

GREENPEACE

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Denial of Export License of "Source Material" to Japan's Rokkasho Reprocessing Plant

Dear Chairman Meserve:

We are writing to you on behalf of Greenpeace International in opposition to the issuance of export license XSOU8790, which concerns the export of depleted uranium for test purposes in Japan's Rokkasho reprocessing facility. In reviewing the license application, the Nuclear Regulatory Commission (NRC) must take into consideration that operation of Rokkasho will simply lead to continued stockpiling of weapons-usable plutonium by Japan.

We request that this letter be included as part of the official record concerning the export license application and that you respond specifically to the issues raised in this letter. We further request that this letter be provided to the Executive Branch for review and response. Given the public interest involved in proliferation of weapons-usable fissile material in northeast Asia, we reserve the right, as stipulated in NRC regulations, to request a hearing on this export license application or to file an intervention petition.

Additionally, we request that all documents concerning this export license application, including those related to review by the NRC and the Executive Branch, be either e-mailed or sent to Tom Clements in hard copy as your staff has unfortunately not been able to successfully provide assistance in accessing documents on the NRC's ADAMS document system.

License Opposed on Nuclear Nonproliferation Grounds

We oppose the issuance of a license for the export of depleted uranium "source material" to Rokkasho as use of this material is an integral part of the startup of the Rokkasho reprocessing facility, the operation of which will lead to continued stockpiling of weapons-usable plutonium by Japan. We believe that the nuclear proliferation and security impacts in northeast Asia associated with operation of the Rokkasho reprocessing facility must be analyzed as part of NRC and Executive Branch review of the export licenses application.

Application for export of depleted uranium to Rokkasho presents an opportunity to conduct a nuclear proliferation assessment of the impact of operation of the facility and must not be avoided. As use of the material in question is key to Rokkasho operation, the wider impact of its use must be included in the export license review; the NRC cannot simply determine that the material in and of itself is not of proliferation concern and authorize its export.

Our opposition stems from three main issues: 1) the facility in which the material will be used is planned to produce up to 100 metric tonnes of weapons-usable plutonium for which no need has been demonstrated and which will have a negative proliferation and security impact in northeast Asia, 2) no safeguards agreement between Japan and the International Atomic Energy Agency exists for the Rokkasho facility, though such a safeguards agreement will not guarantee diversion of weapons-usable plutonium, and 3) the facility has not been added to Annex 1 of the United States-Japan Nuclear Cooperation Agreement and thus does not have the necessary concurrence between the Japanese and United States governments to operate.

Export License Application and Rokkasho Reprocessing Plant

Export license application XSOU8790, marked as received by the NRC's Office of International Programs (OIP) on October 18, 2002, concerns the export of 25,983 kilograms of "depleted uranium as uranium hexafluoride (DUF6)" for use in testing the Rokkasho Nuclear Fuel Reprocessing Plant in Japan. According to Attachment B to the export license application, the depleted uranium (DU) would be used both in the "Uranium-Test Phase" and "Active-Test Phase" of the Rokkasho facility. Initially, "depleted uranium in the form of U3O8 powder is to be dissolved in the UO3 Dissolver Vessel" and the subsequent uranyl solution will be used "to confirm the design parameters" in the Purification Facility, the Separation Facility and the Uranium-plutonium Co-denitration Facility. After being used in this test phase, some of the uranyl nitrate solution will be retained to be used during the "Active-Test Phase," in which "actual spent fuels" will be involved. Thus, some of the DU will undergo reprocessing with materials bearing plutonium.

The Rokkasho reprocessing facility is currently under construction in Rokkasho-Mura, located in Aomori Prefecture on the northern tip of the main Japanese island of Honshu, by Japan Nuclear Fuel Limited (JNFL). The facility, which has undergone the "Water-Test Phase" and has now entered the "Chemical-Test Phase," has been reported by various news articles to cost over \$20 billion for construction alone. The export license presents that the facility "is planned to be in commercial operation in 2005" in spite of no demonstrated need for or use of the product produced by the facility - oxides of weapons-usable plutonium and uranium. Rokkasho has a designed reprocessing capacity of 800 metric tonnes (MT) of spent commercial nuclear reactor fuel per year, with a goal of reprocessing 10,000MT of spent fuel over a 15-year period after startup. Reprocessing of this amount of fuel could result in separation of almost 100MT of weapons-usable plutonium. Construction of Rokkasho is perhaps the most financially embarrassing part of a failed plutonium program, a program which is proving to be a net energy and financial drain to Japan and an on-going regional security concern.

