Comptroller General
of the United States
Washington, D.C. 20548

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B-219816

January 28, 1988

RELEASED

The Honorable John Glenn
United States Senate

Dear Senator Glenn:

This is in response to your request concerning executive branch implementation of the Nuclear Non-Proliferation Act of 1978 (Non-Proliferation Act). You asked that we focus our inquiry on two major issues.

The first issue concerns the test the executive branch must apply in evaluating (1) whether to approve a request for reprocessing of spent nuclear fuel that had originally been exported or produced through the use of any nuclear materials and equipment or sensitive nuclear technology exported from the United States; or (2) whether to approve the transfer back of the plutonium in quantities greater than 500 grams resulting from the reprocessing for use in another nuclear reactor. The Non-Proliferation Act mandates that United States authorization for such reprocessing or retransfers not result in a significant increase in the risk of proliferation of nuclear weapons. In addition, the statute requires that:

> ". . . 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." (Emphasis added.)

You express concern that, contrary to the legislative history, the executive branch in its first two such approvals since enactment of the Non-Proliferation Act has based its "timely warning" analyses on certain political factors rather than a technical assessment of the capability of the recipient state to convert diverted material into a nuclear weapon before a diversion could be detected and effective diplomatic efforts taken to deter completion of a nuclear explosive device.

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We have concluded that the executive branch's statement of its interpretation of the meaning and application of timely warning is a legally permissible one. Neither the statute nor its legislative history confines a timely warning analysis to a technical assessment. However, consideration of non-technical factors in a timely warning analysis cannot override the need to perform a technical assessment of the capabilities of the recipient country to transform diverted material into a nuclear explosive device.

In these two cases, we could not evaluate, on the basis of the Secretary of Energy's reports to Congress alone, whether the executive branch properly applied the required technical assessment because there was inadequate analysis of timely warning reflected in these reports. The executive branch contends that the statute does not explicitly require a separate "determination" that timely warning exists or is absent with respect to any proposed approval associated with reprocessing. In our view, however, a timely warning assessment must be made since it is the foremost factor to be considered in making the overall proliferation risk judgement. Therefore, we believe the absence of meaningful discussion of timely warning in these reports to Congress and its application to the facts of each particular situation does not comport with congressional intent on this matter.

Your second concern involves the agreements for cooperation recently concluded with Sweden, Norway and Finland. The minutes for each of these agreements include advance approvals for the duration of the 30-year agreement for the transfer to designated facilities in England or France of spent fuel for reprocessing. You question whether such approvals were intended to be included in agreements for cooperation and for such long periods of time, rather than limiting them to inclusion in subsequent arrangements and only on a case-by-case basis reasonably contemporaneous with the proposed action. This would enable the Congress to review each proposed transfer and each instance of proposed reprocessing.

We have concluded that in these three agreements, the inclusion of advance, long term approvals for the transfer to designated facilities in England or France of spent fuel for reprocessing was legally permissible. The statute does not explicitly confine approvals to the subsequent arrangement process or preclude inclusion of advance, long term approvals in the agreement for cooperation between the United States and other countries. However, it is clear that agreements for cooperation were intended to provide a broad framework pursuant to which short term arrangements would be reported and carried out. While case-by-case

review of each retransfer or instance of reprocessing is not necessarily required, short term arrangements were contemplated to provide for meaningful congressional oversight and the application of uniform statutory standards. Nevertheless, although it was anticipated that approvals for reprocessing and retransfer activities would be granted under the subsequent arrangement process, we do not believe the evidence is sufficient to conclude, as a matter of law, that such approvals cannot be included in an agreement for cooperation. However, to achieve the purpose of the Non-Proliferation Act, if such approvals are included in an agreement for cooperation, the statutory requirements of both section 123 (dealing with agreements for cooperation) and Section 131 (dealing with subsequent arrangements) must be satisfied, including the timely warning evaluation and the proliferation risk determination.

Our detailed analyses are included in the enclosed legal memorandum.

Sincerely yours,

Milton J. Socolar

Acting Comptroller General
of the United States

Enclosure

LEGAL MEMORANDUM **B-219816**

TIMELY WARNING AND ADVANCE APPROVALS CONCERNING REPROCESSING UNDER THE NON-PROLIFERATION ACT OF 1978

This memorandum is in response to a request of Senator John Glenn concerning executive branch implementation of the Nuclear Non-Proliferation Act of 1978, Pub. L. No. 95-242, approved March 10, 1978, 92 Stat. 120 (Non-Proliferation Act). One of the purposes of that Act was to ensure effective controls by the United States over its exports of nuclear fuel, equipment and technology. 22 U.S.C. § 3202(d). It was hoped that, in this way, the United States could restrict the proliferation of nuclear weapons while, at the same time, confirming its reliability as a supplier of nuclear reactors and fuel for peaceful purposes to nations which adhere to effective non-proliferation policies. 22 U.S.C. § 3201.

Three legal instruments are primarily relied upon to effectuate this control. The most fundamental mechanism, which was used under the Atomic Energy Act of 1954 and continued by the Non-Proliferation Act, is the "agreement for cooperation" between the United States on the one hand and nations or international organizations on the other. It includes the "terms, conditions, duration, nature and scope of the cooperation." 42 U.S.C. § 2153(a).

However,

> ". . . agreements for cooperation generally are not in and of themselves commitments to supply nuclear reactors and fuel; rather they set forth the terms under which such commitments may be made." S. Rep. No. 467, 95th Cong., 1st Sess. 3 (1977).

The Non-Proliferation Act sets forth nine guaranties or requirements to be contained in agreements for cooperation. 42 U.S.C. § 2153(a).

The second form of legal instrument is a "subsequent arrangement" pursuant to an agreement for cooperation. "These subsequent arrangements are specific contracts, approvals, authorizations and other arrangements required to implement an agreement for cooperation." H.R. Rep. No. 587, 95th Cong., 1st Sess. 17 (1977). See also, 42 U.S.C. § 2160.

> ". . . Subsequent arrangements are extremely important, as they encompass many of the detailed arrangements for U.S. nuclear coopera-

> tion with foreign nations, including: the approval of reprocessing or re-transfers, contracts for the provision of enriched uranium, physical security arrangements, detailed safeguard arrangements . . . . It should be noted that private contracts and arrangements are not 'subsequent arrangements.'" S. Rep. No. 467, 95th Cong., 1st Sess. 10 (1977).

The third major element of control, but not of concern here, is the export licensing process.

Among the primary proliferation concerns are those activities associated with the reprocessing of spent nuclear fuel. Spent fuel is the waste product from the use of enriched uranium in a nuclear reactor to produce power. Its reprocessing involves chemical separation of plutonium from the components of the spent fuels. The separated plutonium can be recovered for peaceful future uses for certain other nuclear reactors. However, unlike the low-level enriched uranium used in most nuclear reactors, plutonium is fuel of weapons-usable quality. Therefore, its potential diversion for use in a nuclear explosive device is a considerable proliferation risk.

Both questions focus on whether the executive branch is properly implementing the provisions of the Non-Proliferation Act that apply to activities associated with reprocessing of spent nuclear fuel. The first issue concerns the test the executive branch must apply in evaluating: (1) whether to approve a transfer of spent nuclear fuel from the country that had originally received the fuel from the United States to some third country for purposes of reprocessing; or (2) whether to approve the transfer back of the plutonium resulting from the processing.

