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NUCLEAR EXPORT CRITERIA AND CONTROLS
IN THE UNITED STATES

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Howard K. Shapar
Executive Legal Director

United States Nuclear Regulatory Commission*/

*/ The views expressed in this paper are solely those of the author,
and do not necessarily represent the views of the U.S. Nuclear
Regulatory Commission.

Introduction

During the past several years there has been widespread political interest in the procedural basis upon which the United States exports nuclear facilities and nuclear materials, and the criteria applied in licensing exports. This culminated in enactment of the Nuclear Non-Proliferation Act of 1978, signed by President Carter on March 10, 1978. I shall endeavor to explain how that legislation has affected U.S. export activities.

I. Background on the Role of NRC in Nuclear Export Activities

Until 1974, under the Atomic Energy Act of 1954, the former Atomic Energy Commission (AEC), exercised primary responsibility within the U.S. Government for both developing and regulating nuclear energy generally and for U.S. nuclear cooperation and export activities specifically. The Energy Reorganization Act of 1974 separated nuclear developmental responsibilities from nuclear licensing and regulation. That Act abolished the AEC and divided its functions between two new agencies. The Energy Research and Development Administration (ERDA) was given developmental responsibilities related to nuclear and other forms of energy. (On October 1, 1977, ERDA was assimilated into the new Department of Energy (DOE).) NRC was created as an independent regulatory agency, with its central focus on protection of public health, safety and the environment in private nuclear activities and protection of nuclear facilities and material from sabotage or diversion. While this separation of functions involved primarily U.S. domestic activities, the 1974 Act also made NRC responsible for licensing exports of nuclear materials and nuclear facilities, such as power reactors.

ERDA, now DOE, inherited authority under the Atomic Energy Act to distribute nuclear reactors and materials under agreements for cooperation. No license was required for such government-to-government transactions. This form of distribution is of limited significance as a source of equipment and materials for a nuclear power reactor program and has been restricted further under the Nuclear Non-Proliferation Act of 1978, of which I will speak more later.

Another aspect of nuclear exports which bears special comment is the licensing for export of certain items which may be related to the construction and operation of a power reactor system but which were not necessarily exported under the NRC reactor license. These items include such things as zirconium tubing, certain pumps, helium circulators, certain water purification equipment, pipe valves, and certain heat exchangers designed for use with reactors. These items were exported under licenses issued by the Department of Commerce under its authority in the Export Administration Act of 1969, as amended. This sharing of component export functions was a result of long-standing agreement between the Commerce Department and NRC and its predecessor, the AEC. The Commerce Department also obtained advice from DOE on the export of heavy water and other items potentially useful in foreign nuclear power programs, also licensed under its authority. The 1978 Non-Proliferation Act provided for NRC rather than the Commerce Department to license such items. The NRC is authorized to issue licenses to export components specially designed or prepared for use in a reactor, as well as other items or substances especially relevant from the standpoint of nuclear export control, because of their significance for nuclear explosive purposes.

II. NRC's Role in the Nuclear Export Process

As you may know, the Executive Branch of the U.S. Government, headed by the President, is responsible for the day-to-day administration of our federal government, and the Department of State carries out most foreign affairs functions under the President's general supervision and control. Independent regulatory commissions such as the NRC exercise responsibilities within their statutory mandates which may have a quasi-legislative or quasi-judicial character and are not subject to presidential control. Although the President, with Senate approval, appoints these bodies, he does not have the power, in most instances, to override their policy decisions.

Regulatory commissions usually have had only domestic responsibilities. When Congress gave NRC responsibility for nuclear export licensing, however, this general pattern was not followed. Nevertheless, Executive Branch views have traditionally been given appropriate weight by the Commission, particularly on questions of national security and foreign policy, even though under current law, NRC may deny an application for a proposed export license supported by the Executive Branch. The Nuclear Non-Proliferation Act of 1978 (NNPA) formalized the procedure for obtaining Executive Branch views on license applications. The NNPA permits the President to "override" the denial of an export license by NRC, while giving the Congress a review of the President's decision. During the legislative process leading to the enactment of the NNPA, NRC supported such a Presidential override to assure that the President's national perspective in the conduct of U.S. foreign policy is appropriately recognized.

The Commission is aware not only of its independence, but also of the value to the U.S. and its nuclear customers of a unified national policy on nuclear exports. The Nuclear Non-Proliferation Act assures that the views of the Executive Branch are received and evaluated before decisions are taken. With this framework in mind, let me now turn to the nuclear export review process.