Skyrocketing Plutonium Stocks

On December 10, 2001, Japan reported to the International Atomic Energy Agency (IAEA) in Information Circular 549 (INFCIRC 549) that it held at the end of 2000 about 5.3MT of plutonium domestically and 32.1MT in "other countries," for a total of 37.4MT. According to information released by the Government of Japan on August 27, 2002, the amount of plutonium stored in Japan in various forms at the end of 2001 had reached 5.6MT domestically and 32.4MT in the United Kingdom and France, for a total of 38MT and an increase of 600 kilograms from the previous year. Japan also reported that 90MT of commercial spent fuel was being stored at the end of 2001 at the spent fuel storage pools located at Rokkasho. No INFCIRC 549 filing by Japan for 2002 has yet been publicly posted by the IAEA.

Stocks of Japanese plutonium have risen dramatically over the last decade due to the reprocessing of Japanese spent fuel at state-owned reprocessing facilities operated by British Nuclear Fuels Limited (BNFL) in the United Kingdom and Cogema in France, as well as at a domestic facility located at Tokai. In 1998, the first year of voluntary reporting under INFCIRC 549, Japan reported that at the end of 1997 that it held a domestic plutonium stockpile of 5.0MT and a foreign stockpile of 15.1MT. Thus, in the four years from the end of 1997 to the end of 2001, the stockpile of Japanese plutonium skyrocketed from a total of 20.1MT to 38.0MT. Meanwhile, the stockpile continues to rise due to the continued reprocessing in Europe of Japanese spent fuel previously shipped and the failure to implement any plutonium fuel utilization program domestically. Total Japanese stocks of separated plutonium in Europe are expected to rise to above 40MT within the next five years. In short, it is clear that Japan has simply carried a plutonium stockpiling program and it is time that such stockpiling be halted.

"Principle of No Surplus Plutonium" - Violated in the Extreme

Japan's rapid accumulation of a vast surplus of plutonium clearly violates numerous statements made that no surplus stocks would be made and runs directly counter to plutonium

plans presented at the time the U.S.-Japan Nuclear Cooperation Agreement was being negotiated in 1987. Not only has the pledge to accumulate no surplus stocks been violated but stocks have risen to levels far beyond any conceived of ability to use them. Given the well-established weapons-usability of the material now being accumulated as well various forms of plutonium previously placed in storage, the long-term nuclear weapons proliferation implications are severe. While some Japanese officials still deny the weapons-usability of reactor grade plutonium, all evidence presented by the U.S. Government shows that such assertions are simply false.

In the early 1990s, Japan sought to assure the international community that it would not accumulate a plutonium stockpile, as reflected by the following statements:

"There is a national principle that Japan will not possess plutonium beyond the amount required to implement its nuclear fuel recycling program. Therefore, there is no possibility that Japan will possess 100 tons of plutonium at any point of time by the year 2010." Ministry of Foreign Affairs, *Japanese Retransfer of Plutonium*, Tokyo, June 1992, p.9

"Supply and demand of plutonium will continued to be balanced. There will be no chance to stockpile large amounts of excess plutonium in Japan even if temporarily." Nuclear Fuel Division, Science and Technology Agency, *Nuclear Energy Development and Utilization in Japan*, Tokyo, July 1992, p.2

In spite of this pledge not to stockpile plutonium, reprocessing of Japanese spent fuel continued in Europe and planning for construction of the Rokkasho reprocessing plant proceeded without clear plans or ability to use the resulting plutonium. Although the stockpile surged dramatically, Japan pledged to the IAEA in INFCIRC 549 on March 31, 1996 that a policy of "no surplus plutonium" was being followed:

"The nuclear fuel cycle is being promoted based on the principle that plutonium beyond the amount required to implement the program is not to be held, i.e. the principle of no surplus plutonium. Nuclear materials are also strictly managed, so as not to give rise to any international doubts concerning nuclear proliferation. Japan intends to ensure transparency of the plutonium utilization program through these efforts."

Obviously, Japan has repeatedly broken its word concerning accumulation and use of plutonium. That Japan was proceeding with a program which was merely stockpiling plutonium has long been warned about by public interest groups such as Greenpeace International and Greenpeace Japan.

