the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Arms Control and Disarmament Agency (ACDA). Only the ACDA has complied fully with our FOIA request. The other agencies, particularly the State Department, have not been forthcoming with the requested information. A number of important documents remain classified. The records we have obtained, nonetheless, confirm that there were serious deficiencies and misjudgments in the Administration's processing of the TEPCO MB-10 request.

Perhaps the most damaging error was the determination in the DOE analysis that the yet unconstructed Thermal Oxide Reprocessing Plant (THORP) at Windscale was "grandfathered" by the NNPA. As a result, the TEPCO "subsequent arrangement" was to be exempted from the "no significant increase in risks of proliferation" and "timely warning" tests under Section 131b (2) of the amended Atomic Energy Act. We would like to express our appreciation to Chairman Bingham for noticing this flaw and calling it to the attention of the President in a letter dated September

15, 1978. We fully concur in the view that Congressional intention was to grandfather only reprocessing plants which were in operation before March 10, 1978, the date of passage of the NNPA.

Our understanding is that the Administration is now re-examining this question, as well as a number of other issues addressed in the DOE August 17 Analysis. A revised analysis of the TEPCO subsequent arrangement is to be provided today to the Subcommittees. We assume that this will extend the statutory period for Congressional review of subsequent arrangements an additional fifteen days.

Pending an examination of new DOE information, we believe that the TEPCO retransfer request should be denied. The retransfer here in question does not meet the "physical need" criteria previously established by the Administration nor the "no significant increase in risk of proliferation" test under Section 131b (2) of the amended Atomic Energy Act.

There Has Been No Clear Showing of Physical Need for the TEPCO Retransfer

The Administration's policy on retransfer requests for reprocessing was first articulated by Joseph Nye, Deputy to the Undersecretary of State for Security Assistance, at the IAEA Salzburg Conference in May, 1977. Nye said transfers would be approved on a case-by-case basis where there was a showing of clear need. At that time he defined "need" as involving those cases where ability to continue power generation is at stake

because of spent fuel congestion. In regard to the proposed 10-year reprocessing contracts that Japan was at the time negotiating with the British and French, Nye told a press conference that "I don't think case-by-case and a 10-year contract are consistent." Nucleonics Week, May 9, 1977, at 1-2.

The House International Relations Committee has also underlined the importance of showing need for proposed retransfers. In its Report on H.R. 8638, the Committee states that it assumes:

> ". . . that the United States will enter into reprocessing arrangements in the interim only in those cases where a compelling need can be demonstrated, as for instance, to alleviate an extremely difficult spent fuel storage situation for which no other alternative seems reasonable." H.Rep. No 95-587, at 20.

Nye subsequently reaffirmed this approach in letters to Patrick Moberly of the U.K. Foreign and Commonwealth Office, dated December 19, 1977, and to Representative Zablocki, Chairman, House International Relations Committee, dated January 25, 1978. In this second letter, Nye set out the following as a "minimum criteria" for retransfer requests:

> A near-term need for transfer of the fuel must exist; e.g., limitations on spent fuel storage capacity could result in reactor shutdown and possibility of alternative storage arrangements does not currently exist, although we would expect that such possibility was being actively pursued.

Nye further stated that the Administration anticipated that this criteria would remain in effect until the International Fuel Cycle Evaluation (INFCE) is completed at the end of 1979.

Although the DOE August 17 Analysis of the TEPCO subsequent arrangement has generated uncertainty as to the Administration's present policy on retransfers, "physical need for the transfer" is still identified as one of the considerations for decisions on MB-10 requests. Yet the discussion in the Analysis of the physical need for the TEPCO retransfer is woefully inadequate. NRC Commissioners Gilinsky and Bradford advised against approval because there is no clear showing of need. Their views which were submitted to DOE in early August are still classified. We also were denied access to some of the information submitted by TEPCO to DOE, which DOE claims is "company confidential or proprietary." 3/ Within the last week or so, DOE has obtained additional data and is now revising its analysis, but not its conclusions.

Our own review of the physical need issue is based on materials we obtained under the FOIA and in conversations with Administration officials. Since the public record on the TEPCO case remains incomplete, our findings should be considered as preliminary. We, nonetheless, strongly believe that need for this transfer has not been established.

The DOE August 17 Analysis argues that approval of this subsequent arrangement is necessary if TEPCO is to continue to operate its Fukushima No. 1 Nuclear Power Station, Unit No. 2. Reracking of the Unit No. 2 spent fuel storage pool was to commence in September 1978. There was concern that this work

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3/ The undisclosed information is in a letter from TEPCO to Gerard T. Helfrich, DOE Office of International Activities, dated March 31, 1978.

to expand the pool's capacity would not be completed in time for the shutdown of Unit No. 2 for maintenance and refueling, which is scheduled for December 1, 1978. The discharge of spent fuel would reduce the available space in Unit No. 2's spent fuel pool below the supposedly required full core reserve.

TEPCO contends that they are required to maintain an emergency full core storage capacity by a provision of a June 15, 1965 order of the Japanese Ministry of International Trade and Industry (MITI).[4/] Article 25 of the "Order to specify technical criteria with respect to Nuclear Power generating facilities" states, in paragraph 4, that:

> "Facility shall be provided with the storage capacity to store fuel produced by the normal operation of the plant and to store fuel necessary to maintain normal operation of the plant."

It remains unclear as to whether the MITI Order is a binding regulation or merely a guideline. We also question TEPCO's interpretation of the requirement. TEPCO's understanding is that the term "normal operations" in Article 25 includes shutdown for inspection or reloading. TEPCO thus argues that it must maintain "constantly" excess storage capacity equal to the full core. TEPCO Analysis, at 8. As we will show in the instant case, this interpretation is not credible.

4/ Attachment to letter from Shin Miyake, General Manager, Nuclear Fuel Department, TEPCO, to Nelson F. Sievering, Jr., dated March 31, 1978, (TEPCO Analysis).

Our most recent information on the fuel storage situation at Unit No. 2 is:

Reactor core size:	548 assemblies
Spent fuel pool capacity:	820 assemblies
Spent fuel stored in pool:	151 assemblies
Damaged spent fuel storage positions in pool, not available for storing:	118 assemblies
Next refueling:	96 assemblies

We have been advised that the information in the DOE August 17 Analysis concerning TEPCO's plant to begin reracking in September was incorrect. Apparently now the reracking of Unit No. 2 has been put off until next Spring. Assuming TEPCO carries out its plans to discharge the entire core of Unit No. 2 in December, the spent fuel storage situation will then be:

Fuel in the reactor:	0 assemblies
Spent fuel in the pool:	699 assemblies
Damaged spent fuel positions, not available for storing:	118 assemblies
Remaining usable capacity in the pool:	3 assemblies

According to TEPCO, they now would be in violation of the full core storage reserve requirement, <u>even though there is no fuel in the reactor</u>! TEPCO's explanation defies logic; nonetheless, it was accepted apparently without question by DOE.

Maintenance and reloading is scheduled from December 1, 1978 to June 1, 1979. In the Spring, TEPCO will take 454 assemblies from the pool and return them to Unit No. 2. Fresh fuel assemblies will replace 96 left in the pool. Assuming nothing is done to rerack or repair the pool, the spent fuel situation at Unit No. 2, just before the June 1979 start-up, will be:

Hot fuel in the reactor:	452 assemblies
Cold fuel in the reactor:	96 assemblies
Spent fuel in the pool:	
151 + 96 =	247 assemblies
Damaged spent fuel positions in pool, not available for storing:	118 assemblies
Remaining (unused) capacity in the pool:	
820 - 247 - 118 =	455 assemblies

At this point, TEPCO would need additional storage for 93 fuel assemblies in order to maintain full core storage capability for Unit No. 2. It has over eight months to take steps to avoid this dilemna. TEPCO could repair the 118 damaged fuel storage positions in the pool. Or it could rerack just one-quarter of the pool, which would increase its capacity by 100. TEPCO claimed that it may take more than three months to rerack

the entire pool because of their lack of experience. In the U.S. the same work takes two weeks and has never taken a U.S. utility more than a month. TEPCO already has gained experience reracking the pools for Units No. 1 and No. 3 at its Fukushima station. In sum, TEPCO has eight months to do 25% of the work it takes U.S. utilities two weeks to perform, and which they scheduled three months to complete.

A third option is moving the 93 assemblies from Unit No. 2 to the spent fuel pool of Unit No. 1. TEPCO argues that this would be difficult prior to the December 1 shutdown of Unit No. 2 because of complications due to the overlapping shutdown periods of Units 1 and 2. However, these complications would not arise if the transfer were made after Unit No. 1 has started up, but before the start-up of Unit No. 2, namely in the three month period, March 1, 1979 to June 1, 1979.

Based upon this analysis, we believe that there has been no adequate demonstration so far that a physical need exists for the retransfer. DOE thus should withdraw its proposed TEPCO subsequent arrangement.

The Proposed TEPCO Subsequent Arrangement Will Result In A Significant Increase in the Risk of Proliferation

Under Section 131b.(2) of the amended Atomic Energy Act, the Secretary of Energy may not enter into any subsequent arrangement unless such an arrangement would not result "in a significant risk of proliferation beyond that which exists at the time that approval is requested." The maintenance of "timely warning" is to be the foremost consideration.

The DOE August 17 Analysis incorrectly interprets the "no significant increase of the risk of proliferation" test. Its review of the risks inherent in the TEPCO subsequent arrangement is unduly narrow and inconsistent with the legislative history of the NNPA. On September 28, 1977, Chairman Bingham explained on the House floor the meaning of the term "no significant increase in the risk of proliferation" in Section 131b.(2). He stated that "the intent of this language [is] to direct that the Secretary not confine his inquiry exclusively to increased proliferation risk in the country concerned, but also consider the potential impact of his determinations upon other countries, as well." Cong. Rec., 95th Cong., 1 Sess., H 10280 (September 28, 1977). As noted at the outset, the TEPCO subsequent arrangement has implications for several other non-weapons nations. The DOE August 17 Analysis fails to provide any assessment of these risks.

Also Congressman Bingham cited "the providing of a major additional source of weapons usable materials," as an example of

"a significant increase in the risks of proliferation" resulting from a proposed arrangement. This is the case here. Approval of the TEPCO retransfer would signal the U.S. Government's acquiescence to the start of Purex reprocessing in an entirely new commercial facility at Windscale. It will be a precedent for the use of "political need" as the standard of U.S. retransfer approvals. It will make it very difficult for the U.S. not to grant retransfer requests for reprocessing submitted from other non-weapons states.

The TEPCO MB-10 request, a copy of which is attached, contemplates the return of pure plutonium to Japan subject to U.S. approval. [5/] However, once the reprocessing services are paid for and the spent fuel is reprocessed, it will be practically impossible for the U.S. to deny Japan access to the plutonium. Even if Japan and other nonnuclear weapons states were to agree that the plutonium would be retained in the United Kingdom, the TEPCO subsequent arrangement will still weaken efforts to persuade other nonnuclear weapons states to forego national reprocessing capabilities.

The approval of the TEPCO subsequent arrangement will undermine U.S. efforts to postpone a global commitment to a plutonium economy. It would prejudice the outcome of INFCE by effectively precluding the acceptance of proliferation-resistant alternatives to reprocessing, such as more efficient once-through fuel cycles. In April 1977 testimony before this

[5/] A copy of the MB-10 request is retained in subcommittee files.

Subcommittee, Fred Ikle, former ACDA Director, emphasized the importance of gaining time to explore such options, noting that reprocessing may make waste disposal problems even worse. 6/

We have been very disappointed by the failure of the Administration to move ahead quickly with the development of alternatives to reprocessing, including the expansion of spent storage fuel capacity at foreign reactor sites, the storage of foreign spent fuel in the U.S., and the establishment of international spent fuel storage facilities. In the instant case, there is no evidence so far of a U.S. offer to assist TEPCO with reracking or repairing its spent fuel storage pools.

Almost a year ago, DOE announced a new spent nuclear fuel policy. The DOE stated that:

> "the U.S. would be prepared to store limited foreign spent fuel when this action would contribute to meeting nonproliferation goals. The U.S.'s ability to negotiate more effective nonproliferation measures with foreign countries and to prevent premature entry into the plutonium economy will be enhanced by this policy." 7/

6/ Hearings on the Anti-Proliferation Act of 1977, supra note 2 , at 5.

7/ DOE Press Release, "DOE Announces New Spent Nuclear Fuel Policy," R-77-017 (October 18, 1977).

The next day, President Carter opened the first session of INFCE in Washington, stating that:

> We are very eager also to help solve the problem of disposal of spent nuclear fuel itself. We cannot provide storage for the major portion of the world's spent fuel, but we are willing to cooperate. And when a nation demonstrates to us the need for spent nuclear fuel storage, we hope to be prepared to accept that responsibility, working closely with you.[8]

Almost a year later, the Administration appears to have made little progress in implementing its foreign spent fuel return policy. One of the first steps was to be the preparation of an environmental impact statement (EIS) by DOE. Yet the EIS is still not ready for publication in draft form.

Since March 1977, NRDC has expressed its support for storage of foreign spent nuclear fuel as an alternative to reprocessing where it meets our nonproliferation objectives. We have urged that such storage be undertaken initially in the United States and other weapons states, with a view towards the creation of storage facilities under international control. While there may be some opposition to the return of foreign fuel particularly by citizens living close to storage facilities, NRDC and other national environmental groups which have been actively concerned about nuclear weapons proliferation, would accept the storage of foreign fuel here, under appropriate conditions, as a small price to pay for reducing the risks of proliferation.

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[8] Office of the White House Press Secretary, "Remarks of the President at the plenary session of the International Nuclear Fuel Cycle Evaluation," at page 4 (October 19, 1977).

The Administration's Review Of The Proposed TEPCO Subsequent Arrangement Was Seriously Deficient

The Congress set out in the NNPA an extensive procedure for handling subsequent arrangements involving the participation of six concerned federal agencies and the opportunity for Congressional review. Section 131 of the amended Atomic Energy Act sets out elaborate procedures for making subsequent arrangements under U.S. agreements for cooperation. Under Section 131a(1), Secretary of Energy is given the authority to enter into proposed subsequent arrangements for reprocessing after obtaining the concurrence of the Secretary of State and the views of the ACDA, NRC, and the Departments of Defense and Commerce. Under Subsection 131a(2), the Director of the ACDA may exercise his discretion to prepare an unclassified nuclear proliferation assessment if in his view "a proposed subsequent arrangement might significantly contribute to proliferation."

The NNPA's provisions are implemented by procedures established by the Departments of Energy, State and Commerce.[9/] These provide, inter alia, that if there is a disagreement among the agencies concerning a proposed retransfer request, that such disagreement should be referred for settlement to the National Security Council and, if necessary, to the President.

In the TEPCO case, this elaborate review process simply did not work properly so as to assure a reasoned, sound decision

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9/ These procedures were published in 43 Fed. Reg. 25326-25330 (June 9, 1978).

on the proposed subsequent arrangement. The mishandling of the TEPCO MB-10 request is evidenced by DOE's recent decision to submit a new, revised analysis.

First, it is not clear that all the commenting agencies had adequate information concerning the proposed retransfer or the same criteria in mind, when preparing their views. ACDA's memorandum to DOE on the TEPCO retransfer, dated July 13, 1978, suggests that there had not been a firm decision at that point as to whether the standards set out in Section 127 of the amended Atomic Energy Act, concerning export licenses, were also to be applied to decisions on subsequent arrangements. A copy of the ACDA memo is attached.

The DOE August 17 Analysis contains a new formulation of the criteria for retransfer approval. However, it does not appear that this revision was the result of thorough reevaluation by the Administration of U.S. policy on reprocessing abroad of U.S.-supplied nuclear fuels.

Second, the DOE failed to make use of the interagency procedures noted above for resolving the "physical need" issue raised by NRC Commissioners Gilinsky and Bradford. With Commissioner Ahearne abstaining, the NRC was split two-two on the approval of the TEPCO request. As a matter of sound administrative practice, DOE should not have submitted a proposed subsequent arrangement to Congress without the concurrance of at least a majority of the Commissioners and the settlement of all outstanding questions.

Third, we do agree that it may be appropriate to apply some of the same criteria used for export licences to retransfer requests. We are very concerned, however, that their applica-

tion to such requests by DOE could be a source of confusion for other nations seeking to import U.S. nuclear equipment and material. This would arise if there were discrepancies between interpretations of DOE and that of NRC concerning any of the Section 127 export licensing standards, such as the adequacy of safeguards or that of U.S. rights of prior approval of retransfers. The Congress assigned authority over export licensing to the NRC. Its independence and objectivity in this important area should not be subject to compromise by the Executive Branch agencies. As a matter of sound government policy, DOE should defer to the NRC in interpreting the Section 127 criteria for decisions upon all subsequent arrangements.

Fourth, we believe that the ACDA has erred in its determination not to prepare a Non-Proliferation Assessment Statement for the TEPCO retransfer and that it has inadequately justified its decision not to do so. The ACDA concurrence flatly states that is "does not intend to prepare a nuclear proliferation assessment for this subsequent arrangement." We obtained no documentation or analysis demonstrating that this decision was made after careful consideration.

As we noted at the beginning of our testimony, the TEPCO subsequent arrangement is a significant one in terms of the precedents that it will set as the first such arrangement under the NNPA. Also the DOE August 17 Analysis may indicate a substantial change in the U.S. policy on retransfers for reprocessing. This appears to be precisely the kind of situation in which Congress would want the ACDA to undertake a thorough and public assessment of all the risks involved. We sincerely

hope that the ACDA's decision here does not portend an inability on the part of the agency to hold the rest of the Administration to a rigorous standard of review for retransfer requests.

The Subcommittee might consider next session amending the procedures for handling retransfer requests. While there has been some improvement in DOE's performance over the last eighteen months, its handling of the TEPCO subsequent arrangement suggests that this decisionmaking process should be centered elsewhere. Retransfer decisions are just as significant as initial export licenses, in terms of the proliferation, environmental and other risks they pose. We have continued to believe that authority to retransfer requests should be given to the NRC. U.S. control over the movement of its nuclear materials in international commerce - from export to disposal - would be enhanced if this responsibility is vested in a single agency. Given its expertise and experience, we believe that there would be a greater assurance of competent and consistent decisions by the NRC on retransfer requests.

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In conclusion, we recommend that the Subcommittee strongly urge DOE to withdraw its approval of the TEPCO subsequent arrangements. There has been no clear showing of need for the retransfer; and the proposed subsequent arrangement poses unacceptable proliferation risks. Furthermore, the Administration should take immediate steps to improve its handling of MB-10 requests and to articulate a clear policy on retransfers of U.S.-supplied fuels.

In April 1977 testimony before this Subcommittee, former ACDA Director, Ikle warned that there would be "fake time pressure" and "pretense urgency" that would push the United States into wrong decisions on retransfer requests for reprocessing.[10/] The U.S. must remain firm in its opposition to reprocessing abroad of U.S.-supplied fuels. Otherwise, the Administration's efforts to gain time to build an international consensus on more proliferation-resistant alternatives will be overtaken and doomed to failure.

10/ Hearings on The Nuclear Anti-Proliferation Act of 1977, supra note 2 , at 65.

UNITED STATES ARMS CONTROL AND DISARMAMENT AGENCY
WASHINGTON, D.C. 20451

July 13, 1978

MEMORANDUM

TO: DOE/ISA/ONA - Mr. Michael D. McDonough

FROM: ACDA/NP/NX - Richard L. Williamson

SUBJECT: Subsequent Arrangement

REF: RTD/EU(JA)-20

Pursuant to Part E of the NNPA procedures, ACDA has reviewed the referenced case of a retransfer involving reprocessing. We believe that this case conforms to Presidential guidance on this subject and meets the applicable criteria set forth in Section 131(b) of the NNPA. Moreover, while the NNPA does not explicitly require that the criteria of Section 127 be met for retransfers, we believe it would be contrary to our non-proliferation interests to permit retransfers of material which we were precluded from exporting directly to the same recipient by virtue of Section 127. In that regard, we assume that the Secretary of State will certify shortly that Euratom is a group of nations which has agreed to renegotiate its Agreement for Cooperation within the meaning of the Act, and that criteria number 5 will therefore be met. Finally, we understand that the "Muehleberg" criteria will apply, including, inter alia, that the Japanese will retain title and will permit no disposition of the recovered plutonium without our permission.

Assuming that our understandings are correct, ACDA has no objection to the proposed retransfer and does not intend to prepare a Nuclear Proliferation Assessment Statement for this subsequent arrangement.

Concurrence: ACDA/NP - Charles Van Doren

ACDA/NP/NX:KMcManus:ofo
7/13/78

Mr. BINGHAM. Thank you very much, Mr. Scherr and Dr. Cochran. Now I will hear from Ms. Hieber.

STATEMENT OF JANET E. HIEBER, WASHINGTON REPRESENTATIVE, ENVIRONMENTAL POLICY CENTER

Ms. HIEBER. Thank you for the opportunity to testify today.

My name is Janet Hieber. I am a Washington representative of the Environmental Policy Center (EPC).

Mr. BINGHAM. Ms. Hieber, I can hear you all right, but for the benefit of the people in the back of the room, would you speak up? We do not have any amplifiers.

Ms. HIEBER. As an environmental watchdog of U.S. nuclear policies, EPC applauded President Carter last year when he announced a shift in U.S. nonproliferation policy by calling for an indefinite deferral of commercial plutonium reprocessing. Earlier this year, the U.S. Congress codified this shift in policy by passing the Nuclear Non-Proliferation Act, of which you were chief architect.

POLICY PATTERN

Recently, however, the manner in which the administration has addressed proposed subsequent arrangements to retransfer spent U.S.-supplied fuel to be reprocessed has raised serious questions as to the implementation of the act. EPC shares the fundamental objections which have been voiced by the chairman of this subcommittee to DOE's interpretation of "grandfather" exemptions set forth in the NNPA. We are encouraged by this subcommittee's efforts to ascertain whether such exemptions would serve to foreshadow U.S. acceptance of commercial reprocessing and believe such acceptance would surely render much of the NNPA meaningless.

Administration witnesses are expected to shed some light on this subject in testimony before this subcommittee next week. However, a pattern appears to have already emerged. The combination of: one, DOE's approval of the Fukushima retransfer—this is the TEPCO retransfer; two, DOE's confirmation to EPC that it will approve the Takahama retransfer, which is the Kansai transfer; and three, State Department's comments to EPC confirming that in Austria, Zwentendorf's U.S.-supplied fuel will be retransferred "to the French for reprocessing," certainly speaks to the question of U.S. acceptance of commercial reprocessing.

Because the first of the above-listed cases has been discussed at length here this afternoon, the remainder of my testimony will focus on the latter two cases. In each of these two cases, administration officials have indicated to EPC that reprocessing would be acceptable because of "political considerations," which is to say the citizens of Japan and Austria have been assured by their government officials that the radioactive spent fuel will not be stored in their vicinity or country. In fact, very few people would like to have radioactive wastes stored in their neighborhood, and shipping it off to another country to be reprocessed is a sure method of removing it from one's neighborhood.

Unfortunately, the leftovers from the reprocessing process are high level radioactive wastes for which a means of disposal has yet to be demonstrated.

LOCAL OBJECTIONS TO STORAGE

Regarding the Takahama proposal to reprocess—this is the Kansai proposal—DOE has told EPC that "room exists, but local officials made commitments to remove the fuel," and if we make them store it onsite, it "might keep units 3 and 4 from going into operation."

We request the committee to ask this question of the DOE witnesses who will testify here next week: What are Kansai's plans for storing spent fuel produced by units 3 and 4?

Should the administration allow foreign countries to reprocess for reasons of allaying fears of local waste storage, U.S. policy will have shifted to an indefinite deferral of final waste disposal. Austria's Zwentendorf retransfer proposals address U.S. policies of both commercial reprocessing and final waste disposals. As such, a detailed description of the Austrian nuclear situation follows.

The newly built Zwentendorf reactor is located approximately 20 miles from Vienna. It is Austria's first reactor, and it will be loaded with its U.S.-supplied nuclear fuel only after Austrian citizens have given the project a green light. Although it is known that the Zwentendorf reactor is located in an earthquake zone, and that minor radioactive ground water contaminations would put Vienna's water supply at risk, the critical issue of the nuclear debate in Austria is radioactive waste disposal.

Initially, the Austrian Government promised to not start up the reactor until waste "arrangements" were made. At this time, there was discussion whether Zwentendorf's fate should be decided by referendum vote, but Austria's federal chancellor publicly declared that nuclear power was a highly unfit subject for a referendum. Subsequently, each attempt to designate a waste storage site in Austria met with local resistance and led to a withdrawal of the proposal. Therefore Austria proceeded to develop plans for sending its waste to foreign nations.

These waste "arrangements" are being negotiated with France and Egypt. Austria has signed a contract with France's Cogema which would allow the French to reprocess the fuel and store the extracted plutonium in France, with Austria retaining title to it. The remaining high level radioactive waste would then be sent to Egypt for disposal.

Now, the federal chancellor has called for a referendum vote on whether to put the reactor into operation. The referendum will be held on November 5. This will be Austria's first referendum since 1938, when Austria voted to allow Hitler to take over the country.

As long as Austria's waste arrangements are not vetoed by the United States, Austrian citizens will perceive a waste solution. A U.S. nondecision on the French/Egyptian arrangements effectively decouples the waste disposal issue from Austria's nuclear referendum debate.

In mid-August, EPC made initial inquiries to the State Department to find out what position the United States was taking with regard to Austria's subsequent arrangements. Contacting the Nuclear Office at State Department, EPC was told that "reprocessing would probably be done by the French," that the "Egyptians will take the high level waste after reprocessing," and that the only man to talk to was Lou Nosenzo, who was negotiating the Agreements of Cooperation with the Austrians.

After leaving some 20-odd messages for Mr. Nosenzo, EPC received a call from one of Mr. Nosenzo's aides in early September. Although less candid than the initial State Department contact, Mr. Nosenzo's aide did confirm that Austria had signed a reprocessing contract with France's Cogema, and said "Austria and Egypt are engaged in preliminary talks regarding an initial feasibility study in Egypt."

EXISTING CONTRACTS

At this point, I would like to interject that in discussing the reasons that DOE would allow Japan to reprocess, DOE said that one problem was that the Japanese had already signed reprocessing contracts, and that "there are severe penalties, up to $20 million, if these contracts have to be renegotiated."

EPC requests this subcommittee to ask the Government witnesses who will appear before you next week the following question: Did the United States discuss this issue with the Austrians before they became signatory to the Cogema contract?

If they did not, we would like to know why they did not, and if they did, we would like to know how the talks progressed. The State Department told EPC that the State Department was "renegotiating agreements for cooperation to meet upgraded requirements," that "under present agreement, Austria needs United States approval," and State added that under the NNPA State was attempting to "minimize the reprocessing."

EPC commented that we understood the policy to be one of deferring reprocessing. To this comment, State responded they were discussing "a pattern of options." As to whether this was publicly available, State replied, no, probably in a couple of months.

When the subject of Austria's nuclear referendum was broached, State explained that it was "neither expected nor appropriate" for the U.S. decision to be made until after the fuel had been burned in the reactor and was ready to be retransferred. Asked whether State viewed the U.S. decision as having an impact on Austria's nuclear future, State answered that "Austria has committed themselves to solving the back end of the fuel cycle."

This solution has eluded the U.S. Government for years. However, should Austria succeed in this endeavor, it is our sincere hope that the Austrian Government will engage in technology transfer with our Department of Energy.

State's recent comments to congressional people involved in these hearings do not indicate that Austria is attempting any technological breakthroughs. Rather, they indicate that the time-frame for the United States to make a decision on Austria's subsequent arrangements is several years away because the spent fuel will be stored at Zwentendorf for at least 5 years.

This is directly contrary to a report which first appeared in the February 2 issue of Nucleonics Week, which states that under the Cogema contract, Zwentendorf's spent fuel deliveries to France will commence in 1980. EPC has since heard but cannot yet document that in a recent exchange of letters between Austria and France it was agreed that the delivery date would be slipped to 1981.

This most likely is due to the fact that Zwentendorf's operating permit has been held up by public controversy within Austria. In any

event, this does not augur well for State's most recent justification of not airing the implications of Austria's waste arrangements at this time.

Thus, a discussion of Austria's arrangements for the disposal of high level, vitrified waste appears to be in order. Apparently, Iran was the first nation Austria approached in attempting to solve the back end of the fuel cycle. These negotiations broke down when Iran would not unconditionally agree to never return the waste to Austria.

PROPOSED DISPOSAL IN EGYPT

It should be mentioned here that the U.S. Geological Survey's definition of high level radioactive waste is the residuum left after plutonium has been removed from the spent fuel. In other words, it is only the waste that is left after you have reprocessed that is clearly defined as high level waste by USGS. This is the waste, as I said, which would be sent to Egypt.

The terrorist-vulnerability implications of such a proposal should first be decoupled from terrorist-diversion implications. The high-level waste left after reprocessing could not easily be diverted by a terrorist and fashioned into a bomb. Rather, high-level waste repositories constitute attractive targets for terrorists. Such sites could be bombed with nonnuclear weapons and radioactive fallout would still result.

In the politically unstable Mideast, nobody knows what Egypt's position will be in 5 or 10 years—nor Iran's, Israel's, nor many of the nations there—when the first large-scale shipments of radioactive wastes are expected. Also, because it is anticipated that such a repository would be sited in the desert, surface transportation of the waste to the site will most likely be via special railroads, and long line transportation is extermely terrorist vulnerable.

The vulnerability and implication of employing air transportation for this type of material and in this particular area of the world is self-evident.

I had expected by today to have received some information from Austria, from some Austrian citizens, some of the professors there who have looked into the environmental problems of the Zwentendorf reactor, and a part of what they were sending me was an exact copy of the referendum. It has not yet come in. I do not understand exactly why as it was sent airfreight Sunday morning, but as of 1 o'clock today it has still not come in, and I would like to submit some of that information to you for the record.

Mr. BINGHAM. We would be glad to have that. Did you say an exact copy of the referendum?

Ms. HIEBER. The wording of Austria's nuclear energy referendum.

Mr. BINGHAM. Would that be a long document to be shipped by airfreight?

Ms. HIEBER. I do not think it should be that long.

Mr. BINGHAM. I would not suppose so.

Ms. HIEBER. Excuse me. I thought you were talking about the length of it.

Mr. BINGHAM. I was. You said you understood the document was to be shipped airfreight.

Ms. HIEBER. Yes, Mr. Chairman, it was sent from Frankfort. It would have been 6:30 in the morning our time Sunday, due in yesterday afternoon. It did not come in and still had not come in this afternoon, and we may need help in getting it, but we will see if it comes in yet this afternoon or tomorrow.

Finally, although none of the countries involved in the subsequent arrangements for Austria—the countries being the United States, Austria, and Egypt—although none of us has ever demonstrated disposal of high level, vitrified waste, EPC has been informed that the State Department is already engaged in negotiations with Austrian Foreign Ministry officials seeking American approval of the Austro-Egyptian projection.

State, however, would neither confirm nor deny this to EPC, and we request this subcommittee to question the relevant officials about this matter. It is hoped that the hearings which are scheduled for today and next week shall go far in discerning any discrepancies which may exist between the past pronouncements and present practices of U.S. nonproliferation policy.

I would also like to add that I did call the Austrian Embassy here in town last week to request a copy of the referendum. They got back to me yesterday and said that they did not have a copy and had not been in communication with Vienna or anyone in Austria who had it and would not be able to supply it for me.

[The information referred to follows:]

LETTER TO JANET HIEBER FROM PETER WEISH, INSTITUT FUR UMWELTWISSENSCHAFTEN UND NATURSCHUTZ, OSTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN

Ms Janet Hieber
317 Pennsylvania Ave., S.E.
Washington D.C. 20003

23 September, 1978

Re final storage of Austrian high-level nuclear waste

Dear Ms. Hieber,

Local opposition to storage of high-level waste from Austria's unopened and only nuclear power station at Zwentendorf near Vienna has made it virtually impossible for Austrian authorities to officially consider such waste storage facilities in Austria, especially in view of the fact that geological conditions in Austria have, according to recent expertises (Prof. Tollmann, head of Geological Dept. of Vienna University), turned out to be unfavourable to such projects.

For some time, therefore, Austrian politicians and utility officials have been negotiating with Iran and Egypt in order to obtain permission to store Austrian high-level radioactive waste there.

While negotiations with Iran have practically broken down, Austrian chancellor Bruno Kreisky announced on 8 July, 1978, on the occasion of Egypts president Sadat's to Vienna, that agreement had been reached in principle as to storage in Egypt. Kreisky said to the press, "the texts of the contracts are lying on the table, more or less finished." (quoted from KURIER, 9 July).

The Austrian population is under the impression that there is a good chance of reaching an agreement with Egypt. This may have considerable influence on the outcome of the referendum on Nov. 5.

Yours sincerely,

Peter Weish

Dr. Peter Weish

Institut für Umweltwissenschaften
und Naturschutz der
Akademie der Wissenschaften

Text of referendum on Zwentendorf nuclear reactor to be held in Austria on November 5, 1978

The Austrian people are called upon to decide in what is to be the first plebiscite after World War II for or against the "peaceful use of atomic energy" in Austria. The socialist government have prepared a law for the putting into operation of Austria's first and (so far) only nuclear power plant and the erection of more nuclear power plants.