III. U.S. Nuclear Export Criteria, Controls and Procedures

Several U.S. agencies have responsibilities within the general framework of the U.S. nuclear export system. These responsibilities are coordinated among the agencies. NRC is only one part--although a key part--of the U.S. nuclear export process.

A. Nuclear Export Licenses

Under sections 53, 54, 57, 103, 104, 111; 126, 127 and 128 of the Atomic Energy Act, (the Act), and NRC's present regulations, NRC may license the export of a nuclear facility, such as a power reactor, or special nuclear material--enriched uranium or plutonium--only when it finds (1) that the export would be within the scope of, and consistent with, an agreement for cooperation for the civil uses of atomic energy arranged pursuant to section 123 of the Atomic Energy Act^{*/}; (2) that the export would not be inimical to the U.S. common defense and security; and (3) that the export meets the criteria in sections 127 and 128 of the Act.

^{*/} Section 54 b. and c. of the Act permit the export of (a) plutonium containing 80 per cent or more by weight of plutonium 238 and (b) other special nuclear material exempted from licensing requirements without an agreement for cooperation. Such export must be found to be not inimical to the common defense and security.

The section 127 criteria added to the Atomic Energy Act of 1954 by the NNPA are:

- (1) International Atomic Energy Agency safeguards as required by Article III (2) of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) will be applied to the exported materials or facilities, to any such previously exported material or facilities, and to any special nuclear material used in or produced through the use thereof.
- (2) No facilities, material or sensitive nuclear technology proposed to be or previously exported, or special nuclear material produced therefrom, will be used for any nuclear explosive device or for research on or development of such devices.
- (3) Adequate physical protection measures will be maintained on exported materials and facilities and produced special nuclear material. This criterion is deemed met if the requirements of NRC regulations establishing levels of physical protection are met. NRC has promulgated a regulation that requires measures that provide protection comparable to that set forth in INFCIRC/225, Rev. 2.
- (4) The U.S. will have approval rights for any retransfer of U.S.-supplied facilities, materials or sensitive nuclear technology, or special nuclear material produced therefrom, to another nation or group of nations.
- (5) The U.S. will have prior approval rights for reprocessing or alteration in form or content of U.S.-supplied nuclear material or special nuclear material produced through use of such material.

- (6) The foregoing criteria will be applied to nuclear material or equipment produced or constructed through the use of U.S.-supplied sensitive nuclear technology.

A two-year exemption from the reprocessing and retransfer criteria is provided for groups of nations (i.e., Euratom and IAEA) which have agreed to renegotiation of agreements for cooperation pursuant to the NNPA. The President may extend this exemption at the expiration of the two-year period (March 10, 1980), subject to Congressional review.

New section 128 of the Act requires as a condition of continued U.S. nuclear exports to non-nuclear-weapon states the application of IAEA safeguards to all peaceful nuclear activities. This criterion enters into force on March 10, 1980, but its application to a specific nation may be suspended by the President upon a finding that its application would "be seriously prejudicial to the achievement of United States non-proliferation objectives or otherwise seriously jeopardize the common defense and security." Such Presidential suspensions are subject to Congressional review. The first license for export of a nuclear facility or material to the specific nation each year will also be subject to Congressional review until the criterion is met.

The export of source material, that is, unenriched uranium or thorium, is licensed pursuant to sections 62 and 64 of the Act. The issuance of the export license need not necessarily be under the terms of an agreement for cooperation, but it must be supported by a finding that the export is not inimical to the interests of the United States. Further, the criteria of sections 127 and 128 discussed above apply to licenses for export of source material.

Section 109 of the Atomic Energy Act, as amended by the NNPA, and NRC regulations authorize the Commission to issue export licenses for deuterium production plants, nuclear reactor fuel fabrication plants, component parts especially designed for such plants and for nuclear facilities, deuterium and nuclear grade graphite, upon finding that (1) IAEA safeguards as required by Article III (2) of the NPT will be applied to the exported items; (2) no such items will be used for any nuclear explosive device or for research on or development of such devices; and (3) such items will not be retransferred (to another jurisdiction) without prior U.S. approval and (4) the export will not be inimical to the U.S. common defense and security.