The same test is applicable for both and is set forth in the section of the Non-Proliferation Act dealing with subsequent arrangements. 42 U.S.C. § 2160. Aside from the determination that the arrangement will not be inimical to the common defense and security, the Non-Proliferation Act mandates that United States authorization for such reprocessing or retransfers not result in a significant increase in the risk of proliferation of nuclear weapons. In addition, the statute requires that:

> ". . . 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." (Emphasis added.) 42 U.S.C. § 2160(b)(2).

Senator Glenn expressed concern about two approvals of transfers associated with reprocessing, the first such cases since the passage of the Non-Proliferation Act; namely, to Japan in the one case and to Switzerland in the other. It has been claimed that, contrary to the legislative history, the executive branch had based its "timely warning" analyses on a combination of political factors rather than a technical assessment of the capability of the recipient state to convert diverted material into a nuclear weapon before a diversion could be detected and effective diplomatic efforts taken to deter completion of a nuclear explosive device.

The second issue involves the agreements for cooperation recently concluded with Sweden, Norway, and Finland. The minutes for each of these agreements include advance approvals for the duration of the 30-year agreements for the transfer to designated facilities in England or France of spent fuel for reprocessing. Senator Glenn questions whether such approvals were intended to be included in agreements for cooperation and for such long periods of time, rather than limiting them to inclusion in subsequent arrangements and only on a case-by-case basis reasonably contemporaneous with the proposed action. This would enable the Congress to review each proposed transfer and each instance of proposed reprocessing.

In the course of our consideration of Senator Glenn's request, we requested the views of the Departments of State, Energy, and Defense, the Arms Control and Disarmament Agency and the Nuclear Regulatory Commission. In addition, we carefully considered the thorough analysis of timely warning prepared by Dr. Leonard Weiss, who was then Minority Staff Director, Subcommittee on Energy, Nuclear Proliferation, and Government Processes, Senate Committee on Governmental Affairs (Weiss Analysis). Our detailed analyses follow.

I. TIMELY WARNING

Facts

The Administration, through the mechanism of subsequent arrangements, approved two retransfers associated with reprocessing that are of concern. The first was an approval in August 1985 of a request made by Switzerland. In the past, the Swiss, with United States approval, had spent fuel that had originally been obtained from the United States

reprocessed in France. The recent approval was for the resulting plutonium to be retransferred from France to Germany for further fabrication and subsequently to Switzerland for experimental use in a power reactor.

The second instance was approval of a request made by Japan to retransfer plutonium resulting from the French reprocessing of Japanese spent fuel from France to Japan. The fuel had originated in the United States, and the United States had previously authorized Japan to have it reprocessed in France. The plutonium recently approved for retransfer to Japan would be used in an experimental fast breeder reactor. Switzerland, Germany and Japan are, of course, non-nuclear-weapon states, and France is a nuclear-weapon state.

Law

Under subsection 131(b)(2) of the Atomic Energy Act, added by the Non-Proliferation Act, 42 U.S.C. § 2160(b)(2), the Secretary of Energy may not enter into any subsequent arrangement for, among other things, retransfer to a non-nuclear-weapon state of any plutonium resulting from reprocessing in quantities greater than 500 grams, unless in his judgment and that of the Secretary of State, such 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 . . . 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."

In addition, the Secretary of Energy must provide the House Committee on Foreign Affairs and the Senate Committee on Foreign Relations with a report containing his reasons for entering into such arrangement.1/ 42 U.S.C. § 2160(b)(1).

1/ Among other statutory requirements, prior to entering into any proposed subsequent arrangement (1) the Secretary of Energy must obtain the concurrence of the Secretary of State, after consultation with the Director of the Arms Control and Disarmament Agency, the Nuclear Regulatory Commission, and the Secretary of Defense; and (2) the Secretary of Energy must publish in the Federal Register a

(continued...)

Energy's Reports on the Retransfers

The Secretary of Energy submitted reports to the cognizant congressional committee on both the Swiss and Japanese retransfer requests. The structure and contents of these reports, in part, precipitated the question of whether the statutory requirements were being satisfied. In particular, the Secretary of Energy stated in similar language in both reports that:

> ". . . Together with the Department of State, we have concluded that, taking into account the non-proliferation credentials of the countries involved . . . and the fact that the material may not be used or retransferred . . . without explicit U.S. consent, this approval will not result in a significant increase in the risk of proliferation."

Thereafter, in virtually identical language in both reports, the Secretary stated the following regarding timely warning:

> ". . .Timely warning is the foremost factor to be taken into account in determining whether subsequent arrangements for reprocessing, retransfer of spent fuel for reprocessing, or retransfer of resulting separated plutonium in excess of 500 grams would result in a significant increase in the risk of proliferation beyond that which existed at the time that approval was requested. °Timely warning°, as defined in the [Non-Proliferation Act], is not an IAEA [International Atomic Energy Agency] concept. Although international safeguards are but one means of providing such warning, we believe that effective IAEA safeguards are being applied at the facilities where the plutonium is to be located." 2/

1/(...continued)
written determination that such arrangement will not be inimical to the common defense and security. 42 U.S.C. § 2160(a)(1).

2/ An international safeguard system is maintained by the IAEA. Under this system, records are kept of all nuclear material going into and coming out of civilian power reactors throughout much of the world, and verified by international inspectors.

Additional factors considered by Energy in its overall proliferation risk determination in both reports included the closeness and importance of the relationship of the countries involved to the United States, membership of the transferee countries in the IAEA, and physical security arrangements associated with the retransfers.

Concerns

Although the Nuclear Regulatory Commission concurred that these two approvals would not result in a significant increase of the risk of proliferation, it disagreed with Energy on whether non-technical factors are to be considered in connection with reaching any conclusions on the existence of timely warning. In the Commission's view, Congress intended timely warning to be essentially a technical matter involving such factors as safeguard measures applied to the material and the technical ease of incorporating the material into a nuclear explosive device. Other non-technical factors were to be considered relevant only in connection with making the overall statutory finding of no significant risk of proliferation.

Senator Glenn asserts that it is a misinterpretation of the intent of Congress for the executive branch to find in these two plutonium retransfer cases--

> "that the timely warning test was met . . . through a combination of certain political factors which appear to have nothing whatever to do with the technical capability of the recipient state to convert diverted material into a nuclear weapon."

In addition, the Weiss Analysis concludes that the executive branch's determinations as reflected in the reports to Congress were counter to congressional intent, because there was inadequate explanation of how the determination of "timely warning" was arrived at, no showing of how "foremost consideration" was given to it and the reports suggested that extraneous political factors were the main component in the determinations.

Therefore, the issues for resolution regarding timely warning, as thus presented, are: (1) the legality of considering political factors in analyzing whether timely warning exists; and (2) whether a complete timely warning analysis should be included in Energy's reports to cognizant congressional committees when subsequent arrangements are entered into granting approvals associated with reprocessing.

Analytical Basis for Timely Warning

We have carefully reviewed the statute and its legislative history, as well as other supporting materials provided us by interested parties. On reading the latter materials, it was evident that the interested parties use a specificity of terminology in expressing their positions not always evident in the statute and its legislative history, although not necessarily inconsistent with it. These refinements were understandably developed subsequent to enactment, in association with the implementation of the statute. Some familiarity with this terminology will clarify the differences in the positions, as well as facilitate narrowing the issue for resolution and application of the legislative history.