Here is the latest phrasing of the draft (translation of box on photocopied article in socialist newspaper "Arbeiter Zeitung" -- see enclosure)[1]

§1. The setting into operation of a nuclear power station in Austria demands -- apart from necessary official permissions based on other legal regulations -- a special permission to be given by federal law, considering national economic and energy aspects as well as technological and health--safety -- as far as it falls under the jurisdiction of the federal government.

§2. The permission as laid down in §1 is given for the nuclear plant of the GKT (operating company of said plant) at Zwentendorf.

§3. In the execution of this federal law and all other relevant legal regulations priority must be given to health and safety of people as well as to the protection of the environment; this principle must above all be applied to the establishment and control of maximum permitted doses of radiation-exposure, alarm regulations in case of a major accident and the management of nuclear waste, as far as these measures fall under the competence of the federal government.

§4. The federal government is entrusted with the execution of this federal law.

[1] The article referred to is retained in subcommittee files.

Mr. BINGHAM. Thank you very much, Ms. Hieber. Thanks to all of you for thoughtful presentations.

Mr. Scherr and Mr. Cochran, what would you understand would be the consequences if the administration were not to approve or to defer action on the request for the retransfer from Fukushima?

Mr. COCHRAN. First, I think they would finish the reracking of their reactor, so they would not run into those problems. Second, I think it would be the right signal to send to the rest of the world if we were determined in our policy toward commercial reprocessing, and the criteria that were enunciated previously by Mr. Nye—that we would only consider retransfer on a case-by-case basis, where there was a clear showing of need. That was in fact the U.S. policy, and it should remain in effect at least through the INFCE period, and hopefully beyond.

Mr. BINGHAM. Let's focus on what would happen in Japan. That was the intent of my question. You say that they could rerack and handle the problem of storage. How long would they have?

Mr. COCHRAN. The spent fuel pool has 820 spaces. Assuming they complete the reracking, they would be providing themselves with an additional 400 spaces or thereabouts. If you assume that they would also clean up the damage problem, then they would have an additional 118 spaces.

They are now discharging roughly in the neighborhood of 100 to 144 fuel elements per year, so reracking provides them with sufficient storage capability at that reactor unit for an additional 4 years of operation. In that 4-year time period there is ample time to build an additional storage pool at the same site to handle lifetime storage needs, if that is considered necessary. So there is really no excuse for ever transferring spent fuel from that particular site, except for final disposal.

First, they have time to rerack——

Mr. BINGHAM. Just a minute. I want to go back a little bit. You have said that they have 452 hot fuel assemblies in the reactor, is that right?

Mr. COCHRAN. That is correct. We are assuming now we have completed the maintenance and we are loading the reactor back up.

Mr. BINGHAM. Well, what I want to get clear in my mind is how many assemblies are producing power at any given time in such a reactor?

Mr. COCHRAN. When the reactor is turned on, they are all producing power, all 548 of them.

Mr. BINGHAM. Well, then, how does anyone determine that about 150 a year will need to be discharged?

Mr. COCHRAN. That is determined by some elaborate computer programing that optimizes the economics of the fuel, although I am quite sure it is not optimized today for other reasons that we can ignore——

Mr. BINGHAM. Let me put the question this way. Why is it that they do not all expire at the same time, requiring storage?

Mr. COCHRAN. You could operate the reactor in that manner. You could start it up at time zero, run it for 3 years, take all of the rods out and put a whole new set of rods in, operate it 3 more years, take them all out and put a whole new set in. Now, one finds it is more

economical to operate the reactor in a mode where every year one will only take one-third of the elements out. In the first 3 years there has to be some adjustments made up front.

Mr. BINGHAM. I see.

Mr. COCHRAN. So the ones you take out the first year are obviously not burned up to the full amount that one achieves at equilibrium, say, after 10 years. But that is just a matter of the most economical arrangement. During refueling periods one can also rotate assemblies around in the reactor. Those on the outside of the core can be moved in. They can be moved to another part of the core. In this way one obtains a better distribution of the power level in the reactor and improves the burnup of the fuel in the reactor.

Mr. BINGHAM. So that as a practical matter you need to find storage space in the pool for about one-third, roughly, of the assemblies in the reactor?

Mr. COCHRAN. That is correct. That is assuming that in the previous year you operated at your designed capacity factor, which is not always the case, and so forth. I mean, there are many adjustments that can be made. One might pull out some damaged assemblies, some leakers, or one might want to change the design somewhat, to change the power level in the reactor.

Mr. BINGHAM. Now, you are saying that if they really put their minds to it, the Japanese could find storage space for the spent fuel assemblies for the next 4 years, in which time they could add to their pool capacity. Is that what you are saying?

Mr. COCHRAN. That is correct. I am saying that in the United States, utilities rerack entire pools in a 2-week period, and no utility has spent more than 1 month reracking, and many utilities have reracked. The Japanese have 8 months to do the job, and they only need to do 25 percent of the job in that 8 months to meet the legal requirement of maintaining a full core discharge once the reactor starts up.

Mr. BINGHAM. Again, the reracking is simply a process of giving the pool greater capacity. Is that it?

Mr. COCHRAN. Yes. If you went to the liquor store and bought a case of whiskey and decided you wanted to put one more bottle in the carton, you would rerack it, right? Shove in another piece of cardboard.

Mr. BINGHAM. I am not sure how practical that is.

So getting back to what you were talking about, Mr. Scherr, the problem is really not so much a matter of finding additional temporary storage space as it is dealing with the problem of Japanese public resistance to continued storage of spent fuel in Japan. Is that right?

Mr. SCHERR. I think it is Ms. Hieber who addressed that point. Why don't you go ahead?

Ms. HIEBER. Yes, this is on the Kansai case.

Mr. BINGHAM. Let's talk about Fukushima for the moment.

Mr. SCHERR. I am not aware in the Fukushima case of any particular public concern about the storage situation at the reactor site.

Mr. BINGHAM. Then really why would they be pressing so hard for approval of the retransfer?

Mr. SCHERR. In the TEPCO case, I think the reason they are pressing very hard is because they view reprocessing in the United Kingdom as a solution to their waste disposal problem. They had made prior arrangements with British Nuclear Fuels, Limited to

ship the spent fuel to Windscale for reprocessing. Now they are doing everything they can to convince the United States that there is a need to retransfer this fuel at the present time.

Mr. COCHRAN. With respect to that question, let me call your attention to a letter to Dr. Bengelsdorf dated May 30, 1978, from Kansai Electric Power Co. Excuse me. I was looking at the previous letter. A letter dated March 24, 1978, to Mr. Nelson Sievering from the Kansai Power Co. On page 3 of that letter, paragraph 3 addresses that particular issue. I will just read you a couple of sentences:

> There is growing concern on the part of the general public over nuclear power development and the cooperation and public acceptance by the local citizens in the neighborhood of the proposed plantsites, et cetera, et cetera. Unless such reprocessing is arranged or approved, it could lead to a forced halt in the reactor operation and the project may fail to attain the expectation and acceptance originally given by the general public and local inhabitants in the neighborhood of the plant.

So in fact the Japanese are arguing to the DOE that they need to get the fuel out of Kansai,

Mr. BINGHAM. That is Kansai?

Mr. COCHRAN. Yes.

Mr. SCHERR. Public concern is not an element in the TEPCO case. I would just like to hark back to the testimony of former ACDA Director Ikle before this subcommittee in April 1977. He pointed out that what we should be trying to do is buy some time so that we can develop some alternatives to reprocessing and can avoid a broad commitment to reprocessing, with all of its associated risks. He warned at that time that the United States should be aware of false time pressures or pretensed urgency which would push us into making basically wrong decisions on retransfer requests. I think that is the situation we have here, particularly in regard to TEPCO and Kansai.

The proposed retransfers do not solve the Japanese waste disposal problem. Sooner or later, the Japanese are going to have to deal with the vitrified or high level waste.

Mr. BINGHAM. Do you have any information on that aspect of it, whether the Japanese public understands that they will eventually have to take back the product of reprocessing, the various products of reprocessing?

Mr. SCHERR. I am not aware of Japanese public opinion on this matter. If they are like most human beings, they are not terribly worried about risks a number of years off in the future. In other words, reprocessing in the United Kingdom is portrayed as a waste solution, and no one really worries too much about what is going to happen 25 years from now when the material has to come back, or when the United Kingdom says, we can no longer store it on our soil because of public concern. It is absolutely clear there is a need to develop an international solution to the whole radioactive waste disposal problem. Otherwise, we are just going to have this material moving from one place to another around the world.

Mr. BINGHAM. There is another time element I would like to explore here. It is my understanding that spent fuel has to cool for several years before it can be transported for reprocessing. Is that correct?

Mr. COCHRAN. Yes and no. It depends upon your shipping cask. Obviously, if you design the cask to handle a very high heat load or do

not put much fuel in it, you can move it sooner, but normally you would not move it until at least 6 months to a year after it is removed from the reactor.

Mr. BINGHAM. Six months to a year?

Mr. COCHRAN. Six months to a year at a minimum. There are some old—the reason I would qualify it, there are some old AEC studies with respect to the breeder—where you want to get the fuel out and back in the reactor as quickly as possible.

These studies discuss moving the spent fuel within 30 days, But the fuel is much hotter both in terms of its radioactivity and its thermal energy releases in that period of time, I am more or less guessing, but I think anywhere during the 1- to 5-year period is not that much difference.

SPENT FUEL SHIPPING

Mr. BINGHAM. Are you aware there is supposed to be a ship waiting for these cargoes from, I believe, both plants?

Mr. SCHERR. [Nods affirmatively.]

Mr. BINGHAM. Both plants?

Mr. COCHRAN. Our information, which obviously ought to be checked, is that there is a ship named, what, the *Fisher*——

Mr. SCHERR. *Pacific Fisher.*

Mr. COCHRAN [continuing]. *Pacific Fisher*, scheduled to pick up four loads of fuel. We were told, one is not of U.S. origin. The second load would be the shipment approved just prior to the Nuclear Non-Proliferation Act of 1978, plus these two. Obviously if TEPCO and Kansai are not approved it would go back with just a partial load. Also, this would be the case if Kansai were not approved.

Mr. SCHERR. Chairman Bingham, I think this is an example of what happens when the United States fails to make clear what our policy is on reprocessing abroad of spent fuels. This lack of clarity allows other countries to go ahead and place a tremendous amount of pressure on our Government to permit a retransfer.

For over a year now, we have been pushing the State Department to say clearly what our policy is here. I think because of the failure to articulate a policy, the United States is going to be subject to increased pressures from more and more countries to permit transfers for reprocessing because of "political need." This will open the floodgates. If we are really concerned about postponing a commitment to commercial reprocessing, then I think we have to hold the line now and not let ourselves be rolled.

Mr. BINGHAM. I understand your point very well, Mr. Scherr, and am very sympathetic to it, but I am trying to find out a little bit more about the validity of the argument that they have got to move immediately. That is why I have been asking you these questions.

Mr. COCHRAN. It might be interesting to know whether the Department of Energy could call up the General Electric Co. and replace or remove 118 of whatever these damaged assembly units are prior to June 1 of next year. We have a policy to aid these other countries in their storage of spent fuel.

Mr. BINGHAM. I have a number of questions about these matters, but I think in truth most of them probably should be directed to the administration witnesses themselves. Let me ask you, Ms. Hieber, what is the source of most of the information that you have on the Austrian situation?

Ms. HIEBER. It is a combination of Department of Energy, State Department, and Austrian citizens with whom I have spoken. I think I pretty much put in quotes everything that I heard from DOE or State Department. Also, I meant to clarify when I was speaking about the information being sent to me from Austria. When I said it had been sent Sunday morning, it was actually physically put on a plane Sunday morning, and should have arrived in New York Sunday night, and still has not gotten here by plane. I did not anticipate that. It includes, among other things, some Austrian news articles which are more recent. It is given more coverage over there, of course, than it is here.

Mr. BINGHAM. Do you get the impression that there will be a very extensive and far-reaching debate between now and early November on the whole subject?

Ms. HIEBER. I think there will be a very expensive one.

Mr. BINGHAM. Extensive.

Ms. HIEBER. I say expensive, with most of the money spent by the government, which is lobbying in favor of starting up Zwentendorf. I had a figure, which I do not have with me right now. I believe the utility is spending something on the order of $2 million on their information program in favor of starting up the Zwentendorf reactor, but the critical issue there has been the waste problem, and as long as the United States does not say anything about it—as a matter of fact, U.S. silence is effectively influencing the outcome of that referendum.

Mr. BINGHAM. By suggesting that there is no problem?

Ms. HIEBER. That is right. The Government has publicized the fact that they will be sending the fuel to France and then to Egypt.

Mr. BINGHAM. Unfortunately, we now have notice of a vote, and there will be several votes to follow that, so I think we will have to conclude this hearing. Let me ask you just one quick question. Isn't it true that the philosophy of the NNPA was in part, at least, that the United States would have to be in a position to absorb waste itself if it were to provide an alternative to countries concerned with the waste problem, an alternative to reprocessing, and that we ourselves have not reached the stage where we can do that? Is that true?

Ms. HIEBER. [Nods affirmatively.]

Mr. SCHERR. [Nods affirmatively.]

Mr. COCHRAN. [Nods affirmatively.]

Mr. BINGHAM. You are all indicating assent. In that sense, we have intensified our own dilemma because we are really not in a very good position to offer countries the alternatives that the policy of the act suggests.

Well, I want to thank you again for your testimony, and we will be pursuing these matters with administration witnesses next week. I would like to insert in the record at this point a statement submitted by Mr. Paul Leventhal, who has testified before the subcommittee before, regarding pending transfers of U.S.-origin nuclear spent fuel.

[The statement referred to follows:]

STATEMENT OF PAUL L. LEVENTHAL, CHEVY CHASE, MD.

I am concerned with the degree of effort that has been expended by Congress on procedural matters connected with the early stages of the MB-10 process. These procedural questions, while important, have diverted Congressional efforts away from early consideration of far more important substantive issues involved in the pending transfers for reprocessing of U.S.-origin spent fuel. These substantive issues relate to the dangers that await the United States at the end of the MB-10 process. To be specific, too little attention has been paid in the current Congressional oversight efforts to the bottom-line danger of spent-fuel transfers: namely the manufacture and the spread of atomic bombs.

Before any spent-fuel transfer goes forward under the new Non-Proliferation Act, there should be an accurate assessment and a clear understanding of the substantial risks involved in the inability of either international safeguards or United States intelligence-gathering to provide---with a high degree of assurance---timely warning of a diversion of plutonium in a non-nuclear weapons state after the plutonium has been extracted from spent fuel in a reprocessing plant. Even more important, there should be a firm grasp of the greatest danger connected with spent-fuel transfers: namely the inability of any juridical, safeguards or intelligence system to prevent the wholesale abrogation of nationally held civilian stocks of plutonium (or uranium) in non-nuclear weapons states during future crises.

The fact that reprocessing is to take place initially in a nuclear-weapons state, and the fact that it actually won't get underway in Britain for perhaps 10 years, simply serve to defer, but not to eliminate, the danger of separated plutonium. These facts also serve to obscure the direct link between the future plutonium danger and the seemingly benign

MB-10 process of today. Given this unclear but nevertheless, dangerous linkage, I am troubled that there has not yet been a separate inquiry into the basic vulnerability of national plutonium stocks once the MB-10 process is completed and the separated plutonium is retransferred to Japan or to other non-nuclear weapons states.

How can this transfer of spent fuel, or any transfer of spent fuel for the purpose of reprocessing, be justified if the means do not now exist and likely will never exist to prevent the transformation of civilian plutonium into atomic bombs by nations and probably by terrorist and criminal groups as well? This is the question that has not yet been raised in the present Congressional review of MB-10 requests. Yet it is the gut issue behind all such transfers.

The safeguards, intelligence and juridical implications of spent-fuel transfers generally---and of the Japanese transfer in particular---should be thoroughly explored before any transfer goes forward under the Act. Indeed, the "proliferation-risk" test contained in Section 303(b)(2) of the Nuclear Non-Proliferation Act pertains both to risk of reprocessing and to risk of "subsequent retransfer" of separated plutonium (and uranium). Therefore, the Act would seem to mandate that the ultimate vulnerability of the plutonium---whenever and in whatever form it is retransferred---be addressed now, not at some point when the reprocessing is about to begin or has been completed. By then it will be too late: an irreversible process will have been started, precedents will have been set, and nations with a claim to most-favored-nation treatment, such as Iran, will be lining up for reprocessing services or for their own plants and will be demanding the privilege of retaining separated plutonium or plutonium-bearing fuel elements.

To view the MB-10 process in any other light---especially to avoid facing real plutonium dangers for the sake of satisfying competing diplomatic interests---is a shortsighted and perilous approach to the proliferation problem. The Congress should avoid spending countless hours and pages in the unraveling of the procedural maze that bureaucratic lawyers have designed for the MB-10 process. This maze is illustrated by the "grandfathering" issue, which emerged from unfortunate draftsmanship that was imposed on the principal sponsors of the Act during the final compromise in the Senate that was needed to achieve enactment. The grandfathering issue should be seen, then, as the diversionary element that it is, needing quick resolution for sure, but not being permitted to divert Congressional energies away from the bottom-line dangers that remain at the end of the convoluted MB-10 process.

These dangers should be addressed directly by posing the following questions to Administration and other expert witnesses:

1. What are the limitations of international safeguards, as they now exist and as they reasonably can be expected to be upgraded, for providing timely warning of, and effective response to, diversions of plutonium by non-nuclear weapons states?

2. What are the limitations of U.S. intelligence-gathering with respect to detecting diversions of plutonium from dedicated facilities and fabrication of nuclear weapons in small, clandestine facilities?

3. What are the limitations of the NPT, the IAEA, Euratom and the entire system of commercial nuclear agreements and understandings for preventing wholesale abrogation of civilian stocks of plutonium (and uranium) for weapons purposes in the event of national and global crises?

4. In view of the above limitations, how can the transfer of spent fuel be justified at this time, and perhaps at any future time, if the result will be national stocks of plutonium?

5. If reprocessing is to go forward, should the United States require, as a minimum condition for approving transfers of U.S.-origin spent fuel, that separated plutonium be retained in existing nuclear-weapons states and that only the energy equivalent of the plutonium be retransferred in the form of low-enriched or natural uranium?

Mr. BINGHAM. The subcommittee is adjourned.

[Whereupon, at 3:30 p.m. the subcommittee adjourned, to reconvene at 2 p.m. on Tuesday, October 3, 1978.]

NUCLEAR FUEL TRANSFER FOR REPROCESSING: PENDING CASES

TUESDAY, OCTOBER 3, 1978

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERNATIONAL RELATIONS,
SUBCOMMITTEE ON INTERNATIONAL
ECONOMIC POLICY AND TRADE,
Washington, D.C.

The subcommittee met at 2 p.m. in room 2200, Rayburn House Office Building, Hon. Jonathan B. Bingham (chairman of the subcommittee) presiding.

Mr. BINGHAM. Ladies and gentlemen, in view of the intense interest in this hearing I have inquired as to whether the full committee room is available, and it is available. So we will move down to 2172. I want to say that we have made available all the copies of statements that we have. We do not have enough for everybody. So we will move down to 2172 and start there.

[A brief recess was taken.]

Mr. BINGHAM. The Subcommittee on International Economic Policy and Trade will come to order.

There are no microphones operating in this room.

Today we continue hearings on pending applications for transfers of U.S.-origin nuclear spent fuel under section 131 of the Atomic Energy Act of 1954, as amended.

At an earlier hearing the subcommittee heard rather persuasive testimony from two public interest organizations to the effect that transfer for reprocessing is not the only feasible solution to the fuel situation faced by the Tokyo Electric Power Co., which has applied for approval to send 126 spent fuel assemblies to the Windscale Works in England for reprocessing.

PENDING APPLICATIONS

Since that hearing, the subcommittee has received from the Department of Energy a revised report on the Tepco application, as well as a report concerning proposed executive branch approval for a similar transfer of assemblies from the Japanese Kansai facility to La Hague in France.

We have with us today representatives of the various executive agencies directly and indirectly involved in decisions regarding these applications to give the subcommittee a more complete report both on the facts of these cases and the basis for the executive branch recommendations.

We will hear first from Mr. Joseph Nye of the State Department.

STATEMENT OF JOSEPH S. NYE, JR., DEPUTY TO THE UNDER SECRETARY FOR SECURITY ASSISTANCE, SCIENCE AND TECHNOLOGY, DEPARTMENT OF STATE

Mr. NYE. Thank you, Mr. Chairman.

I am pleased to be here today to discuss U.S. policy on retransfer of U.S.-origin nuclear material for reprocessing in the United Kingdom and France. Before discussing the cases which are before us, I would like to review briefly how our policy on retransfers relates to our broader nonproliferation objectives.

The basic objective of U.S. nonproliferation policy is to develop an international framework that will minimize both the incentives and opportunities for nuclear proliferation. To this end, we are working toward the development of an international regime of norms and institutions that will provide the widest possible separation between peaceful applications and potential military uses, while enabling countries to meet their energy needs. One key element in bringing about such a development is the international nuclear fuel cycle evaluation (INFCE) which is examining more proliferation-resistant alternatives to the present nuclear fuel cycle.

INFCE

The United States sees INFCE as a cooperative effort to evaluate the role of nuclear energy technology in an international context and help develop an objective appreciation of the nonproliferation, economic, and other implications of different fuel cycle approaches. INFCE provides a 2-year period in which nations can reexamine assumptions and find ways to reconcile their somewhat different assessments of the risks involved in, and the time scale for commercialization of the various aspects of the nuclear fuel cycle. While INFCE has a technical cast, it is part of the process of laying a basis for a stable international regime to govern nuclear energy through the end of the century.

A stable regime should be designed to minimize the global distribution of weapons-usable materials and vulnerable points in the fuel cycle, while adequately meeting the energy needs of all countries. One can visualize five basic norms for a strengthened international regime: (1) Full-scope safeguards; (2) avoidance of the unnecessary spread of sensitive facilities; (3) use of diversion-resistant technologies; (4) multinational control of sensitive facilities; and (5) institutions to insure the availability of the benefits of nuclear energy.

The United States does not, of course, have all the answers for how a safer nuclear order may be structured, nor are we in a position to dictate the norms to be followed. Indeed, success in building a safer nuclear order depends critically on the cooperation of other countries.

It is in this broader context that we look at the specific matter of U.S. policy on requests for the retransfer of U.S.-origin material for reprocessing in the United Kingdom and France during this 2-year period of INFCE.

NUCLEAR NONPROLIFERATION ACT OF 1978

The Nuclear Non-Proliferation Act of 1978 sets forth criteria in addition to other requirements of the law to be applied to requests for retransfers for reprocessing. The law specifies that:

One: With respect to facilities which had not processed power reactor fuel assemblies or been the subject of a subsequent arrangement prior to March 10, 1978, the Secretary of Energy may not enter into a subsequent arrangement for such retransfer for reprocessing of any special nuclear material exported by the United States unless, in his judgment, and that of the Secretary of State, such reprocessing or retransfer will not result in a significant increase of the risk of proliferation beyond that which exists at the time that approval is requested. Among the factors in making this judgment, foremost consideration will be given to whether or not the reprocessing or retransfer will take place under conditions that will insure timely warning to the United States of any diversion well in advance of the time at which the nonnuclear-weapon state could transform the material into a nuclear explosive device.

Two: For facilities that have processed power reactor fuel or have been subject to a subsequent arrangement prior to March 10, 1978, the Secretary of Energy will attempt to insure that such reprocessing or retransfer will take place under conditions comparable to those above.

In both cases now before us, we believe that the above criteria for approval are met. In the Tepco case we have addressed this question in the revised analysis under section 131b(2) of the act.

In addition to the requirements of the law, the President has established policy criteria regarding requests for retransfer for reprocessing. Approval of such requests has been on a case-by-case basis when there is clear showing of need; that is, spent-fuel congestion—and then only provided that the United States retains the right of approval over subsequent transfer of the separated plutonium, and the requesting country has made appropriate efforts to expand its spent-fuel storage capacity. Three approvals have been made under these criteria since April 1977.

The Tokyo Electric Power Congress request to transfer approximately 24 tons of spent nuclear power reactor fuel to Great Britain for reprocessing at Windscale would be the fourth such case. The basis for our determination that there is a need for the transfer has been spelled out in the analysis forwarded to the committee.

Both Japan and the United Kingdom have also been cooperative in nonproliferation areas. Both are parties to the NPT, both are active participants in the IAEA, in the nuclear suppliers group, and more recently in INFCE, and both have a strong political commitment to preventing the further spread of nuclear weapons. They have both worked to further common nonproliferation objectives.

JAPAN: A NUCLEAR POWER

Furthermore, in connection with INFCE and as reflected in the Tokai-Mura communique of last September, Japan stated that it shares the view that plutonium poses a serious proliferation danger, that its recycle in light water reactors is not ready at present for commercial use, and that its premature commercialization should be

avoided. Japan also agreed to undertake experimental coprocessing work at its operational test laboratory and, if such coprocessing is found to be technically feasible and effective in light of this work and INFCE, to convert the Tokai reprocessing facility to coprocessing at the end of the initial period of operation.

In addition, Japan has agreed to defer the construction of its planned plutonium conversion facility at Tokai-Mura for 2 years and is now studying possible alterations for a combined uranium/plutonium product. Japan is also working with the IAEA at the Tokai reprocessing facility to test the application of advanced safeguards instrumentation.

This is not to say that our policies and those of the other countries involved in these transfers are always identical. There was, for example, a frank difference of opinion between the United States and the United Kingdom over the timing of the Windscale/Thorp project, with the United States preferring deferral of the project at least pending the outcome of INFCE.

As the committee knows, the project has not been deferred. However, in parliamentary debate supporting the project, the British Government noted that, since actual construction of the reprocessing plant itself would not begin before 1981 or 1982, the design could still be adjusted to accommodate any results of INFCE.

Finally, we believe that the proposed retransfer for reprocessing will not result in a significant increase in the risk of proliferation, with due consideration of whether we would have timely warning "of any diversion well in advance of the time at which the non-nuclear-weapon state could transform the diverted material into a nuclear explosive device." We believe this conclusion is supported, among other considerations, by the nonproliferation credentials of the countries involved, by where the reprocessing will occur, and by the fact that the derived plutonium may not be returned to Japan or transferred to another country without specific U.S. consent.

KANSAI TRANSFER

The second case which I would like to discuss with you today, the request by Japan's Kansai Electric Power for the transfer of 29 tons of spent fuel to France for reprocessing in the existing UP–2 Cogema facility, differs from the cases previously approved. While it meets all other aspects of our approval criteria, it is not based on a spent-fuel storage congestion problem. For this reason, the matter was forwarded to the President with a recommendation of the Department, DOE, and ACDA, that our nonproliferation objectives would be best served by approval. The President agreed with this recommendation.

Kansai and the Japanese Government have asked for approval of this transfer on the basis that the contract concerning the shipment was concluded in 1975, before the current U.S. policy had been enunciated; that public assurances had been given to the local community, on the basis of the contract, that the spent fuel would be transferred; and that it will have to pay substantial financial penalties if the spent fuel does not move on schedule. Although the utility was aware that U.S. approval for the retransfer would be required to fulfill the contract, it could not have foreseen that U.S. policy would change from a per-

missive policy on retransfers to a policy where approval would be granted only as a "last resort."

The executive branch has carefully weighed all aspects of this matter and has determined that approval would best serve U.S. nonproliferation and broader foreign policy interests. This decision does not represent any basic change in the U.S. view of reprocessing. Requests for retransfers for reprocessing will continue to be considered on their merits and on a case-by-case basis, giving primacy to the test of "need." However, the President has decided that the administration will consider approval of this limited set of requests that involve contracts predating 1977 if the requesting country is actively cooperating in exploring more proliferation-resistant methods of spent-fuel disposition, and if approval would directly further nonproliferation objectives. In this regard we have Japanese agreement to join the United States in discussions of possible international spent-fuel storage centers. These discussions will complement studies in the United States and INFCE on developing spent-fuel storage regimes, something that is essential if we are to be successful in deferring reprocessing.

In every case, we would continue, among other things, to retain a veto over transfer of plutonium. This limited change in our policy was explained to the countries concerned when we notified them of the decision on the Tepco and Kansai requests.

CARTER POLICY STATEMENT

We have added "preexisting contracts" as a factor to be considered in approving reprocessing for the following reasons:

As the President made clear in his April 7, 1977, statement, our policy has never assumed that ongoing activities in the United Kingdom, France, West Germany, and Japan would be "turned off" during INFCE. The INFCE communique provides that INFCE will be carried out without jeopardizing other countries' "fuel cycle policies or international cooperation, agreements, and contracts."

Holders of reprocessing contracts entered into prior to current U.S. policy can argue with some justification that they have been caught in the middle when the rules changed. This modification will allow us to take this factor into consideration while we continue to encourage the expansion of spent-fuel storage capacity.

Only four countries have reprocessing contracts which predate our policy—Japan, Switzerland, Sweden, and Spain. Moreover, several of the concerned facilities are expanding their spent-fuel storage capacities—in part due to our urging in previous retransfer approvals. This will limit the number of requests we are faced with during the INFCE period.

Most importantly, our approach to such reprocessing requests is inextricably related to achievement of a fundamental objective of our nonproliferation strategy that I described above: The development of an international consensus on norms for a more proliferation-resistant framework for nuclear energy. Achieving this objective depends on the cooperation of other countries. The results of INFCE are beginning to be shaped and total inflexibility now in dealing with key participants is likely to give us less influence over the shape of the outcome.

AN INTERIM APPROACH

Thus, we believe that this interim approach to handling requests for reprocessing in the United Kingdom and France during the INFCE period is consistent with our longer term nuclear nonproliferation objectives and, at the same time, affords sufficient protection against the erosion of our policy on reprocessing. To take the alternative course, would, in our view, have weakened the prospects for developing the cooperative framework on which the achievement of our large nonproliferation objectives depends.

The example the United States sets in its own programs is also key to effective pursuit of our nonproliferation program. In this context I would like to address the question of spent-fuel storage in the United States, in particular the development of an away from reactor (AFR) spent-fuel policy announced in October 1977.

SPENT-FUEL STORAGE

On March 13, 1978, the President established an interagency nuclear waste management task force to formulate recommendations for administration policy with respect to long-term management of nuclear wastes. This interagency task force is chaired by the Department of Energy—I might add parenthetically, ably chaired by my colleague Mr. John Deutch, who is here before you—and includes State and other concerned agencies.

The task force is now in the process of preparing a draft report for the President which we expect to circulate for public comment in early October. Early availability of additional AFR capacity would demonstrate concrete progress in our domestic program and is highly desirable if we are to focus international attention on alternatives to reprocessing, including the economic and technical feasibility of storing spent fuel in the interest of common nonproliferation goals.

In addition to this task force, we continue to argue in INFCE that spent fuel can be stored safely and securely for long periods and that reprocessing is not a requirement for effective waste management. While we have not made any specific commitments, direct or indirect, regarding acceptance of foreign-power-reactor spent fuel in the United States, and are mindful that the law would require congressional review of any such commitment, we are continuing to discuss the possibility of multilateral and bilateral waste management questions with other countries.

Long-term solutions to all the complex problems we face in regard to nuclear energy will require international cooperation. The policy that I have described today is designed to strengthen the prospects for such cooperation.

ON A CASE-BY-CASE BASIS

In closing, I would like to summarize this policy. For the interim INFCE period, we will approve retransfer for reprocessing on a case-by-case basis under the following carefully defined conditions:

Requests involving a clear showing of need—that is, spent-fuel congestion—will continue to be approved on a case-by-case basis if the requesting country has made appropriate efforts to expand its spent-fuel storage capacity;

Requests not meeting the physical-need standard, but involving contracts predating 1977, such as the Kansai request, will be con-

sidered for approval on a case-by-case basis if the requesting country is actively cooperating in exploring more proliferation-resistant methods of spent-fuel disposition, and approval will directly further major nonproliferation objectives;

We will continue to require prior U.S. approval over the subsequent transfer, including return to the country which has title to the material, of any plutonium resulting from the reprocessing.

I will now be happy to address any questions the subcommittee may have on these two cases or on U.S. nonproliferation policy in general.

Mr. BINGHAM. Thank you, Dr. Nye.

Before going to the questioning period, we will hear from the other witnesses. I would like to hear next from Dr. John Deutch, Director of the Office of Energy Research, Department of Energy.

STATEMENT OF HON. JOHN DEUTCH, DIRECTOR, OFFICE OF ENERGY RESEARCH, DEPARTMENT OF ENERGY

Mr. DEUTCH. Thank you, Mr. Chairman. With your permission, sir, I would like to submit my prepared testimony for the record and summarize it briefly for you.

Mr. BINGHAM. That is fine.

Mr. DEUTCH. I am here today to testify in behalf of the Department of Energy on the proposed retransfer arrangements from the Tepco and Kansai reactors in Japan to the United Kingdom and France. I am accompanied by Mr. Harold Bengelsdorf, Director of our International Office for Nuclear Affairs. Mr. Sievering, whom you invited to testify, is retiring this week from Government service. I might add that he was a most able public servant and Foreign Service officer. He will be sorely missed from our Department. Because of his departure, the Department has asked me to come and testify to give some continuity to these problem areas.

Joe Nye has reviewed for you the policy of the administration and the recommendations to you concerning the cases under consideration. I would like to make some summary remarks from the Department of Energy's point of view.

The first and foremost point is that we believe that reprocessing retransfers should be considered on a case-by-case basis and that continued primacy should be given to the criterion of physical congestion as a measure of the need for such retransfer arrangements. This will be the basic test for need.