The Act, as amended by the NNPA, also mandates termination of U.S. nuclear exports to any non-nuclear-weapon state which is found by the President to have, after March 10, 1978: (1) detonated a nuclear explosive device; (2) terminated or abrogated IAEA safeguards; (3) materially violated an IAEA safeguards agreement; or (4) engaged in activities involving source or special nuclear material having direct significance for the manufacture or acquisition of nuclear explosive devices. The Act also mandates termination of U.S. exports to any nation or group of nations that is found by the President to have, after March 10, 1978 (1) materially violated an agreement for cooperation with the United States or any other agreement under which U.S.-supplied nuclear facilities, material or equipment were exported; (2) assisted, encouraged or induced a non-nuclear-weapon state to engage in activities involving source or special nuclear material and having direct significance for manufacture or acquisition of nuclear explosive devices; or (3) entered into an agreement for

the transfer of reprocessing equipment, materials or technology to a non-nuclear weapon state, except in connection with an international fuel cycle evaluation in which the U.S. is a participant or pursuant to an international agreement or understanding to which the U.S. subscribes.

The President may waive such termination of exports if he determines that such cessation of exports would seriously prejudice the achievement of U.S. non-proliferation objectives or otherwise jeopardize the U.S. common defense and security.

Byproduct material may be exported, pursuant to section 82 of the Atomic Energy Act, upon finding that the export would not be inimical to the common defense and security.

While the NRC has important responsibilities in connection with U.S. nuclear exports, the State Department and other Executive Branch agencies also have significant duties and interests regarding foreign policy aspects of this process. These agencies have a broad information base and substantial analytical resources. For these reasons, the NNPA specified and required procedures (which had in large part been previously developed) for NRC review of export license applications to take full account of all relevant Executive Branch information and views. A final licensing determination cannot be made until NRC has received the views of the Executive Branch on facility exports and exports of nuclear material of significant quantity and form. In no event may the NRC issue an export license for such facilities and materials if the Executive Branch determines that the export would be inimical to the U.S. common defense and security.

The following procedures are used in obtaining Executive Branch views:

- A. When NRC receives an export license application for a nuclear facility or nuclear material, it is forwarded to the Departments of State, Energy, Defense and Commerce and the Arms Control and Disarmament Agency.
- B. The Department of Energy obtains confirmation in writing from the nation or group of nations under whose agreement for cooperation the export is to take place that:
 - (i) the export will be subject to the terms and conditions of the agreement for cooperation;
 - (ii) the consignee is authorized to receive the export; and
 - (iii) adequate physical security measures will be maintained as required by section 127 (3) of the Atomic Energy Act (such confirmation may have been obtained on a country-wide basis).
- C. After receipt of a license application the Executive Branch agencies:
 - (i) request NRC to obtain from the applicant any additional information needed in connection with the preparation of the Executive Branch judgment; and
 - (ii) identify whether the application appears likely to cause controversy, whereupon steps will be taken to obtain required policy decisions within the Executive Branch or assurances from the recipient nation or group of nations.

- D. The Secretary of State then prepares a proposed Executive Branch judgment on the application, which is transmitted to the Secretaries of Energy, Defense, and Commerce and the Director of the Arms Control and Disarmament Agency (ACDA). Those agencies then transmit to the State Department their views on the proposed Executive Branch judgment.
- E. The State Department then transmits to the Nuclear Regulatory Commission the Executive Branch judgment on the application. The Executive Branch judgment must determine, as required by section 126a.(1) of the Atomic Energy Act:
- (i) Whether or not the export will be inimical to the common defense and security;
 - (ii) The extent to which the export criteria in sections 127 and 128 of the Atomic Energy Act, discussed above, are met; and
 - (iii) The extent to which the cooperating party has adhered to the provisions of any applicable agreement for cooperation.

If warranted, additional factors may be addressed such as:

- (i) Whether issuing the license will materially advance the non-proliferation policies of the United States by encouraging the recipient nation to adhere to the NPT, or to participate in undertakings contemplated by sections 403 or 404 (a) of the NNPA (for the application of full scope safeguards in recipient nations).

- (ii) Whether failure to issue the license would otherwise be seriously prejudicial to the non-proliferation objectives of the United States.
- (iii) Whether the recipient nation or group of nations has agreed with another supplier nation that conditions substantially identical to the criteria set forth in section 127 of the Act will be applied to the proposed export, and whether those conditions will be implemented in a manner acceptable to the United States.
- (iv) Such additional matters as the Commission may advise the Executive Branch it believes must be considered in the Commission's analysis of a license application.

The Executive Branch judgment must, by the terms of section 126 of the Act, be completed no later than 60 days from receipt of the license application by the Executive Branch unless the Secretary of State specifically authorizes additional time because it is in the national interest.

A single Executive branch judgment may address more than a single license application to the extent that the applications involve exports to the same country, in the same general time frame, of similar significance for nuclear explosive purposes and under reasonably similar circumstances. Further, an Executive Branch judgment may, rather than address the criteria in section 127 of the Act, express the view that there are no material

changed circumstances associated with a new license application from those existing at the time of the last application for an export license to the same country, where the prior application was subject to full analysis by the Executive Branch under the new law. (The Commission may also make a finding of "no material changed circumstances" rather than analyzing the application in terms of the section 127 criteria in such circumstances.)