The Weiss Analysis sets forth four time intervals relevant to the concept of timely warning. These are:

Detection Time: The time between diversion of material and either the later detection of the diversion by the safeguards system or the earlier prediction of diversion through intelligence information.

Conversion Time: The time needed by country "X" to convert diverted material into an explosive device.

Warning Time: The interval between the time when the United States learns a diversion has occurred or may occur and the time at which country "X" is capable of producing a nuclear explosive device following the aforementioned diversion of material.

Reaction Time: The amount of time needed to fashion an appropriate and effective diplomatic response to prevent diverted material from being converted by country "X" into an explosive device.

Applying these after-the-fact definitions, the Weiss Analysis concludes that warning time equals conversion time minus detection time. In addition, according to the Weiss Analysis, "The U.S. has received 'timely warning' of a diversion by country 'X' when warning time is greater than reaction time." Thus the conclusion of whether a warning is timely is the result of the comparison of two time intervals; namely, reaction time and warning time.

All parties are in agreement that reaction time involves consideration of political factors, and this is in accord with the legislative history. Accordingly, every evaluation of timely warning involves political factors impacting on the anticipated reaction time needed to fashion an

appropriate and effective diplomatic response against country "X" to try to prevent country "X" from developing a nuclear explosive.

As indicated above, the Weiss Analysis considers warning time to be the difference between conversion time and detection time. Conversion time is related to such things as the amount, type, form and location of the diverted material; the facilities available to convert the material to weapon-usable form and to assemble a nuclear explosive device; and the availability of personnel and other scientific and technical resources to design, test and manufacture the components of a nuclear explosive device. All parties are also in agreement that calculation of conversion time requires a technical assessment, and no political factors should be involved.

Therefore, the matter in dispute can be more narrowly stated as whether political factors should be considered in determining "detection time" rather than the legality of considering political factors in computing warning time. In fact, this seems to be the crux of the controversy.

In the bill that first passed the House of Representatives (H.R. Rep. No. 8638, 95th Cong.), the language of the pertinent provision was somewhat different from that which was ultimately enacted in the Non-Proliferation Act. The language did not include provision for a proliferation risk determination. In addition, the House bill prohibited subsequent arrangements for the reprocessing and retransfer of United States supplied material unless it could be certified that:

> ". . .such reprocessing or retransfer will take place under conditions that are designed to ensure reliable detection of any diversion and which would provide timely warning to the United States of such diversion well in advance of the time at which the non-nuclear-weapons state could transform diverted material into a nuclear explosive device." (Emphasis added.)

This language presupposes that a diversion has occurred. Thus it was stated that "Reliable detection refers . . . to the act of determining that material has been diverted . . . ." H.R. Rep. No. 587, 95th Cong., 1st Sess. 18 (1977). This detection would be accomplished by safeguards, an essentially technical monitoring system. See id. at 20. The time interval measured for detection time would be that from the time of diversion until the diversion is detected by safeguards.

Thus this portion of the process, as stated in the House report, was essentially a technical assessment.

> "It is impossible to specify with absolute precision how long the interval of warning time . . . would have to be in order to satisfy the standard set forth in this section. Upon completion of the International Nuclear Fuel Cycle Evaluation,[3/] it should be possible to know which of a number of alternatives to conventional reprocessing would most optimally fulfill the timely warning requirement and to know as well the amount of warning time such alternative could provide. At a minimum, however, it is clear that the existing conventional reprocessing technologies, that is, those that result in the production of weapon-usable plutonium fail to meet the committee's prescribed standard: for, as has been frequently explained, one could not confidently expect warning times of more than a few days or weeks with such technologies. Until such time, then, as this act may be amended on the basis of the findings of the International Fuel Cycle Evaluation, the committee expects the Administrator [now Secretary of Energy] to assure that warning times would exist which are at least roughly equivalent to those that can be obtained when spent low enriched reactor fuel is placed under verified storage in countries not possessing a reprocessing capability." (Emphasis added.) H.R. Rep. No. 587, 95th Cong., 1st Sess. 19 (1977). See also id. at 20.

The executive branch at the time had serious difficulties with the above language of the House bill, which was also the language of the Senate bill, as reported from the Senate Committee on Governmental Affairs. Among these concerns were:

> ". . . First, it would jeopardize negotiation of new, strict nuclear cooperation agreements since an overly strict interpretation of the 'timely warning' standard could rule out all forms of fuel processing necessary

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3/ The International Nuclear Fuel Cycle Evaluation (INFCE) was a technical and analytical study of the nuclear fuel system established in October 1977. It was the United States objective that through the INFCE study our allies would be convinced to refrain from reprocessing. However, the INFCE study, completed in February 1980, concluded that reprocessing is an essential preliminary to many fuel cycles and that reprocessing and recycling do not create a greater proliferation risk than other fuel cycles. See INFCE Final Report of Working Group 3, IAEA, February 1980.

> for future fuel cycle activities. Second, 'timely warning' should not be the sole basis for making determinations concerning the acceptability of subsequent arrangements, taking into account the existence of other factors which must be evaluated. Additional factors of importance include the non-proliferation policies of the countries concerned, and the size and scope of the activities involved. Thirdly, as presently written in S.897, . . . section 303(b) would give the impression that the U.S. is prejudging the results of the international fuel cycle evaluation by apparently ruling out any form of fuel processing. We should not legislate policies giving such an impression since the serious participation of other countries in this program is dependent upon their perception that the study will result in a fair and open minded evaluation. . . ." S. Rep. No. 467, 95th Cong., 1st Sess. 47 (1977).

In order to ameliorate these concerns, discussions were held by the executive branch with, among others, the leadership of the House Committee on International Relations and members of the Subcommittee on Arms Control, Oceans, and International Environment, Senate Committee on Foreign Relations, to which the bill had also been referred. These discussions resulted in a number of changes which affect the issue at hand. We discuss them here not necessarily in the chronological order in which they occurred but with regard to their relevance and importance to this analysis.

First, the following language was added to the "subsequent arrangements" section of the bill to assert clearly that the United States was not opposed to reprocessing of spent fuel:

> "Nothing in this section is intended to prohibit, permanently or unconditionally, the reprocessing of spent fuel owned by a foreign nation which fuel has been supplied by the United States, to preclude the United States from full participation in the International Nuclear Fuel Cycle Evaluation provided for in section 3224 of title 22; to in any way limit the presentation or consideration in that evaluation of any nuclear fuel cycle by the United States or any other participation; nor to prejudice open and objective consideration of the results of the evaluation." 42 U.S.C. § 2160(d).

Secondly, in order to fulfill this policy, some change was necessary in the language of the bill, quoted previously, dealing with "reliable detection of any diversion" and "timely warning." Under this language, as we previously noted, the House committee had stated, "Conventional

reprocessing technologies result in direct access to weapons usable material and therefore do not permit timely warning. . . ." H.R. Rep. No. 587, 95th Cong., 1st Sess. 20 (1977). Consequently, the executive branch would have been prohibited from entering into subsequent arrangements associated with conventional reprocessing. Therefore, some flexibility had to be introduced so that reprocessing would not be foreclosed.

One major change that was made to the language of the bill, and ultimately the statute that was enacted, was to expand the standard on which decisions to enter into subsequent arrangements associated with reprocessing were to be based. Rather than being limited to "reliable detection of any diversion" and "timely warning," the bill was changed to require the Secretaries of Energy and State to make a determination that

> ". . . 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." 42 U.S.C. § 2160(b)(2).