NO SHIFT IN U.S. POLICY

The second remark I would like to make to you is that the two proposals in front of you do not signal any shift or weakening in U.S. attitudes or Department of Energy attitudes toward conventional reprocessing. It remains our view that conventional reprocessing for thermal reactors is not economical and this technology along with its concomitant risk for the spread of weapons-usable material presents significant nonproliferation concern.

The third point that I would like to emphasize is the need which Mr. Nye spoke to you about for away-from-reactor storage in order to present a real alternative for spent-fuel storage compared to the availability of foreign reprocessing. I would like to also emphasize that the

retransfer of any plutonium under these arrangements will be treated as a subsequent arrangement and require prior approval by the United States in all these matters.

I would like to make two remarks, the first having to deal with the Tepco proposal that is in front of you, and then with Kansai. We initially submitted our request under section 131b(3) of the Non-Proliferation Act and have—upon consideration by all interested executive agencies and the comments offered to us by you, Mr. Chairman, and by Senator Glenn and others—we have reconsidered the matter and have resubmitted our analysis under section 131b(2).

Now I would like to mention to you that in either case our policy position on when transfer agreements are suitable and what our policy attitude is toward their present or future approval remains the same. We believe that Tepco has made a convincing case that it needs to retransfer the fuel now on the basis of physical congestion at their pool at their reactor. I am prepared to respond to specific questions about that, but it is our judgment that a convincing case has been made for physical congestion at the reactor pool and that they cannot delay some transfer of that fuel without running the risk of interfering with their reactor operations. In the case of Tepco, the criterion for physical need due to physical congestion as a measure of need we believe is the operative one.

Finally, I would like to make a few comments about Kansai, the proposed transfer to the UP–2 facility in Cogema in France for the reprocessing of 29 tons. As Mr. Nye has discussed with you, this is one of several contracts which predate our current policy on reprocessing. We will consider the question of predating contracts in the consideration of future requests from the four countries that Mr. Nye mentioned to you in our retransfer-reprocessing approvals.

DOE POSITION

I would like to emphasize, however, three points. The first is that we will continue to consider all cases presented to us on a case-by-case basis and spent-fuel storage congestion will continue to be our primary criterion for need. Second, such approvals for preexisting contracts would only be approved when their approval would advance specific nonproliferation objectives. As Mr. Nye mentioned, we believe that holds in the case of the Kansai proposal in front of you today. Finally, I would like to emphasize that we will treat all subsequent retransfers of plutonium resulting from these reprocessing operations and subsequent arrangements to be given our full scrutiny under our policy before any agreement is given for their retransfer back to the originating country or to any other countries.

In summary, the Department of Energy supports the position taken by Mr. Nye in front of you. I would like to underscore the remarks Mr. Nye made regarding the need to move ahead with provisions for away-from-reactor storage. We are currently working on that, and we required it as an integral part of waste-management programs in this country and our policy on trying to prevent the spread of nuclear weapons.

Thank you very much, Mr. Chairman. I will be happy to answer any questions you may have.

[Mr. Deutch's prepared statement follows:]

PREPARED STATEMENT OF HON. JOHN DEUTCH, DIRECTOR, OFFICE OF ENERGY RESEARCH, DEPARTMENT OF ENERGY

Thank you Mr. Chairman,

On behalf of the Department of Energy, I would like to testify, very briefly, on the proposed retransfer arrangement from the TEPCO and Kansai reactors in Japan to the United Kingdom and France for reprocessing purposes. I am accompanied by Mr. Harold Bengelsdorf (Director of our International Office for Nuclear Affairs). Mr. Sievering, whom you invited to testify, is departing this week from government service. Thus, we judged that it would be more appropriate that those of us who will have a continuing responsibility in this area appear before you this afternoon.

Mr. Nye has reviewed several of the major foreign policy considerations that have prompted the Executive Branch to conclude that the proposed retransfer requests should be approved and I would like to briefly summarize the position of the Department of Energy on these matters.

First, I should stress that these are the first retransfer cases of this character that are being processed pursuant to the Non-Proliferation Act of 1978. I think we have benefited by the observations that have been made by you and Senator Glenn, and others on this subject. Your comments have helped us greatly in administering our responsibilities and in preparing the kinds of reports that, we hope, the Congress and the public will find most useful.

Working in close cooperation with the Department of State, ACDA, and others, DOE has the responsibility for reviewing such requests and I can assure you that we intend to scrutinize closely whether the tests outlined by Mr. Nye are being adhered to.

We support the concept that any such requests should be considered only on a case by case basis, and that continued primacy should be given to physical congestion as the basic need test for approval. Cases not meeting this principal test will be considered only where they involve contracts predating our present policy and where their approval will advance specific non-proliferation objectives.

I can assure you that from our perspective the subject retransfers do not signal any shift or weakening in US attitudes towards conventional reprocessing. Neither do we interpret these actions as an endorsement of the reprocessing facilities or activities that are involved. On the contrary, it remains our view that conventional reprocessing for thermal reactors is not economical and that this technology with its concomitant potential for spread of separated plutonium presents significant concerns from a proliferation standpoint. Accordingly, we believe that other alternatives for spent fuel management should be explored most actively including especially the AFR storage discussed by Mr. Nye.

We view our current actions as interim in character until better remedies have been found and accepted. Also, I believe that we are approaching these cases in a circumspect manner and that our controls over the produced plutonium will support US non-proliferation objectives. In particular, it is our policy to require the prior approval of the United States before the separated plutonium involved in these retransfers can leave the state where reprocessing occurs. Moreover, the return of such material to the

originating country would constitute a new "subsequent arrangement" pursuant to Section 131 of the Atomic Energy Act. As such it would have to be considered on its own merits by the Executive Branch and then referred to the Congress.

I should now like to comment about the two specific cases that are being considered. First, with regard to the TEPCO transfer from Japan to the United Kingdom we have submitted to the Committee a revision to the analysis that accompanied our report of August 17 , 1978. In full consultation with the other interested agencies, we had concluded that the proposed retransfer would not result in any incremental risk of proliferation and this remains our judgment. We have based this judgment on a number of factors including the physical need for the transfer, where the reprocessing will occur, as well as the controls that will apply to plutonium, and we gave due consideration to the "timely warning" criterion in Section 131. The revised analysis is designed to amplify the basis for this judgment. Perhaps more importantly, it indicates that we have now decided to consider the request under paragraph 131b(2) rather than 131b(3) of the Statute. As you know,

we had earlier processed this request under Section 131b(3) but on further reflection we have evaluated it under paragraph 131b(2). We fully agree with the point made both by you and Senator Glenn in your respective letters to the President that it was the intention of the authors of the bill to evaluate all retransfer requests of this character from the same overall policy framework. Therefore, I can assure you that cases processed under paragraph 131b(3) will be analyzed pursuant to the same policy objectives as apply to cases processed under paragraph 131b(2).

The interested agencies in the Executive Branch have made the judgment that TEPCO has made a convincing case that it needs to retransfer spent fuel immediately to avoid disrupting operations due to physical congestion at its reactor storage pool. Our latest information in this regard appears on page 15 of our revised analysis. The utility is proving to be quite cooperative in expanding its spent fuel storage capacity but you will note that the reracking program now is not likely to start until June 1979 and that the schedule for reactor shutdown argues for a shipment now of the spent fuel to avoid some significant delays and penalties. This derives from a number of factors

including the Japanese requirement that utilities maintain a full core storage reserve at their reactors.

Finally, I should like to make a few observations about the case of the proposed Kansai transfer. In this case, there is no immediate shortage of storage capacity. But, as you know, the President has agreed with the views of the interested agencies in the Executive Branch that other factors, and especially the fact that the contract involved predates our current policy on reprocessing, justify the accommodation of this particular request at this time. However, in accordance with the President's policy, it is our clear intention to consider future requests on their merits on a case by case basis, and spent fuel congestion will continue to be the primary "need" criterion. Moreover, we intend to continue our efforts to encourage other nations to expand their spent fuel storage capacity, and to urge them to explore alternates to conventional reprocessing for spent fuel disposition. Cases such as Kansai which do not meet the basis "need" criterion will be considered and approved by the interested agencies only where they involve contracts predating our

present policy and where their approval will advance specific non-proliferation objectives.

Finally, I would like to underscore the remarks made by Mr. Nye regarding the need to move ahead with provision of AFR or away-from-reactor spent fuel storage. The successful demonstration of the feasibility of alternatives to near term commercial reprocessing, as well as the creation of a limited US capacity to accept foreign spent fuel in exceptional cases, will be crucial to advancing our non-proliferation objectives in the long term.

Thank you Mr. Chairman, this concludes my statement.

I shall be happy to answer any questions you might have on these matters.

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Mr. BINGHAM. Thank you, Dr. Deutch.

Next, Charles Van Doren, Assistant Director for Non-Proliferation, Arms Control and Disarmament Agency.

STATEMENT OF HON. CHARLES N. VAN DOREN, ASSISTANT DIRECTOR, NON-PROLIFERATION BUREAU, ARMS CONTROL AND DISARMAMENT AGENCY

Mr. VAN DOREN. Thank you, Mr. Chairman.

It is a pleasure to appear before you today to discuss the handling of the first two "subsequent arrangements" under the Nuclear Non-Proliferation Act of 1978. I would like to address particularly the role and position of the Arms Control and Disarmament Agency in these two cases.

Section 131 of the Atomic Energy Act, as added by the Nuclear Non-Proliferation Act of 1978:

Requires the Secretary of Energy to consult with the Director of ACDA prior to entering into any proposed subsequent argeement;

Provides that the Director may prepare an unclassified nuclear proliferation assessment statement with regard to such proposed subsequent arrangement if in his view the proposed arrangement "might significantly contribute to proliferation;"

Requires the applicable procedures to specify that if he intends to prepare a nuclear proliferation assessment statement, the Director shall so declare in his response to the Department of Energy.

TEPCO CASE

The first case to arise under this section was a request by Tokyo Electric Power Co. [TEPCO], a Japanese utility, for U.S. consent to the retransfer of spent power reactor fuel assemblies containing U.S.-supplied nuclear material to the United Kingdom for eventual reprocessing.

ACDA was duly consulted on the TEPCO case, advised the Secretary of Energy that it did not intend to prepare a nuclear proliferation assessment statement with respect to this case, and did not oppose a decision of the Secretary of Energy to issue the consent to the retransfer of this spent fuel to the United Kingdom for reprocessing. Our position on this case reflected our independent judgment that the granting of this consent:

Would not be inimical to the common defense and security;

Would not result in a significant increase in the risk of proliferation beyond that which existed at the time the approval was requested, after giving due consideration to whether we would be insured of timely warning of any diversion "well in advance of the time at which the nonnuclear-weapon state could transform the diverted material into a nuclear explosive device"; and

Was not an action that "might significantly contribute to proliferation."

In reaching these judgments, we took into account the nonproliferation credentials of the two countries involved—Japan and the United Kingdom; potential effects on other nations from a nonproliferation point of view; when and where the reprocessing would take place; and the fact that the separated plutonium could not be returned to Japan

or otherwise transferred or used without prior U.S. consent. The return of such plutonium to Japan would be a separate "subsequent arrangement" that would have to be considered on its own merits, and would require a report to this committee and to its Senate counterpart.

REPROCESSING IN THE FUTURE

Since the reprocessing will not occur for some 10 years, the transaction will in the interim amount to a transfer of spent fuel from a congested reactor-storage pool in Japan to storage in a pool in the United Kingdom.

As for the subsequent reprocessing of the fuel, we took into account the statement made to the House of Commons on March 22, 1978, by Mr. David Owen, the British Secretary of State for Foreign and Commonwealth Affairs. After noting that the U.S. Government had made clear that we would have preferred them to defer the decision on building the new facility at Windscale until after INFCE, he noted that:

> Construction of the processing part of the plant will start only in late 1980–82, though work on the ponds will need to start right away. This timing will allow us to take full account of the results of INFCE as it progresses, * * * in how we design, safeguard, protect, and manage the reprocessing plant and its production.

We have advised the United Kingdom in connection with this case that a separate U.S. consent would be required for any return of the separated plutonium, and emphasized that requests for retransfer for reprocessing will continue to be considered on a case-by-case basis, taking into account progress toward meeting nonproliferation objectives. We believe that this should prevent any misconception that our action in this case represents a change in our position. Moreover, we plan to continue to have consultations with the United Kingdom before the actual reprocessing of this fuel takes place, in the interest of assuring that the modalities are supportive of our mutual nonproliferation interests.

We also believe that treating this case under subsection (2) of section 131b of the Atomic Energy Act will help avoid possible misunderstandings of its implications. We are grateful to the chairman for having called our attention to this point.

Beyond meeting the statutory standards, the administration has, as a matter of policy, called for a showing of actual need for requested transfers of spent fuel for reprocessing. We believe that the evidence presented to the committee by the Department of Energy on this issue shows that there is a genuine operational need for the utility to remove this fuel to avoid congestion in its reactor storage pool and to facilitate reracking. Thus we believe the transfer both satisfies the "need" criterion and helps promote our objective of encouraging the expansion of spent-fuel storage capacity.

KANSAI CASE

The second request, by Kansai Electric Co., involves the transfer of spent power reactor fuel assemblies for reprocessing in the existing UP–2 plant at La Hague, France, pursuant to an agreement entered into in 1975. The previous witnesses have described to you the facts of this case, the rationale for approving it, and why we think this strictly limited exception will not undercut our efforts to discourage premature decisions on reprocessing. ACDA concurs in this decision

and believes that it will not result in a significant increase in the risk of proliferation.

POINTS OF CONSIDERATION

Among the major considerations that led us to this conclusion are:

One: The nonproliferation credentials and cooperativeness of the parties involved;

Two: Where the reprocessing will take place;

Three: The fact that the disposition of the separated plutonium remains subject to our consent, and that a request for its return would be a separate "subsequent arrangement" under section 131 of the Atomic Energy Act, which would have to be considered on its own merits;

Four: The fact that we are making clear that such requests will continue to be considered on a case-by-case basis, and cannot be taken for granted; that physical need for the retransfer will continue to be the normal prerequisite for approval; that the other basis on which we have been authorized by the President to consider approvals is limited to transactions involving contracts predating the change in U.S. policy toward reprocessing—a class that by definition cannot expand—and that even in such cases there must be an independent justification and a net nonproliferation benefit; that there currently are no available international spent-fuel storage facilities; and that the Japanese have expressed their willingness to join us in discussion of international spent-fuel storage possibilities.

To sum up, the Arms Control and Disarmament Agency supports the granting of these first two requests for retransfer for reprocessing under section 131 of the Atomic Energy Act. Since the other subjects which you wished to discuss have already been dealt with by the other administration witnesses which have already testified today, I will simply state that I support their testimony and stand ready to respond to questions.

Mr. BINGHAM. We have with us two Commissioners of the NRC. Commissioner Gilinsky and Commissioner Bradford, would you join us at the witness table, please, and give us the benefit of your wisdom.

Mr. Victor Gilinsky of the U.S. Nuclear Regulatory Commission.

STATEMENT OF HON. VICTOR GILINSKY, COMMISSIONER, NUCLEAR REGULATORY COMMISSION

Mr. GILINSKY. Thank you, Mr. Chairman. I am pleased to be here for this rescheduled hearing. I submitted a letter to you on September 23 thinking at that time that a commitment to speak in London would keep me from participating in this hearing. In that letter I addressed the "grandfathering" issue which you had raised in your letter of September 15, 1978, to the President. I feel certain your timely intercession had a great deal to do with the formulation of our Government's current position on this vital matter.

Nevertheless, it needs to be emphasized that some plants will be grandfathered. As I pointed out in my letter, in these cases something should be done to tighten the discretion allowed under the statute in section 131b(3). It seems to me that where the return of plutonium to its owners after reprocessing is involved, it is important that this more discretionary standard be interpreted as strictly as that of para-

graph (2). In my view, that is the only course which meets the concern which led Congress to adopt the statutory "timely warning" standard.

I would like to submit my letter for the record. And since my London speech of September 27 was closely related to the subject matter of the hearing today, with your indulgence I would like to submit a copy of that speech for the record.

Mr. BINGHAM. We will be glad to include that in the committee files at this point and see whether it can be incorporated in the record.[1]

Mr. GILINSKY. Thank you, Mr. Chairman.

I would like to turn now to the specific retransfer requests from Tokyo and Kansai utilities. There was, as you know, a difference of views among the Commissioners as to whether the "need" test applied to approvals for reprocessing of U.S.-supplied fuel—that is, congestion in spent-fuel storage ponds—was met in the case of Tepco. The Kansai case occupies a different category; here no claim of such congestion was made in requesting approval for transfer.

In the interval since the Commission first learned of these two requests, new Presidential guidance has been issued. As you have heard today from other witnesses, this guidance retains the "need" test, but at the same time allows more flexibility in the case of contracts entered into prior to the President's enunciation of his nonproliferation policy in April of 1977. Under these new guidelines the Kansai retransfer qualified because it comes under an old contract, dating back to 1975. The Tepco retransfer is allowed because in any case it has been deemed to meet the "need" test of spent-fuel-pool congestion.

But the experience of reviewing these two applications—the first under the new law—suggests that it is worthwhile to consider the review process and specifically what NRC's role in consulting on proposed transfers is and ought to be. And what stands out most here is the fact that the Government is not as well informed as it might be.

Under the new guidelines some approvals or disapprovals may turn on the nature of the contract involved. Yet we do not have the contracts themselves or even have a very good idea of what is in them. We also do not know exactly how many contracts are involved—it is relevant that the reprocessors and customers are renegotiating these contracts—so in a sense contracts could be moving from old categories to new categories—and therefore we do not know the dimensions of the problem. While the answer may not be relevant to the decision in this particular case, it might be in the future. In any event, in my view the Government should not have to rely exclusively on what we are told by the consumers of our fuel.

NRC ROLE

On the matter of NRC participation, it is my feeling that the Congress, in setting forth the procedures of section 131, was interested in getting as broad a participation and cross-check as possible in matters seriously affecting the eventual disposition of the nuclear fuels we are exporting. There does not appear any question that Congress thought NRC had a useful role to play in this process, and I think events have vindicated that judgment.

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[1] The letter and speech referred to appear in appendixes 1 and 2.

The Commissioners did offer their views in the Kansai case, but they did so on their own initiative and on the basis of informal draft papers. The Commission as a whole was not formally consulted until after the Presidential decision to approve the request had already been taken. The ad hoc procedure followed in this case may satisfy the strict letter of the new law, in that members of the Commission were involved, but Commissions of the future may see individual comments such as those volunteered in the case of Kansai as inappropriate, or even embarrassing. If this happens the input envisioned by the Congress may not be made at all, and the executive branch will not have the benefit of our views before decisions are made.

Finally, I want to add my voice to that of Drs. Nye and Deutch on the question of spent-fuel management. It is difficult to hold to a policy of refusing approvals for reprocessing unless we develop some international alternatives for spent-fuel storage. This question alone has stimulated worldwide cynicism about U.S. motives in trying to hold down widespread reprocessing. We have said there is no economic penalty attached to forgoing reprocessing, that there is no problem in holding spent fuel for long periods of time. We have also said that we are going to pursue away-from-reactor storage and will accept for storage in this country some part of the spent fuel which has accumulated abroad. I am afraid our own lack of action on spent-fuel storage has invited the criticism we are getting.

Mr. BINGHAM. Thank you, Commissioner Gilinsky.

Mr. Bradford, do you have a statement?

STATEMENT OF HON. PETER BRADFORD, COMMISSIONER, NUCLEAR REGULATORY COMMISSION

Mr. BRADFORD. I do. Considerations of time prevented Commissioner Gilinsky and me from collaborating on a statement. I agree with much of what he has said.

I thank you for the opportunity to appear before you today to discuss the proposed retransfers for reprocessing of spent fuel from Tokyo Electric Power Co. [TEPCO] to British Nuclear Fuels, Ltd. [BNFL] and from Kansai Electric Power Congress [Kansai] to Cogema. As you are aware, the Commission formally forwarded to DOE its comments on the proposed Kansai retransfer on September 29, 1978. While I stated that I had no objection to the proposed Kansai retransfer under the current executive branch guidelines, I did make the following points:

One: U.S. control over the retransfer of the separated plutonium to other Euratom countries is not as strong as our control over transfers out of Euratom.

Two: It would be desirable for the analysis to contain some discussion of the NEPA consequences, if any, arising from the transfer from Japan to Europe.

Three: I agree with Senator Glenn's advice to the President that, if legally allowable, we should condition our approval of reprocessing upon a further confirmation by the United States at the actual time of reprocessing that the proliferation-risk standard continues to be met.

Four: As U.S. policy in part depends upon the date of the contract pursuant to which the material is being reprocessed, the date should be

determined, if possible, by U.S. reference to the actual contract in future cases.

Five: The fact that Japan has commendable nonproliferation credentials should not be taken to be part of the "timely warning" evaluation and should not prejudice separate evaluation of the eventual transfer of the plutonium out of the country in which reprocessing takes place.

Six: Approval of the current request should explicitly state that our review of any future transfer of recovered plutonium will be under the standard set forth in section 131b(2).

EVALUATION BASED ON PHYSICAL NEED

The TEPCO case is, as you know, based on a standard involving a showing of physical need, and this standard is to continue to underlie the evaluation of retransfer requests based on contracts not in existence in April 1977. The basis for defining physical need in the TEPCO case has been hard to come by. Evaluations have shifted repeatedly in recent months, and the proofs in some evaluations have not been consistent with the proofs in others. The conclusion of overriding physical need has been the basic constant, though even now the following questions remain unanswered:

One: Why is the reracking scheduled for a period of time significantly longer than that experienced by U.S. utilities in their reracking programs?

Two: Why cannot the damaged spent fuel-handling equipment be repaired or disposed of as low-level waste?

Three: Why cannot the fuel be retransferred to the basins at units 4 and 5?

Four: Presumably the TEPCO retransfer can now be justified on the same basis as the Kansai retransfer, so the proof of need is less significant than it was when TEPCO was before the NRC for comment. Furthermore, it is obviously a delicate matter to inquire into allegations of fact made by a foreign government. Nevertheless, no policy can be credible unless applications under it are carefully analyzed to be sure that the standards really fit the facts in every case. Returning repeatedly to a foreign government simply to patch up the factual underpinning of a conclusion which has already formed the basis for U.S. Government action does not seem a likely way to convince the foreign government that we take our own policy seriously.

One further point seems worth making at this time. The law requires that the NRC be consulted on individual retransfer approvals. It does not expressly require that we be consulted in the shaping of the generic executive branch policy governing retransfers. Adequate consultation was achieved in the context of the discussion of the new standard for preexisting contracts, but we are going to have to pay some attention to this area to be sure the NRC's consultative role comes before the point in time at which a generic Presidential decision has made case-by-case consultation a pro forma exercise.

PHYSICAL NEED OF TEPCO

Mr. BINGHAM. Thank you, Mr. Bradford. I think before we get into more philosophical questions, I would like to get a little more information on the table about the question of physical need of TEPCO. I do

not know whether this is particularly in your area, Dr. Deutch; I assume that it is.

The questions that I have are very similar to those posed just now by Commissioner Bradford and proposed at our hearing last week by witnesses representing public interest agencies. Perhaps you could give us first a summary of the situation as you see it, and explain why the United States appears to have gone along with a changing situation which could be construed as action taken by the Japanese utility involved to render impossible the timely reracking. In other words, it is almost as if our posture had been to allow the company to build up a case. Would you comment, sir?

Mr. DEUTCH. Mr. Chairman, I would like to try to answer your question in as quantitative detail as I can at present, and also make a broader remark about the last point that you made. It looks as if events have conspired to make the case for physical need. As you know, if I can just start with the quantitative aspect, the pool capacity at TEPCO is 820, room for 820 assemblies. Japanese regulations require the provision of full-core reserve, and that in the case of the reactor is 548. There are 151 spaces in the pool occupied by spent fuel. There are 118 spaces that are unavailable. When you add all that up, that leaves three spaces unoccupied.

Testimony before you has indicated that TEPCO plans to do reactor maintenance and repairs, in which case sometime around December they would be emptying their core into the full-core reserve spaces available at the pool. When they pull their reactor backup sometime next year they will then have a deficit if they leave out the 96 assemblies that their present operational schedule suggests will be what will be needed for recharge. They will have a deficit of some number of spaces. There are a series of considerations that one might ask; what can they do about it? Can they violate temporarily their full-core reserve? Japanese regulations do not permit that. Can they do some reracking during this period of time? Can they speed up their reracking-structures schedule? Can they transship between units at the TEPCO site?

ENGINEERING JUDGMENTS

All of these are issues that can be legitimately raised in a quantitative basis, and we are prepared to go into them. But I would like to tell you, if I can ask you for a moment, to appreciate that unfortunately many times now and in the future, because we are dealing eventually with operating engineers who must concern themselves with the prudent management of real plants rather than calculation, that frequently what we will find is that the judgment of operating engineers who know both the technical and regulatory circumstances under which they work will leave us with a case which is regrettably more ambiguous than we would like. I think we must recognize that it is very difficult to allow the perfect analysis in Washington to completely substitute for the engineering judgment of reactor managers and engineers.

So, the first point I would like to make then, is that we can invent conceivable steps that could be taken, in our judgment, that are not prudently available to the managers at the site or not permitted by Japanese regulation.

We do believe that a suggested change would either require an interruption of their normal reactor operating procedures, a change in Japanese regulation of a substantial sort, or really taking—I won't say a risk—but intervening in a way which would really put an analyst between the operating engineer and the Japanese powerplant and his own judgment about how best to work it.

So, in fact, we think a case has been made for the need for this. We know about the possible suggestions which have been made to avoid it. We do not believe that that can meet the test of what is prudently required by the operating characteristics of the plant.

Mr. BINGHAM. It does not seem you have quite dealt with my broader question of how do you prevent—if you, in effect, rely on the judgment of the operating engineer—the companies from developing a case for actual need?

Mr. DEUTCH. Sir, I didn't mean to say we do not take their judgment into account. What we try not to do is, we pass our own independent judgment on it and we do try and recognize that there are situations where an operating engineer is simply not going to deal so close to the margin as an analyst might think was possible.

If we foresaw that any specific utility anywhere in the world was arranging its spent fuel management in a way as to force U.S. reprocessing approval, I suspect that the entire executive branch would be extremely reluctant to grant such approval, and we do not believe that in the case of TEPCO, that that has happened and we do not believe that it is something which we would permit to happen.

I do not believe that is the instance confronting us today.

ACCESS TO CONTRACTS

Mr. BINGHAM. Let me turn to the kind of question presented by the Kansai case.

First of all, do we not have access to the contracts in question?

Mr. DEUTCH. Mr. Chairman, to the best of my knowledge we do not have complete access to those contracts.

Mr. BINGHAM. Do we have any access? What do we rely on when we rely on a preexisting contract?

Mr. NYE. Mr. Chairman, in the case of the contracts which involve proprietary information, we do not have access to the contracts per se. We do have formal representations from the governments involved as to what the facts of those contracts are. We are not going completely blind, we are going on the words of the governments with whom we have a longstanding relationship, and with whom we come back time and again on a number of these points.

In some cases, we may not know as much as we would like to know, but it's not nearly as blind as it is made out to sound.

I would say, in a footnote to what Mr. Deutch said about the details, that in cases where we see a company not taking any remedial steps, this is visible to us over time. As Commissioner Bradford pointed out, the point could be moot in the case of Tepco under the revised additional criteria.

I think the more important point to keep in mind is that not only is there a question of intervening between the operating engineer and his judgment of how best to run his plant, there is also a question of focusing on the larger objective which we have in mind, which is to

provide alternatives to reprocessing. In cases like this, it really depends upon our ability to produce those alternatives and to work with other governments to demonstrate their credibility. I think our ability to work with other governments is not improved by harassing for details on whether there are 3 rods, or 2 rods, in 2 to 3 square feet. We must try to focus on the larger picture, which is something that persists over time.

So I think that we should not mistake the trees for the forest, but keep an eye on the forest; if one were concerned about the forest as a whole, I think the amount of information we have is indeed adequate.

Mr. BINGHAM. Would you say that the decision on the Kansai case, or on other of these cases, would have been the same if the United States had been prepared to offer to take the spent fuel and store it in this country?

OFFERING AN ALTERNATIVE

Mr. NYE. I would have preferred, Mr. Chairman, that we had the capability to offer a better alternative. Then I think we would not have had to make the same kind of decision, though obviously when it's a decision made by the President, it's hard to speak for him on it.

But I think the ability to achieve our larger objective depends upon our ability to provide a credible alternative, which is why Mr. Deutch, Commissioner Gilinsky and I, stressed developing that credible alternative. I think if we are going out internationally to plead the case for the credibility of the once through fuel cycle and are not able to demonstrate the feasibility of that fuel cycle with either repositories or the ability to take back spent fuel in limited amounts—as the President has mentioned—then I think we are going to be faced with other cases such as these.

So while I don't know exactly how to rewrite history, I would certainly hope we will write a different sort of history in the future by moving rapidly with the study, of which Dr. Deutch is chairman, on the next steps in our implementation of the spent fuel and waste management policy.

SHIFT IN U.S. POSITION

Mr. BINGHAM. I certainly emphatically agree with you there.

I am troubled at what appears to be a shifting and a weakening in U.S. position on these matters. It seems to me that the analysis that you make particularly of the Kansai arrangement is one that is not contemplated in section 131(b)(2), that the type of reasons that you give for the President's decisions there are not the kinds of considerations that are spelled out in 131(b)(2).

Mr. NYE. Mr. Chairman, the testimony which you heard last week quoted from a section of the House report on the NNPA on page 20—the section which says:

> The committee assumes, however, that the United States will enter into reprocessing arrangements in the interim only in those cases where a compelling need can be demonstrated as, for instance, to alleviate an extremely difficult spent fuel storage situation for which no other alternative seems feasible.

What was not mentioned was the preceding sentence, which reads:

> This will attempt to achieve the same end, but allows for a certain degree of flexibility in the interim period.

As I stressed in my testimony, the guidelines which we have from the President are only for the INFCE period, which is another 18 months, and they provide us the kind of flexibility which will get an outcome in INFCE to achieve the type of larger objectives we are seeking. So we feel the administration's decisions on these cases are consistent with the nature of the act and with the nature of the House report on the act.

Mr. BINGHAM. But does this situation qualify under the words of section 131(b)(2)?

Mr. NYE. We certainly feel that it does in terms of the ability to make the finding. In reading the testimony submitted to you last week, the difficult question, and I think the important question, raised by the testimony, concerns the disposition of the plutonium after the reprocessing. This is dealt with very nicely in the speech Mr. Gilinsky has submitted to you for consideration and insertion in the record, and there I think it's important that we stress again, the criteria which we are using in that area.

CRITERIA FOR RETURN OF PLUTONIUM

We see the criteria for return of plutonium as very narrowly defined, and as requiring another MB–10. In other words, there will be another MB–10 procedure and another review by the Congress. We will be judging in such cases, on a case-by-case basis, in accordance with the provisions of the law, particularly 131(b)(2), regardless of whether the retransfer has been done in an existing plant or another plant.

We intend to treat it by the same standards as when we approach the MB–10 on the retransfer question. We will look at the intended use of the plutonium, technical alternatives to the use of said plutonium, nonproliferation conventions of the parties concerned, and the types of outcome which we hope to negotiate in INFCE, which will provide the timely warning specified in 131(b)(2).

Mr. BINGHAM. What if the return of the plutonium and other products of the reprocessing to Japan is called for in the contract, as I understand is the case with some of the reprocessing contracts made with France?

Mr. NYE. There is a letter from the Government of Japan to us recognizing this right of subsequent MB–10 procedure and subsequent right of approval of retransfer of the plutonium. Regardless of commercial contract terms, we have reserved our legal right, and we have, indeed, within the last week notified the relevant governments again of that point.

Mr. BINGHAM. The difficulty is that we clearly have that right under the presiding law. But we are not exercising that right for reasons that are now appearing to be not strong enough.

The same situation, it seems to me, may arise, and I want to say, I do appreciate the fact that the basis for the decision on Telco was changed and I appreciate the responsiveness there.

But it leaves us still with very difficult questions, it seems to me, particularly in the light of the importance that is given to a rather practical consideration of not wanting to be too tough on the Japanese because we want their cooperation on the entire procedure, and then to be sure the return will come long after INFCE presumably is over.

But the same kind of consideration of what led to approval here might lead to approval in the future.

INTERIM GUIDELINES

Mr. NYE. It may, Mr. Chairman, but again let me repeat that the criteria are interim criteria for the duration of INFCE. What our criteria will be after the INFCE period, which essentially will begin in early 1980, will depend upon what has been negotiated in the INFCE context. I think the important point is to keep our eyes on that larger context of what sort of consensus can we develop in INFCE which will allow countries which have independent technology and which, if necessary, could go in other directions without us, to see the larger interest which we share in the proliferation area and develop a common set of rules for protecting the peaceful fuel cycle from military misuse.

So again in the spirit of the Non-Proliferation Act and also in terms of what we are trying to accomplish in INFCE, these retransfers make sense. Whether this would still tend to make sense when viewed in the light of the outcomes of INFCE a year and a half from now, I don't yet know, because it depends on what we are able to negotiate internationally in that intervening period. Nevertheless, I don't think we have opened the floodgates in any sense.