An Executive Branch judgment may address any or all of the matters required by section 126 a.(1) of the Act by reference to an analysis previously submitted to the Nuclear Regulatory Commission after clearance with the agencies required to be consulted for Executive Branch judgments (a country-wide analysis), if those agencies agree that there is no material changed circumstance with respect to such matters. These options are intended to expedite and routinize the export licensing process and assure that the United States remains a reliable nuclear supplier.

When the Executive Branch views are received and analyzed, the Commission makes a final determination on the license application, with reference to the statutory requirements and criteria described above.

If the NRC denies a license, after receiving a favorable Executive Branch judgment on the license application, because in the NRC's view the statutory requirements have not been met, or if the Commission is unable to decide whether the application meets the statutory criteria, the Commission is required to forward the application to the President, with an explanation of the basis for the decision, if any, and any dissenting or separate views. The President may then authorize the export by an executive order, upon

determining that withholding the export would be seriously prejudicial to U.S. non-proliferation objectives or would otherwise jeopardize the U.S. common defense and security. Such Presidential authorization is subject to Congressional review.

If the Commission has not completed action on a license application within 60 days after receipt of the Executive Branch judgment, it must inform the applicant in writing of the reason for delay and provide follow-up reports as appropriate.

Further, if the Commission has simply not acted on a license application within 60 more days after receiving the Executive Branch judgment, the President may authorize the export by executive order, upon making the above findings and a finding that further delay would be excessive, again subject to Congressional review. If the NRC has requested additional information from the Executive Branch within the first 60 days, the second 60-day period begins only after receipt of the additional information from the Executive Branch. If the NRC has commenced procedures for public participation in connection with the proposed export, the second 60-day time period does not begin to run until completion of the public proceedings.

NRC procedures for issuance of export licenses are found in Part 110 of Title 10 of the U.S. Code of Federal Regulations. Part 110 contains procedures for public participation in the Commission's export licensing proceedings, including provisions mandated by the NNPA.

The main features for public participation include:

Written Comments--Persons interested in NRC export licensing proceedings have always been able to file written comments. Part 110 specifically recognizes this procedure.

Petitions for Leave to Intervene and Requests for Hearing-- Petitions or requests must particularize issues to be raised and explain why a hearing or intervention would be in the public interest or how a hearing or intervention would assist the NRC in making the requisite statutory determinations. If a petitioner asserts that his interest may be affected, his petition must set out: (1) the nature of the asserted interest; (2) its relation to an NRC licensing decision; (3) the effect of any NRC order on that interest; and (4) whether the relief requested would redress the alleged injury. The Commission considers the above factors in ruling upon hearing requests and petitions for leave to intervene.

Hearings and Decisions--A hearing will be held upon the affirmative vote of two Commissioners of the NRC. No hearing request will be granted prior to receipt of Executive Branch views on the license application. If the NRC decides to hold a hearing, the notice will specify whether the hearing will be oral, or will consist of written comments.

Unlike domestic hearings conducted by NRC licensing and appeal boards, hearings on export licenses are normally conducted by the Commission itself. However, the Commission may designate another presiding officer. In oral hearings, instead of the direct examination and cross-examination typically used in adjudicatory proceedings in domestic licensing, participants submit questions for response by other participants. Such questions may be posed by the Commission or other presiding officers after review for relevance and materiality. The regulations do not provide for formal devices for obtaining information by participants (such as written interrogatories). Also, no provision is made for subpoenas to compel attendance and testimony of witnesses or the production of evidence. Participants may make oral or written statements during the hearing. Special rules apply in cases where classified information is involved.

The Commission's decision upon completion of a hearing in an export licensing proceeding is not restricted to the material produced at the hearing. The decision will be based on all relevant information, including information which may go beyond that in the hearing record.

As is apparent from the foregoing, the procedures adopted by the Commission for the conduct of hearings and the rendering of decisions in

export licensing cases follow essentially the legislative, rather than the judicial, model.

B. Other Nuclear Export Controls

NRC export licenses constitute only one part of the United States activities in the nuclear export control area. Other forms of control are discussed below.