Among all the factors in making this judgment, foremost consideration would be given to "timely warning." Id. However, "other factors" might also be considered to overcome a negative timely warning finding and thereby still permit the subsequent arrangement.

The Senate committee report stated:

> "Other factors which may be taken into account in determining whether there will be significant increase in the risk of proliferation are whether the nation is firmly committed to effective non-proliferation policies and is genuinely willing to accept conditions which would minimize the risk of proliferation, whether the nation has a security agreement or other important foreign policy relationship with the U.S., the nature and stability of the recipient's government, its military and security position, and the energy resources available to that nation.
>
> "It is important to note that the bill requires that 'foremost' consideration be given to the question of timely warning. While this implies that the latter will receive the greatest weight among all factors, there may be circumstances that will suffice and a request may be granted even though timely warning is not present. 'Timely warning' cannot be controlling in every case. The Committees do wish to emphasize that

> in the absence of a clear determination that timely warning will indeed be provided, a strong combination of other factors is necessary to compensate for this weakness in safeguards." S. Rep. No. 467, 95th Cong., 1st Sess. 12 (1977).

Another major change that was made to the language of the bill, and ultimately the statute that was enacted, was to delete the phrase "reliable detection of any diversion" altogether. We could find no discussion in the legislative history of the reason for the deletion. However, it is very significant to the question of how detection time is to be measured.

As noted previously, the earlier language about "reliable detection" expected the agency to assume that a diversion had occurred in evaluating whether timely warning exists; that is, it appeared to require that a worst-case scenario be used in the analysis. This is reflected in the House committee report:

> "In applying the timely warning standard, the committee expects the Administrator [now Secretary of Energy] to assume that the party in question could already have done work in nuclear weapons research, design, and fabrication, so that the sole remaining need would be that of the weapons usable material itself. The committee also expects the Administrator to assure that the standard would apply in the instance of each of a number of credible possibilities, that is, with respect to the threat of terrorist diversion, to clandestine diversion by nations, and to outright national abrogation of agreements with subsequent appropriation of the facilities and materials in question. . . . " H.R. Rep. No. 587, 95th Cong., 1st Sess. 19 (1977).

Under this worst-case scenario, as indicated previously, detection time would be that time interval measured from the time of diversion until the diversion is detected by safeguards.

It appears that the worst-case concept; that is, that the United States would not suspect in advance that a diversion might occur, but would learn about it only after the fact, when the safeguards system had detected it, was recognized by the Congress as too stringent a concept as reflected in the following portion of the Senate report:

> ". . . the standard of timely warning . . . is strictly a measure of whether warning of a

diversion will be received far enough in advance of the time when the recipient could transform the diverted material into an explosive device to permit an adequate diplomatic response." (Emphasis added.) S. Rep. No. 467, 95th Cong., 1st Sess. 11 (1977).

In addition, the Senate report contained a letter from Mr. Douglas J. Bennett, Jr., Assistant Secretary of State for Congressional Relations, to Senator John Sparkman, Chairman of the Senate Foreign Relations Committee, which states, in part:

"Agreement has been reached on suitable language . . . related to the 'timely warning' standard to govern U.S. approval of reprocessing with the leadership of the House Committee on International Relations. This language is acceptable to the Administration. While setting forth strict standards, it recognizes that other foreign policy and non-proliferation factors must be considered. It should also be recognized that warning time associated with alternative reprocessing technology is difficult to quantify but does represent a continuum, progressing from a minimum time associated with processes that involve separated plutonium to longer times for processes that involve uranium and most of the fusion products present in irradiated spent fuel. Timely warning is a function of a number of factors, including the inherent risk of proliferation in the country concerned, the amount of warning time provided, and the degree of improvement in warning time that alternative reprocessing technology provides relative to other technologies." (Emphasis added.) Id. at 60.

Relying, in part, on these congressional changes and their own interpretation of the Non-Proliferation Act, the Departments of Energy and State and the Arms Control and Disarmament Agency in some cases would have a different standard of measurement for detection time than the time interval from the time of diversion until the diversion is detected by safeguards. Our understanding of their position is that for some non-nuclear-weapon states, particularly those without "an inherent risk of proliferation," the United States would have warning of a possible diversion in advance of the time that the diversion actually takes place through United States intelligence capability of various sorts, and could then take into consideration political factors, among others. Accordingly, for these instances, detection time would be measured from the time the United States obtained knowledge of an expected diversion to the time the diversion occurs.

Taking all of these factors into account, we do not believe it is contrary to the Non-Proliferation Act or its legislative intent if non-technical factors are considered in evaluating detection time, to the extent they contribute to intelligence information that would enable the executive branch to become aware of plans for a possible diversion of nuclear materials prior to the diversion occurring.

We conclude that the following statement of the executive branch's interpretation of the meaning and application of non-technical factors in a timely warning analysis is a legally permissible one:

> "Neither the legislative history of the NNPA [Non-Proliferation Act] nor the language of the Act itself specifies that consideration of timely warning is limited to technical factors only. Political factors may be taken into account in considering warning time, but only where such factors in the particular situation increase or decrease the interval between the time the U.S. receives indications that a diversion has occurred or is intended and the time the material could be assembled into a nuclear explosive device. The timely warning issue in appropriate circumstances includes technical as well as other factors, including political factors. Moreover, the timeliness of warning of diversion clearly involves a number of non-technical judgments, including judgments about the diplomatic relationships and influence that the U.S. has with respect to the country in question."

Nevertheless, although we agree that non-technical factors may be considered in a timely warning analysis, those factors cannot be used to avoid performing the technical assessment of the capability and proficiency of a recipient country to convert diverted material into a nuclear explosive device. This technical assessment of conversion time is crucial to the timely warning determination. Timely warning is present only if the United States could effectively respond to a diversion before a recipient country could successfully convert diverted material into a nuclear explosive device. As previously stated, conversion time includes consideration of such things as the amount, type, form and location of the diverted material; the facilities available to convert the material to weapon usable form and to assemble a nuclear explosive device, and the availability of personnel and other scientific and technical resources to design, test and manufacture the components of a nuclear explosive device.

Inadequate Analysis in Secretary of Energy's Reports

The Secretary of Energy's reports to the Congress on these plutonium retransfers did not indicate whether the technical assessments associated with calculating conversion time were made. It was these omissions that were at the heart of the concerns raised here.

Energy's reports on these plutonium retransfers state that timely warning is the foremost factor to be taken into account, and that it is not an International Atomic Energy Agency concept. The only statement relating the concept of timely warning to the particular retransfers involved is that "we believe that effective IAEA safeguards are being applied at the facilities where the plutonium is to be located."

However essential effective safeguards at the site are, one cannot determine on the basis of effective safeguards alone whether timely warning would exist. Although the existence of effective safeguards is very important, it is but one factor to be taken into account in any conscientious evaluation of the existence of timely warning. No other evidence of analysis of timely warning is apparent in Energy's two reports. There is no indication that the necessary and important technical assessments were made. To the extent we know Energy's position on the matter, it was the result of independent correspondence with executive branch agencies.4/

The Administration does not dispute this nor does it claim that the reports on these two plutonium retransfers provided an analysis of timely warning. Rather, the Departments of State and Energy and the Arms Control and Disarmament Agency emphasized in their composite letter to us that the Non-Proliferation Act does not require a separate "determination" regarding timely warning. Therefore, implicitly the Secretary of Energy's report to the cognizant congressional

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4/ According to the consolidated response we received from the Departs of Energy and State and the Arms Control and Disarmament Agency, the factors considered in the timely warning analysis of both Swiss and Japanese requests included the nature and extent of Swiss nuclear facilities and capabilities; the application of IAEA safeguards; and the extent of Switzerland's non-proliferation commitments and policies as well as Switzerland's stable, democratic system. In the case of Japan the factors considered included all of the above, plus Japan's status as a reliable United States ally.

committees need not include a separate analysis of timely warning.