As Mr. Van Doren said, these interim criteria cover a closed set, and we are going to be well within that set. In addition to that, we are using interim guidelines for the INFCE period. Our position after INFCE will depend upon what happens in INFCE. But in any case, for those few retransfers which occur in the remainder of the INFCE period, we will use for each a subsequent MB–10 procedure coming before you under the 131(b)(2) criteria. Before any disposition of plutonium occurs, if there is any disposition of plutonium, we will repeat the MB–10 procedure.

"TIMELY WARNING" PROVISION

Mr. BINGHAM. Thank you.

Mr. Findley?

Mr. FINDLEY. Thank you, Mr. Chairman.

First of all, I would like to observe, Dr. Nye, that from my limited experience in Government it seems almost in every case our interim plans and rules do become permanent. So, what you are doing in this initial 18-month period may well become the basis for what follows. That is why I am so concerned about the steps which have been taken and have not been taken.

I think the chairman shares that concern with me.

I claim a little parentage to the timely warning provision in the Nuclear Non-Proliferation Act and, as I recall, the language of the act requires that the most consideration be given to this timely warning aspect at the time a decision is made for transfer. Is that correct?

Mr. NYE. Yes, though we want to distinguish timely warning related to this retransfer for reprocessing, and timely warning related to the subsequent retransfer of the plutonium. We are addressing the first question now, and we reserve our rights on the second through a subsequent MB–10.

Mr. FINDLEY. Would you not agree that they are closely related?

Mr. NYE. Yes, they are definitely, and I should say in our appraisal of this, we feel that in terms of the location, the nonproliferation cre-

dentials, NPT adherence and INFCE cooperation of the countries, there is not a timely warning problem related to the retransfer for reprocessing.

Mr. FINDLEY. Because it has not been reprocessed?

Mr. NYE. Yes; but at the time of reprocessing in the United Kingdom we are to look at timely warning as the foremost factor in judging no significant increase in the risk of proliferation.

Mr. FINDLEY. That is years in the future?

RISK OF PROLIFERATION

Mr. NYE. Yes; but I would point out our concern is there is going to be a significant increase in the risk of proliferation. Commissioner Bradford raised the question of whether we were asking questions about nonproliferation credentials having an effect on timely warning, and I would point out that we are saying the nonproliferation credentials relate not to timely warning, but to the larger judgment of a significant increase in the risk of proliferation. Timely warning is foremost among the criteria for making this judgment. In other words, we want to make sure which statements we make are related to which aspects of the judgment.

Mr. FINDLEY. But what are the prospects today when the transfer of the spent fuel is under consideration, that the plutonium, at that later date when it is reprocessed, will be handled through a technology that assures timely warning?

Mr. NYE. Well, I——

Mr. FINDLEY. You can't give any assurance because the technology does not exist, does it?

Mr. NYE. That is right, Mr. Findley. That is why I wanted to distinguish between the retransfer for reprocessing, which is the issue before us now, in which there is, in fact, not a concern.

Mr. FINDLEY. Timely warning at the other end of the transaction is vitally important today when the initial transfer is under consideration.

Mr. NYE. That's right.

Mr. FINDLEY. How can we really be sure today that the transfer that is being approved will not inevitably result in an increase in proliferation risk?

We don't know. We have to say that, isn't that true?

Mr. NYE. We are withholding our legal rights and a formal decision before that return of the plutonium occurs, and will come before you with another MB–10 procedure at that point, which has to be justified under the criteria of 131(b)(2).

Mr. FINDLEY. It seems to me that, in the sense you are arguing, that timely warning really is not a legitimate consideration at this point, when the transfer of the spent fuel is being decided.

Mr. NYE. No; I would correct that slightly, sir, by saying it is, of course, a legitimate consideration, because it is in the law, and we have to consider it. But I would point out that the law says timely warning to the United States of any diversion well in advance of the time when the non-nuclear-weapon state could transform and divert material. Material would not return to a non-nuclear-weapons state until the second MB–10 procedure has gone through.

UNDERMINING THE ACT

Mr. FINDLEY. You are engaging in prophecy, it seems to me. You are guessing about what may, or may not, happen in the future in terms of technology, in terms of the situation and, in third countries, and I am troubled by, what seems to me, an apparent fact that the administration in the first two instances in which the Nuclear Non-Proliferation Act is being applied has actually found a way to undermine the effectiveness of the act.

Those are harsh words, I know, and I don't direct them at you personally, or at anyone at the table personally. I know there are all kinds of pressures that come to bear in the political world, especially that international political world, which are very complicated. But here we have found a way to, in a sense, to let Japan off the hook, while Japan moves away from their country, some materials that they clearly would like to get offshore.

I would like to return, if I may, for just a few more minutes, Mr. Chairman, to the question of the Kansai preexisting contracts, and to the precedent that seems to have been established here.

Am I correct that no one in the U.S. administration has had an opportunity to examine the language of these contracts?

Mr. NYE. The details of the commercial contracts, I don't believe we have seen; is that correct?

Mr. FINDLEY. You have seen only a representation of the contracts as drafted by the Government of Japan, not by TEPCO; is that correct?

Mr. DEUTCH. We have been privileged, staff has been privileged by both the individuals of the electric power companies and in certain cases——

Mr. FINDLEY. But you have not seen the language of the contracts?

Mr. NYE. That is correct, sir.

A DIFFICULT DECISION

Mr. FINDLEY. Has any official of our Government informed the Government of Japan that we face a difficult decision in considering their request for the transfer of spent fuel? That it creates complications because of our obligations to fulfill the terms of the Nuclear Non-Proliferation Act and, therefore, in order to satisfy our own obligations under the law we must, on a confidential basis, be permitted to examine the details, the terms, the actual language of the contracts. Has that question been raised?

Mr. NYE. Mr. Chairman, we have talked with the relevant officials of the Japanese Government, explained to them in considerable detail the requirements of our law, and asked for assurances on a government-to-government basis on what is in those contracts. That allows us to have the word of the Government of Japan on that without their giving out proprietary information which, I might say, is information our Government would wish to withhold, if we were in their shoes. In many other circumstances in commercial relationships we do withhold such information.

Mr. FINDLEY. But no official has actually tried to make the case that this very serious problem merits personal examination by U.S. officials on the language of the contracts?

Mr. NYE. Let me just check to make sure at staff level that has not been done.

At staff level there has been request to see the contracts. Request has been denied on the grounds that it included proprietary commercial information. In lieu of that, there has been a government-to-government briefing on their contents.

REVIEWING THE CONTRACTS

Mr. FINDLEY. When the staff made the request, did it give assurance that the information would be held in the highest confidence?

STATEMENT OF HON. HAROLD BENGELSDORF, DIRECTOR, OFFICE OF NUCLEAR AFFAIRS, INTERNATIONAL AFFAIRS, DEPARTMENT OF ENERGY

Mr. BENGELSDORF. We did ask to see the contract. We were told that these were viewed as commercially sensitive documents. I have been briefed personally by one of the utilities on the major elements of the contract.

Mr. FINDLEY. You say you did see the contracts?

Mr. BENGELSDORF. I have seen features of the contracts.

Mr. FINDLEY. I see, but not the contracts as a unit?

Mr. BENGELSDORF. I have seen elements of the contract, Mr. Findley. I don't think it's fair to say that we have had the chance to review the contracts in depth at our leisure, and analyze all of their attributes.

I think we have an understanding of what one of the contracts looks like.

Mr. FINDLEY. Let me say this: That while it may be that there could be no ultimate position for our Government to take but to accept the summation that the Government of Japan wished to make to us, while that might be the ultimate position you inevitably would reach, I am not satisfied that you have really made every effort that could be made to get the language of the contract for confidential examination. Yet I think it's important, because now you have established the precedent of permitting a government to give you an interpretation—its own interpretation—of a contract. In the future, I don't know how you are ever going to force any government or persuade any government to make available to you the details of the contract that they, for whatever reason, find it convenient to describe as sensitive or proprietary information.

I think this is a vitally important precedent that has occurred here.

Mr. Chairman, I have heard the term case-by-case review used time and again here today. How does that differ from what was contemplated originally? Whenever application would have been made, would be made, I would assume each application would be considered as an individual application. You surely don't throw them in a barrel and consider the whole barrel as a unit.

What is so different now? Why do you raise this term case-by-case review? I will tell you why I raise the question. It strikes me that this has been brought forward as a sort of a justification, or a cover for getting away from, or undermining, the original intent of the Nuclear Non-Proliferation Act.

Those are tough words, but I will be glad to have any response any of you want to make.

CASE-BY-CASE REVIEW

Mr. DEUTCH. Mr. Findley, I would like to make two remarks:

I think no one here at this table, or no one in the administration, is trying to throw back the Non-Proliferation Act. We all are very much committed to it.

Case by case does have, to me, a very vital point to accompany testimony in front of you today. We are not saying that there is a blanket waiver for everybody who had preexisting contracts whether or not we can examine it, and that is very important.

In other words, we are not saying that the fact that you had a preexisting contract immediately means that you will be rubberstamp granted an MB–10. Case by case, saying it over and over again, is to remind the public and to make it very clear that each case will still be looked at very critically, and approval will not be granted just because there was a preexisting contract.

You will have to demonstrate a very strong positive effect on our nonproliferation objectives in order to make it for approval. So, in my judgment, the case by case is a clear statement that future proposals that come to us, if an applicant says there is a preexisting contract, then that is not a reason for immediate approval, but that it would still apply, we would still apply a variety of standards spelled out. But the primary one being, does it serve our nonproliferation objectives affirmatively in granting such approval?

Mr. FINDLEY. It just strikes me on the face of it as if by launching this concept of case-by-case review, you are trading off for cooperation among the various nations, trading off some of the restrictions, the terms of the act, and that troubles me.

Mr. NYE. Mr. Findley, I would have thought the argument was the other way from every experience I have had in discussions in Europe. In Europe, there is a resentment and concern because we reserve the right to a case-by-case determination, which means they lack the predictability which they see required to have the full implementation of their contracts.

I would have thought that case-by-case determination assured in each case we would look at the criteria of our own act and that this was not something which worked against the intent of the act, but rather re-enforced it. Indeed, I would say that the question before us is, how do we make sure we are enforcing the intent of the act, and that this has been foremost in our minds. Having sat across this table from you a number of times in the formulation of the act, I am sure you would not want to say we are trying to deliberately undermine the act, but I think, on the contrary, that the exceptions which we have made in this criteria for a very limited set of contracts involving only four countries will give us a better prospect for being able to implement the intent of the act than if we were to follow the alternative course.

In all foreign policy decisions, one has to ask: As compared to what? The alternative in this case was to reject the request for retransfer. In our judgment, that would have led to a less likely prospect of our achieving the kind of outcome in INFCE that would have led to the full implementation of the intent of this act.

We may turn out to be wrong, but certainly it was not a case of wrong intent.

TEPCO STORAGE

Mr. FINDLEY. Mr. Chairman, I have a series of questions that I think need to be raised about the need for TEPCO to find other storage.

Now, I don't want to dominate the time. If we can return to that later, or I am glad to pursue it now, if that is your wish.

Mr. BINGHAM. Go ahead.

Mr. FINDLEY. I might as well start out by saying that the information that I have available to me makes me wonder if a good faith effort was made by TEPCO to provide for the storage problem that they present now as being a critical one.

When did our Government first get wind that there would be a crisis for storage?

Mr. DEUTCH. In February of this year, 1978, sir.

Mr. FINDLEY. And what was your step? Did we go to Japan, ask to talk to TEPCO, to examine the problem, to provide whatever technological help we might be able to offer in order to avert a crisis?

Mr. DEUTCH. There has been lengthy consultation since that time, exchange of correspondence, groups coming here on a variety of these subjects. We do have staff available that can trace through for you, sir, precisely the steps we went through in examining this case.

CHANGE IN TEPCO UTILITY'S PLANS

Mr. FINDLEY. In your original report, just finding the need to transfer from TEPCO, you said the utilities were to begin reracking in September, but it was unlikely to be finished by the time the reactor had to shut down in December.

Now, in your revised report you note that the utility will not even begin reracking until June. Was the United States officially notified of this significant change in the utility's plans?

Mr. DEUTCH. Yes, sir.

Mr. FINDLEY. When did that notification occur?

Mr. DEUTCH. Approximately 3 weeks ago, sir.

Mr. FINDLEY. Three weeks ago. When did the utility decide on that need for a change?

Mr. BENGELSDORF. Mr. Findley, I wonder if we can just run through the sequence that we went through at the time?

Mr. FINDLEY. Good. Fine.

Mr. BENGELSDORF. When the utilities first approached us in February, they were questioned about their plans about alternate disposal sites. If you look at their March 31 submission, they foreshadowed the prospect that they might have difficulty reracking in the period of September, October, November, prior to the scheduled shutdown of the reactor on December 1.

So, at that juncture, in March they put us on clear notice that it was questionable—given competing obligations placed by other facilities, and problems associated with a scarcity of staff—whether they could complete the reracking on time.

Mr. FINDLEY. And this was in March?

Mr. BENGELSDORF. This was in March.

Mr. FINDLEY. What did we do then?

Mr. BENGELSDORF. Frankly, Mr. Findley, we made a judgment at that time, and we did it within the executive branch, that they had presented a sufficiently credible case of doubt as to whether they could rerack by the December 1 shutdown date. We didn't want to put them at risk, so that the collective judgment which materialized and manifested itself in our submission to you in August was that we should give them the benefit of the doubt and let the proposed shipment go through.

In the interval, they informed us when we asked for up-to-date information that, indeed, their initial assessment that they could not rerack due to competing obligations of other facilities had, indeed, materialized, and that they simply could not undertake a reracking program without delaying the scheduled shutdown of the facility, which is December 1.

Now, if they delay that shutdown, that in turn impacts adversely on their ability to go through the shutdown period and restart the reactor in time for their being able to meet their summer peak power demand.

Mr. FINDLEY. So in March our Government decided——

Mr. BENGELSDORF. The decision process, Mr. Findley, took place through consultations from, I would say in April, May, June, and that interval, with the various agencies.

RERACKING

Mr. FINDLEY. Did we have experts on the scene to talk directly with TEPCO experts about this problem?

Mr. BENGELSDORF. You mean in Japan?

Mr. FINDLEY. Yes.

Mr. BENGELSDORF. No, sir.

Mr. FINDLEY. Did we make the offer to do so?

Mr. BENGELSDORF. We did not make a specific offer to help them with the reracking, because we had a feeling that they were strongly committed to reracking, had the competence to do so.

Mr. FINDLEY. I meant to deal with the whole storage problem, with the thought there might be a way to accelerate the construction of added storage space.

Mr. BENGELSDORF. I have to say, Mr. Findley, now from the standpoint of hindsight, that it was our judgment, at that time, that here was a utility that was supportive to our efforts to expand storage capacity, that they were making an across-the-board commitment to enhance storage capacity in all of their facilities.

I think we thought they had the technical competence to rerack, that they were going to do it as fast as they could. They did, however, forewarn us that there was a question whether they could do it on the desired schedule and that, indeed, has materialized.

ADDING STORAGE FACILITIES

Mr. FINDLEY. Are you convinced now that they have accelerated their construction of added storage facilities as much as possible?

Mr. BENGELSDORF. From my several conversations, Mr. Findley, I think they are committed, and are making a major effort here.

Mr. FINDLEY. But this has not been verified onsite, is that correct, by our own technicians?

Mr. BENGELSDORF. Not to my knowledge, sir, I can't say.

Mr. FINDLEY. Is it a proprietary interest problem again? Surely not. Mr. Chairman, I have proceeded too long, but I will withdraw.

Mr. BINGHAM. Mr. Whalen.

Mr. WHALEN. Thank you very much, Mr. Chairman.

The Commissioners have been very quiet. I would like to pose a question to them:

What role did you play in the decisionmaking process? Specifically, were you consulted, did you have an opportunity to raise some of the questions which I understand you already posed?

Mr. GILINSKY. The TEPCO application was forwarded to the Commission in accordance with procedures outlined in the act, and Commissioners commented on it. It turned out there was a difference of view among the Commissioners. In the other case, the Kansai case, there was a larger issue of guidance which is to be followed in a class of cases and there was also a specific request.

The Commissioners, on their own initiative, wrote letters to the President on the broader question and participated in that way. The retransfer request itself was submitted to us after the President made his decision, and the Commission acted on it speedily. I happened to be away at the time.

Mr. WHALEN. You say the one was presented after the President made a decision?

Mr. GILINSKY. The Kansai request, yes, although as I said, the Commissioners did participate in, or did present their views before then, before it was submitted formally. That was the point I was trying to make in my testimony earlier.

Mr. WHALEN. How are these views presented, in written form?

Mr. GILINSKY. Insofar as the views of the Commission are concerned, they are presented in written form. In both cases where formal consultation was sought, letters setting out Commission views were sent over to the Department of Energy over the signature of our International Programs Director.

Mr. WHALEN. Were separate views given by each Commissioner, or two sets of views?

Mr. GILINSKY. In one of the cases, in the TEPCO case, there was a difference of view and, therefore, there were two sets of views, yes.

Mr. WHALEN. Mr. Nye, I think you addressed it in another context, but supposing the decision had been not to approve the transfer, what would happen?

CHANGING RULES IN MIDSTREAM

Mr. NYE. I think the effect of not approving the transfer would have been to create a sense of injustice, of inequity, that we had come along to change the rules of the game governing the nuclear fuel cycle in midstream, causing great difficulty for countries who had large investments, and regarded this as essential to their energy security, and who did not evaluate the proliferation risk as highly as our Government has evaluated it.

Indeed, we realized, and said at the time of the President's change of policy at the beginning of 1977, that there was a considerable difference among nations, which is why the seventh point of the President's April 7, 1977, statement called for an international nuclear

fuel cycle evaluation, which one can see as an international technology assessment.

This is an effort for different countries with different perceptions to try to share their views on what the risk is on one side of proliferation that is inherent in certain types of fuels and aspects of the fuel cycle, and, on the other side, the risk of energy insecurity, which is a very real concern to a number of other countries.

We feel that during the period of the fuel cycle evaluation there has been an increased awareness by all parties of the relevant risks each faces, and that the best prospects for coming to terms with the problem of proliferation, and particularly keeping the peaceful fuel cycle as distant as possible from military misuses, must lie in getting cooperation from other governments because there are at least six other governments with major investments in plutonium technology, and there are at least 20 other governments with major investments in nuclear technology.

A BROADER VIEW

For the United States to shut itself off from these other governments and say we will do it our way and the rest of you can go your own way, would be very much like an ostrich with its head in the sand. To use another metaphor I have taken before, this would be a Pontius Pilate policy, in which we might feel we had very clean hands, but minimal effectiveness.

If we were to take positions such as that in relation to the Kansai case, this would have created a sense of injustice and inequity, a lack of understanding of the concerns of the other governments, and would have prevented their cooperation in reaching a satisfactory outcome in the international nuclear fuel cycle evaluation and in investigating prospects for international spent fuel storage. Then we would have been less able to carry out the full intent of the act which you passed.

That was a considered judgment based on 1½ years of working in this area, and I would argue it is, in fact, the correct judgment.

I would also argue that when we look at these cases we should notice that the criteria which we have set out are deliberately designed not to open the floodgates, to meet this sense of justice when the rules of the game were changed in midstream, and help us in moving toward an agreement in the international fuel cycle evaluation. Within those criteria, I think we have a better prospect for moving ahead and getting the objectives you want than if we were to take the alternative path of simply sitting at home and denying the requests.

Mr. WHALEN. In other words, the decision, as I interpret your remarks, was predicated on the broader view than just the impact of the two companies involved.

Mr. NYE. That is correct, sir.

Mr. WHALEN. What would have happened had the reverse occurred? Forgetting the implication you have just cited, how would they affect the companies?

Mr. NYE. I think in the case of companies involved, it would have led them to incur severe financial penalties. It would also have led them to difficult situations, in terms of promises they had given, to remove the spent fuel which were predicated on contracts which had been signed before our policy change.

In that circumstance the companies would have suffered considerable loss. But I would argue that our judgment was based on the

larger concern, or larger situation of equity, and how that affects our ability to get other governments to cooperate with us in reaching a joint solution. This goes beyond the narrow details of the companies concerned. We were concerned about such details, but it was in the context of the larger issue.

Mr. WHALEN. In other words, you are facing a decision on the equity risk rather than safety risk, is that the way I understand it?

Mr. NYE. No, sir.

Mr. WHALEN. Another interpretation might be that all future key decisions will be based upon the principle of not changing the rules in the middle of the game.

INTERNATIONAL FUEL CYCLE EVALUATION

Mr. NYE. No, sir. As we have stressed, this is guidance for the interim period of the international fuel cycle evaluation, while we and other countries jointly evaluate the rules of the game to see whether we can get agreement on changing those rules. The question of timely warning in relation to the reprocessing and when the non-nuclear-weapons states will have access to the material does not arise in this case because, as you know, the reprocessing will be done in a weapons state. The question specified in the law as to safety in terms of a timely warning of the non-nuclear-weapons state having access to the material will not arise until after the international nuclear fuel cycle evaluation period. At that time we have a legal consent right, and will go through a similar type procedure, such as the one we have today, at that point.

So we have not neglected the safety concern. What we have done is try to focus on the larger picture of how do we achieve our overall objectives. Rather than counting the trees in the forest, I would say if we get too deeply into questions of the veracity of another government and questions of the competence of another government, such as how fast can they rerack and intervening in the intimate details of their domestic operations, we will probably produce the type of harassment which cuts down a few trees but really loses the forest.

So I would like to make sure that the testimony we are giving is put in a larger context. We are not basing this case in terms of each tree; we are speaking in terms of achieving the objectives of the Non-Proliferation Act which you set forth; we believe this is wise procedure and fully in compliance with the law that you passed.

Mr. WHALEN. I gather your interpretation is that the act is aimed at the trees and not at the forest?

Mr. NYE. No; I didn't say that, sir.

Mr. WHALEN. That is my interpretation.

Mr. NYE. I said one could misapply the act to hit a few trees and miss the forest, but I think we are trying to apply it in the larger spirit of the act.

Mr. WHALEN. I guess the fundamental question we face is when are we going to get serious, and when is the international community going to get serious about the question. I don't see any turnabout on the part of other governments.

Mr. NYE. Sir, I would argue that that seriousness has already occurred.

Mr. WHALEN. I think it is on the part of the Congress.

Mr. NYE. As you probably also are aware, though, the President has suffered a great deal of criticism, a great deal of friction with other countries with whom we share close relationships, because of his strong views in this area.

It's also a case in which we feel that by setting up the international nuclear fuel cycle evaluation we have been able to get other countries to look more seriously at our assessment of the risk associated with certain aspects of nuclear technology. I would answer your question, that is, when we are going to get serious, that we have gotten serious, and it goes back to the beginning of this administration.

When is the rest of the world going to get serious? I think that has already been done; it's a slow process, but it has begun.

Mr. WHALEN. Thank you, Mr. Chairman.

Mr. BINGHAM. Dr. Nye, you are a distinguished lawyer, among other things.

Mr. NYE. No, sir, that is Mr. Van Doren, he is the distinguished lawyer.

AVOID SETTING BAD PRECEDENTS

Mr. BINGHAM. Doesn't the case-by-case process necessarily lead to the establishment of precedents?

Mr. NYE. I think it does. What we have done by spelling out this criteria, is to limit the nature of the precedents to a very carefully circumscribed subset of the possible spent fuel contracts that have been signed. In other words, there is a danger, and there was a concern, which I think your letter has helped identify, of not putting our justifications in forms which would set unfortunate precedents. The criteria which I outlined at the end of my testimony were designed specifically to avoid setting bad precedents.

Mr. BINGHAM. But you would have to agree, that to the extent that the cases arise where the facts are somewhat similar to these cases, that the decision of the United States would have to be the same as it had been here.

You couldn't be tougher in the future than you have been in these cases?

Mr. NYE. Well, these criteria will cover, during the interim period of INFCE, preexisting contracts, in four countries in which the residual amounts of spent fuel to be transferred during the INFCE period is probably around a total of 900 tons.

Mr. BINGHAM. How much?

Mr. NYE. Roughly 900 tons, I think we can get a rough approximation of this in terms of the four countries which I have mentioned to you. There were 2,400 metric tons of uranium under preexisting contracts.

If we look at that, some 420 tons of that have already been transferred. Of the remaining 2,000 tons, we feel that from our estimates, roughly 900 tons or so are available during the period we are discussing, which is the remaining 18 months of the INFCE period.

But within the upper limit figure of roughly 900 tons there is a question of whether all those will be approved. Since we will continue to stress reracking, and since we will also not necessarily approve automatically, but will relate the approvals to cooperation in achieving common nonproliferation objectives, we do not expect all of that necessarily to be approved. That is why we have specified the criteria

in the terms I discussed before. Mr. Van Doren was able to say this is a limited, finite set, and we hope to stay within the boundaries of that set.

Mr. BINGHAM. Has there been any spent fuel case so far where the answer has been no?

Mr. NYE. Yes, there have been cases. Let me just check them.

A case involving Sweden and a case involving Spain.

TIGHTENING GUIDELINES

Mr. BINGHAM. When you speak as you do of these being interim guidelines, are you suggesting that it may be possible after the period of INFCE to tighten the guidelines?

Mr. NYE. That certainly is a possibility, sir. I think the question of how we would want to handle the spent fuel and retransfers, will depend upon the agreed criteria which are negotiable from the INFCE countries and our ability to offer a viable alternative to reprocessing.

That can certainly affect the type of guidelines which we would want to have in that time, and I don't foreclose the prospect they could be tighter guidelines.

AUSTRIAN REFERENDUM

Mr. BINGHAM. I would like to turn now to a different topic which was raised in my letter asking you to testify, but which has not been mentioned by any of you.

Let me read the paragraph from my letter with respect to the referendum coming up in November of approval for nuclear facilities in Austria:

> With respect to the Austrian referendum, the subcommittee seeks detailed information as to whether silence by the U.S. Government on such issues as reprocessing and subsequent storage of spent fuel from the Austrian reactor may seem to imply support by the U.S. of the Austrian Government's position with respect to the Zwentendorf reactor. Also, what assurances, if any, have been made to the Austrian Government's position with respect to storage of spent fuels from the Austrian reactor should it go into operation? How do any such assurances conform to the policies set forth by President Carter pledging consideration of the option of return to the U.S. of spent nuclear reactor fuel for storage? If no assurances have been made, what are U.S. policy and plans with respect to storage of the Austrian spent fuels?

Mr. NYE. Mr. Chairman, on the Austrian question, as I mentioned in my testimony, the President has taken a position that we are not trying to interfere with other countries' nuclear energy programs. So we have taken no position on the Austrian referendum.

The concern that we have in relation to Austrian spent fuel, is that there not be any movement of U.S.-origin spent fuel without our approval. That in fact is the situation. No commitments have been made to any country that indicate U.S. approval of reprocessing or retransfers or reprocessing outside the criteria which I described today.

There have been informal discussions with the Austrian Government in the context of our renegotiation of our agreement for cooperation. For example, what if there is no available alternative? There we have told the Austrian Government, as we have told other governments, that the options are storage in their own country, storage in the United States if practicable, and storage in an international repository in ac-

cordance with internationally agreed arrangements to which Austria and other governments, including the United States subscribe.

STORAGE TERMS

To put that in simplier terms, we are holding off any idea of reprocessing, except as a last resort. We far prefer to demonstrate the credibility of the once-through nuclear fuel cycle which means that we believe the options of storage in their country, storage in the United States, or storage in an international repository come first.

So in that sense we have made clear that we believe there are other alternatives. If for some reason all those alternatives were wiped out and we are in the year 1986, or whenever they would become relevant, then at that point there is a theoretical possibility that the Austrians might need to send their spent fuel to France, the United Kingdom or a mutually agreed third state for reprocessing.

In that instance we would consider the situation again, but we have made it clear to them that our preferences are in the order which I stated to you.

Mr. BINGHAM. Dr. Nye, I am happy to hear you say this here today in an open hearing. Those who within Austria are opposed to the development of nuclear power have stated that the U.S. Government is pursuing a policy of silence on these issues which is really assisting the Austrian Government in its position in favor of an affirmative reaction on the referendum.

Your opening statement here today, I think, meets that concern. Is this the first time that that statement has been made publicly?

Mr. NYE. I don't know that there has been any public statement on it. I would also note that my statement is coupled with our desire to stay out of the Austrian referendum. We regard that as a decision for the Austrian voters to make, and not the decision of the United States. The issue relates to the United States only with regard to the disposition of U.S.-origin fuel. We have sent them alternative ways of disposing of the spent fuel with our clear preferences stated.

Mr. BINGHAM. I understand that, but also isn't it incumbent upon us if there is any indication that the Austrian people are being misled as to what the U.S. position is, that we should make clear what the U.S. position is on such issues as retransfer and reprocessing?

Mr. NYE. I think the statement today will help to make that clear. We certainly have made that statement to the Government of Austria in prior communications.

Mr. BINGHAM. Thank you.

Mr. Findley.

OBLIGATIONS TO JAPAN

Mr. FINDLEY. Dr. Nye, could you shed any light on the extent of our obligation to Japan to approve transfer of spent fuel? Are we obligated to go along with transfers of spent fuel for the entire interim period?

Mr. NYE. No, sir, we are not obligated. As I mentioned in our previous exchange, one of the benefits of taking it on a case-by-case basis is that there is no obligation. Each case must be looked at anew.

We have then expressed the criteria which would limit how we approach these cases, to those in the limited set of preexisting con-

tracts. Within that limited set of preexisting contracts, we have further confined the criteria to those countries where we have an understanding that the Government is helping to work on more proliferation-resistant methods of disposition of the spent fuel and seeking to help us in achieving nonproliferation objectives.

In addition, there is the physical need criteria which stands as a test. So, essentially, the answer is no, sir.

Mr. FINDLEY. We have approved only the transfer of certain quantities of spent fuel that are now in the prospect in the immediate future?

Mr. NYE. That is correct, sir.

Mr. FINDLEY. Have we notified the Government of Japan that they should accelerate their efforts to expand storage capacity in order to meet any emergencies that may arise in the near future?

Mr. NYE. Yes, sir, we have done that on a number of occasions.

Mr. FINDLEY. Is that a condition of approval of this transfer?

Mr. NYE. The condition is stated in the criteria that efforts be made to increase storage capacity.

Mr. FINDLEY. Is Japan going forward now with the construction of added storage capacity?

Mr. NYE. I believe so, but let me check and make sure I don't mislead you. Yes, sir, they are both doing reracking and looking at additional pools. I think of equal importance, they have agreed to discuss with us the question of developing an international spent fuel repository.

Mr. FINDLEY. You say they are looking at additional pools but they have not committed themselves to the construction of additional pools?

Mr. DEUTCH. It is my understanding, Mr. Findley, that not only are they reracking and doing so aggressively, but at their newer reactors they are adding a larger amount of capacity per reactor in those cases where they are locked into an old one.

Mr. FINDLEY. Has the Government of Japan given you assurance that they will not need to come back for approval on retransfer during the interim period of additional transfers?

Mr. DEUTCH. Of spent fuel?

Mr. FINDLEY. Yes.

Mr. DEUTCH. They have not, sir.

Mr. FINDLEY. Have we asked for that assurance?

Mr. DEUTCH. No, sir.

Mr. FINDLEY. Why not? It would seem to me a very logical question to raise.

PREEXISTING CONTRACTS

Mr. NYE. That would raise the same questions which we have addressed in the Kansai case and explained before you.

Mr. FINDLEY. Preexisting contracts?

Mr. NYE. Preexisting contracts involve the question of penalty and the question of promises made on the basis of preexisting contracts. That would not be affected by the reracking. The grounds on which this was decided still stand. So there is a difference in that instance between cases based on reracking and cases based on preexisting contracts.

Mr. FINDLEY. I don't believe your letter to Chairman Zablocki mentioned the problem of preexisting contracts.

Mr. NYE. That is correct, Mr. Findley. That is the letter of January 25. At that time this issue had not arisen. At that time we were using the criterion only of physical congestion.

Mr. FINDLEY. There, again, it troubles me that we have let proprietary interests, preexisting contracts, what would seem on the face of it to be purely commercial considerations, stand in the way of nuclear nonproliferation advance. That, frankly, is the way it strikes me.

Mr. NYE. I can assure you that the commercial consideration is not the driving force. I joined in the recommendation which went to the President on this and I can assure you that my feeling about the commercial consideration of this was very, very tiny, if not zero.

Mr. FINDLEY. How about today?

Mr. NYE. I want to see a situation in which we are able to get cooperation from the other governments in leading to a more poliferation-resistant fuel cycle. In the sense of unilateralism, injustice, changing the rules without consideration of other countries, a disapproval of these requests will not lead to that consideration.

LEGAL REQUIREMENTS

Mr. FINDLEY. The legislative history of that act took no notice of the commercial problem of preexisting contracts.

Mr. NYE. That is correct, sir. The policy guidance on this is the President's policy guidance. The criteria on retransfers and reprocessing are additional to the requirements of the law.

As I specified in my testimony, there are two requirements laid down in the law. We have met both those requirements as laid down by law. There was then an additional criterion laid down by the President's policy guidance.

In achieving our larger objectives and the objectives at which the law aims, we thought it wise to add the criterion of preexisting contracts for the interim 18-month period.

Mr. FINDLEY. Dr. Nye, I would assume that we would have today quite a large-scale reprocessing in spent fuel were it not for the absence of timely technology. Is that a fair statement?