Japan's accumulation of plutonium has hinged on the failure of both the Monju breeder reactor program due to a sodium accident in December 1995 and the long-anticipated failure to implement use of mixed uranium-plutonium oxide fuel (MOX) in light-water reactors (LWRs). Programs to use MOX in reactors owned by Tokyo Electric Power Company (TEPCO) and Kansai Electric Power Company (KEPCO) have been brought to a halt due to the scandal involving falsification of quality control data for MOX shipped to Japan from BNFL and due to reluctance of prefectural governments and local citizens to allow the controversial program to go forward. In total, more than 2MT of plutonium have been transported to Japan from Europe since 1992, yet not one gram of this material has been loaded into a reactor.

Recent developments in Japan have further compounded the significant problems for Japan's controversial plutonium program. Following disclosures of extensive cover-up and falsification of safety inspection reports at TEPCO reactors, Japan's largest utility announced that its MOX program was indefinitely frozen. Since then, approval for MOX loading in the two prefectures where the utility has reactors licensed to use MOX has been withdrawn by the prefectural governments. Recent reports have cited that KEPCO assessments have concluded that it may not be possible to load MOX fuel before 2008, three years after the start-up date of the Rokkasho-mura reprocessing facility as presented to the NRC in the export license application. This is a clear indication that if Rokkasho were somehow able to begin commercial operation in 2005 that the Japanese plutonium stockpile will grow even more dramatically than to date.

Greenpeace estimates made in June 2002, before the most recent setbacks to the MOX program, show that there will be a massive increase in Japan's plutonium stockpile over the coming years due to continued problems with the MOX program and due to Rokkasho operation. Even on the basis that as many as ten reactors would be loaded with MOX fuel by 2010, which will almost certainly not be attained, Greenpeace has calculated that plutonium stocks surplus to MOX demand by 2020 will be in excess of 110MT. By way of comparison this is more than the total stock of plutonium within the entire U.S. nuclear weapons program. Thus, the Japanese MOX program itself is proving to be a driver behind plutonium accumulation.

It is clear that there are many both within the nuclear industry and in the Japanese government who see the folly in pursuit of MOX and look forward to a change in policy against reprocessing and use of weapons-usable plutonium as a nuclear fuel. In spite of the problems facing plutonium use and chronic violation of the "no surplus plutonium" pledge, reprocessing of Japanese spent fuel in Europe continues and start-up testing for the Rokkasho reprocessing facility has begun.

While Japan has made feeble attempts to redefine its plutonium stockpile as a "working inventory" or "running stock" it is clear that it possesses a vast stockpile of excess weapons-usable plutonium for which no use has been presented. Given the sensitivity in the Northeast Asia region over the proliferation of nuclear weapons materials, a strong argument can be made against the further accumulation of such materials in the region. While all eyes are on North Korea's nuclear weapons program and the small amounts of fissile materials which it may have accumulated under that program, the stockpile of weapons-usable plutonium in Japan has soared to a level which could soon rival plutonium stocks in the largest nuclear weapons states. This is a clear proliferation concern which cannot be ignored by the Nuclear Regulatory Commission, the U.S. Department of Energy, the U.S. Department of State or any other branch of the U.S. Government concerned about international security issues related to theft or diversion of fissile materials.

Safeguards Challenges at Reprocessing Facilities

As is well understood, application of effective safeguards at large facilities which handle plutonium in bulk are essentially impossible. The IAEA itself stated prior to the 1995 review of the Nuclear Nonproliferation Treaty (NPT) that "the major challenge facing the IAEA in the next years is to prepare for and implement effective safeguards at a large commercial reprocessing facility." (*Activities of the International Atomic Energy Agency Relevant to Article III of the Treaty on the Non-Proliferation of Nuclear Weapons*, NPT/CONF/1995/PC.III/7, Document presented to the Third Session, Geneva, September 12-16, 1994)

Implementation of effective safeguards at Rokkasho will not be possible based upon existing available technology, including the application of Near Real Time Accountancy (NRTA) as is planned for Rokkasho. At this point no such safeguards agreement with the IAEA for Rokkasho even exists. Discussions are underway between the IAEA and Japanese about a safeguard's agreement but such an agreement is likely not to be finalized in the near term. Additionally, due to the absence of such an agreement, no matter how ineffective, and lack of request from Japan, the Rokkasho facility has not been added to Annex 1 of the U.S.-Japan Nuclear Cooperation Agreement.