Although the statute does not specifically require a separate "determination" that timely warning exists or is absent with respect to any proposed approval associated with reprocessing, in our view the timely warning assessment must be made since it is the foremost factor to be considered in making the overall proliferation risk judgment. Further, we believe the legislative history reflects a congressional intent that the reports to the cognizant congressional committees, required by the statute, include a meaningful discussion and application of the timely warning standard to the facts involved in any particular case.

Subsection 131(b)(1) of the Atomic Energy Act of 1954, as added by the Non-Proliferation Act, 42 U.S.C. § 2160(b)(1), requires that the mandated reports to the cognizant congressional committees contain the Secretary of Energy's reasons for entering into a subsequent arrangement with another country associated with reprocessing. The congressional committee reports do not state what is to be included in these reports. See, H.R. Rep. No. 587, 95th Cong., 1st Sess. 18 (1977) and S. Rep. No. 467, 95th Cong., 1st Sess. 11 (1977). However, the statute requires that "foremost consideration" be given to timely warning in making the proliferation risk determination. Therefore, it is apparent that Congress contemplated that there would be meaningful discussion and application of the timely warning standard in the reports to Congress.

It is clear from the legislative history that Congress recognized the importance of the Secretary of Energy's reports. As originally proposed, Congress was to be provided with 15 calendar days to review the reports. However, the bill was amended on the floor to provide Congress with 15 legislative days.

In explaining the purpose of the proposed amendment, Senator Glenn, who was the Senate floor manager of the bill stated:

> "Mr. President, there is no part of this bill that is of more significance for the prevention of nuclear proliferation than the elevation of the 'timely warning' standard to statutory force.
>
> . . . . .
>
> "Indeed the inherently sensitive nature of any subsequent arrangement for reprocessing or for the subsequent retransfer of plutonium in quantities

> greater than 500 grams makes it imperative that the Congress be given a sufficient amount of time to react to the Secretary of Energy's report as provided for in subsection 303(b)(1), a report which is designed to lay out the Secretary's reasons for entering into such subsequent arrangements, including his application of the timely warning standard. (Emphasis added.)
>
> . . . . .
>
> "The proposed amendment simply changes the time involved to 15 days during which the Congress is in continuous session as defined in section 130(g) of the 1954 act. The amendment insures, Mr. President, that if the appropriate committees wish to react or to take any substantive action based upon the Secretary's report, they will have sufficient opportunity to do so." 124 Cong. Rec. 2511 (1978).

Senator James McClure concurred with Senator Glenn when he stated:

> ". . . I think that, . . . the 15-day provision referring to legislative days, does strengthen the congressional oversight, the congressional opportunity, which is, I think, fundamental to this legislation." (Emphasis added.)

The legislative history on the House side similarly reflects the significance accorded timely warning. See, e.g., Statement of Chairman Clement Zablocki of the House Committee on International Relations, 124 Cong. Rec. 2975 (1978) Statement of Congressman Robert Lagomarsino, minority member of the House Committee on International Relations, 123 Cong. Rec. 30297 (1977). See also, H.R. Rep. No. 587, 95th Cong., 1st Sess. 2 and 4 (1977).

Thus, we believe that Congress intended and contemplated that the Secretary of Energy, in his reports to the cognizant congressional committees, would include a sufficiently meaningful discussion and application of the timely warning standard to the facts involved in any particular reprocessing or retransfer arrangement. This would include a full account of the technical factors considered to enable the Congress to evaluate whether the standards set forth in the Non-Proliferation Act have been met. See 123 Cong. Rec. 30294 (1977). To fail to do so does not adequately recognize the degree of importance that the statute attached to timely warning or allow Congress to perform its oversight function.

Consequently, we believe that the absence of a meaningful discussion of timely warning and in particular the lack of any technical assessment in the reports to Congress on the Japanese and Swiss plutonium retransfers did not comport with congressional intent. We note, in this regard, that the Secretary of Energy has provided a more complete analysis in his report on the more recent subsequent arrangement dealing with reprocessing of special nuclear material of the United States origin at the Tokai-Mura facility in Japan.

II. ADVANCE APPROVALS CONCERNING REPROCESSING

Facts

The second concern involves the agreements for cooperation concluded with Sweden, Norway and Finland. The texts of the first two agreements were transmitted by the President to Congress on January 26, 1984, and the agreement with Finland was transmitted on May 21, 1985. See, respectively, H.R. Doc. No. 163, 98th Cong., 2d Sess. (1984); H.R. Doc. No. 164, 98th Cong., 2d Sess. (1984); and H.R. Doc. No. 71, 99th Cong., 1st Sess. (1985). Each of the three agreements for cooperation were for a term of 30 years. Each agreement also provided, in substance, that

> "Each party guarantees that material . . . shall not be transferred to unauthorized persons or, unless the parties agree, beyond its territorial jurisdiction," and
>
> "Each party guarantees that source or special nuclear material transferred . . . shall be reprocessed only if the parties agree." See, e.g., Articles 7.2 and 8.1, respectively, of H.R. Doc. No. 163, 98th Cong., 2d Sess. 15 (1984).

What has proven to be controversial was that advance approval of the United States for the cooperating country to retransfer material and to reprocess spent nuclear fuel was contained in an Agreed Minute to the agreement for cooperation itself in all three instances. These approvals could last for the full 30-year term of the agreements. The relevant language of the Swedish Agreed Minute, which is typical of the others, states:

> ". . . the parties agree that material . . . may be transferred by Sweden to the United Kingdom or France and reprocessed at the Sellafield or La Hague reprocessing facilities, subject to the following conditions:

"(1) Sweden shall keep records of such transfers and shall upon shipment notify the United States of each transfer;

"(2) prior to such transfers, Sweden shall confirm to the United States that, while outside of Swedish jurisdiction, the material will be subject to the agreement for cooperation between the United States and EURATOM [European Atomic Energy Community];

"(3) Sweden shall retain the right to consent to any transfer or further use of any plutonium separated as a result of any such transfer and shall obtain the prior agreement of the United States for the transfer of the plutonium to Sweden or any other country or for any use of the plutonium.

"With regard to the understanding in paragraph (2) above, the parties will cooperate in efforts to obtain such confirmation on a generic basis from EURATOM.

"The foregoing understandings concerning fuel disposition may be terminated in whole or in part, if either party considers that exceptional circumstances of concern from a non-proliferation or security standpoint so require. . . . Such circumstances include, but are not limited to, a determination by either party that the foregoing understandings cannot be continued without a significant increase of the risk of proliferation or without jeopardizing its national security." H.R. Doc. No. 163, 98th Cong., 2d Sess. 36 and 37 (1984).