Mr. NYE. Well, I am not sure, sir. There was a conventional wisdom in the nuclear industry that we would all move in this direction. But I think particularly with regard to reprocessing for recycle in thermal reactors, in fact the economics are against it, as well as security concerns. When we look at reprocessing for recycle and thermal reactors, it turns out to be marginally beneficial at best and possibly negative. For these reasons, it is not at all clear that it is technology holding us back in that area. It does mean that before we move into future questions of breeder fuel cycles, we should be working on institutions and technologies to increase degrees of proliferation resistance.

HANDLING AND SHIPMENT OF PLUTONIUM

Mr. FINDLEY. What happens once the fuel has been reprocessed and the plutonium separated if arrangements to secure timely warning and effective safeguards are not yet in sight?

Is the United States prepared to insist that plutonium in that circumstance remain in the weapon status until a timely warning can be satisfied? Have we faced that question yet?

Mr. NYE. We have faced it in the legal sense in that we have reserved our right of consent. The answer to how that will be implemented, if implemented at all, will depend upon the type of agreements which we reach in the fuel cycle evaluation on the handling and shipment of plutonium.

Mr. FINDLEY. It could well be that at that stage Japan would be in a situation where it would press very hard to get its plutonium back.

Are we prepared to face up to the pressure of that? I am asking you to engage in prophesy.

Mr. NYE. We feel there is no way in which one can protect against significant proliferation risk, I think we will take a very hard line. If we feel there are accomplishments which have been reached institutionally and technically which will allow us to protect against proliferation risk, then I think we would make accommodations along those lines.

So I must answer, my prophesy depends.

Mr. FINDLEY. Mr. Chairman, I have several questions that may be asked in the process of the hearing, but if they are not, I would like unanimous consent for Dr. Nye to have the opportunity to answer these for the record.

Mr. BINGHAM. Without objection. But the gentleman may proceed.

BRITISH AND FRENCH REQUIREMENTS

Mr. FINDLEY. Well, will the British and French insist that Japan take back all of the waste created during the act of reprocessing, including even a share of the plant's totally fluid product? Has that question been faced?

Mr. NYE. I believe on the new contracts which have been signed, which are not at issue today, the British and French do require taking back the waste products.

Mr. FINDLEY. All the waste products?

Mr. NYE. I believe so.

Mr. FINDLEY. That applies to the French as well as the British?

Mr. NYE. I believe so. I will have to check on that, but that is our understanding.

Mr. FINDLEY. I had heard the French had overlooked that stipulation, but the British had established that principle.

Mr. NYE. I think that is true for the contracts that have been signed recently. I am not sure it is true for some of the earlier contracts, though there may be efforts to add those conditions to the earlier contracts.

I think that reinforces our case which is that there are better alternatives from both ecological and an economic point of view to reprocessing. There is the fact that the political questions associated with the removal of spent fuel are not resolved by reprocessing and that you get the waste back, indeed may even get a higher volume of waste back, that adds substance to our position which is that this is not the best way to be going.

Mr. BINGHAM. Would the gentleman yield on that point?

Mr. FINDLEY. Yes, certainly.

Mr. BINGHAM. Do you happen to know whether the Japanese people are aware of this requirement in the current contracts that the ultimate waste be taken back?

Mr. NYE. I don't know whether the Japanese people are aware of that. Certainly the Japanese Government officials that we spoke with are aware of it. We have also made to those government officials and continue to do so the point I just made in reply to Mr. Findley.

Mr. FINDLEY. Has our Government at any point given any assurance, obviously private, to the French Government that we would look favorably upon enough reprocessing requests to maintain the operation of at least the existing portion of the Hague facility?

Mr. NYE. In the international nuclear fuel cycle evaluation communique there is a statement which says we will not interfere with existing programs. In addition, at the time of his April 7 statement, President Carter made a statement that we would take into account existing programs; that has been repeated to the French Government.

Mr. FINDLEY. And that is viewed as an assurance of enough spent fuel to keep the reprocessing plant operating?

Mr. NYE. I think in terms of existing plants there is a clear understanding which was expressed publicly in the INFCE communique that there will not be interference with existing plants. In our understanding, that reference is to the UP–2 facility at La Hague.

CHANGING THE RULES

Mr. FINDLEY. Did our Government see that as essential to get the French to cooperate in the international fuel cycle program?

Mr. NYE. Yes, in the same sense we mentioned earlier, that in changing the rules of the game and trying to get others to join us in developing new rules to the game, a larger sense of justice is necessary to secure that cooperation.

Mr. FINDLEY. Thank you, Mr. Chairman.

Mr. BINGHAM. Further, with respect to that, the Japanese have entered into very large financial commitments to assist in the construction of these plants both at Windscale and La Hague; is that correct?

Mr. NYE. Yes, sir, that is our understanding.

Mr. BINGHAM. Do you know what the sums are, approximately?

Mr. NYE. Our rough estimate is that it is over $1 billion each—both the British and French situation.

Mr. BINGHAM. Have we made any efforts to discourage that type of commitment?

Mr. NYE. Yes, sir. We have expressed to the governments involved, the fact that our case-by-case approval seems to us inconsistent with such long-term commitments. We have also expressed the fact to the Government of Japan that there is no precedent from the cases which we are now approving under preexisting contracts which affect those new contracts, which you refer to having these financial aspects.

Mr. BINGHAM. But the Japanese are, nevertheless, going ahead. It is going to be very difficult for us to say no to future requests if they have invested hundreds of millions of dollars in those plants.

Mr. NYE. Well, sir, we have a very clear record, if you want timely warning in this case, about the rules of the game. The best chance of that type of difficult confrontation in which we would have to fall

back upon our previous warning is to look for the type of cooperative solution in INFCE which I have stressed.

JAPANESE NUCLEAR POLICY

Mr. BINGHAM. Some of the suggested acts of cooperation by the Japanese that you have mentioned, seem to me to be merely actions in their own interests; for example, cooperation in the search for storage facilities in the Pacific. Is that something that they were reluctant to do and we had to use leverage to persuade them to do?

Mr. NYE. Well, sir, I think in the Japanese Government's view, they had already found a solution to the problem. What we were trying to convince them was that there were alternative solutions which might in fact be in their larger interest, as well as in our interest, and indeed in the larger global interest.

I think when a government is set on a course of action that is reinforced by contracts and a great deal of past history, even though something may be in their interest, it is not always immediately apparent. So we have indeed been trying to make the case to the Japanese Government, and other governments, and continue to do so in INFCE that there are better ways both from an economic and ecological point of view.

In that context, while we have been making these points generally, the undertaking of discussions of international spent fuel repositories is, I think, a very useful step forward.

AUSTRIAN-COGEMA CONTRACT

Mr. BINGHAM. I would like to turn for a moment to the Austrian situation. You indicated just now that you thought there would be some time before there would be any shipments of spent fuel out of Austria. I am under the impression that the Austrian contract with Cogema calls for deliveries to start in 1981. That would seem to be in conflict with what you have said.

Mr. NYE. As I understand, it is a new reactor and so there probably would not be spent fuel to be removed before 1981 which is, as I said, after the INFCE period is over. So we don't believe it will be before the outcome of the INFCE period.

Mr. BINGHAM. I understood you to speak of a larger period.

Mr. NYE. I think the larger amounts would be spaced out over the 1980's.

Mr. BINGHAM. Do you have any information that you can give us at this time, about discussions between the Austrian Government and the Egyptian Government with regard to this disposal of wastes in Egypt?

Mr. NYE. Yes, sir. We have informally discussed this with the Austrian Government. They have been discussing with the Egyptian Government the prospects of storing waste materials after reprocessing, in the Egyptian desert, if at some point in the future reprocessing were approved. We have indicated to both those governments, as well as to others, that we would not approve storage of spent fuel before reprocessing in a number of locations, of which that is one, and that we would only agree on storage of waste if we had agreements for cooperation with the countries involved and if there were no significant strategic value to the waste materials.

So any responses that we have given have been on a purely hypothetical basis. As I understand it, it is still on a hypothetical or exploratory basis between the governments concerned.

Mr. BINGHAM. No agreement has been reached?

Mr. NYE. To my knowledge there is no agreement. Let me check. No, there is none.

Mr. BINGHAM. Why do you feel that there is not a risk involved in storage of so-called high-level waste?

Mr. NYE. Well, I should allow Dr. Deutch to answer this as a distinguished chemist, but in our preliminary look at this in the context of the INFCE working group 7 on waste, our view is that the amount of special nuclear materials involved in the waste after reprocessing are of such small amounts and so difficult to recover that they do not pose a proliferation risk.

Mr. BINGHAM. Is the proliferation risk the only risk there? What about some deliberate spreading around of that material by terrorists?

Mr. DEUTCH. Normally, Mr. Chairman, the high-level wastes from reprocessing operations do not contain fissionable material. Of course, they still contain highly radioactive material which, unless it is stored, disposed of and cared for with the greatest prudence, would serve to be a both short-term and long-term risk to people in the area.

This Nation, of course, has a great interest in encouraging any long-term disposal of high-level waste to be carried out with great prudence anywhere it happens in the world.

Mr. FINDLEY. May I ask just one question?

Mr. BINGHAM. Surely.

PRESIDENT'S TASK FORCE

Mr. FINDLEY. Dr. Nye, I notice in your statement on page 11, you refer to the President's nuclear waste management task force which will have recommendations in early October, or at least recommendations for public comment in early October.

Did you consider delaying decision on a request for transfer until that task force could have a chance to settle down on a recommended course of action? Would that not be an important factor to take into account as we make decisions on these requests?

Mr. NYE. Mr. Findley, I should answer briefly and then return to Dr. Deutch who is chairman of that task force.

But, no, we did not want to delay because the penalties involved would be incurred before the task force report. The nature of the political process in this country which has led us into, let's say, the great deliberation of how to implement the President's spent fuel policy did not make us think that we could take that option, or regard that option as a real one for the immediate future. But on the timing of the task force report, it would probably be useful to ask John Deutch, since he is here and he is the chairman.

Mr. FINDLEY. First of all, can you tell us what the penalties involved are? Did you at least get that detail?

Mr. NYE. Yes, sir. We had the information from the governments concerned that they were in the order of $20 million for this shipment.

Mr. FINDLEY. Would you explain how the penalty would come into being as a result of what factors?

Mr. NYE. Maybe Mr. Van Doren has the details.

JAPANESE CONTRACTS

Mr. VAN DOREN. As I understand it, it was a take-or-pay contract under which they had an obligation to ship this spent fuel to the reprocessor and he was reserving a place for it. The reprocessor said if you fail to ship it, you are going to have to pay anyway. That amounted to $20 million.

Mr. FINDLEY. So the contract obligated the Government of Japan to find a means for transferring spent fuel?

Mr. VAN DOREN. Actually there were two contracts. One was an obligation to the reprocessors to send it to them, and the other was a transportation contract, so they would also have a penalty to pay for that. They reserved this vessel to take the spent fuel to Europe. If they can't ship it, they incur the costs for use of this vessel anyway.

Mr. FINDLEY. Could you tell us the extent to which the Government of Japan is financially involved in the operation of Tepco?

Mr. VAN DOREN. I don't believe at all. I think it is a commercial company.

Mr. FINDLEY. If there is not any close alliance and the power industry in Japan was the public sector, it is the only aspect of this economy in which this doesn't exist, to my knowledge.

Mr. VAN DOREN. I am sure the Government of Japan takes into account the interests of its companies.

Mr. DEUTCH. Mr. Findley, I have recently returned from Japan where I was on another matter. But I would like to try and convey to you that it is certainly not a few million dollars involved in a commercial transaction that is at stake here. The Japanese Government, the officials whom I spoke with, certainly feel extremely strong about this matter, as does our Government. There is a major division of opinion.

But a rejection of this, what they regard as a good faith proposal request for retransfer, would have been a major, in my mind, it would have had a major impact on their whole view not only of our relations with them in the nuclear policy area, but also would have led them to, might well have led them to evaluate other courses of actions for dealing with their nuclear problems.

So the point I wanted to convey was that the reason for prompt consideration of this matter is not so much a certain number of dollars whatever that might be, of two commercial venturers, but the very serious attitude the Japanese Government has toward the relationship of the United States in the sensitive area.

Mr. FINDLEY. Does the Government of Japan contend that our Government had a preexisting obligation to cooperate with them in this regard?

Mr. DEUTCH. They certainly claimed that while they knew that MB–10's of course, predate the Non-Proliferation Act, they knew that such a request was required. They do feel that having entered a good faith contract before the rules of the game changed, that such provision should be granted.

STATE DEPARTMENT LETTER TO CHAIRMAN ZABLOCKI

Mr. FINDLEY. Thank you, Mr. Chairman.

Mr. BINGHAM. Dr. Nye, isn't the stress on preexisting contracts a relatively new rationale for approval of retransfers? I don't recall its

being mentioned at all in your letter to Chairman Zablocki of last January in which you set out the basis for retransfer approval.

Mr. NYE. That's correct, sir; it's not in my letter to the chairman. It has arisen as something which we have had to deal with subsequently. And the reason we have dealt with it is because of a sense of justice and the need for developing the type of cooperation which we regard as essential for a successful outcome of INFCE. It is true it has arisen and taken this concrete form since I sent the letter to the chairman.

Mr. BINGHAM. Was this consideration passed by in connection with the denial of the retransfer request from Sweden? At that time the preexisting contract rationale was not in use, is that correct?

Mr. NYE. I believe the Oskarshamn reactor, which was at issue there, had not yet started up, and there was not an immediate problem. But let me just check that. It was a preexisting contract but that criteria did not exist at that time and there was also no immediate need in the sense that there was not a major storage problem.

Mr. BINGHAM. Do I understand then, that immediate need remains to be a criterion in some cases, but not in others?

Mr. NYE. We are continuing to stress need in the sense of spent fuel congestion and continuing to urge other countries to take steps such as reracking to avoid that problem. That is the criterion which applies to contracts entered into after April 1977.

There is another criterion which is a very limited set. For the four countries who have contracts prior to 1977, there is the possibility of MB–10's being granted on the terms I mentioned in my testimony where there is assistance in exploring more proliferation resistant methods of disposition of spent fuel and agreement to work with us in achieving common nonproliferation objectives.

Mr. FINDLEY. Could I ask one more question, Mr. Chairman?

Mr. BINGHAM. Yes.

Mr. FINDLEY. Dr. Nye, are there other problems similar to this which can come downstream in the next 6 or 8 months?

REQUESTS FOR RETRANSFER

Mr. NYE. There will, we believe, be other requests for retransfers and I tried to give a rough approximation of the numbers. The outer bound of the problem is somewhere under 900 tons. There will in fact, be cases under preexisting contracts which will come over the next 18 months.

Mr. FINDLEY. What are we doing to help those countries out of their jam, so we are not confronted with a request for transferring?

Mr. NYE. That to me is the central issue, and I am delighted we have come back to it, because it really goes to the task force John Deutch is chairing, and the importance of this.

We have been sufficiently locked up in this country on a number of legal procedure and environmental issues, all of them just and important in their own right, that we have not demonstrated the ability to close the once-through fuel cycles with spent fuel storage as a credible alternative to reprocessing, nor have we demonstrated an ability yet to implement the President's offer to help others who face similar problems by taking their fuel here on a limited basis.

Unless we face up to those hard decisions and realize that we are going to have to cut our way through some of these problems, and

trade off some values against others, I think we are going to be strained in our ability to avoid such situations in the future.

Mr. FINDLEY. Is the task force operation the only thing we are doing in order to avoid a crisis with X country and Y country and Z country?

Mr. NYE. In addition to the task force, we have a generic environmental impact statement on foreign spent fuel being prepared which should be ready in the next month. But I think probably the best person to answer that is sitting to my right, and I really would urge the committee that in its efforts to constrain this reprocessing situation, over which we share your concern, to transfer this energy and effort to help get this spent fuel policy moving forward in the Congress.

FOREKNOWLEDGE OF TRANSFERS

Mr. FINDLEY. Before you turn the mike, it would seem to me that you would have a pretty good idea of what country is going to ask for a transfer for whatever reason, preexisting contracts, shortage of storage or whatever. And it would seem to me also that having the foreknowledge you would be getting experts over there right now to help them out of that tangle, even on a temporary basis, reracking or building additional pools, or whatever, and not waiting for the next technological step. Is that being done?

Mr. NYE. I know of at least one country where we are doing something about that, but let me check the details.

Mr. VAN DOREN. We have, in fact, made quite a bit of progress with the Spanish and Swiss in their own reracking efforts. We have urged them to do it, and they are, in fact, doing it, and we certainly made the political point and they have taken it.

Mr. FINDLEY. It seems to me this distressing experience which we are now acting to solve, or you have been acting to solve, I should say, would be worthwhile if it would lead to action to forestall the problem in the future. Surely with 6 or 8 months you could correct whatever emergency problem may be going to come on downstream during this interim period. I would appreciate it if, in the record, you could put details of countries where you expect a problem to arise, and also give specifics on what is being done now by our Government to help those countries avoid the crisis.

Mr. NYE. We will provide that information for the record, sir, but I still would like to emphasize the importance of our doing something at home rather than just abroad.[1]

Mr. FINDLEY. Right. Of course, but as a major act, and I presume your decision to approve the transfer you regard as a major step, not something that you welcome as a matter of course of business.

Mr. BINGHAM. Dr. Deutch, I would like to have your comments on that. I said earlier I share Dr. Nye's emphasis on this subject.

In looking at alternatives at this point, this is about the only alternative that we see other than the kind of action that Mr. Findley just suggested.

We here in the Congress are obviously concerned with the way things have been going, and the act does not give us the authority to exercise any kind of veto. I think the general tenor of this hearing

[1] The information requested appears in appendix 2.

indicates that great concern. I know it is shared by some Members of the Senate. I thought one or two interested Senators might be here this afternoon. They asked if they might come, and I told them they would be most welcome, but obviously they have been detained.

This concern can focus on the need for developing swiftly an alternative in the form of storage. That was certainly part of the philosophy underlying the act.

Let me ask you this specific question.

Is it possible to deal with this problem separately, or does it have to be linked with the problem of storage of our own domestic wastes?

Mr. NYE. I think on that Mr. Deutch really could answer better.

Mr. BINGHAM. Yes, sir.

REACTOR STORAGE IN THE UNITED STATES

Mr. DEUTCH. I would, if I may, first of all make a remark in response, to clarify for the record for Mr. Findley, that we do have, in fact, appropriations in fiscal 1979, to the amount I believe of $6 million for international spent fuel storage work.

We also have two of the working groups of INFCE, which is an important place to discuss problems of away-from-reactor storage of spent fuel, so we are not completely absent of tools to deal with these problems in dealing with foreign nations who have spent fuel problems.

With respect to the broader question of our own national efforts to implement the President's spent fuel policy, which both you and Joe Nye have correctly noted as deeply intertwined with these nonproliferation matters before us today, the question of early availability of reactor storage capacity in this country is really one of the most high priority items in our Department today. Indeed, the whole question of response and effect of radioactive waste management is a critical question, both for our Nation and for these nonproliferation objectives we are jointly sharing.

The precise route toward obtaining this away-from-reactor storage capacity is a difficult one. It's a difficult one both down at our side of the street and up here on Capitol Hill.

I would like to mention that it is our judgment that the most effective way, and the most economical way, and most environmentally benign, prudent, and safe, way to provide it would be to do initial away-from-reactor storage capacity for joint domestic and foreign fuel.

At the present time the Department of Energy does not have authority to accept foreign spent fuel or domestic spent fuel for storage for disposal. Legislation will be required for that, for that authority to be granted to the Department.

The question of capacity availability storage pools which the Department presently has control of, or is likely to be able to obtain control of, has been examined in enormous detail. There are several different options of where early capacity could be obtained. Each one has its advantages, disadvantages, and costs. We do not have appropriated money for that yet.

I would like to emphasize that our Department is placing the highest priority on provision of this away-from-reactor storage capacity and any assistance we can have from this committee, or anywhere, is really deeply appreciated.

KEEPING THE PUBLIC INFORMED

We have presently published for public comment a draft generic environmental impact statement on domestic storage for spent fuel and we have one for the storage of foreign spent fuel in a separate document available for comment in November.

We have published for public comment, an illustrative document for the charge that would be levied on utilities for the storage and disposal of spent fuel, and we have in preparation a generic environmental impact statement for the disposal of commercially generated wastes.

All of these actions are required to be done under the National Environmental Policy Act, and we believe that we have taken those steps, and I would anticipate that in following the task force, the interagency task force recommendations, we will be speedily moving in January to come up with specific proposals.

I might mention that Secretary Schlesinger, and Deputy Secretary O'Leary have both emphasized our Department's judgment that such away-from-reactor disposal for spent fuel capacity is required by 1983 at the latest. Initial capacity, to be useful, would have to be before that time.

I might add the consideration of the criteria for acceptance of limited quantities of spent fuel from abroad, that further nonproliferation objectives is a very thorny one involved, and has to be very carefully considered before we enter into an agreement.

Mr. BINGHAM. Have you made any requests up to now for the legislation to give you the authority to accept this storage?

Mr. DEUTCH. No, sir.

Mr. BINGHAM. Do you anticipate having legislation of that nature to be recommended early in the next session?

Mr. DEUTCH. Yes, sir.

Mr. BINGHAM. I am sure this committee will be involved, and I am sure there will be every disposition on the part of this committee to assist you in that regard.

Before we conclude this hearing, and I express my appreciation for the patience of all of you, I would like to ask if any of you, particularly the Commissioners, whom we have not addressed many questions to, have anything they would like to add.

Mr. BRADFORD. Perhaps, just to mix up a metaphor that occurred earlier. I fully respect Joe Nye's need to distinguish between forests and trees.

But, at the same time, to think in terms of forests without trees is rather like thinking in terms of an emperor without clothes. Whatever the overall guiding U.S. policy that is laid out, its going to have to be applied with somewhat more discipline to individual factual situations than was done with the need question in the Tepco case.

As Mr. Nye has noted, the need question is no longer especially pertinent, given the change in overall guidance, and I don't want to belabor that point.

It does seem to me though that the implementation of any policy and the Nuclear Regulatory Commission's ability to provide effective consultative advice both depend a great deal on getting the most accurate possible information before all of the branches of Government at the earliest possible time.

Mr. BINGHAM. Thank you.

Commissioner Gilinsky, do you have anything?

Mr. GILINSKY. I don't have anything further to add, Mr. Bingham.

Mr. BINGHAM. Mr. Van Doren.

Mr. VAN DOREN. I don't have anything to add.

Mr. BINGHAM. Thank you all very much for your patience and cooperation.

The subcommittee stands adjourned.

[Whereupon, at 4:45 p.m., the subcommittee adjourned, subject to the call of the Chair.]

APPENDIX 1

Letter From Victor Gilinsky, Commissioner, Nuclear Regulatory Commission, to Hon. Jonathan B. Bingham, Dated September 23, 1978

The Honorable Jonathan B. Bingham
Chairman
Subcommittee on International
Economic Policy and Trade
Committee on International Relations
United States House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

I regret that a long-standing commitment to speak in London will prevent my appearance before the Subcommittee on International Economic Policy and Trade in its hearings on the very important subject of retransfers of U.S.-supplied nuclear reactor fuel for reprocessing. As you made clear in your own letter to President Carter, the conditions under which such transfers are to be permitted are central to the intent of the Nuclear Nonproliferation Act of 1978 and to the successful implementation of U.S. nonproliferation policy.

One of the primary objectives of that policy is to discourage premature, widespread release into international commerce of plutonium, a nuclear explosive. The reason for this is that, should assurances not hold, there is no way now known to us to protect nationally-held plutonium stocks from sudden appropriation by their owners for use in nuclear weapons.

This safeguards deficiency led the Congress to place strict constraints on reprocessing of U.S.-supplied fuel. The most important of these constraints is the so-called "timely-warning" standard, (Sec 131 b(2)) which the law requires be taken into account both in approvals of retransfers for reprocessing and of the subsequent return to its owners of the resulting plutonium. This standard is, and was intended to be, very difficult to meet; the object was, after all, to discourage reprocessing and use of plutonium without fail-safe protection.

There was, however, a complicating factor: some reprocessing plants were already in existence, operated primarily by the British and French for their own needs and those of the surrounding economic community. The Congress exempted these plants from the proposed restrictions -- in other words, "grandfathered" them. As it turns out the effect of this is that any spent fuel going to these existing plants for reprocessing, and any plutonium emerging from them for return to its owners is not clearly subject to the strict statutory timely warning standard imposed on all new plants.

This would not have been great cause for concern had it not been for an important and relatively recent development. Both the United Kingdom and France have decided to provide reprocessing services for export on a large scale, and are planning new reprocessing plants at the sites of the existing facilities. The combined volume business over the next decade is expected to add up to almost three billion dollars.

In these circumstances, the question of the status under the Act of the new plants being built to accomodate this business arises. If new plants are to be treated as mere expansions of the existing plants it could well happen that virtually all plutonium derived from fuel supplied by the United States throughout the world will end up free of any effective safeguards, that is, free of the statutory "timely warning" standard imposed on material passing through new reprocessing plants. And while the presence of this material in a nuclear weapons country does not pose the threat of national diversion, the return of nuclear explosive material to a national stockpile under inadequate safeguards is the very contingency the law was designed to avoid.

It is thus essential that the interpretation of the standard be held strictly to the purpose and intent of the law. To stretch it beyond these reasonable limits would be to vitiate the Act. Even in the grandfathered cases, something can and should be done to tighten the applicable standard. Approvals for reprocessing in, or return of plutonium from grandfathered plants are governed by the standard of Section 131 b.(3) which instructs the Secretary of Energy "to attempt to ensure...conditions comparable to those which in his view, and that of the Secretary of State, satisfy the standards set forth in paragraph (2)."

The problem with the application of this standard to reprocessing at Windscale and La Hague is that is also applies to the return of the plutonium to the customers. So far as the return of the separated plutonium is concerned, it is vitally important that this more discretionary standard in fact be interpreted as strictly as that of paragraph (2). In my view, that is the only course which meets the concern which led Congress to adopt the statutory "timely warning" standard.

I am enclosing the speech I have prepared for the London meeting on September 27th, since it addresses this general subject.

Sincerely,

Victor Gilinsky

Victor Gilinsky
Commissioner

Enclosure: London speech

Remarks by Victor Gilinsky, Commissioner
United States Nuclear Regulatory Commission
Presented at the Atomic Industrial Forum/British Nuclear Forum
International Conference on the Nuclear Fuel Cycle
London, England
September 27, 1978

PLUTONIUM, PROLIFERATION AND THE PRICE OF MONEY

INTRODUCTION

I have been asked to discuss proliferation and the nuclear fuel cycle from the American point of view. I should make clear at the outset that I am speaking only for myself and not for the American government, as those who are familiar with the role of my agency in the Washington labyrinth will appreciate. So the point of view will be an American one rather than the American one.

As you know, Europe and the United States have parted company on the question of reprocessing spent fuel from nuclear power reactors, particularly as it applies to separation and export of plutonium. The decisions to proceed with the construction of new plants at Windscale in Britain and La Hague in France to provide this service for non-nuclear weapon countries run counter to the U.S. conviction that restricting separation and trade in plutonium is essential, at least until more effective controls can be devised.

History, unlike physics, does not allow for controlled experiments, so we may never know how things would have turned out had the British and French acceded to the American plea that a commitment to large-scale reprocessing be deferred. In any case, I do not propose to rehash the

arguments over whether this European decision should have been taken; they are familiar to this audience and I imagine my own views would not surprise you. What I would like to do, with your indulgence, is to explore its implications for our common effort at control over the proliferation of nuclear weapons. In a sense, a new dimension has now been added to the problem, bringing with it new questions for which we must find answers.

THE U.S. DILEMMA

There is no disagreement among our three nations that reprocessing plants in non-nuclear-weapon states should be discouraged. The British Foreign Secretary, Mr. David Owen, told Parliament during the Windscale debate that Britain had "never made such a sale, nor do we intend to do so." The recently reported mutual withdrawal from a transaction involving France and Pakistan is welcome news. There is disagreement among us, however, over whether provision of plutonium services for export helps the effort to contain proliferation.

The situation is not without its ironies: much of the spent fuel the United States hopes will not be reprocessed prematurely is in fact under its putative control. It is derived primarily from fuel supplied under agreements which require American approval for its reprocessing and for the subsequent return of plutonium to its owners. The grant of such approvals is subject to strict criteria under the new U.S. nonproliferation law. The law treats Euratom as a single entity, and provides certain exemptions for its member countries where U.S.-supplied fuel moves inside the community. Reprocessing for non-Euratom countries, however, is subject to an American veto.

During the period following Presidents Ford and Carter's respective announcements of new U.S. policy on plutonium separation -- and in some cases after the passage of the new law early in 1978 -- the Europeans entered into a number of export reprocessing contracts. These actions, to put it bluntly, have put the U.S. in a box. It can now attempt to be consistent with its nonproliferation policy by refusing to assent to the transfer of spent fuel to the European plants thereby pulling the rug from under its close allies and friends; or it can accept defeat in its effort to control reprocessing and the widespread use of plutonium before adequate protection is in place; or it can take a middle course, extending permission, for example, to transfer spent fuel in certain cases to the European reprocessing plants but placing strict conditions on the eventual return of plutonium. The most interesting question in nuclear energy policy today is how the United States will deal with its dilemma.

It is clear heavy financial investments ride on the outcome. Over the next decade Windscale is scheduled to receive 1600 metric tonnes of spent fuel from Japan; a like amount is expected to come in from Europe. La Hague is reported to have contracts with Japan, the Federal Republic of Germany, Sweden, Switzerland, Belgium, Holland and Austria to process about 6000 tonnes of spent fuel. In security terms, this adds up to the separation of perhaps 75 tons of plutonium, or -- if you will forgive an oversimplification -- enough for about 10,000 nuclear weapons. In commercial terms, when transport charges are included, the European contracts are said to represent almost three billion dollars in business.

COMMERCE AND CONTROL

The political might of these commercial investments is bound to influence the issue of control. It is traditional, in addressing the subject of proliferation and nuclear energy, to regard international security as unavoidably linked to policy on commercial uses of the atom. But the history of the past twenty-five years -- despite international safeguards, the Nonproliferation Treaty, and various international cooperative arrangements -- suggests that in reality commercial considerations have tended to dominate security concerns, complicating and even undermining efforts at control.

It is worth recalling that the idea of nuclear power for the generation of electricity had its genesis in pre-war France and came to Britain early in World War II by way of two refugee French scientists. In the British wartime Maud Committee which guided the first work on nuclear weapons, the "boiler" was talked about as well as the bomb; there was even a certain amount of British-French quarrelling over patents for future peacetime uses. When the exigencies of the war moved the bomb project to North America, the power reactor idea and its commercial possibilities went with it.

"The problem with disinterring a little history", Tawney once observed, "is that one runs the risk of appearing to sermonize." Nevertheless, we are bound to acknowledge that U.S. policies were largely responsible for the very situation over which we are now wringing our hands and importuning our fellow nuclear suppliers. At the end of the war, for example, when the British moved to take up the options on technical cooperation provided in the wartime agreements with the United States, they ran head on into the Atomic Energy Act of 1946, which effectively sealed off all

outward flow of information. There was understandable bitterness in the UK, which saw this as an attempt to interfere with Britain's atomic energy development. The French, deprived of credit for their wartime contribution, were even more incensed.

The problem of commercial rivalry still haunts us today and complicates efforts to solve the problem of international security posed by the utilization of nuclear energy. It has been there from the beginning and it is not going to go away. What we need to do is to set limits on it.

The first best effort at international controls, the Acheson-Lilienthal Report, took into account the fact that no control scheme which precluded national commercial development of peaceful uses was likely to succeed. At the same time it insisted on the need to reserve the dangerous aspects of nuclear energy to international ownership and control. Dangerous activities were defined as those for which an effective inspection system -- one which provided sufficient warning time of diversion to frustrate illicit weapons manufacture -- was not possible under any circumstances. "Separation plants which make the material for bombs" were placed on the dangerous list.

It was some years after the failure of the international control proposal based on that Report before the United States moved into high gear commercially with Atoms for Peace. While there was an element of altruism in that program, it was by no means unadulterated. In 1955, for example, a special committee of scientists and industrialists appointed by the Congress reported that U.S. assistance in the European development of nuclear energy would not only pay long-term dividends in future U.S. programs, but would also open a potential multi-billion dollar market.

For more than twenty years, the U.S. pursued that market on the theory that the combination of bilateral and international inspections would provide adequate protection against diversion to military purposes. In assessing the dangers associated with possible misuse of nuclear materials, we were influenced by the mistaken assumption that nuclear weapons development would always require long and costly programs and that even separated plutonium could not easily or rapidly be turned into military explosives. That notion has now been pretty much put to rest, but we are still living with the decisions and institutions that were based on it.

In that more innocent time we pushed the idea of the plutonium-fueled breeder enthusiastically, treated the future utilization of plutonium as inevitable and reprocessing as a legitimate and necessary commercial activity. Unfortunately, the possibility that safeguards that worked for low-enriched fuel would not also work for plutonium, when that far-off day came, was not considered. The slow realization that international inspection of plutonium stockpiles could not provide sufficient protection turned U.S. policy around.

A NEW AMERICAN POLICY

It was an important break with this history when President Ford, on October 28, 1976, concluded that "avoidance of proliferation must take precedence over economic interests" and that reprocessing should be deferred until "there is sound reason to conclude that the world community can effectively overcome the associated risks of proliferation."