The "Implementing Agreement" of the U.S.-Japan agreement stipulates in Article 2, Section 2.(b)(i) the requirement that "a statement affirming that the safeguards arrangement is in accordance with the relevant safeguards concept that has been agreed upon between the parties and a description of the key elements contained in the safeguards arrangement." As this requirement has not been met, the Rokkasho reprocessing facility is not eligible to be added to Annex 1. Thus, for all practical purposes the Rokkasho reprocessing facility does not exist as far as the U.S.-Japan agreement is concerned and thus is not authorized to process or store plutonium.

It should be noted that Article 1 of the U.S.-Japan agreement defines "nuclear material" to include "source material" and it is thus clear that conditions laid out in that agreement apply to

the export in question. Likewise, both the Nuclear Suppliers Group (NSG) and the Zangger Committee view depleted uranium to be source material and thus subject to export controls. The NSG recognizes that the export of nuclear materials to non-nuclear weapons states poses a proliferation risk. Given recent statements by Japanese politicians that Japan should seek nuclear weapons, via use of the plutonium it holds, concerns expressed by the NSG about exported materials which may aid a nuclear weapons program are validated.

Export License Application Review

According to NRC regulations, depleted uranium is defined as "source material" and export of more than small amounts can only be carried out under a specific NRC export license. While depleted uranium cannot be used in nuclear explosive devices due to the low uranium-235 content, it can be used as a fertile material from which plutonium is created in nuclear reactors and, in this case, can aid in the validation of the chemical process in a reprocessing facility which employs the PUREX process. The role of the DU exported from the U.S. in validating a process to separate weapons-usable plutonium must be analyzed as part of the license application review process.

The depleted uranium stipulated in the export license in question will aid in the operation of a plutonium facility for which no safeguards agreement has been developed and which has thus not been added to Annex 1. While safeguards themselves are inherently ineffective, it is clear that they must be in place on the Rokkasho facility for it to be recognized by the United States. At this point, it is unknown when or if a safeguard agreement will be reached between the IAEA and Japan and how effective any such agreement would be in preventing theft or diversion of weapons-usable plutonium. Given the stockpiling of Japanese plutonium and the crisis now taking place in North Korea over plutonium and highly enriched uranium, the issue of separating and stockpiling fissile materials must be looked at in a regional and global context. The buildup of fissile material stocks in the northeast Asia region is of great concern to the United States and well could be considered to be "inimical to the common defense and security." Such stocks in Japan not only present an inherent risk in and of themselves but also play a role in stimulating interest by other countries in obtaining or enlarging their own fissile material stocks. Thus, the risk to the "common defense and security" presented by operation of a large new reprocessing facility in the region must be analyzed in the context of the export license application in question.

In the letter from Transport Logistics International, Inc., which was submitted as part of the export license application, it is stated that "our Japanese customer has certified that the material to be exported under the license is of United States origin and was not processed in any other country prior to entering the United States." The applicant should provide proof that the depleted uranium in question, coming from the United States Enrichment Corporation (USEC) facilities located in Paducah, Kentucky and Portsmouth, Ohio, is solely of U.S. origin. Those facilities have processed uranium from a number of countries around the world and have received uranium which was processed before arrival in the U.S. If USEC has been able to guarantee to the applicant that the depleted uranium it would provide is solely of U.S. origin then those documents should be requested of USEC for the record.

The applicant should also provide information as to the schedule for operation of Rokkasho, how much plutonium will be separated and what the end use of the material will be. Given the freeze on use of MOX in Japan, all earlier statements concerning plutonium use have proved inaccurate in the extreme. Vague or unrealistic plans, which will simply result in more plutonium stockpiling, must be taken as justification to reject the current export request.

To further underscore the concern we hold about this export license application, we will submit for the record a copy of a report prepared by Greenpeace International on safeguards at the Rokkasho reprocessing plant and the proliferation implications of operating this facility.

U.S. Must Act as a Reliable Partner Against Fissile Material Proliferation

We urge the NRC to consider the global proliferation implications as it reviews the export

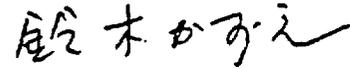
license application and that the application therefore is denied. Demonstration of U.S. reliability as a global partner against proliferation, theft and diversion of nuclear weapons materials is an essential step in controlling such materials. The opportunity to demonstrate such unbiased reliability now rests in the hands of the NRC and the Executive Branch as it reviews this export license application.

Thank you for consideration of these comments for the record. We look forward to your response to them.

Sincerely,



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