The Agreed Minutes associated with each of the three countries involved explicitly provide that the Agreed Minutes shall be an integral part of the agreement for cooperation. H.R. Doc. No. 163, 98th Cong., 2d Sess. 27 (1984); H.R. Doc. No. 164, 98th Cong., 2d Sess. 32 (1984); and H.R. Doc. No. 71, 99th Cong., 1st Sess. 22 (1985).

It has been argued that such advance, blanket approvals to retransfer or reprocess spent fuel were not intended to be included in agreements for cooperation and for such long periods of time. Rather, United States approval was only contemplated to be given in subsequent arrangements and only on a case-by-case basis reasonably contemporaneous with the proposed action, which would enable the Congress to

individually review each proposed transfer and each instance of proposed reprocessing.5/

Law

As noted previously, under the Atomic Energy Act of 1954 and continued by the Non-Proliferation Act, the agreement for cooperation is the most fundamental legal mechanism by which nuclear cooperation is regulated between the United States on the one hand and nations or international organizations on the other. It includes the general "terms, conditions, duration, nature and scope of the cooperation." 42 U.S.C. § 2153(a). On the other hand, subsequent arrangements are specific contracts, approvals, authorizations and other arrangements required to implement an agreement for cooperation. See 42 U.S.C. § 2160; H.R. Rep. No. 587, 95th Cong., 1st Sess. 17 (1977); and S. Rep. No. 467, 95th Cong., 1st Sess. 10 (1977).

The Atomic Energy Act, as amended by the Non-Proliferation Act, treats agreements for cooperation and subsequent arrangements in separate sections. Section 123 of the Atomic Energy Act, as amended, 42 U.S.C. § 2153, addresses agreements for cooperation, while section 131 of the Atomic Energy Act, as amended, 42 U.S.C. § 2160, regulates subsequent arrangements. The substantive requirements and procedures for the two also differ.

Subsection 123(a) prescribes nine requirements that must6/ be included in agreements for cooperation. Among these are:

5/ Senator Alan Cranston, Congressman Howard Wolpe, Conressman Michael Barnes and six public interest organizations had filed suit in U.S. Federal District Court contesting the authority of the Administration to approve in advance retransfer or reprocessing of spent fuel, but their lawsuit was dismissed on the basis of non-justiciability. Cranston v. Reagan, 611 F. Supp. 247 (D.C.D.C. 1985).

6/ The President may exempt a proposed agreement for cooperation from any of the requirements if he determines that inclusion of any such requirement would be seriously prejudicial to the achievement of United States non-proliferation objectives or otherwise jeopardize the common defense and security. 42 U.S.C. § 2153(a). However, any such proposed agreement for cooperation shall not become effective unless the Congress adopts, and there is enacted, a joint resolution stating that the Congress favors the agreement. 42 U.S.C. § 2153(d).

(1) a guaranty by the cooperating party that any material transferred pursuant to the agreement for cooperation will not be transferred to unauthorized persons or beyond the jurisdiction or control of the cooperating party without the consent of the United States, and (2) a guaranty by the cooperating party that no material transferred pursuant to the agreement for cooperation will be reprocessed without the prior approval of the United States. 42 U.S.C. § 2153(a)(5) and (7).

Proposed agreements for cooperation are to be negotiated by the Secretary of State, with the technical assistance and concurrence of the Secretary of Energy, and in consultation with the Director of the Arms Control and Disarmament Agency. After subsequent consultation with the Nuclear Regulatory Commission (NRC), the proposed agreement is to be submitted to the President jointly by the Secretary of State and the Secretary of Energy, accompanied by the views and recommendations of the Secretary of State, the Secretary of Energy, the NRC and the Arms Control and Disarmament Agency. The Arms Control and Disarmament Agency must also provide the President an unclassified Nuclear Proliferation Assessment Statement (NPAS).

If the President wants to pursue the proposed agreement for cooperation, he is obliged to submit the text, with the accompanying NPAS, to the Senate Committee on Foreign Relations and the House Committee on Foreign Affairs, and to consult with both during a period of not less than 30 days of continuous session of the Congress on the consistency of the terms of the proposed agreement with the statutory requirements. Thereafter, once the President has approved it and made a determination in writing that the agreement "will promote and will not constitute an unreasonable risk to the common defense and security," he may authorize the execution of the agreement. Then, depending on the nature of the proposed agreement for cooperation, it and the accompanying Presidential approval and determination, must lie before the House Committee on Foreign Affairs and the Senate Committee on Foreign Relations for a period of either 30 or 60 days of continuous session, before it becomes effective for the United States. A proposed agreement for cooperation shall not become effective if during this period the Congress adopts, and there is enacted, a joint resolu-

tion stating in substance that the Congress does not favor it.7/

On the other hand, subsequent arrangements are under an agreement for cooperation and are entered into by the Secretary of Energy, with the concurrence of the Secretary of State, after consultation with the Arms Control and Disarmament Agency, the NRC and the Secretary of Defense. Notice of any proposed subsequent arrangement is to be published in the Federal Register at least 15 days before it becomes effective, together with the written determination of the Secretary of Energy that the arrangement will not be inimical to the common defense and security. It is discretionary with the Arms Control and Disarmament Agency whether to prepare an NPAS.

In addition, as was discussed previously with respect to the first question in this memorandum, if the subsequent arrangement is associated with reprocessing, the Secretary of Energy must provide the House Committee on Foreign Affairs and the Senate Committee on Foreign Relations with a report containing his reasons for entering into the arrangement, and a period of 15 days of continuous session must elapse before the subsequent arrangement can become effective. Moreover, where the proposed subsequent arrangement authorizes reprocessing or a retransfer to a non-nuclear-weapon state of any plutonium resulting from reprocessing in quantities greater than 500 grams, the Secretaries of Energy and State must find that the 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 used in making this judgment, foremost consideration must be given to whether or not the reprocessing or retransfer will take place under conditions that will ensure timely warning to

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7/ When the proposed agreements for cooperation with Sweden, Norway and Finland were before Congress, the statute provided for passage of a concurrent resolution approving or disapproving the agreement under review. This provision was amended by section 301 of the Export Administration Act of 1979, Reauthorization, Pub. L. No. 99-64, approved July 12, 1985, 99 Stat. 120, 159, in light of Immigration and Naturalization Service v. Chadha, 462 U.S. 919 (1983). Congress also provided in section 301 of that Act that if the proposed agreement for cooperation is one subject to the 60-day lie and wait period, the House Committee on Foreign Affairs and the Senate Committee on Foreign Relations are obliged to hold hearings and submit a report to their respective bodies.

the United States of any diversion well in advance of the time at which the non-nuclear-weapon state could transform the diverted materials into a nuclear explosive device. The Departments of Energy and State acknowledge that the Agreed Minutes of the Swedish, Norwegian and Finnish agreements for cooperation contain several features, including advance approval for retransfer and reprocessing, which would constitute subsequent arrangements under the Atomic Energy Act, as amended, if agreed to separately from the agreements for cooperation. See, e.g., H.R. Doc. No. 163, 98th Cong., 2d Sess. 48 (1984); H. R. Doc. No. 71, 99th Cong., 1st Sess. 68 (1985). The issue is whether it was legally permissible for the Administration to include the substantive content of a subsequent arrangement in these three agreements for cooperation.

Legislative History

The law on cooperative agreements prior to the enactment of the Non-Proliferation Act required a guaranty that any transferred material not be retransferred to unauthorized persons or beyond the jurisdiction of the cooperating party, except as specified in the agreement. 42 U.S.C. § 2153(a) (1976); S. Rep. No. 467, 95th Cong., 1st Sess. 22 (1977). There was no specific statutory provision addressing reprocessing. In addition, the Atomic Energy Act, before enactment of the Non-Proliferation Act, contained no section regulating subsequent arrangements.