Two elements contributed to this decision and to the subsequent development and extension of U.S. nonproliferation policy under President Carter. The primary consideration was the impact on international security of the safeguards deficiency -- no way is now known to protect nationally held plutonium stocks (or stocks of highly enriched uranium for that matter) should its owners suddenly decide to abrogate their agreements and appropriate explosive material for weapons. The second consideration was that since reprocessing and recycle of plutonium in light water reactors was a dubious proposition economically, the early introduction of plutonium into international trade was as unnecessary as it was dangerous.

Both Presidents Ford and Carter believed that a resolution of the security problem had to precede, not follow, any move to large-scale reprocessing. We have to admit, however, that their efforts to persuade our allies and trading partners have at best met with mixed success. It is hardly surprising that their policy shift on plutonium caused widespread irritation, alarm and even the cynical suggestion that the Americans were less interested in proliferation than in perpetuating a commercial advantage.

Beyond that, there were a variety of reasons why American efforts to defer reprocessing met with so little success. We failed to establish the credibility of the once-through fuel cycle; the International Fuel Cycle Evaluation, which might still do that, came late. Our earlier enrichment contract policies left a residual uncertainty about the

reliability of U.S. fuel supplies. We failed to provide adequate assistance with spent fuel to relieve political pressure stemming from waste disposal problems. We misjudged the depth of the commitment to reprocessing in the nuclear bureaucracies of the big industrial nations; that commitment was very far gone by the time we moved to intercept it. And last, but by no means least, the idea of plutonium as the ultimate fuel was so entrenched that it drained conviction from the effort to delay its utilization.

I leave it to historians to decide whether, in these circumstances, the British and French commitment to the new plants at Windscale and La Hague was inevitable.

REPROCESSING AND PROLIFERATION

In any event, what is significant and interesting for our purposes today is that both Britain and France have emphasized the security advantages of their reprocessing plans. The British view, as it emerged in recent public discussion, is that pressures arising from worldwide accumulation of spent fuel, if not relieved by reprocessing, will inevitably drive non-nuclear-weapon states to develop indigenous reprocessing facilities, which everyone agrees poses serious dangers of proliferation. The best way to discourage this development, it was argued, is to confine reprocessing services to the states which already have the bomb. As Mr. David Owen put it: "I am second to none in wishing to try to restrict reprocessing, where it is possible, to those who are nuclear weapon states."

The difficulty with this approach turns on the conditions to be attached to return of plutonium to its owners. The commercial and political pressures which led to reprocessing in the first place and which have made it so difficult for the United States to exercise its rights of control will likely come into play again, and could force return whether or not adequate international protection has been developed.

If nationally-owned material is held in international storage, pressures for return may be even more difficult to resist. It is unlikely controls devised by member countries in the plutonium trade will have any more bite than the present system of international safeguards. In either event the problems of setting criteria for return are the same, whether they are confronted on the national or international level. And while the Americans share in those problems, the reprocessors have now taken on a serious responsibility for their solution. Once the nuclear explosive material is released to its owners, it will be too late to make rules about it.

INTERNATIONAL PLUTONIUM MANAGEMENT: WHAT RULES WILL GOVERN?

During the Windscale debate, Mr. Owen mentioned "international plutonium management". The idea of international solutions has always been evoked by the hard questions: Where can spent fuel be stored? Where can plutonium be stored safely until needed? What rules are to govern the return of plutonium to its owners? Where will radioactive wastes be stored? Who will lay down the rules for transportation safety and enforce them?

Whenever the subject comes up I cannot escape the impression that what is envisioned is not international management, but only international caretaking. Are the reprocessors really willing to submit themselves to a strict, comprehensive international regime of plutonium controls, with all that implies for the conduct of a competitive commerce?

Yet can they commit themselves to any less? The international community has a right to know what rules are going to govern this commerce. Country X has a right to know whether and in which circumstances and in what form its neighbor, Country Y, is getting nuclear explosive materials. Are the reprocessors to pick and choose among the non-nuclear-weapon countries claiming either the right to such services or the right to purchase plutonium from its owners as a quid pro quo, perhaps, for foregoing indigenous reprocessing?

In opting to carry out this service, Europe is taking on this as well as other headaches. If, for example, plutonium eventually displaces uranium as the primary fuel for power reactors, how can indigenous reprocessing be successfully discouraged outside the nuclear weapon states or a big suppliers' club? The logic of the long-sought goal plutonium is supposed to fulfill -- fuel "independence" -- will not permit fuel dependence simply to shift from the United States to Europe. But this is crystal-gazing. There are more immediate questions.

We are faced right now with a security problem to which everyone agrees a ten-year time frame -- the construction lead time for the new reprocessing plants -- is affixed. We have in place certain instrumentalities for control which took at least 25 years to build up: a frail system of international safeguards in the International Atomic Energy Agency, the Nonproliferation Treaty pledges to refrain from nuclear weapons manufacture, not yet universal, and the rough ground rules agreed to among the nuclear suppliers at London. For reasons I have tried to explain, none of these

alone or in combination is likely to provide any more adequate insurance against widespread access to plutonium ten years hence than they do now.

This is why the controls over U.S.-supplied fuel provided in the new law are so important in American eyes. Non-Euratom countries must not only obtain permission to transfer U.S.-supplied spent fuel to the reprocessors, but must secure an additional approval for the return of plutonium from the new plants at Windscale and La Hague. The latter transfer is governed by a strict standard; it requires that "foremost consideration" be given to whether or not the transfer will take place "under conditions that will ensure timely warning to the United States of any diversion well in advance of the time" diverted material could be transformed into weapons. This standard will be extremely difficult to meet. It is thus risky to infer that the U.S. approval for transfer of spent fuel to the reprocessor will also bring the plutonium home to the customer free and clear.

The conditions under which return will be allowed of course involve the reprocessors' as well as U.S. controls. It would be interesting to know what the reprocessors themselves are thinking about how rules for returning plutonium might be designed and about such questions as: How far are parties to the contracts willing to go to preclude premature demands for return of plutonium, possibly through a mutually agreed test of need? Can agreements be made to provide energy credits in exchange for plutonium? Is it appropriate to seek, in exchange for reprocessing services, assurances that customers will not acquire their own reprocessing plants? And, can an adequate combination of safeguards and technical fixes be designed?

SAFEGUARDS AND TECHNICAL FIXES

The Windscale debate revealed clearly that the British government is concerned about exporting bomb-ready materials. Much has been made of the fact that plutonium will be returned to its owners only under international safeguards, which are admittedly not "perfect" but said to be improving all the time.

There is a certain amount of bravado in the perennial talk about "strengthening" international safeguards to protect plutonium; recent IAEA studies indicate we cannot even be sanguine about how they are working in the far less vexing task of safeguarding reactors. Confidence in safeguards

over plutonium stocks would not appear to square with the British, French and American determination to discourage indigenous reprocessing. If protection against removal of plutonium from an indigenous stockpile can't be provided, it is difficult to see how providing the plutonium from a plant abroad will help matters.

There is an implied recognition of this in the attention being given in the UK to various possibilities for doing something to the plutonium before it is returned to its owners. Mr. Owen has pledged the material will be returned to its owners "only in a form that will reduce the risks..." of proliferation. In his Report on the Windscale inquiry, Judge Parker took refuge in time: "...this matter can be alleviated to some extent by technical fixes", he wrote. "It will not in any event happen for ten years...."

I must presume to disagree with the eminent Judge. If suppliers and customers are unable to forge a consensus on some coherent overall plan for control sooner than that, the plutonium emerging from the new plants ten years hence may get away from us all.

Of course technical fixes play a role. There is no question that we should pursue every conceivable scheme for making the fuel cycle more resistant to misuse; one of the objectives of the international effort in INFCE is to rethink the technical options. But leaning on technical fixes which are illusory or impractical can sidetrack and even undermine the development of sound institutional approaches to controls.

One such technical fix has received a fair amount of international attention in recent months; it involves a return of plutonium to the customer in the form of fabricated fuel containing enough radioactive products to preclude its easy chemical treatment for extraction of bomb material. I am talking, of course, about the CIVEX process.

The argument for this scheme is that spent fuel resting in its pools around the world constitutes "plutonium mines" in every country utilizing nuclear energy. As such it is alleged to be a greater proliferation risk than plutonium separated in a nuclear weapon state and stored in central repositories until withdrawn on demand. It is difficult to take CIVEX seriously as an answer to the manifest danger of dispersing plutonium in weapons usable form, a problem we will face, according to Judge Parker, ten years from now; there is no conceivable way this scheme can be implemented within the period Judge Parker has allowed us. Moreover,

CIVEX fuel remains radioactive enough to be self-protective for a fleeting period of time compared to spent fuel; its radioactivity is so diminished a few years after leaving the reactor that it cannot provide the protection for which it is designed. Since most spent fuel reprocessed in this century will have cooled for longer than that, the CIVEX process cannot contribute to the solution of the problems we must worry about now.

In fact, this proposal has other problems. It will be difficult to persuade the industry to use irradiated fuels, with their inevitable increase in occupational and public health exposures. In addition, the suggestion that the reprocessors will fabricate fuel for all their customers flies in the face of commercial reality. The owners of the material are not likely to accept the dictates of the reprocessor on the form in which plutonium is to be returned to them, particularly when it is dangerous.

The abortive flurry over CIVEX underlines the importance of attacking the problem of plutonium return now, and not ten years from now. What is to be done if no workable technical fix can be found, or, if found, is unacceptable to the customer? The reprocessor may find himself giving plutonium back pure, or dumping it on an international agency, if one exists, or being stuck with a lot of plutonium. They may also get stuck with the associated waste products, which brings me to my next point.

WHAT ABOUT THE WASTE?

A recurrent rationale runs through the record of the Windscale inquiry: that whether or not plutonium is to be used as fuel, reprocessing is an essential first step in waste disposal, and therefore the sooner we get on with it the better. It appears to me this shows a curious disregard for the price of money, which, as you know, bears on the economics of future investment.

In undertaking disposal of reprocessing waste on a large commercial scale, we are confronted with an immediate question: Where is it all going to go? One of the major reprocessors told me that all of the waste from reprocessing will be returned to the customer -- vitrified high level waste, solidified medium level plant effluents, and the remains of fuel rods -- all of it.

If a country's motive for reprocessing spent fuel now derives from the pressure for storage, and if it is obliged to take back all the waste products, the likely increase in volume returned will not simplify the storage problem in the long term. If the motive lies in public pressures to get rid of accumulating spent fuel for environmental or public health reasons, subsequent return of the wastes will only aggravate the political problem. If the motive is to extract the plutonium and bank it for future use as fuel, where is the customer going to bank the wastes? Is it implicit in the current arrangments that each country buying reprocessing services is to have its own permanent waste site? The reprocessors cannot regard this as entirely the customers' problem.

I will resist contrasting the disposal of radioactive wastes after reprocessing with the relatively simple and proven procedures for holding spent fuel safely for long periods of time. But I might observe that since the projected reprocessing capacity probably cannot sop up the spent fuel expected to be generated yearly by the end of the next decade, it would be prudent to pursue the idea of regional spent fuel storage a little more vigorously.

CONCLUSION

These practical technical problems are bearing down on us very fast, and threatening to outstrip the search for ways to cope with a nuclear explosive in commercial use.

The Nonproliferation Treaty ruled out the acquisition by non-nuclear-weapon states of nuclear explosive devices, however labelled, because explosives for ostensibly "peaceful" purposes cannot be distinguished from explosives for more ominous uses. There is no suggestion that this prohibition can be altered by the application of international safeguards. The Treaty, for example, provides for explosive services only under strict international physical control. While it does not define a nuclear explosive device, it would be impossible to sustain the argument that the same rules do not apply to something very close to a ready explosive device -- say a disassembled bomb. That being so, what about the nuclear explosive material itself? Is it to be covered by the rules for explosives, or is its use to be unconstrained so long as it is labelled "peaceful"? That is what we are talking about.

The only answer consistent with the Treaty's prohibition on nuclear explosive devices is that nuclear explosive material is not eligible for the "peaceful" label until it can be proved safeguardable.

There is no getting around the fact that plutonium (as is highly enriched uranium) is the primary component in a terrifying and destructive weapon. We have to accept the fact that we cannot put the plutonium we plan to separate into the stream of commerce until a fail-safe mechanism can be devised. The rules have to be strict, unalterable, uniform and universal. There cannot be one set of rules for those inside the club and another for those outside. For one thing there are too many clubs: the nuclear weapons states; the nuclear supplier states; the potential supplier states; and the states newly arrived at political power.

In presenting the Windscale question to the House of Commons, the British Foreign Secretary suggested the basic dilemma to be that of reconciling the need to utilize the energy in plutonium with the danger of proliferation. If plutonium is equated with the survival of nuclear power, then the dilemma has been correctly stated. But the idea that without plutonium nuclear energy is at a dead end ought to be greeted with increasing skepticism in the face of the abandonment as uneconomic of plutonium recycle in current reactors, more optimistic assessments of uranium supply, and greater efficiency in the preparation and use of enriched fuels. We don't have to choose now between plutonium and nuclear energy. If there is a dilemma, it arises out of the choice between plutonium and proliferation. Whether we will have to make that choice in the future depends on how much commercial freedom we are willing to trade for international security.

What I have tried to say here today is that nuclear explosive materials cannot be handled within the normal rules of commerce -- their control is beyond the present capacities of our international institutions -- and that time is running out.

We don't have to come out against healthy competition among nations to accept the reality that competition in bomb materials is unhealthy. In a press conference following the announcement of his new policy on nuclear energy April 7, 1977, President Carter expressed his desire to develop a relationship with other countries "to remove the competitive aspect of reprocessing itself. There is obviously going to be continued competition," he said, "...in the selling of atomic power plants themselves." Nevertheless, the President felt there had to be "a clearly drawn distinction" between what he called "the legitimate and necessary use of uranium and other enriched fuels to produce electricity" and the use of fuels that are also nuclear explosives.

That, at least, is not <u>an</u> American view of proliferation; that is <u>the</u> American policy on proliferation.

APPENDIX 2

Responses by Joseph S. Nye, Jr., to Additional Questions Submitted in Writing for the Record

Question 1. Article 1 of the Additional Agreement for Cooperation between the U.S. and Euratom states that special nuclear material produced through the use of U.S.-supplied material may be exported to any nation outside Euratom provided that such nation has an appropriate Agreement for Cooperation with the U.S. or guarantees the peaceful use of the produced material under safeguards acceptable to Euratom and the U.S. You argue that this constitutes the equivalent of a right of prior approval, since only the U.S. is in a position to determine the appropriateness of agreements.

--- Are there differences of opinion among the various agencies as to the validity of this interpretation?

--- Have any differences of opinion been expressed within Euratom itself, or by other affected governments, such as Japan?

--- Is it correct to assume that this provision of the U.S.-Euratom Agreement would be fully sufficient to permit us to deny reexport to Japan due to a determination that the standards of Section 131 could not be properly satisfied?

Answer. In recent discussions with the EC on renegotiation of our nuclear cooperation agreement the EC delegation confirmed that the additional Agreement gives the United States the right to determine the appropriateness of the relevant Agreement for Cooperation or of the acceptability of safeguards in the state to which the EC wishes to transfer US origin material. We therefore believe that there is no question about the adequacy of this language. The Japanese Government also understands that US approval will be required for the return of plutonium derived from reprocessing of Japanese owned US origin nuclear material in the European Community.

Question 2. As we understand it, inter-Euratom transfers of U.S.-origin materials will be controlled through special consultative arrangements between the U.S. and the non-Euratom shipping country.

--- Will these arrangements be essentially voluntary in nature?

--- Have the Japanese utilities formally acquiesced in this arrangement?

--- Would instructions from the Japanese government to the individual utilities be legally binding in these cases?

Answer. The Japanese utilities concerned and the Japanese Government have confirmed their understanding and acceptance of the arrangements by which the US will control intra-EC transfers of US origin material. The arrangements were entered into voluntarily by the utilities as a condition of US approval of the transfer but cannot be abrogated unilaterally without violating the conditions under which US approval was granted. We do not understand the implication of the question concerning whether instructions from the Japanese Government to the Japanese utilities would be legally binding. Both the utilities and the government have agreed that US approval must be obtained for retransfer or other disposition of the material. Any action to the contrary would be a violation of these understandings.

Question 3. Fuel of U.S. and non U.S.-origin will no doubt be commingled within Euratom reprocessing facilities.

--- What problems do you foresee this presenting in terms of our being able to maintain tight and effective control over the plutonium separated from U.S.-origin fuel?

--- What steps would we be able to take in the event the European Community transferred purportedly Euratom-origin plutonium to Japan, and then relied on the use of the U.S. origin plutonium for Euratom research needs.

Answer. Material in any reprocessing (or enrichment) plant is inevitably comingled, and its is impossible to track it "atom by atom". However the reprocessing state must credit the account of supplying state with an appropriate amount of separated material. If the EC sought to transfer material to Japan to satisfy the contractual obligation under the reprocessing contract which involves US origin material, this transfer would be treated as plutonium derived from US origin material and would therefore be subject to US approval. The EC could sell Japan separately its own plutonium outside of US control, but equivalent Japanese owned US origin material in the EC could not be substituted in the EURATOM stockpile for the transferred material without US approval.

Question 4. Is it U.S. policy to discourage large-scale commerical reprocessing in non-weapons states, including industrialized countries such as West Germany and Japan? Is it U.S. policy to discourage such reprocessing in Great Britain and France? If so, what are we doing in each case to achieve this objective? Please respond on a confidential basis if necessary.

Answer. It is US policy to discourage reprocessing in all states until more proliferation resistant technologies and institutional arrangements are developed and until energy demands and resource scarcity considerations justify the separation of substantial amounts of plutonium. At the same time we recognize that the United States cannot compel other states to terminate their reprocessing plans, and that reprocessing is likely to continue in those states where it is already taking place. Limiting reprocessing depends upon a cooperative effort by all the concerned countries, and this is the premise of INFCE which is now exploring, among other things, more proliferation resistant alternatives for the disposition of spent fuel.

We are working toward the establishment of an international regime which will reduce incentives for premature reprocessing through fuel assurances, alternative means of handling spent fuel, and limiting plutonium demand to R&D programs for advanced reactor development by avoiding recycle in thermal reactors. It is too early to judge the degree to which we will be successful, but if large scale demand for plutonium can be delayed until and if breeders are deployed on a commercial scale (which is decades away for most states), there will be additional time to develop institutional and technological steps to address the proliferation risks inherent in this fuel cycle.

Question 5. In the recent retransfer decisions it was noted that Japanese utilities must meet a binding regulatory requirement to maintain a full core reserve (FCR) in the reactor cooling pools.

--- Have any Japanese reactors previously lost their FCR?

--- If so, what were the circumstances as you understand them?

--- Was the FCR regulatory requirement formally waived in these cases, or was it simply ignored?

Answer. We are not aware of cases where Japanese reactors have lost their full core reserve (FCR). We believe that this regulatory requirement is strictly enforced.

Question 6. In judging future retransfer requests you note that the U.S. will now look to determine, among other things, if the requesting country is "actively cooperating" in INFCE.

--- Can we assume that "active cooperation" is intended to imply something more than mere participation?

--- Is it correct to assume that in addition to active cooperation in INFCE, there would also have to be present certain other tangible non-proliferation gains which would, in Dr. Deutsch's words, "have a very strong positive effect on our non-proliferation objectives?"

Answer. Active cooperation in INFCE assumes more than mere participation. As noted in our testimony, Japan, the UK, and France are all making important contributions in INFCE, and their continued cooperation is essential to a successful outcome. In addition to active cooperation in INFCE we will also look for other non-proliferation gains in evaluating future retransfer requests.

Question 7. A question was raised during the hearing as to whether the U.S. ever made a private commitment to the French government to approve enough retransfers to keep the existing portion of the La Hague reprocessing facility in commercial operation. Second, it was asked whether or not this was done in order to gain French participation in INFCE. In your response, you noted that the U.S. INFCE communique acknowledges our intention not to interfere with existing programs. This was not entirely responsive to the question, however, which sought to determine if specific private assurances were made to guarantee enough MB-10s to keep La Hague operating up to capacity during the period of INFCE.

--- Was such a specific commitment, assurance or understanding ever given? If so, we would appreciate being able to review whatever documentation may exist on the subject.

--- If such an assurance was given, at what point in time did it occur and on whose authority was it made?

--- Was the Congress consulted at the time this assurance was given?

--- How was it determined that such a blanket pledge would not be violative of the terms of the Non-Proliferation Act? Or is the commitment no longer operative?

--- Did the U.S. receive any assurances from the French in return for such a promise, other than their willingness to attend INFCE?

--- Did we make similar specific promises to the British?

--- How were we able to determine in advance that this commitment could be fulfilled within the parameters of the then existing Presidential policy of approving retransfers only as a last resort and on a compelling showing of physical need?

--- Did our inability to fulfill this commitment within the framework of the physical need guidelines contribute in any way to our most recent policy shift?

--- Assuming that the French would have elected to participate in INFCE in any event, if only to protect and advance their own position on the questions to be reviewed, why was there a need for such concrete pledges?

Answer. In discussions with the French prior to the formation of INFCE, Ambassador Gerard Smith told the French that we would not interfere in the operation of their existing facilities at La Hague during INFCE. This assurance was given on the authority of the President, and Congressional staff members were informed.

This commitment was made prior to enactment of the Nuclear Non-Proliferation Act. No specific commitment in this regard was made to the UK; but, as noted in my testimony, the INFCE communique acknowledges that the evaluation will be carried out without jeopardizing the fuel cycle policies, international cooperation, or contracts of the participating countries during INFCE. We were hopeful that this commitment could be fulfilled within the Presidential policy of approving retransfers only as a last resort and on a compelling showing of need, e.g. spent fuel storage congestion, but we did not have before us at that time detailed information about contractual shipping dates or spent fuel storage capacity projections. The commitments to the French and in the INFCE communique were factors in our policy on approving such retransfers during INFCE. As stated in our testimony, however, the more important consideration was the need to maintain a cooperative relationship with key countries as we approached the end of INFCE. In addition there was an element of basic equity on the side of those with contracts that predate the Administration's policy. It is possible that the French would have participated in INFCE without the US commitment, but we believe that they would have played a less constructive role which would not have been conducive to the cooperative approach necessary to reach a successful outcome of the INFCE exercise.

Question 8. Is it true that Japan is insisting on a special "regional" safeguards arrangement with the IAEA in which most of the responsibility for accounting and verification would fall on Japanese rather than IAEA personnel? Are there any misgivings within the IAEA about granting Japan this kind of special arrangement? Can you tell us more about the specifics of the safeguards that currently apply in Japan?

Answer. Japan has completed an NPT safeguards agreement with the IAEA, and we are not aware of any regional safeguards arrangement that Japan is pursuing. Japan, however, wishes to ensure that other NNWS NPT parties are subject to similar safeguards, and supports the negotiation between IAEA and EURATOM for the application of Agency safeguards to the EC.

Question 9. Do Japanese concerns own some part of the ship or shipping company currently engaged in transporting spent, U.S. fuel from Japan to Windscale and La Hague?

Answer. We understand that the Japanese utilities own a share of the ships used to transport the spent fuel to La Hague and Windscale, and that the ships have been specifically designed for this purpose.

APPENDIX 3

Letters to Hon. Clement J. Zablocki From Nelson F. Sievering, Jr., Deputy Assistant Secretary for International Programs, Department of Energy

A. Original TEPCO Analysis

Department of Energy
Washington, D.C. 20585

August 17, 1978

Honorable Clement J. Zablocki
Chairman, Committee on International
Relations
House of Representatives
Washington, D. C. 20515

Dear Mr. Chairman:

In accordance with Section 131 of the Atomic Energy Act of 1954, as amended, 42USC 2160, ~~notice is hereby given~~ of a proposed "subsequent arrangement" under the Agreement for Cooperation between the Government of the United States of America and the European Atomic Energy Community.

The subsequent arrangement to be carried out under the above mentioned agreements involves approval of a transfer of 126 spent fuel assemblies containing 89,000 grams of plutonium and 24,346,000 grams of uranium containing 139,000 grams of U-235 from the Tokyo Electric Power Company, Inc., Japan (TEPCO) to the Euratom Supply Agency for British Nuclear Fuels, Ltd., Windscale Works, England, for the purpose of reprocessing. The enriched uranium was originally supplied by the United States under enrichment contract No. E (49-14) UES/JA/3. Briefly, approval of this subsequent arrangement is necessary for TEPCO to ensure its reserve emergency spent fuel storage at Fukushima No. 1 Nuclear Power Station, Unit No. 2.

The Windscale Works had processed power reactor fuel assemblies prior to the date of enactment of the Nuclear Non-Proliferation Act of 1978. It has been determined that retransfer and reprocessing of the fuel assemblies referred to above will not be inimical to the common defense and security (Section 131a. (1) of the Act).

In connection with Section 131b.(3) of the Act, it is to be noted that the United Kingdom is a nuclear weapons state. Also, with respect to any use or retransfer of separated plutonium or recovered uranium from the Windscale plant, prior U.S. approval will be required as described in the attachment to this letter. Moreover, the United States has received

assurances from the United Kingdom that physical security arrangements at the Windscale plant meet standards set by the IAEA. Taking these factors into account, and the factors listed in the analysis, we do not believe that the proposed retransfer will result in a significant increase in the risk of proliferation.

This letter of transmittal together with the attached analysis constitutes the report to the Committee on International Relations of the House of Representatives and the Committee on Foreign Relations of the Senate required by Section 131b. (3) of the Act.

Sincerely,

Nelson F. Sievering, Jr.
Deputy Assistant Secretary for
International Programs

Enclosure

1. Analysis of Request
No. RTD/EU(JA)-20

Analysis of Request Number RTD/EU(JA)-20 for Retransfer for Reprocessing

Parties

Transferor - The Tokyo Electric Power Company, Inc., Japan (TEPCO)

Transferee - British Nuclear Fuels Ltd. (BNFL) for UKAEA (EURATOM)

Origin

Obtained by transferor from USDOE under Contract No. E(49-14)UES/JA/3

Material

Fuel Type	Marketing, Number, etc.	Total U (in grams)	U-235, U-233 or Pu (in grams)	Isotopic Percent U-235, U-233 or Pu
Enriched Uranium Oxide		U 24,346,000	139,000	About 1.19
GE-BWR		Pu 118,000	89,000	75

Present Location

Fukushima No. 1 Power Nuclear Station in the province of Fukushima, Japan. Unit No. 2.

Proposed Location

British Nuclear Fuels Ltd., United Kingdom (EURATOM)

Purpose

Chemical reprocessing and recovery of uranium and plutonium contained in the irradiated fuels. The disposition of the produced plutonium would be subject to the prior agreement of the United States and the uranium would either be returned as UO_3 to Japan or sent to the United States in the form of UF_6 for enrichment at a DOE facility.

Schedule

The proposed retransfer would take place on or about early September 1978. The actual reprocessing will not take place for about 10 years.

Consideration

It is the current policy of the United States only to approve transfers of this kind on a case by case basis taking into account (a) the same criteria that are applicable to a direct export from the U.S. to the receiving country or group of countries (b) safeguards implementation, (c) the non-proliferation implications of the arrangement, (d) the relationship of the transfer to the energy needs of the cooperating shipping country or countries, and (e) whether there is a physical need for the transfer.

Discussion

This request falls under the definition of a "subsequent arrangement" in section 131a.(2)B of the Atomic Energy Act of 1954, as amended (Act) and requires the concurrence of the State Department and consultation by DOE with ACDA, NRC, and DOD. ACDA may, if it deems such action necessary, prepare a Nuclear Proliferation Assessment Statement, but has not done so in this case. Interagency procedures also provide for notice to and require comments by the Department of Commerce. The State Department has concurred in approval of this request. ACDA, DOD, and Commerce have been consulted and have raised no objection. Chairman Hendrie and Commissioner Kennedy of NRC have no objections to the proposed retransfer provided it is subject to the conditions contained in this analysis. NRC Commissioners Gilinsky and Bradford have advised against approval since there is a possibility that the reracking effort at the facility will meet the storage needs for another year. Commissioner Ahearne has abstained. Notice of the proposed subsequent arrangement must be given at least 15 days in advance in the Federal Register, together with the written determination of the Secretary of Energy or his delegate that this arrangement will not be inimical to the common defense and security. This determination has been made. The notice for the Federal Register is being forwarded for publication. Under section 131b.(1) of the Act, this retransfer cannot be approved until the Committee on International Relations of the House and the Committee on Foreign Relations of the Senate have been provided with a report containing the reasons for entering into the arrangement and a period of 15 days of continuous session has elapsed; provided that the Secretary of DOE (by delegation from the President under E.O. 12058) can declare an emergency due to unforeseen circumstances and then the period shall be 15 calendar days.

Section 131b.(2) of the Act provides that:

> "(2) the Secretary of Energy may not enter into any subsequent arrangement for the reprocessing of any such material in a facility which has not processed power reactor fuel assemblies or being the subject of subsequent arrangement therefore prior to the date of enactment of the Nuclear Non-Proliferation Act of 1978 or for subsequent

> retransfer to a non-nuclear-weapon state of any plutonium in quantities greater than 500 grams resulting from such reprocessing, unless in his judgment, and that of the Secretary of State, such reprocessing or retransfer will not result in a significant increase of the risk of proliferation beyond that which exists at the time that approval is requested. Among all the factors in making this judgment, foremost consideration will be given to whether or not the reprocessing or retransfer will take place under conditions that will ensure timely warning to the United States of any diversion well in advance of the time at which the non-nuclear-weapon state could transform the diverted material into a nuclear explosive device;"

The BNFL facility in the past has processed power reactor fuel assemblies and has been the subject of a subsequent arrangement therefore prior to the date of enactment of the Nuclear Non-Proliferation Act of 1978, so this paragraph is not applicable.

However, section 131b(3) of the Act provides that:

> "(3) the Secretary of Energy shall attempt to ensure in entering into any subsequent arrangement for the reprocessing of any such material in any facility that has processed power reactor fuel assemblies or been the subject of a subsequent arrangement therefore prior to the data of enactment of the Nuclear Non-Proliferation Act of 1978, or for the subsequent retransfer to any non-nuclear-weapon state of any plutonium in quantities greater than 500 grams resulting from such reprocessing, that such reprocessing or retransfer shall take place under conditions comparable to those which in his view, and that of the Secretary of State, satisfy the standards set forth in paragraph (2)."

This paragraph is applicable in this instance and the question therefore arises as to the desirability of ensuring that such reprocessing shall take place under conditions which satisfy the standards set forth in paragraph (2). The Department of Energy and the Department of State believe this test is met in the instant case since paragraph (2) in connection with timely warning of any diversion, stresses that such a warning should be available "well in advance of the time at which the non-nuclear-weapon state could transfer the diverted material into a nuclear explosive device" (underscoring added). In the instant case the reprocessing will occur in The United Kingdom, a nuclear weapons state. Moreover the plutonium separated in the reprocessing facility will remain in the United Kingdom until it is disposed of in accordance with arrangements satisfactory to the United States. Accordingly the threat of diversion for nuclear weapons by a nonnuclear weapon state is felt to be minimal in this instance.

Of course, all the countries in the European Community, except the United Kingdom and France are nonnuclear-weapons states. And, as will be discussed at greater length under criterion (4) below, prior United States approval is not required for retransfer within Euratom. However, the United States also has been controlling retransfers within Euratom of separated special nuclear material in cases such as this by a commitment from the non-Euratom shipping country to the following conditions.

(1) That the spent fuel will be retained by the reprocessor until it may be reprocessed and that, thereafter, the recovered special nuclear material will be retained by the reprocessor subject to the direction of the shipper.

(2) That any direction by the shipper to the reprocessor for the transfer or use of the recovered special nuclear material will be subject to the prior approval of the United States. This second condition is in addition to the right of the United States to prior approval for any transfer of these materials to a country outside Euratom.

The non-EURATOM shipping country agrees to these conditions based upon the processor's contractual pledge to hold the spent fuel, reprocess it, and then use or transfer the recovered material only in accordance with the shipper's instructions. In the instant case, Japan has assured the United States that it agrees to the above conditions.

(A) Criteria

Criteria used for retransfers, in addition to the foregoing requirements, are the same as those set forth for NRC licenses in section 127 of the Act. The word "export" (or a variation thereof) should be henceforth considered as equivalent to the word "retransfer" (or a variation thereof) in the criteria set forth below.

Criterion (1)

"IAEA safeguards as required by Article III(2) of the Treaty will be applied with respect to any such material or facilities proposed to be exported, to any such material or facilities previously exported and subject to the applicable Agreement for Cooperation, and to any special nuclear material used in or produced through the use thereof."

Since the United Kingdom is a nuclear weapons state, this criterion is satisfied in that IAEA safeguards are not required in the United Kingdom pursuant to the NPT.

However, it is to be noted that several actions designed to assure the effective application of safeguards in the European Community as a whole, including those required by the NPT in the non-nuclear weapon States of the Community have been undertaken. Under Article V of the Additional Agreement for Cooperation of 1960, as amended, which incorporates Article XI, XII and Annex B of the November 8, 1958 Joint Program Agreement, as amended, the Community undertakes the responsibility of establishing and implementing a safeguards and control system designed to give maximum assurance that any material supplied by the United States or generated from such supply will be used solely for peaceful purposes ("Euratom Safeguards System"). The Community is bound to consult and exchange experiences with the IAEA with the objective of establishing a system reasonably compatible with that of the latter. The Community is responsible for establishing and maintaining a mutually (with respect to the United States) satisfactory and effective safeguards and controls system in accordance with stated principles.