Government-to-Government Transfers

Sections 54 and 64 of the Act, as amended by the NNPA, authorize the Department of Energy (DOE) to distribute without an export license (a) quantities of special nuclear material amounting to no more than 500 grams per year to any recipient of uranium-233, uranium-235, or plutonium contained in special nuclear material for certain uses^{*/}, and (b) no more than three metric tons of source material per year to any recipient. Such transfers are, however, subject to the criteria in sections 127 and 128 of the Act and must not be inimical to the common defense and security. Further, DOE must have the concurrence of the State Department and have consulted with ACDA, NRC and the Department of Defense.

Technology Transfer

Nuclear technology transfers are authorized by the Department of Energy pursuant to section 57b. of the Atomic Energy Act upon finding that the transfer would not be inimical to the U.S. common defense and security and with the concurrence of the State Department and after consultation with ACDA, NRC and the Departments of Defense and Commerce.

^{*/} Use in laboratory samples, medical devices, monitoring or other instruments, and in emergency situations.

Subsequent Arrangements

Nuclear export transactions in a new category, "subsequent arrangements", added by the Non-Proliferation Act, are subject to controls set forth in new section 131 of the Atomic Energy Act. "Subsequent arrangement" is defined as an arrangement entered into by a U.S. government agency with respect to cooperation with another nation or group of nations involving: contacts for furnishing nuclear materials and equipment; approvals for transfers of materials, equipment and technology; government-to-government distributions of commodities; physical security and spent fuel storage arrangements; safeguards application arrangements; and "any other arrangements which the President finds to be important from the standpoint of preventing proliferation." Although these terms are neither completely clear nor detailed, it is plain from section 131 and the legislative history of that section that they include, among other things, approval of reprocessing or retransfer of U.S. supplied material and arrangements for storage or disposition of foreign spent fuel in the United States. These important arrangements are subject to rather complicated procedures involving Congressional review.

Before entering into subsequent arrangements, the Secretary of Energy must obtain the concurrence of the State Department and must consult with ACDA, NRC and the Department of Defense.

Agreements for Cooperation

Under the Act and the NNPA, a new regime for negotiation of agreements for cooperation between the United States and its nuclear trading partners

is established. Section 123 of the Atomic Energy Act as amended by the NNPA contains a detailed list of provisions required in such agreements, including provisions similar but not identical to the criteria in sections 127 and 128. A program of renegotiation of current agreements to obtain agreement to the new provisions in section 123 is required by section 404 of the NNPA. New and revised agreements are negotiated by the State Department with the technical assistance and concurrence of the Department of Energy and after consultation with the ACDA and NRC. The views and recommendations of these agencies are submitted with the proposed agreement to the President. The proposed agreement is then submitted to the Congress for its review. The involved agencies are required, upon request of the relevant congressional committees, to furnish their views as to whether the safeguards and other controls contained in the agreement provide an adequate framework to ensure that any exports as contemplated by such agreement will not be inimical to or constitute an unreasonable risk to the U.S. common defense and security. The first renegotiated agreement - with Australia - has been approved by the President and forwarded to the Congress.

Commerce Department Export Licenses

The Commerce Department has export control over items, other than those licensed by the NRC, which could be, if used for purposes other than those for which the export is intended, of significance for nuclear explosive purposes. In determining whether such exports should be licensed, the Commerce Department consults with the ACDA, NRC and the Departments of State, Energy and Defense.

C. Consideration of Environmental Impacts Abroad of Nuclear Exports

I have saved this highly controversial subject for the last because it is germane to a variety of nuclear export actions and is in a state of uncertainty at this time.

Executive Order 12114, Environmental Effects Abroad of Major Federal Actions, issued by the President on January 4, 1979, directed every Federal agency taking actions encompassed by the order (i.e., exports of nuclear reactors, among other things), and not exempted therefrom, to have implementing procedures in effect by September 4, 1979 and to take environmental considerations into account in making decisions regarding such actions. The President designated the Department of State as the lead agency to work with other relevant agencies to develop unified procedures for environmental reviews of nuclear exports covered by the Order. Following a series of meetings of staff from the State Department, DOE, the Export-Import Bank, the Council on Environmental Quality and NRC, implementing unified procedures have been prepared and are expected to be issued shortly.

The Order envisages preparation of environmental documents of varying degrees of scope, depth and length, depending upon the impact of the action. Although the issuance of an export license by NRC is exempt, Executive Branch judgments on reactor export licenses are covered.

The NRC would not be precluded by the executive order or the procedures from taking any environmental document produced by the Executive Branch into consideration in making export licensing decisions. As you probably know, NRC had in the past declined to require preparation

of statements on environmental impacts in a recipient country, or consideration of health and safety in a recipient country, in connection with issuance of export licenses. I am unable to predict how this new development will affect that position.