The legislative history of the Non-Proliferation Act reflects substantial dissatisfaction with the variable controls and absence of standards extant under the old system:

> ". . . Controls over important matters such as the reprocessing of U.S. fuel varied in strength and clarity from agreement to agreement. In some cases, U.S. rights of prior approval or veto were clear; in others, they were clearly absent. In some cases, the United States was left to make an ambiguous determination about the 'acceptability' of the facility within which reprocessing was to occur, leaving open important questions about the disposition and 'safeguardability' of the reprocessed product. Other agreements were formulated so as to require a determination that safeguards could be 'effectively applied.'
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> ". . . Not only were U.S. controls over reprocessing highly variable, but no standards were provided by which determinations on approval or

disapproval could be made." H.R. Rep. No. 587, 95th Cong., 1st Sess. 4 (1977).

To ameliorate these concerns, Congress sought "to see existing agreements for cooperation strengthened, simplified, and made essentially uniform with respect to their criteria, standards and conditions." Id. at 17. In particular, the "United States retransfer approval right is to be unqualified and set forth in the agreement unambiguously." Id. at 13. In addition, the "U.S. reprocessing approval right is to be unqualified and set forth in the agreement unambiguously." Id. at 14. Moreover, Congress sought:

> ". . . to provide a clear and understandable set of standards and export criteria to replace the loose and inconsistent policies of the past . . . . The ambiguity of past agreements and policies has not only led to genuine confusion, but has provided a pretext for distortion as well. The codification of consistent standards accomplished by this legislation will help to eliminate such possibilities in the future." Id. at 7.

A separate section on subsequent arrangements was enacted requiring

> ". . . a formalized process of interagency review and consultation in order to insure that these decisions receive the thoughtful and systematic review they so obviously deserve." Id. at 18.

Of particular concern and interest were the required findings and procedures explained above for United States approval of reprocessing and United States approval of the retransfer of the resulting plutonium.

At the same time, Congress was concerned that the process not get bogged down. Thus, the law prescribed that, within 90 days of enactment, orderly and expeditious procedures be developed for the administrative consideration of requests for subsequent arrangements. 42 U.S.C. § 2160(c). It also stated that:

> "The United States will give timely consideration to all requests for prior approval . . . for the reprocessing of material . . . , and additionally, to the maximum extent feasible, will attempt to expedite such consideration when the terms and conditions for such actions are set forth in [an] . . . agreement for cooperation or in some other international

> agreement executed by the United States and subject to [comparable] congressional review procedures . . . ." 42 U.S.C. § 2160(a)(3).

A caveat was expressed, however, that:

> ". . . Although the U.S. may enter into an agreement at any time with a recipient nation setting forth conditions that would be required to obtain U.S. approval for reprocessing, any such agreement should include sufficient flexibility to enable the U.S. to respond to changed circumstances, as such shifts could drastically alter U.S. expectations concerning the intentions of the recipient." S. Rep. No. 467, 95th Cong., 1st Sess. 10 and 11 (1977).

Discussion

Whether approvals associated with reprocessing may be included in the agreement for cooperation, rather than as subsequent arrangements, may have significant substantive consequences and is not merely a technical matter of form. A primary reason for including approvals associated with reprocessing in the agreement for cooperation is to provide so-called generic or programmatic approvals--that is, arrangements covering indeterminate amounts of material over a long period of time, e.g., for the duration of the agreement for cooperation. The potential proliferation implications of such approvals may be more serious, and are usually much more difficult to discern, than approvals covering specific and limited amounts of material on an individual basis.

In addition, as is evident from the discussion above, the procedures and substantive requirements of law governing subsequent arrangements differ from those for agreements for cooperation. For example, where a proposed subsequent arrangement authorizes reprocessing or a retransfer to a non-nuclear-weapon state of any plutonium resulting from reprocessing in quantities greater than 500 grams, the Secretaries of Energy and State must make a finding that the 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 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 the 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. 42 U.S.C. § 2160. No such requirements exist for agreements for cooperation.8/ See 42 U.S.C. § 2153.

Moreover, the duration of agreements for cooperation is usually a substantial period of time, generally 30 years. Thus, although the statutory time period for congressional review of an agreement for cooperation (up to a total of 90 days) is substantially longer than the 15-day congressional review period for subsequent arrangements associated with reprocessing, the effect of a one-time approval can last as long as 30 years for an agreement for cooperation. Subsequent arrangements, on the other hand, provide approvals on a request-by-request basis, offering more extensive opportunity for oversight and control over activities associated with reprocessing.

There is no express statutory provision which limits approvals associated with reprocessing to the subsequent arrangements process, or which precludes inclusion of advance, long-term, approvals in the agreements for cooperation between the United States and other countries. At the same time, we note that the practice prior to the enactment of the Non-Proliferation Act was for the United States Government to provide approvals, including approvals associated with reprocessing, on a request-by-request basis. The Non-Proliferation Act's addition of the separate section on subsequent arrangements, 42 U.S.C. § 2160, was an obvious attempt to continue but regularize this process. In addition, the substantial modifications by the Non-Proliferation Act to section 123 of the Atomic Energy Act governing agreements for cooperation, seem designed to buttress this process. 42 U.S.C. § 2153. The language prohibiting retransfers of material beyond the jurisdiction of the cooperating party "except as specified in the agreement" for cooperation was deleted. In its place, the Non-Proliferation Act added requirements that the agreement for cooperation contain guaranties by the cooperating party that no material would be retransferred beyond its jurisdiction or be reprocessed without United States approval, which approval rights were to be unqualified and set forth

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8/ Consequently, we would disagree with the Arms Control and Disarmament Agency statement that "The procedural requirements and substantive findings that are required for an agreement for cooperation match or exceed those requirements applicable to subsequent arrangements . . . ." H.R. Doc. No. 163, 98th Cong., 2d Sess. 78 (1984) (Sweden); H.R. Doc. 71, 99th Cong., 1st Sess. 48 (1985) (Finland).

in the agreement unambiguously. One might extrapolate from these provisions that the approvals themselves were not to be included in an agreement for cooperation. Rather, it appears that an agreement was intended to provide the broad framework pursuant to which short term arrangements would be reported and carried out. These short term arrangements were to be processed as subsequent arrangements in accordance with the procedures and constraints of the new section governing such arrangements. Hence, as contemplated, Congress would have continuous oversight over reprocessing and retransfer activities and an opportunity to act prior to any action being taken by the requesting country.

Nevertheless, although it appears that Congress anticipated that approvals for reprocessing and retransfer activities would be granted under the subsequent arrangement process and cover a definite amount of material over a specified period of time, we do not believe the evidence is sufficient to conclude, as a matter of law, that approvals associated with reprocessing cannot be included in an agreement for cooperation and must be granted only through the subsequent arrangement process. There is nothing in the law which specifies in which legal document the approvals must be placed. Nor does the statute specifically require a case-by-case review of each retransfer or instance of reprocessing.

On the contrary, subsection 131(a)(3) states that the terms and conditions on which approvals for activities associated with reprocessing will be based may be included in the agreement for cooperation. 42 U.S.C. § 2160(a)(3). However, in these situations, the actual approvals would still be provided through the subsequent arrangement process, but on an expedited basis.