Euratom safeguards are being applied to material and facilities previously exported or retransferred and subject to the United States-Euratom Cooperation Agreements and to special nuclear material used in or produced through the use thereof. These agreements require these safeguards to be applied to such material and facilities and to the proposed export or retransfer and special nuclear material produced through its use.

Also all of the member states of the Community, with the exception of France (a nuclear-weapons state), are parties to the NPT. An agreement for the IAEA application of safeguards pursuant to the NPT was signed by the IAEA and Belgium, Denmark, the Federal Republic of Germany, Ireland, Italy, Luxembourg, the Netherlands, and the European Atomic Energy Community (EURATOM), on April 15, 1973. (As a nuclear-weapons state, however, the United Kingdom permits the application of IAEA safeguards pursuant to the NPT under a voluntary offer which was signed on September 6, 1976. Similarly, France has agreed to application of the IAEA safeguards verification system at some of its civil facilities under a France-EURATOM-IAEA trilateral approved by the IAEA's Board of Governors on February 21, 1978.)

Further, the EURATOM accountability system was adapted to that of the IAEA through the publication of Commission Regulation 322/76, which came into force during January 1977. On February 17, 1977, the Commission of the European Communities notified the IAEA that all of

the necessary steps had been taken for the IAEA-EURATOM Safeguards verification Agreement pursuant to the NPT to come into force and the Agreement came into force on February 21, 1977.

Currently, EURATOM and the IAEA are actively negotiating the Subsidiary Arrangements and Facility Attachments which are necessary to bring IAEA verification of EURATOM safeguards into practical effect. Pending the completion of these negotiations, the IAEA has been conducting ad hoc inspections under Article 48 and 71A of the Verification Agreement. Through late 1977, it had conducted more than 80 such inspections at approximately 70 percent of all EURATOM-safeguarded facilities.

Criterion (2)

"No such material, facilities, or sensitive nuclear technology proposed to be exported or previously exported and subject to the applicable Agreement for Cooperation, and no special nuclear material produced through the use of such materials, facilities, or sensitive nuclear technology, will be used for any nuclear explosive device or for research on or development of any nuclear explosive device."

Each Non-Nuclear-Weapons State (NNWS) of the Community is a party to the Nuclear Non-Proliferation Treaty (NPT). As such, it is pledged not to develop nuclear explosive devices for any purpose. This pledge applies to any material, facilities and sensitive nuclear technology previously exported or retransferred to such state by the United States and subject to the United States-EURATOM Agreements for Cooperation and to special nuclear material used in or produced through the use thereof. Since this pledge will apply to the proposed retransfer and to any special nuclear material produced through its use, it appears that criterion (2) would be met with respect to the NNWS of the Community if any subsequent retransfer were made to a NNWS.

With regard to the two Nuclear-Weapons States (NWS) of the Community, the United Kingdom and France, the proposed retransfer and any special nuclear material produced through its use will be subject to the continuing applicability of the United States-EURATOM Agreements for Cooperation. Article XI(1) and (3) of the November 8, 1958 Joint Program Agreement, as amended, which is incorporated into the Additional Agreement for Cooperation by virtue of Article V of the Additional Agreement, provide that "no material, including equipment and devices, transferred pursuant to this Agreement" and "no source or special nuclear material utilized in, recovered from, or produced as a result of the use of material, equipment or devices transferred pursuant to this agreement...will be used for atomic weapons, or for research or development of atomic weapons or for any other military purpose." The United States--with the support of most other major nuclear supplier

states--has taken the position that nuclear explosive devices are "atomic weapons," within the meaning of this guarantee, regardless of the intended end use of such devices. Both the United Kingdom and France havr accepted this interpretation and, as members of the Nuclear Suppliers Group, have agreed as a matter of national policy to authorize the export of trigger list items "only upon formal governmental assurances from recipients explicitly excluding uses which would result in any nuclear explosive device (underlining supplied) and have notified the IAEA to this effect.

Therefore, it appears that the equivalent of criterion (2) is met with respect to this transfer.

Criterion (3)

"Adequate physical security measures will be maintained with respect to such material or facilities proposed to be exported and to any special nuclear material used in or produced through the use thereof. Following the effective date of any regulations promulgated by the Nuclear Regulatory Commission pursuant to section 304(d) of the Nuclear Non-Proliferation Act of 1978, physical security measures shall be deemed adequate if such measures provide a level of protection equivalent to that required by the applicable regulations."

The Nuclear Regulatory Commission has promulgated new regulations pursuant to section 304(d) of P.L. 95-242, which requires measures equivalent to those recommended in the IAEA's INFCIRC/225/Revision 1, "The Physical Protection of Nuclear Material."

Each member of the Community has established physical security measures, which, as a minimum, do meet those recommendations.

In addition, all states in the Community (except Denmark, Ireland, and Luxembourg) also are members of the Nuclear Suppliers Group, and, as such, have agreed to levels of protection, consistent with INFCIRC/225/ Revision 1, to be ensured with respect to nuclear materials and equipment and facilities containing these materials, which are detailed in transmissions of the Nuclear Suppliers Guidelines to the IAEA.

Therefore, it appears the criterion (3) is met.

Criterion (4)

"No such materials, facilities, or sensitive nuclear technology proposed to be exported, and no special nuclear material produced through the use

of such material, will be retransferred to the jurisdiction of any other national or group of nations unless the prior approval of the United States is obtained for such retransfer. In addition to other requirements of law, the United States may approve such retransfer only if the nation or group of nations designated to receive such retransfer agrees that it shall be subject to the conditions required by this section."

Article XI(2) of the November 8, 1958 Joint Program Agreement, as amended, which is incorporated in the Additional Agreement for Cooperation, as amended, by Article V of the latter Agreement, provides that no material (including equipment and devices) may be transferred beyond the control of the EURATOM Community, unless the United States agrees.

Article 1 bis D of the Additional Agreement for Cooperation, as amended, provides that special nuclear material produced through the use of United States-supplied material may be exported to any nation outside the Community or to a group of nations, provided that such nation or group of nations has an appropriate Agreement for Cooperation with the United States or guarantees the peaceful use of the produced material under safeguards acceptable to the Community and the United States. The European Community's interpretation of this language--as set out in an April 15, 1977, letter to the Department of State from Fernand Spaak, Head of the Delegation of the Commission of the European Communities--is that the European Community Supply Agency, prior to any proposed transfer, will consult with the United States to find out whether, in the view of the United States, the proposed recipient of such produced special nuclear material has an Agreement for Cooperation with the United States which is "appropriate." A letter of February 11, 1977 from Fernand Spaak to the Department of Energy (then ERDA) makes clear that this provides the United States a consent right, since the United States has the exclusive ability to decide whether an agreement is "appropriate." This letter states that:

> "It is our understanding that any transfer of recovered materials from the Community of a third country is subject, in accordance with the terms of the EURATOM-United States Agreement for Cooperation, to prior United States authorization."

Therefore, it appears that, with regard to the proposed retransfer and special nuclear material produced through its use, criterion (4) is met.

With respect to transfers within the Community, it should be noted that the use of the words "group of nations" in criterion (4) makes clear that no retransfer consent right is required within a group of nations under this criteria. With respect to this provision, the Senate report states:

> "It should be noted that under the U.S.-EURATOM Agreements, the United States does have a right of prior approval on retransfers of certain material outside of the EURATOM Community. It should also be noted that paragraph 4 does not require prior approval with respect to transfers within the EURATOM Community, consistent with United States policy of treating that Community as a (Single) entity."

The Congressional intent, in connection with exports, not to require United States consent rights for transfers within the Community is also clear in Section 123a.(5) of the Atomic Energy Act, as amended, since it requires that the United States seek a guarantee "by the cooperating party" (which, in this case, is EURATOM as a whole).

However, the Executive Branch, before passage of the Nuclear Non-Proliferation Act of 1978, took the position that, with respect to retransfers into EURATOM, it was important to keep retransfers for reprocessing limited as much as possible to control the use and transfer of the separated materials, especially plutonium. Therefore, the case by case approach described earlier was developed and the system of control by commitment from the non-EURATOM shipping country.

Criterion (5)

"No such material proposed to be exported and no special nuclear material produced through the use of such material will be reprocessed, and no irradiated fuel elements containing such material removed from a reactor shall be altered in form or content, unless the prior approval of the United States is obtained for such reprocessing or alteration."

EURATOM is expressly exempted from Criterion 5 by virtue of Section 126(a)(2) of the Act for a period of two years from March 10, 1978 in as much as the Department of State notified the Nuclear Regulatory Commission on July 20, 1978, that EURATOM has agreed to negotiations with the United States as called for in Section 404(a) of the Nuclear Non-Proliferation Act of 1978. However, this exemption in no way derogates from the rights which the United States has under the United States-EURATOM Agreements for Cooperation and under the commitments from the non-EURATOM shipping country (Japan).

Criterion (6)

"No such sensitive nuclear technology shall be exported unless the foregoing conditions shall be applied to any nuclear material or equipment which is produced or constructed under the jurisdiction of the recipient nation or group of nations by or through the use of any such exported sensitive nuclear technology."

The proposed export does not involve sensitive nuclear technology. Criterion (6) is, therefore, not applicable.

Section 128 Criterion

Section 128a.(1) of the Atomic Energy Act establishes the following additional criterion: "As a condition of continued United States export of source material, special nuclear material, production or utilization facilities, and any sensitive nuclear technology to non-nuclear-weapons states, no such export shall be made unless IAEA safeguards are maintained with respect to all peaceful nuclear activities in, under the jurisdiction of, or carried out under the control of such state at the time of the export."

This criterion does not yet formally apply to this case since the statutory 18/24-month time period in section 128 has not yet expired. As previously noted, however, all nonnuclear-weapon states that are members of the European Atomic Energy Community are Parties to the NPT and, thus, have agreed to accept IAEA safeguards with respect to all their peaceful nuclear activities. Also, as indicated above, all such peaceful nuclear activities within the Community including those in France and the UK are currently subject to EURATOM safeguards.

(B) Safeguards Implementation

The above discussion of criterion (1) of section 127 of the Atomic Energy Act reviews the current status of implementation of IAEA-EURATOM safeguards verification arrangements. DOE believes the framework of commitments, assurances, and safeguards is adequate for the purposes of this export.

(C) Non-Proliferation

There is a long history of cooperation and strong bonds between Japan and the United States and between the member states of the Community and the United States, in the economic and security areas. Japan and the Community countries have worked closely with the United States in efforts to further common nonproliferation objectives, through bilateral cooperative efforts and in such forums as the United Nations, IAEA, and Nuclear Suppliers Group. More recently, Japan and the Community countries have agreed to participate in the International Fuel Cycle Evaluation and are actively participating in this program in order to develop more proliferation-resistant means to help meet future world energy needs with nuclear power.

(D) Energy Needs

Japan is one of the world's largest industrialized nations and is almost totally dependent upon imported energy sources. Thus, it has major energy security concerns and a need to ensure the efficient and economic operation of its nuclear power program. As a further point of information, the contract between TEPCO and BNFL for reprocessing of the fuel covered by this retransfer request was entered into in 1975.

(E) Physical Needs

In this case, there are three power reactors at the Fukushima No. 1 Nuclear Power Reactor Station (Units 1, 2, and 3), each with its own storage pool as well as three additional reactors under construction. All three pools are running short of space. TEPCO has set up schedules for reracking of each reactor pool to fit in with required maintenance shutdowns which cannot take place at the same time. This reracking for greater storage capacity is in keeping with U.S. policy favoring such expansion of fuel storage capacity in cooperating countries like Japan. The storage pool at Unit No. 2, which is the subject of this retransfer request is planned for reracking during September, October, and November 1978, with a shutdown to occur around December 1, 1978, when the whole core will have to be put in the pool because of the planned maintenance. Then, after the maintenance work is completed, a partial discharge of the core is planned. The Japanese procedures and regulations require a full core emergency discharge capability. Unless a substantial portion of the reracking is accomplished by the shutdown, Unit No. 2 could experience operational difficulties after the shutdown. The other pools cannot be used; the reracking order cannot be changed; TEPCO's schedule overall may not be met because this is their first experience at reracking, it is difficult to work in water with spent fuel still in place, the number of workers at their reactor sites is limited, and it is difficult to share manpower and working hours during the reracking of Unit No. 2 as Units No. 1 and No. 3 will be shutdown for periodic overhaul during the same period; and TEPCO cannot plan on sending this spent fuel to the PNC Reprocessing Plant in Tokai because, while some spent fuel was sent there from Unit No. 1, further allocations among Japanese utilities and shipping dates have not yet been determined. Based on the foregoing, it would appear that there is a real risk that the necessary reracking might not be completed in time and, that Unit No. 2 would consequently have to shut down for reracking.

Conclusion

Based upon all of the foregoing and taking into account the foreign policy advice of the Department of State, the Department of Energy is prepared to approve this request for retransfer for reprocessing in accordance with applicable laws and regulations.

B. Revised TEPCO Analysis

Department of Energy
Washington, D.C. 20585

Honorable Clement J. Zablocki
Chairman, Committee on
International Relations
House of Representatives
Washington, D. C. 20515

Dear Mr. Chairman:

This refers to my letter of August 17, 1978, concerning the proposed "subsequent arrangement" involving the retransfer of spent fuel assemblies from the Tokyo Electric Power Company, Inc., to the Euratom Supply Agency for reprocessing by British Nuclear Fuels, Ltd. at the Windscale Works in England. As you will recall, that letter and its attachments outlined several of the considerations that have prompted the Executive Branch to conclude that the subject MB-10 should be issued.

Hearings on this subject, of course, are being held by the Subcommittee on International Economic Policy and Trade of the Committee on International Relations. Representatives of the Departments of State and Energy and ACDA will be appearing during the week of October 2, 1978 and will be pleased to attempt to answer any questions that the Committee may have on the subject. In the interim, however, we have given careful consideration to several Congressional comments that we have received on the analysis that was prepared and it is the purpose of this letter to advise you as to our thinking on this subject.

As you know, a major issue has arisen as to whether the subject transfer appropriately falls under the Section 131b(3) or Section 131b(2) of the Atomic Energy Act, as amended, and there have been some differing perspectives as to which Section of the law applies.

You will recall that our analysis assumed that the provisions of Section 131b(3) of the Atomic Energy Act, as amended, would apply to this case. Our report also expressed the judgment of the Executive Branch that the proposed retransfer will not result in a significant increase in the risk of proliferation. In reaching this judgment, we gave due consideration as to whether we would have timely warning "of any diversion well in advance of the time at which the non-nuclear-weapon state could transform the diverted material into a nuclear explosive device." We believe this judgment is supported, among other factors, by the

non-proliferation credentials of the countries involved, where the reprocessing will occur, and the fact that the derived plutonium may not be retransferred to Japan or any other state without explicit US consent.

In the interim and taking into account the views expressed by Congressman Bingham, Senator Glenn, and others the Department of Energy and the other interested agencies have analyzed this request under Section 131b(2) and a revised analysis reflecting this approach is enclosed. Consistent with our earlier analysis, DOE has reached the judgment that the proposed retransfer will not result in a significant increase of the risk of proliferation beyond that which existed at the time that approval was requested. The Department of State, in accordance with Section 131b(2), also has reached this judgment. Our analysis has also been amplified in several respects to provide additional data justifying the transfer and further argumentation in support of our judgment. Moreover, it stresses that any return of the separated plutonium to Japan would have to be the subject of a separate subsequent arrangement that, in itself, would be subject to Congressional referral procedures of Section 131.

It is our hope that our revised analysis will clarify this proposal.

Sincerely,

Nelson F. Sievering, Jr.
Deputy Assistant Secretary
for International Programs

Enclosure:
Revised Analysis

9/22/78

Analysis of Request Number RTD/EU(JA)-20 for Retransfer for Reprocessing

Parties

Transferor - The Tokyo Electric Power Company, Inc., Japan (TEPCO)

Transferee - British Nuclear Fuels, Ltd. (BNFL) for UKAEA (EURATOM)

Origin

Obtained by transferor from USDOE under Contract No. E(49-14)UES/JA/3

Material

Fuel Type	Marketing, Number, etc.	Total U and Pu (in grams)	U-235 and Pu (fissile) (in grams)	Isotopic Percent U-235 and Pu (fissile)
Enriched Uranium Oxide (GE-BWR)		U 24,346,000	139,000	About 1.19
		Pu 118,000	89,000	75

Present Location

Fukushima No. 1 Power Nuclear Station in the province of Fukushima, Japan. Unit No. 2.

Proposed Location

British Nuclear Fuels, Ltd., United Kingdom (EURATOM)

Purpose

Chemical reprocessing and recovery of uranium and plutonium contained in the irradiated fuels. The disposition of the produced plutonium would be subject to the prior agreement of the United States and the uranium would either be returned as UO_3 to Japan or sent to the United States in the form of UF_6 for enrichment at a Department of Energy (DOE) facility.

Schedule

The proposed retransfer is scheduled to take place in October 1978. The actual reprocessing will not take place for about 10 years.

Section 131 Analysis

This request falls under the definition of a "subsequent arrangement" in Section 131a(2)B of the Atomic Energy Act of 1954, as amended (Act) and requires the concurrence of the State Department and consultation by DOE with the Arms Control and Disarmament Agency (ACDA), Nuclear Regulatory Commission (NRC), and Department of Defense (DOD). ACDA may, if it deems such action necessary, prepare a Nuclear Proliferation Assessment Statement, but has not elected to do so in this case. Interagency procedures also provide for notice to and require comments by the Department of Commerce. The State Department has concurred in approval of this request. ACDA, DOD, and Commerce have been consulted and have raised no objection. Chairman Hendrie and Commissioner Kennedy of NRC have no objections to the proposed retransfer provided it is subject to the conditions contained in this analysis. NRC Commissioner Bradford has advised against approval at this time on the basis that the US policy of approving such retransfers only as a "last resort" is not satisfied as long as reracking or other domestic management of the spent fuel remains a serious possibility. Commissioner Gilinsky has concurred in the application of a rigorous test of physical need to this case. Commissioner Ahearne has abstained.

Notice of the proposed subsequent arrangement must be given at least 15 days in advance in the Federal Register, together with the written determination of the Secretary of Energy or his delegate that this arrangement will not be inimical to the common defense and security. This determination has been made. The required Federal Register notice has been published. Under Section 131b(1) of the Act, this retransfer cannot be approved until the Committee on International Relations of the House and the Committee on Foreign Relations of the Senate have been provided with a report containing the reasons for entering into the arrangement and a period of 15 days of continuous session has elapsed; provided that the Secretary of DOE (by delegation from the President under E.O. 12058) can declare an emergency due to unforeseen circumstances and then the period shall be 15 calendar days.

The applicable provisions of Section 131(b) of the Act stipulate important criteria that must be taken into account prior to entering into any subsequent arrangement for the retransfer for reprocessing of US supplied special nuclear materials or of special nuclear materials produced through US assistance. While a distinction is drawn in Sections 131b(2) and 131b(3) of the law between facilities which have and have not processed power reactor fuel assemblies or that have or have not been the subject of subsequent arrangements prior to enactment of the Act, common policy objectives clearly apply to both paragraphs. These pertain to whether the proposed retransfer, inter alia, will result in a significant increase in the risk of proliferation beyond that which exists at the time that approval is requested.

In particular, Section 131b(2) of the Act provides that:

> "(2) the Secretary of Energy may not enter into any subsequent arrangement for the reprocessing of any such material in a facility which has not processed power reactor fuel assemblies or been the subject of a subsequent arrangement therefor prior to the date of enactment of the Nuclear Non-Proliferation Act of 1978 or for subsequent retransfer to a non-nuclear-weapon state of any plutonium in quantities greater than 500 grams resulting from such reprocessing unless in his judgment, and that of the Secretary of State, such reprocessing or retransfer will not result in a significant increase of the risk of proliferation beyond that which exists at the time that approval is requested. Among all the factors in making this judgment, foremost consideration will be given to whether or not the reprocessing or retransfer will take place under conditions that will ensure timely warning to the United States of any diversion well in advance of the time at which the non-nuclear-weapon state could transform the diverted material into a nuclear explosive device;"

Section 131b(3) of the Act provides that:

> "(3) the Secretary of Energy shall attempt to ensure, in entering into any subsequent arrangement for the reprocessing of any such material in any facility that has processed power reactor fuel assemblies or been the subject of a subsequent arrangement therefor prior to the date of enactment of the Nuclear Non-Proliferation Act of 1978, or for the subsequent retransfer ot any non-nuclear-weapon state of any plutonium in quantities greater than 500 grams resulting from such reprocessing, that such reprocessing or retransfer shall take place under conditions comparable to those which in his view, and that of the Secretary of State, satisfy the standards set forth in paragraph (2)."

The subject reprocessing will occur in the THORP plant planned for construction at Windscale. The Executive Branch has evaluated this particular proposal under Section 131b(2). Within this framework, the Department of Energy has reached the judgment that the proposed retransfer will not result in a significant increase of the risk of proliferation beyond that which existed at the time that approval was requested. The Department of State, as required by this Section of the law, has reached this same judgment and ACDA has concurred with this view.

In reaching this judgment, we gave due consideration as to whether we could have timely warning "of any diversion well in advance of the time

at which the non-nuclear-weapon state could transform the diverted material into a nuclear explosive device." We believe this judgment is supported, among other factors, by the non-proliferation credentials of the countries involved, where the reprocessing will occur, and the fact that the derived plutonium may not be retransferred to Japan or any other state without explicit US consent.

More specifically, the plutonium separated in the reprocessing facility will remain in the United Kingdom until it is disposed of in accordance with terms that are acceptable to the United States. In cases such as this the United States has been controlling retransfers within the European Community of separated special nuclear material by a commitment from the non-Euratom shipping country:

(1) That the spent fuel will be retained by the processor until it may be reprocessed and that, thereafter, the recovered special nuclear material will be retained by the reprocessor subject to the direction of the shipper.

(2) That any direction by the shipper to the reprocessor for the transfer or use of the recovered special nuclear material will be subject to the prior approval of the United States.

The non-Euratom shipping country agrees to thse conditions based upon the processor's contractual pledge to hold the spent fuel, reprocess it, and then use or transfer the recovered material only in accordance with the shipper's instructions. In the subject case, Japan has assured the United States that it agrees to the above conditions.

Also, the prior approval of the United States would be required for any transfer of the produced material to a country outside Euratom. Such a transfer would constitute a new "subsequent arrangement" pursuant to Section 131 of the Atomic Energy Act and as such would have to be considered on its own merits by the Executive Branch and then the Congress. Thus, the proposed retransfer of Japanese spent fuel to the United Kingdom will not prejudge the US position concerning disposition of the plutonium. While a return to Japan is contemplated by Japan for use in its advanced reactor research program, this will depend on US approval which will only be granted under terms consistent with the provisions of the Non-Proliferation Act including Section 131. The United States intends to emphasize this point to the other governments concerned and to underscore that it shall remain the US policy to consider retransfer proposals for reprocessing on a case by case basis. Moreover, we intend to emphasize that our approval of this retransfer in no way constitutes a policy endorsement of the THORP plant. We believe our case by case approach avoids any implication that we are giving any generic endorsement to conventional PUREX reprocessing which could serve to

influence non-nuclear-weapon states to acquire facilities of a comparable nature, or encourage them to believe that the United States will adopt a relaxed attitude towards subsequent retransfer requests. This case by case approach also enables us to relate our approvals of such retransfers to ongoing developments in the States concerned including the evolution of non-proliferation policies.

Finally, a number of other factors were considered that are relevant to the judgment that the proposed retransfer will not result in a significant increase in the risk of proliferation. In particular, the United Kingdom is a party to the NPT and has developed impressive credentials in fostering rigorous non-proliferation policies. The likelihood that the UK will shift away from such attitudes is judged to be highly remote. Japan also is an NPT party and can be expected to support the development of arrangements that are supportive to non-proliferation. Moreover, the British Foreign Secretary, Mr. Owen, has indicated that the UK intends to take the results of the International Nuclear Fuel Cycle Evaluation (INFCE) into account in its detailed planning of THORP to reinforce its non-proliferation policies. Also, it is understood that the THORP facility will be subject to safeguards pursuant to the United Kingdom's voluntary safeguards agreement with the IAEA and to physical security measures meeting the currently applicable international guidelines. Consequently, these factors support a judgment that the subject spent fuel and produced plutonium to be stored in the UK is unlikely to be subject to any diversion by a non-nuclear-weapon state or a terrorist group.

(A) Section 127 Analysis

Criteria used for retransfers, in addition to the foregoing requirements, are the same as those set forth for NRC licenses in Section 127 of the Act. The word "export" (or a variation thereof) should henceforth be considered as equivalent to the word "retransfer" (or a variation thereof) in the criteria set forth below.

Criterion (1)

"IAEA safeguards as required by Article III(2) of the Treaty will be applied with respect to any such material or facilities proposed to be exported, to any such material or facilities previously exported and subject to the applicable Agreement for Cooperation, and to any special nuclear material used in or produced through the use thereof."

Since the United Kingdom is a nuclear weapons state, this criterion is satisfied in that IAEA safeguards are not required in the United Kingdom pursuant to the NPT.

However, it is to be noted that several actions designed to assure the effective application of safeguards in the European Community as a

whole, including those required by the NPT in the non-nuclear weapon States of the Community have been undertaken. Under Article V of the Additional Agreement for Cooperation of 1960, as amended, which incorporates Article XI, XII and Annex B of the November 8, 1958, Joint Program Agreement, as amended, the Community undertakes the responsibility of establishing and implementing a safeguards and control system designed to give maximum assurance that any material supplied by the United States or generated from such supply will be used solely for peaceful purposes ("Euratom Safeguards System"). The Community is bound to consult and exchange experiences with the IAEA with the objective of establishing a system reasonably compatible with that of the latter. The Community is responsible for establishing and maintaining a mutually (with respect to the United States) satisfactory and effective safeguards and controls system in accordance with stated principles.

Euratom safeguards are being applied to material and facilities previously exported or retransferred and subject to the United States-Euratom Cooperation Agreements and to special nuclear material used in or produced through the use thereof. These agreements require these safeguards to be applied to such material and facilities and to the proposed export or retransfer and special nuclear mateial produced through its use.

Also all of the member states of the Community, with the exception of France (a nuclear-weapon state), are parties to the NPT. An agreement for the IAEA application of safeguards pursuant to the NPT was signed by the IAEA and Belgium, Denmark, the Federal Republic of Germany, Ireland, Italy, Luxembourg, the Netherlands, and the European Atomic Energy Community (EURATOM), on April 15, 1973. (As a nuclear-weapon state, however, the United Kingdom permits the application of IAEA safeguards pursuant to the NPT under a voluntary offer which was signed on September 6, 1976. Similarly, France has agreed to application of the IAEA safeguards verification system at some of its civil facilities under a France-Euratom-IAEA trilateral approved by the IAEA's Board of Governors on February 21, 1978.)

Further, the Euratom accountability system was adapted to that of the IAEA through the publication of Commission Regulation 322/76, which came into force during January 1977. On February 17, 1977, the Commission of the European Communities notified the IAEA that all of the necessary steps had been taken for the IAEA-Euratom Safeguards Verification Agreement pursuant to the NPT to come into force and the Agreement came into force on February 21, 1977.

Currently, Euratom and the IAEA are actively negotiating the Subsidiary Arrangements and Facility Attachments. Pending the completion of these negotiations, the IAEA has been conducting ad hoc

inspections under Article 48 and 71A of the Verification Agreement. Through late 1977, it had conducted more than 80 such inspections at approximately 70 percent of all Euratom-safeguarded facilities.

Criterion (2)

"No such material, facilities, or sensitive nuclear technology proposed to be exported or previously exported and subject to the applicable Agreement for Cooperation, and no special nuclear material produced through the use of such materials, facilities, or sensitive nuclear technology, will be used for any nuclear explosive device or for research on or development of any nuclear explosive device."

Each Non-Nuclear-Weapon State (NNWS) of the Community is a party to the Nuclear Non-Proliferation Treaty (NPT). As such, it is pledged not to develop nuclear explosive devices for any purpose. This pledge applies to any material, facilities and sensitive nuclear technology previously exported or retransferred to such state by the United States and subject to the United States-Euratom Agreements for Cooperation and to special nuclear material used in or produced through the use thereof. Since this pledge will apply to the proposed retransfer and to any special nuclear material produced through its use, it appears that criterion (2) would be met with respect to the NNWS of the Community if any subsequent retransfer were made to a NNWS.

With regard to the United Kingdom, a Nuclear Weapon State (NWS), the proposed retransfer and any special nuclear material produced through its use will be subject to the continuing applicability of the United States-Euratom Agreements for Cooperation. Article XI(1) and (3) of the November 8, 1958, Joint Program Agreement, as amended, which is incorporated into the Additional Agreement for Cooperation by virtue of Article V of the Additional Agreement, provide that "no material, including equipment and devices, transferred pursuant to this Agreement" and "no source of special nuclear material utilized in, recovered from, or produced as a result of the use of material, equipment or devices transferred pursuant to this agreement . . . will be used for atomic weapons, or for research or development of atomic weapons or for any other military purpose." The United States--with the support of most other major nuclear supplier states--has taken the position that nuclear explosive devices are "atomic weapons," within the meaning of this guarantee, regardless of the intended end use of such devices. Both the United Kingdom and France have accepted this interpretation and, as members of the Nuclear Suppliers Group, have agreed as a matter of national policy to authorize the export of trigger list items only upon formal governmental assurances from recipients explicitly excluding uses which would result in any nuclear explosive device (underlining supplied) and have notified the IAEA to this effect.

Therefore, the equivalent of criterion (2) is met with respect to this transfer.

Criterion (3)

"Adequate physical security measures will be maintained with respect to such material or facilities proposed to be exported and to any special nuclear material used in or produced through the use thereof. Following the effective date of any regulations promulgated by the Nuclear Regulatory Commission pursuant to section 304(d) of the Nuclear Non-Proliferation Act of 1978, physical security measures shall be deemed adequate if such measures provide a level of protection equivalent to that required by the applicable regulations."

The Nuclear Regulatory Commission has promulgated new regulations pursuant to section 304(d) of P.L. 95-242, which requires measures equivalent to those recommended in the IAEA's INFCIRC/225/Revision 1, "The Physical Protection of Nuclear Material."

Each member of the Community has established physical security measures, which, as a minimum, do meet those recommendations.

In addition, all states in the Community (except Denmark, Ireland, and Luxembourg) also are members of the Nuclear Suppliers Group, and, as such, have agreed to levels of protection, consistent with INFCIRC/225/ Revision 1, to be ensured with respect to nuclear materials and equipment and facilities containing these materials, which are detailed in transmissions of the Nuclear Suppliers Guidelines to the IAEA.

Therefore, criterion (3) is met.

Criterion (4)

"No such materials, facilities, or sensitive nuclear technology proposed to be exported, and no special nuclear material produced through the use of such material, will be retransferred to the jurisdiction of any other nation or group of nations unless the prior approval of the United States is obtained for such retransfer. In addition to other requirements of law, the United States may approve such retransfer only if the nation or group of nations designated to receive such retransfer agrees that it shall be subject to the conditions required by this section."

Under this specific arrangement, the material and any recovered special nuclear material can be transferred out of U.K. only with U.S. consent. Article XI(2) of the November 8, 1958 Joint Program Agreement, as amended, which is incorporated in the Additional Agreement for Cooperation, as amended, by Article V of the latter Agreement, provides that no material

(including equipment and devices) may be transferred beyond the control of the Euratom Community, unless the United States agrees.

Article 1 bis D of the Additional Agreement for Cooperation, as amended, provides that special nuclear material produced through the use of United States-supplied material may be exported to any nation outside the Community or to a group of nations, provided that such nation or group of nations has an appropriate Agreement for Cooperation with the United States or guarantees the peaceful use of the produced material under safeguards acceptable to the Community and the United States. The European Community's interpretation of this language--as set out in an April 15, 1977, letter to the Department of State from Fernand Spaak, Head of the Delegation of the Commission of the European Communities--is that the European Community Supply Agency, prior to any proposed transfer, will consult with the United States to find out whether, in the view of the United States, the proposed recipient of such produced special nuclear material has an Agreement for Cooperation with the United States which is "appropriate." A letter of February 11, 1977 from Fernand Spaak to the Department of Energy (then ERDA) makes clear that this provides the United States a consent right, since the United States has the exclusive ability to decide whether an agreement is "appropriate." This letter states that:

> "It is our understanding that any transfer of recovered materials from the Community of a third country is subject, in accordance with the terms of the Euratom-United States Agreement for Cooperation, to prior United States authorization."

Therefore, with regard to the proposed retransfer and special nuclear material produced through its use, criterion (4) is met.*

With respect to transfers within the Community, it should be noted that the use of the words "group of nations" in criterion (4) makes clear that no retransfer consent right is required within a group of nations under this criteria. With respect to this provision, the Senate report states:

> "It should be noted that under the U.S.-Euratom Agreements, the United States does have a right of prior approval on retransfers of certain material outside of the Euratom Community. It should also be noted that paragraph 4 does not require prior approval with respect to transfers within the Euratom Community, consistent with United States policy of treating that Community as a (single) entity."