In addition, subsection 131(a)(4) of the Atomic Energy Act, as amended, 42 U.S.C. § 2160(a)(4), indicates that the requirements of various sections of the statute were to be cumulative:

> "All other statutory requirements under other sections of this chapter for the approval or conduct of any arrangement subject to this subsection [on subsequent arrangements] shall continue to apply and any other such requirements for prior approval or conditions for entering such arrangement shall also be satisfied before the arrangement takes effect . . . ."

The Non-Proliferation Act goal of consistent application of the clear and understandable statutory standards for approvals associated with reprocessing would be thwarted if

an Administration could by-pass the timely warning evaluation and make a proliferation risk determination by merely including approvals for activities associated with reprocessing in the agreement for cooperation.

Nevertheless, we conclude that it is not prohibited, as a matter of law, for approvals associated with reprocessing to be included in the agreement for cooperation rather than as subsequent arrangements. However, to achieve the purpose of the Non-Proliferation Act as explained in its legislative history, if such approvals are included in an agreement for cooperation, the statutory requirements of both section 123 (dealing with agreements for cooperation) and section 131 (dealing with subsequent arrangements), including the timely warning evaluation and the proliferation risk determination, must be satisfied.

Specific Agreements for Cooperation

The Departments of Energy and State in their transmittal of the Swedish, Norwegian and Finnish agreements for cooperation did consider the statutory requirements of both section 123 and 131. For example, as is required by section 123, each agreement in fact contains unqualified and unambiguous reservations of United States approval rights over the cooperating country's retransfer of material beyond its jurisdiction and reprocessing of spent fuel. H.R. Doc. No. 163, 98th Cong., 2d Sess. 14 and 15 (1984); H.R. Doc. No. 71, 99th Cong., 1st Sess. 9 and 10 (1985).

In relation to the advance reprocessing approvals contained in the Agreed Minutes to each agreement for cooperation, the Departments of Energy and State stated, with respect to the requirements of section 131:

> ". . . We have considered the question of whether the advance consent to reprocessing will result in a significant increase of the risk of proliferation beyond that which existed at the time the approval was granted, and have considered whether there would be timely warning 'of any diversion well in advance of the time at which a non-nuclear weapon state could transform the diverted material into a nuclear explosive device.' We have concluded that the advance approval of reprocessing will not result in a significant increase in the risk of proliferation."

H.R. Doc. No. 163, 98th Cong., 2d Sess. 48 (1984); H.R. Doc. No. 164, 98th Cong., 2d Sess. 84 (1984); H.R. Doc. No. 71, 99th Cong., 1st Sess. 68 (1985).

Although this statement indicates that the Secretaries of Energy and State applied the statutory standard of section 131, it does not provide the Congress with an adequate analysis of timely warning or the overall proliferation risk determination. (See question 1.)

In addition, we note two technical omissions relating to section 131. First, there is no indication for any of the three agreements that the Department of Defense was consulted. Secondly, no notices or determinations were published in the Federal Register for any of the three agreements. We do not think that publication as a House document or in the Congressional Record satisfies a statutory requirement of publication in the Federal Register. The primary audience of the latter is the public in general and not just the Congress.

Nevertheless, although it is unclear whether the proliferation risk determinations were properly made, it appears that these three particular agreements for cooperation would meet the proliferation risk standard. The critical advance approval in each was for reprocessing of spent fuel subject to the agreement, which could occur during the whole 30-year term of the agreements. This reprocessing was approved in each instance only for designated facilities in the United Kingdom and France, both nuclear-weapon states. The United States would have to provide separate approvals in the future for any transfer of plutonium separated as a result of the reprocessing. This includes not only transfer to any other country, but also transfer of the plutonium from the United Kingdom or France back to the cooperating country involved, each of which are non-nuclear-weapon states. Presumably such approvals would be accomplished through the subsequent arrangement process.

Consequently, since the reprocessing would be occurring in states that were already nuclear-weapon states, the only increase in risk of proliferation would be that associated with greater quantities of plutonium that the United Kingdom or France would have to safeguard. Moreover, to give the United States the flexibility to respond to changed circumstances, the advance approvals for processing can be terminated immediately at any time the United States believes that exceptional circumstances from a non-proliferation or a security standpoint so require. Under these circumstances, it appears that the approvals in these agreements are legally permissible.

Need for Scrutiny and Caution

Although we have concluded that the advance approvals in these agreements are legally permissible, we are concerned

about the inclusion of such approvals in agreements for cooperation in other factual contexts. For example, when advance approvals are contained in agreements for cooperation and involve reprocessing in a non-nuclear-weapon state or retransfer of plutonium to a non-nuclear-weapon state, these agreements may not satisfy the statutory standards of the Non-Proliferation Act.

If the advance approvals in these latter factual circumstances are for long periods of time, such as the 30-year term of the agreement for cooperation, it becomes particularly difficult to apply the timely warning and proliferation risk standards of section 131. It cannot be asserted with any degree of confidence that over the succeeding 30-year period the technical capabilities of the cooperating country, the anticipated conversion time, safeguard capabilities, United States political relationship with the cooperating country, etc., would all be such as to assure the existence of timely warning at all times or even assure there would be no increase in proliferation risk over the 30-year period. Therefore, such approvals may not be appropriate. The problem is less significant where, as in the three agreements just discussed, the activity and possession of the plutonium remain in a nuclear-weapon state. At least when reprocessing is authorized for a nuclear-weapon state, the country involved already has the capability and has detonated a nuclear explosive device. This element of unpredictability is removed from the evaluation in assessing increased risk. The only increase in risk would be that associated with the greater quantities of plutonium that the nuclear-weapon state would have to safeguard.

We recognize that some of the consequences of the uncertainty discussed above may be mitigated by including contingent termination provisions in the long-term agreement for cooperation, as was done in the Swedish, Norwegian and Finnish agreements. However, we are not convinced that the use of this mechanism can enable the executive branch to make the necessary long-term findings of section 131 when activities associated with reprocessing are at issue in a non-nuclear weapon state. More particularly, in this context, we disagree with the Department of States's position that:

> ". . . there is no substantive difference between a commitment in an agreement for cooperation to approve reprocessing or retransfers for reprocessing under specified conditions and actually granting the approval in the agreement subject to the continued existence of these same conditions."

Legislation to Amend the Nuclear Non-Proliferation Act of 1978: Hearings and Markup on H.R. 6032 and H.R. 6138 Before the House Committee on Foreign Affairs and House Subcommittee on International Security and Scientific Affairs and on International Economic Policy and Trade. 97th Cong., 2d Sess. (August 3, 10; September 8, 15; December 14, 1982) pp. 252-253.

The procedure specified in the former is, of course, contemplated by subsection 131(a)(3) of the Atomic Energy Act, as amended, 42 U.S.C. § 2160(a)(3), but thereunder congressional review may occur on a request-by-request basis under the subsequent arrangement process. In the procedure presented by the latter, subsequent decisionmaking on implementation or termination of the approvals in the agreement for cooperation lies with the executive branch alone, with no necessary notification or participation by the Congress.

Accordingly, as a matter of law, under circumstances where the statutory standard can be met, the executive branch is not prohibited from including advance approvals for activities associated with reprocessing in agreements for cooperation. However, there may be factual circumstances, of which the Congress should be aware, where these procedures may not be legally permissible.