The Congressional intent, in connection with exports, not to require United States consent rights for transfers within the Community is also

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*It should be noted that since the US-Euratom Agreements for Cooperation were authorized in accordance with Section 124 of the Atomic Energy Act, the NRC may continue to issue export licenses pursuant to the authority in the first proviso in Section 126a(2) even if criterion (4) was not met.

clear in Section 123a.(5) of the Atomic Energy Act, as amended, since it requires that the United States seek a guarantee "by the cooperating party" (which, in this case, is Euratom as a whole).

However, the Executive Branch, before passage of the Nuclear Non-Proliferation Act of 1978, took the position that, with respect to retransfers into Euratom, it was important to keep retransfers for reprocessing limited as much as possible to control the use and transfer of the separated materials, especially plutonium. Therefore, the case by case approach described earlier was developed and the system of control by commitment from the non-Euratom shipping country.

Criterion (5)

"No such material proposed to be exported and no special nuclear material produced through the use of such material will be reprocessed, and no irradiated fuel elements containing such material removed from a reactor shall be altered in form or content, unless the prior approval of the United States is obtained for such reprocessing or alteration."

The purpose of this arrangement is, of course, for reprocessing. By way of background, however, Euratom is expressly exempted from Criterion 5 by virtue of Section 126a(2) of the Act for a period of two years from March 10, 1978, in as much as the Department of State notified the Nuclear Regulatory Commission on July 20, 1978, that Euratom has agreed to negotiations with the United States as called for in Section 404(a) of the Nuclear Non-Proliferation Act of 1978. However, this exemption in no way derogates from the rights which the United States has under the United States-Euratom Agreements for Cooperation and under the commitments from the non-Euratom shipping country (Japan).

Criterion (6)

"No such sensitive nuclear technology shall be exported unless the foregoing conditions shall be applied to any nuclear material or equipment which is produced or constructed under the jurisdiction of the recipient nation or group of nations by or through the use of any such exported sensitive nuclear technology."

The proposed retransfer does not involve sensitive nuclear technology. Criterion (6) is, therefore, not applicable.

(B) Section 128 Analysis

Section 128a.(1) of the Atomic Energy Act, as amended, establishes the following additional criterion: "As a condition of continued United States export of source material, special nuclear material, production or

utilization facilities, and any sensitive nuclear technology to non-nuclear-weapons states, no such export shall be made unless IAEA safeguards are maintained with respect to all peaceful nuclear activities in, under the jurisdiction of, or carried out under the control of such state at the time of the export."

This criterion does not apply to this case. The statutory 18/24-month time period in section 128 has not yet expired. As previously noted, however, all non-nuclear-weapon states that are members of the European Atomic Energy Community are Parties to the NPT and, thus, have agreed to accept IAEA safeguards with respect to all their peaceful nuclear activities. Also, as indicated above, all such peaceful nuclear activities within the Community including those in France and the UK are currently subject to Euratom safeguards.

(C) Safeguards Implementation

The above discussion of criterion (1) of section 127 of the Atomic Energy Act reviews the current status of implementation of IAEA-Euratom safeguards verification arrangements. DOE believes the framework of commitments, assurances, and safeguards is adequate for the purposes of this export.

(D) Non-Proliferation

There is a long history of cooperation and strong bonds between Japan and the United States between the member states of the Community and the United States, in the economic and security areas. Japan and the Community countries have worked closely with the United States in efforts to further common non-proliferation objectives, through bilateral cooperative efforts and in such forums as the United Nations, IAEA, and Nuclear Suppliers Group. More recently, Japan and the Community countries have agreed to participate in the International Fuel Cycle Evaluation and are actively participating in this program in order to develop more proliferation-resistant means to help meet future world energy needs with nuclear power.

(E) Physical Needs

In an effort to support non-proliferation policies and effective reactor operations, the Japanese are engaged in an effort to expand their fuel storage capacity by reracking their present reactor pools. In this case, there are three power stations at the Fukushima No. 1 Nuclear Power Reactor Station (Units 1, 2, and 3), each with its own storage pool. All three pools are running short of space and are scheduled to be reracked.

Units 1 and 3 are now undergoing periodical inspection. The storage pool at Fukushima Unit No. 2, which is the subject of this request, was originally to be reracked during September, October, and November 1978, with a shutdown to occur around December 1, 1978, when the entire core will have to be discharged and stored in the pool. In making their original submission, the utility

stressed that there was substantial doubt whether the reracking could be completed within this schedule. The shutdown date reportedly is designed to comply with regulations of the Japanese Government (which require one inspection per year) and also is designed to assure that the reactor can go back to full power in time for the summer peak demand. More recently, the utility has advised that it has been necessary to defer the reracking period entirely due to a shortage of skilled workers trained to work with highly radioactive material. The individuals with such capabilities reportedly are now occupied with the inspection of Fukushima units 1 and 3. Also the reracking reportedly entails working under water in a limited space and cannot be performed in a short interval of time. Moreover, TEPCO's design concept entails a total reracking of the pool at Unit #2 and a partial reracking scenario would entail a new design concept which reportedly could not be effectuated prior to the December 1 shutdown. Since defective riser piping has been discovered, the reactor shutdown time is now anticipated to be six months. Normal shutdown time for maintenance and refueling is three months and an additional three months will be required for replacement work on defective riser piping. Because of the factors noted above, TEPCO has advised that if it now starts reracking before the December 1 shutdown, it will not be able to finish by that date and that this, in turn, could lead to both difficulties and further delays in the shutdown period, including an extension of the reactor downtime. Specifically, if the reracking is started now, downtime of the reactor would be increased by another 60 days due to the difficulties of trying to perform maintenance work, refueling, riser pipe repair and reracking all concurrently. Also due to the shortage of skilled workers, it is difficult to share manpower during the reracking of Unit No. 2 as Units No. 1 and 3 which also will be shut down for maintenance. Moreover, it is difficult to perform work in the pool during the shutdown period while refueling and maintenance activities are taking place and while the storage pool is full. Thus, based on all of these factors, the start of reracking prior to December 1, 1978, reportedly could result in a net loss of up to an additional 1,100,000 megawatt-hours during the peak summer period which TEPCO would have to purchase from other utilities. Therefore, TEPCO wishes to postpone reracking until after start up of Unit No. 2 (around June 1979).

Our latest information also indicates that it is necessary that at least 93 spent fuel elements be removed from the storage pond to allow space for refueling and preservation of sufficient spaces for emergency discharge of a full core.

The following is the latest status of fuel element storage capacity at Unit No. 2:

1. Total spaces in storage pond (one fuel element/one space) . . . 820

2. Number of spaces required* for emergency discharge of full core 548

*By Japanese Regulations. (MITI)

3. Available storage for additional fuel elements (1-2) 272

4. Present number of spaces occupied in storage pond 269

5. Present unoccupied spaces (3-4) 3

6. Number of fuel elements to be discharded from reactor during next refueling 96**

7. Number of spent fuel elements needed to be removed from storage pond in order to provide spaces for newly discharged fuel elements while preserving emergency core capacity (6-5) 93

NOTE: For the shipment from Japan to the United Kingdom by the ship Pacific Fisher, TEPCO has been allocated space for 126 spent elements; therefore, the Japanese have requested U.S. approval to transfer 126 elements.

Conclusion

Based upon all of the foregoing and taking into account the foreign policy advice of the Department of State, the Department of Energy is prepared to approve this request for retransfer in accordance with applicable laws and regulations.

**Due to a reduction in the operating power level of the reactor from 784 MWe to 700 MWe, this represents a reduction from the figures first presented by the utility last March. The utility advises that the figure of 96 elements could increase if, for example, any fuel element failures are found in the discharge process.

C. KANSAI ANALYSIS

Department of Energy
Washington, D.C. 20585

Honorable Clement J. Zablocki
Chairman, Committee on International
Relations
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

In accordance with Section 131 of the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2160, notice is hereby given of a proposed "subsequent arrangement" under the Additional Agreement for Cooperation between the United States and the European Atomic Energy Community and the Agreement for Cooperation between the United States and Japan.

The subsequent arrangement to be carried out under the above mentioned agreements involves approval of a transfer of 65 spent fuel assemblies containing 190 kilograms of plutonium and 29,000 kilograms of uranium containing 274 kilograms of U-235 from the Kansai Electric Power Company, Japan, to the Euratom Supply Agency for COGEMA (Compagnie Generale des Matieres Nucleaires), La Hague, France, for the purpose of reprocessing. This transfer involves two shipments, i.e., 30 fuel assemblies in October 1978 and 35 fuel assemblies in January 1979. The enriched uranium was originally supplied by United States under enrichment contract No. E(49-14) UES/JA/6.

It has been determined that retransfer and reprocessing of the fuel assemblies referred to above will not be inimical to the common defense and security (Section 131a. (1) of the Act). Also for the reasons set forth in the enclosed analysis, the Department of Energy and the Department of State favor approval of the subject retransfer at this time. The views of the NRC Commissioners are appended.

This letter of transmittal together with the attached analysis constitutes the report to the Committee on International Relations of the House of Representatives and the Committee on Foreign Relations of the Senate required by Section 131 of the Act.

Sincerely,

Nelson F. Sievering, Jr.
Deputy Assistant Secretary
for International Programs

Enclosure:
Analysis of Request
No. RTD/EU(JA)-20
Views of NRC Commissioners

September 29, 1978

Analysis of Request Number RTD/EU(JA)-21
For Retransfer for Reprocessing

Parties

Transferor - The Kansai Electric Power Company, Inc., Japan

Transferee - Compagnie Generale des Matiers Nucleaires (Cogema)
La Hague, France

Origin of Enriched Uranium

Obtained by transferor from US Department of Energy (DOE) under contract E(49-14)UES/JA/6

Material

Fuel Type	Total U (Kgs)	U-235 (Kgs)	PU (Kgs)	Shipping Date
First Shipment				
Uranium Oxide PWR Type-30 Assemblies	13,400	112	86	October 1978
Second Shipment				
Uranium Oxide PWR Type-35 Assemblies	15,600	162	104	January 1979

Present Location of Spent Fuel

Takahama Nuclear Power Station, Unit No. 1, Japan

Proposed Location of Spent Fuel

Cogema, La Hague, France

Purpose

Chemical reprocessing of the spent fuel to recover uranium and plutonium. Kansai has stated that it intends to request the return of the produced plutonium and recovered uranium to Japan. This disposition would require the approval of the US Government. Reprocessing would be accomplished under a contract that Kansai signed with Cogema in 1975. The spent fuel is to be transferred by the United Kingdom's ship, Pacific Fisher, under a contract between Kansai and the UK also signed in 1975.

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Shipment Schedule

The proposed retransfer is scheduled to take place in two shipments, the first to occur in October 1978 and the second in January 1979.

Section 131 Analysis

This request falls under the definition of a "subsequent arrangement" in section 131 of the Atomic Energy Act of 1954, as amended, (ACT) and requires the concurrence of the Department of State and consultation by DOE with the Arms Control and Disarmament Agency (ACDA), Nuclear Regulatory Commission (NRC), and the Departments of Commerce and Defense. ACDA may, if it deems such action necessary, prepare a Nuclear Proliferation Assessment Statement but has not elected to do so in this case. Notice of the proposed subsequent arrangement must be given at least 15 days in advance in the Federal Register, together with the written determination of the Secretary of Energy or his delegate that this arrangement will not be inimical to the common defense and security. Under Section 131b.(1) of the Act, this retransfer cannot be approved until the Committee on International Relations of the House and the Committee on Foreign Relations of the Senate have been provided with a report containing the reasons for entering into the arrangement and a period of 15 days of continuous session has elapsed; provided that the Secretary of DOE (by delegation from the President under E.O. 12058) can declare an emergency due to unforeseen circumstances and then the period shall be 15 calendar days.

The applicable provisions of Section 131(b) of the Act stipulate important criteria that must be taken into account prior to entering into any subsequent arrangement for the retransfer for reprocessing of US supplied special nuclear materials or of special nuclear materials produced through US assistance. While a distinction is drawn in Sections 131b(2) and 131b(3) of the law between facilities which have and have not processed power reactor fuel assemblies or been the subject of subsequent arrangements prior to enactment of the Act, common policy objectives clearly apply to both paragraphs. These pertain to whether the proposed retransfer will result in a significant increase in the risk of proliferation beyond that which exists at the time that approval is requested.

In particular, Section 131b(2) of the Act provides that: "(2) the Secretary of Energy may not enter into any subsequent arrangement for the reprocessing of any such material in a facility which has not processed power reactor fuel assemblies or been the subject of a subsequent arrangement therefor prior to the date of enactment of the Nuclear Non-Proliferation Act of 1978 or for subsequent retransfer to a non-nuclear-weapon state of any plutonium in quantities greater than 500 grams resulting from such reprocessing unless in his judgment, and that of the Secretary of State, such reprocessing or retransfer will not result in a significant increase of the risk of proliferation beyond that which exists at the time that approval is requested. Among all the

factors in making this judgement, foremost consideration will be given to whether or not the reprocessing or retransfer will take place under conditions that will ensure timely warning to the United States of any diversion well in advance of the time at which the non-nuclear-weapon state could transform the diverted material into a nuclear explosive device;"

Section 131b(3) of the Act provides that: "(3) the Secretary of Energy shall attempt to ensure, in entering into any subsequent arrangement for the reprocessing of any such material in any facility that has processed power reactor fuel assemblies or been the subject of a subsequent arrangement therefor prior to the date of enactment of the Nuclear Non-Proliferation Act of 1978, or for the subsequent retransfer to any non-nuclear-weapon state of any plutonium in quantities greater than 500 grams resulting from such reprocessing, that such reprocessing or retransfer shall take place under conditions comparable to those which in his view, and that of the Secretary of State, satisfy the standards set forth in paragraph (2)."

The Department of Energy has been advised that the subject reprocessing will occur in the existing La Hague "UP-2" plant which, prior to March 10, 1978, had reprocessed power reactor fuel assemblies. Our approval of this retransfer will be conditioned on this fact.

Based on the facts in hand, and in consultation with the other interested agencies in the Executive Branch, the Department of Energy has sought to ensure that the proposed retransfer will not result in a significant increase of the risk of proliferation beyond that which existed at the time that approval was requested, and has considered whether there would be timely warning "of any diversion well in advance of the time at which the non-nuclear-weapon state could transform the diverted material into a nuclear explosive device". Together with the Department of State, we have concluded that, taking into account the non-proliferation credentials of the countries involved, where the reprocessing will occur, and the fact that the derived plutonium may not be retransferred to Japan or any other state without explicit US consent, this approval will not result in a significant increase in the risk of proliferation. The NRC has been consulted.

More specifically, the plutonium separated in the reprocessing facility will remain in France until it is disposed of in accordance with terms that are acceptable to the United States. In cases such as this the United States has been controlling retransfers within the European Community of separated special nuclear material by a commitment from the non-Euratom shipping country:

(1) That the spent fuel will be retained by the processor until it may be reprocessed and that, thereafter, the recovered special nuclear material will be retained by the reprocessor subject to the direction of the shipper.

(2) That any direction by the shipper to the reprocessor for the transfer or use of the recovered special nuclear material will be subject to the prior approval of the United States.

The non-Euratom shipping country agrees to these conditions based upon the processor's contractual pledge to hold the spent fuel, reprocess it, and then use or transfer the recovered material only in accordance with the shipper's instructions. In the subject case, Japan has assured the United States that it agrees to the above conditions.

Also, the prior approval of the United States would be required for any transfer of the produced material to a country outside Euratom. Such a transfer would consitute a new "subsequent arrangement" pursuant to Section 131 of the Atomic Energy Act and as such would have to be considered on its own merits by the Executive Branch and then the Congress. Thus, the proposed retransfer of Japanese spent fuel to France will not prejudge the US position concerning disposition of the plutonium and while a return to Japan is contemplated by Japan for use in its advanced reactor research program, this will depend on US approval which will only be granted under terms consistent with the provisions of the Non-Proliferation Act including Section 131. The United States intends to emphasize this point to the other governments concerned and to underscore that it shall remain the US policy to consider retransfer proposals for reprocessing on a case by case basis. We believe our case by case approach avoids any implication that we are giving any generic endorsement to conventional PUREX reprocessing which could serve to influence non-nuclear-weapon states to acquire facilities of a comparable nature, or encourage them to believe that the United States will adopt a relaxed attitude towards subsequent retransfer requests of this character. This approach also enables us to relate our approvals of such retransfers to ongoing developments in the states concerned including the evolution of non-proliferation policies.

Finally, a number of other factors were considered in arriving at the conclusion that the proposed retransfer will not result in a significant increase in the risk of proliferation. In particular, at the bilateral and multilateral level, the Government of France has evidenced a cooperative attitude in fostering non-proliferation objectives. France, for example, has supported IAEA safeguards and has adhered to the Nuclear Suppliers' Guidelines. Moreover, while not a party to the NPT, France has stated that it will act as if it were a party. France is an active participant in INFCE and we believe that a US approval of this request will be supportive of continuing French cooperation in arriving at a successful outcome in INFCE.

France also increasingly has displayed a cooperative attitude in consulting with the United States on a range of non-proliferation issues. The likelihood that France will shift away from such attitudes is judged to be highly remote. Moreover, France intends to take the results of INFCE into account in its detailed planning of its future nuclear activities. Also, it is understood that France generally subscribes to effective physical security measures and that Euratom safeguards will apply to this material. These factors support a judgment that the subject spent fuel and produced plutonium to be

stored in France are unlikely to be subject to any diversion by a non-nuclear-weapon state or a terrorist group. Japan also is an NPT party and can be expected to support the development of arrangements that foster non-proliferation objectives.

(A) Section 127 Analysis

Criteria used for retransfers, in addition to the foregoing requirements are the same as those set forth for NRC licenses in Section 127 of the Act. The word "export" (or a variation thereof) should henceforth by considered as equivalent to the word "retransfer" (or a variation thereof) in the criteria set forth below.

Criterion (1)

"IAEA safeguards as required by Article III(2) of the Treaty will be applied with respect to any such material or facilities proposed to be exported, to any such material or facilities previously exported and subject to the applicable Agreement for Cooperation, and to any special nuclear material used in or produced through the use thereof."

Since France is a nuclear weapons state, this criterion is satisfied in that IAEA safeguards are not required in France pursuant to the NPT.

However, it is to be noted that several actions designed to assure the effective application of safeguards in the European Community as a whole, including those required by the NPT in the non-nuclear weapon States of the Community has been undertaken. Under Article V of the Additional Agreement for Cooperation of 1960, as amended, which incorporates Article XI, XII and Annex B of the November 8, 1958, Joint Program Agreement, as amended, the Community undertakes the responsibility of establishing and implementing a safeguards and control system designed to give maximum assurance that any material supplied by the United States or generated from such supply will be used solely for peaceful purposes ("Euratom Safeguards System"). The Community is bound to consult and exchange experiences with the IAEA with the objective of establishing a system reasonably compatible with that of the latter. The Community is responsible for establishing and maintaining a mutually (with respect to the United States) satisfactory and effective safeguards and controls system in accordance with stated principles.

Euratom safeguards are being applied to material and facilities previously exported or retransferred and subject to the United States-Euratom Cooperation Agreements and to special nuclear material used in or produced through the use thereof. These agreements require these safeguards to be applied to such material and facilities and to the proposed export or retransfer and special nuclear material produced through its use.

Also all of the member states of the Community, with the exception of France (a nuclear-weapon state), are parties to the NPT. An agreement for the IAEA application of safeguards pursuant to the NPT was signed by the IAEA and Belgium, Denmark, the Federal Republic of Germany, Ireland, Italy, Luxembourg, the Netherlands, and the European Atomic Energy Community (EURATOM), on April 15, 1973. (France, a nuclear-weapon-state (NWS), has agreed to application of the IAEA safeguards verification system at some of its civil facilities under a France-Euratom-IAEA trilateral approved by the IAEA's Board of Governors on February 21, 1978. Similarly, the United Kingdom permits the application of IAEA safeguards pursuant to the NPT under a voluntary offer which was signed on September 6, 1976.)

Further, the Euratom accountability system was adapted to that of the IAEA through the publication of Commission Regulation 322/76, which came into force during January 1977. On February 17, 1977, the Commission of the European Communities notified the IAEA that all of the necessary steps had been taken for the IAEA-Euratom Safeguards Verification Agreement pursuant to the NPT to come into force and the Agreement came into force on February 21, 1977.

Currently, Euratom and the IAEA are actively negotiating the Subsidiary Arrangements and Facility Attachments. Pending the completion of these negotiations, the IAEA has been conducting ad hoc inspections under Article 48 and 71A of the Verification Agreement. Through late 1977, it had conducted more than 80 such inspections at approximately 70 percent of all Euratom-safeguarded facilities.

Criterion(2)

"No such material, facilities, or sensitive nuclear technology proposed to be exported or previously exported and subject to the applicable Agreement for Cooperation, and no special nuclear material produced through the use of such materials, facilities, or sensitive nuclear technology, will be used for any nuclear explosive device or for research on or development of any nuclear explosive device."

Each Non-Nuclear-Weapon State (NNWS) of the Community is a party to the Nuclear Non-Proliferation Treaty (NPT). As such, it is pledged not to develop nuclear explosive devices for any purpose. This pledge applies to any material, facilities and sensitive nuclear technology previously exported or retransferred to such state by the United States and subject to the United States-Euratom Agreements for Cooperation and to special nuclear material used in or produced through the use thereof. Since this pledge will apply to the proposed retransfer and to any special nuclear material produced through its use, it appears that criterion (2) would be met with respect to the NNWS of the Community if any subsequent retransfer were made to a NNWS.

With regard to France, the proposed retransfer and any special nuclear material produced through its use will be subject to the continuing applicability of the United States-Euratom Agreements for Cooperation. Article XI(1) and (3) of the November 8, 1958, Joint Program Agreement, as amended, which is incorporated into the Additional Agreement for Cooperation by virtue of Article V of the Additional Agreement, provide that "no material, including equipment and devices, transferred pursuant to this Agreement" and "no source or special nuclear material utilized in, recovered from, or produced as a result of the use of material, equipment or devices transferred pursuant to this agreement . . . will be used for atomic weapons, or for research or development of atomic weapons or for any other military purpose." The United States--with the support of most other nuclear supplier states--has taken the position that nuclear explosive devices are "atomic weapons," within the meaning of this guarantee, regardless of the intended end use of such devices. Both France and the United Kingdom have accepted this interpretation and, as members of the Nuclear Suppliers Group, have agreed as a matter of national policy to authorize the export of trigger list items only upon formal governmental assurances from recipients explicitly excluding uses which would result in any nuclear explosive device (underlining supplied) and have notified the IAEA to this effect.

Therefore, the equivalent of criterion (2) is met with respect to this transfer.

Criterion (3)

"Adequate physical security measures will be maintained with respect to such material or facilities proposed to be exported and to any special nuclear material used in or produced through the use thereof. Following the effective date of any regulations promulgated by the Nuclear Regulatory Commission pursuant to section 304(d) of the Nuclear Non-Proliferation Act of 1978, physical security measures shall be deemed adequate if such measures provide a level of protection equivalent to that required by the applicable regulations."

The Nuclear Regulatory Commission has promulgated new regulations pursuant to section 304(d) of P.L. 95-242, which requires measures equivalent to those recommended in the IAEA's INFCIRC/225/Revision 1, "The Physical Protection of Nuclear Material."

Each member of the Community has established physical security measures, which, as a minimum, do meet those recommendations.

In addition, all states in the Community (except Denmark, Ireland, and Luxembourg) also are members of the Nuclear Suppliers Group, and, as such, have agreed to levels of protection, consistent with INFCIRC/225/Revision 1, to be ensured with respect to nuclear materials and equipment and facilities containing these materials, which are detailed in transmissions of the Nuclear Suppliers Guidelines to the IAEA.

Therefore, criterion (3) is met.

Criterion (4)

"No such materials, facilities, or sensitive nuclear technology proposed to be exported, and no special nuclear material produced through the use of such material, will be retransferred to the jurisdiction of any other nation or group of nations unless the prior approval of the United States is obtained for such retransfer. In addition to other requirements of law, the United States may approve such retransfer only if the nation or group of nations designated to receive such retransfer agrees that it shall be subject to the conditions required by this section."

Under this specific arrangement, the material and any recovered special nuclear material can be transferred out of France only with US consent. Article XI(2) of the November 8, 1958 Joint Program Agreement, as amended, which is incorporated in the Additional Agreement for Cooperation, as amended, by Article V of the latter Agreement, provides that no material (including equipment and devices) may be transferred beyond the control of the Euratom Community, unless the United States agrees.

Article 1 bis D of the Additional Agreement for Cooperation, as amended, provides that special nuclear material produced through the use of United States-supplied material may be exported to any nation outside the Community or to a group of nations, provided that such nation or group of nations has an appropriate Agreement for Cooperation with the United States or guarantees the peaceful use of the produced material under safeguards acceptable to the Community and the United States. The European Community's interpretation of this language--as set out in an April 15, 1977, letter to the Department of State from Fernand Spaak, Head of the Delegation of the Commission of the European Communities--is that the European Community Supply Agency, prior to any proposed transfer, will consult with the United States to find out whether, in the view of the United States, the proposed recipient of such produced special nuclear material has an Agreement for Cooperation with the United States which is "appropriate." A letter of February 11, 1977 from Fernand Spaak to the Department of Energy (then ERDA) makes clear that this provides the United States a consent right, since the United States has the exclusive ability to decide whether an agreement is "appropriate." This letter states that:

> "It is our understanding that any transfer of recovered materials from the Community of a third country is subject, in accordance with the terms of the Euratom-United States Agreement for Cooperation, to prior United States authorization."

Therefore, with regard to the proposed retransfer and special nuclear material produced through its use, criterion (4) is met.*

With respect to transfers within the Community, it should be noted that the use of the words "group of nations" in criterion (4) makes clear that no retransfer consent right is required within a group of nations under this criteria. With respect to this provision, the Senate report states:

. . . . . .

*It should be noted that since the US-Euratom Agreements for Cooperation were authorized in accordance with Section 124 of the Atomic Energy Act, the NRC may continue to issue export licenses pursuant to the authority in the first proviso in Section 126a(2) even if criterion (4) was not met.

"It should be noted that under the U.S.-Euratom Agreements, the United States does have a right of prior approval on retransfers of certain material outside of the Euratom Community. It should also be noted that paragraph 4 does not require prior approval with respect to transfers within the Euratom Community, consistent with United States policy of treating that Community as a (single) entity."

The Congressional intent, in connection with exports, not to require United States consent rights for transfers within the Community is also clear in Section 123a.(5) of the Atomic Energy Act, as amended, since it requires that the United States seek a guarantee "by the cooperating party" (which, in this case, is Euratom as a whole).

However, the Executive Branch, before passage of the Nuclear Non-Proliferation Act of 1978, took the position that, with respect to retransfers into Euratom, it was important to keep retransfers for reprocessing limited as much as possible to control the use and transfer of the separated materials, especially plutonium. Therefore, the case by case approach described earlier was developed and the system of control by commitment from the non-Euratom shipping country.

Criterion (5)

"No such material proposed to be exported and no special nuclear material produced through the use of such material will be reprocessed, and no irradiated fuel elements containing such material removed from a reactor shall be altered in form or content, unless the prior approval of the United States is obtained for such reprocessing or alteration."

The purpose of this arrangement is, of course, for reprocessing. By way of background, however, Euratom is expressly exempted from Criterion 5 by virtue of Section 126a(2) of the Act for a period of two years from March 10, 1978, in as much as the Department of State notified the Nuclear Regulatory Commission on July 20, 1978, that Euratom has agreed to negotiations with the United States as called for in Section 404(a) of the Nuclear Non-Proliferation Act of 1978. However, this exemption in no way derogates from the rights which the United States has under the United States-Euratom Agreements for Cooperation and under the commitments from the non-Euratom shipping country (Japan).

Criterion (6)

"No such sensitive nuclear technology shall be exported unless the foregoing conditions shall be applied to any nuclear material or equipment which is produced or constructed under the jurisdiction of the recipient nation or group of nations by or through the use of any such exported sensitive nuclear technology."

The proposed retransfer does not involve sensitive nuclear technology. Criterion (6) is, therefore, not applicable.

(B) Section 128 Analysis

Section 128a.(1) of the Atomic Energy Act, as amended, establishes the following additional criterion: "As a condition of continued United States export of source material, special nuclear material, production or utilization facilities, and any sensitive nuclear technology to non-nuclear-weapons states, no such export shall be made unless IAEA safeguards are maintained with respect to all peaceful nuclear activities in, under the jurisdiction of, or carried out under the control of such state at the time of the export."

This criterion does not apply to this case. The statutory 18/24-month time period in section 128 has not yet expired. As previously noted, however, all non-nuclear-weapon states that are members of the European Atomic Energy Community are Parties to the NPT and, thus, have agreed to accept IAEA safeguards with respect to all their peaceful nuclear activities within the Community including those in France and the UK are currently subject to Euratom safeguards.

(C) Safeguards Implementation

The above discussion of criterion (1) of section 127 of the Atomic Energy Act reviews the current status of implementation of IAEA-Euratom safeguards verification arrangements. DOE believes the framework of commitments, assurances, and safeguards is adequate for the purposes of this export.

(D) Physical Needs

The Kansai request for retransfer is not based on an immediate lack of spent fuel storage capacity since the utility storage pool was redesigned and reracked prior to completion of construction in 1975. Instead this request is based on the following principal factors: (a) the contract concerning this shipment was concluded in 1975 before the current U.S. policy towards reprocessing had been ennunciated and assurances have been given to the Japanese public relative to the timely removal of spent fuel on the basis of that contract and (b) we have been advised that the utility will have to pay substantial commercial penalties if the spent fuel does not move on schedule.

The utility and the Japanese government have argued forcefully that these factors strongly favor, as a matter of equity, U.S. approval at this time.

The Executive Branch has carefully weighed all aspects of this matter and has determined that approval would best serve US non-proliferation and broader foreign policy interests. Although the utility was aware that U.S. approval for the retransfer would be required to fulfill the contract, it clearly could not have foreseen that US policy would change from a relatively permissive policy on reprocessing retransfers to a policy where approval would be granted only as a "last resort."

The decision of the Executive Branch favoring this retransfer does not represent any basic change in US policy concerning conventional reprocessing. Requests will continue to be considered on their merits and on a case-by-case basis, and clear primacy will be given to physical need as a basis for approval if the requesting country has made appropriate efforts to expand its spent fuel storage capacity. We also will continue to encourage other countries to request such retransfers only when there is such a clear showing of need. In every case, we will continue, among other things, to retain a veto over any return of the plutonium. The concerned agencies also believe, and the President has agreed, that on a case-by-case basis we consider approval of other cases like Kansai where they involve reprocessing contracts predating our present policy, if there is a strong justification for the transfer and the country concerned is actively exploring more proliferation-resistant methods of spent fuel disposition, and if approval would directly further specific non-proliferation objectives.

In this latter regard we have obtained the agreement of the Japanese Government to join us in discussions of possible international storage centers for spent fuel. These discussions will complement studies in the US and INFCE on developing spent fuel storage regimes, something that is essential if we are to be successful in deferring reprocessing.

Conclusion

Based upon all of the foregoing and taking into account the foreign policy advice of the Department of State, the Department of Energy is prepared to approve this request for retransfer in accordance with applicable laws and regulations.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 29, 1978

Mr. Harold Bengelsdorf
Director for Nuclear Affairs
International Programs
Department of Energy
Washington, D.C. 20585

Dear Mr. Bengelsdorf:

The Commissioners of the Nuclear Regulatory Commission, except for Commissioner Gilinsky who is out of the country at this writing, have reviewed the request by the Kansai Electric Power Company for transfer of spent fuel to Cogema for reprocessing. Based upon the analysis dated September 28, 1978 sent to us by the Department of Energy, Chairman Hendrie and Commissioners Kennedy, Bradford and Ahearne have no objection to this request and to its forwarding to the Congress. Additional comments of Commissioner Ahearne are attached. Commissioner Bradford concurs in these comments and, in addition, has appended separate views of his own.

Sincerely,

James R. Shea

James R. Shea
Director
Office of International Programs

Attachments:
As stated

Commissioner Ahearne notes that the DOE analysis included the following points:

- The reprocessing will be done in an existing plant that has reprocessed fuel.
- The reprocessing will be done in a nuclear weapons state.
- The Government of Japan has assured the United States that any transfer or use of the recovered special nuclear material will be subject to prior approval of the United States.
- Both France and Japan are active participants in INFCE.
- The approval is narrowly limited.

SEPARATE VIEWS OF COMMISSIONER BRADFORD

I concur in the considerations set forth in Commissioner Ahearne's letter. Based on them, I have no objection to approval of this request. I have the following comments:

1. U.S. control over the retransfer of the separated plutonium to other EURATOM countries is not as strong as our control over transfers out of EURATOM.

2. It would be desirable for the analysis to contain some discussion of the NEPA consequences, if any, arising from the transfer from Japan to Europe.

3. I agree with Senator Glenn's advice to the President that, if legally allowable, we should condition our approval of reprocessing upon a further confirmation by the U.S. at the actual time of reprocessing that the proliferation risk standard continues to be met.

4. As U.S. policy in part depends upon the date of the contract pursuant to which the material is being reprocessed, the date should be determined, if possible, by U.S. reference to the actual contract in future cases.

5. The fact that Japan has commendable nonproliferation credentials should not be taken to be part of the "timely warning" evaluation and should not prejudice separate evaluation of the eventual transfer of the plutonium out of France.

6. Approval of the current request should explicitly state that our review of any future transfer of recovered plutonium will be under the standard set forth in Section 131 b(2).

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