SJR

42

SENATE COMMITTEE REPORT

FURTHER:

5/11/87

DATE TURNED INTO OFFICE 5/15/87

Mr. President:

FINANCE Committee considered SJR 42

use of state airports for plutonium shipments under a proposed United State agreement with Japan.

and recommended:

[ ] replace with CS FOR _____) [] same title
[ ] or adopt _____ CS FOR _____) [] new title

[ ] attached amendment(s) and

[✓] do pass

[ ] do not pass

[ ] no recommendation

[ ] individual recommendations

[ ] further referral to _____

[ ] letter of intent adopted _____

Committee [✓] attached or [ ] adopted fiscal note(s)
[ ] new [ ] updated or [✓] previous
[✓] zero [ ] fiscal impact

MEMBERS SIGNING DO PASS

OTHER RECOMMENDATIONS

DO PASS
Chairman signature and recommendation

[ ] Committee Backup Attached

STATE OF ALASKA 1987 LEGISLATIVE SESSION
FISCAL NOTE

Bill Version : SJR 42
Publish Date : 5-11

REQUEST:

Revision Date:
Title : Use of state airports for plutonium shipments...
Sponsor : Senator Uehling
Requestor : Senate State Affairs

Agency Affected :
BRU :
Components :

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
REVENUE	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : (Attach a separate page if necessary)

Prepared by :
Division :
Phone :
Date :

Approved by Commissioner : Chairman Senator Mitch Abood
Date : 5/6/87
Agency : Senate State Affiars Committee

Distribution (by preparer):
- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)
- Senate Secretary

Introduced: 4/16/87 5-1079A
Referred: International Trade, State Affairs, Labor and Commerce and Finance

IN THE SENATE BY UEHLING

SENATE JOINT RESOLUTION NO. 42

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - FIRST SESSION

Relating to the use of state airports for plutonium shipments under a proposed United States agreement with Japan.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS plutonium is an extremely toxic nuclear fuel that can be lethal in minute amounts when ingested; and

WHEREAS the United States and Japan have recently concluded the negotiation of a 30-year nuclear cooperation agreement that would permit the shipping of plutonium by air over a polar route between Europe and Japan; and

WHEREAS it is very likely that the agreement would result in the designation of an Alaska airport as an intermediate refueling point for the shipments from Europe to Japan; and

WHEREAS it is predicted that as much as 40 metric tons of plutonium would be shipped from Europe to Japan over several years starting in the early 1990's; and

WHEREAS the proposed agreement does not specify whether the standards of the Nuclear Regulatory Commission or the less stringent standards of the International Atomic Energy Agency would be followed to ensure the safety of the shipments; and

WHEREAS a cask for safely shipping the large quantities of plutonium by air has not yet been designed, and it is unclear whether it is possible to build a cask that can survive an airplane crash and is large enough to ship the quantities of plutonium contemplated by the agreement; and

WHEREAS an environmental impact statement has not been prepared for

the proposed agreement, although there is court precedent for the proposition that the movement of nuclear fuel qualifies as a major federal action requiring preparation of an impact statement; and

WHEREAS allowing the planes carrying the plutonium shipments to land in the state would have tremendous consequences for the health and safety of the state's residents and the protection of the state's environment;

BE IT RESOLVED that the Alaska State Legislature opposes the proposed 30-year nuclear cooperation agreement between the United States and Japan that would allow the shipment of plutonium by air between Europe and Japan by polar route, resulting in refueling stopovers in the state during the shipments.

COPIES of this resolution shall be sent to the Honorable Ronald Reagan, President of the United States; the Honorable George Bush, Vice-President of the United States and President of the U.S. Senate; the Honorable Caspar W. Weinberger, Secretary of the U.S. Department of Defense; the Honorable John S. Herrington, Secretary of the U.S. Department of Energy; the Honorable George P. Shultz, Secretary of the U.S. Department of State; the Honorable Elizabeth Hanford Dole, Secretary of the U.S. Department of Transportation; the Honorable Jim Wright, Speaker of the U.S. House of Representatives; the Honorable Lando W. Zech, Jr., Chairman of the U.S. Nuclear Regulatory Commission; and to the Honorable Ted Stevens and the Honorable Frank Murkowski, U.S. Senators, and the Honorable Don Young, U.S. Representative, members of the Alaska delegation in Congress.

SJR42

Alaska State Legislature

Senate

MEMORANDUM

P.O. BOX V
State Capitol
Juneau, Alaska 99811

Official Business

TO: Senator Johne Binkley, Co-Chairman
Senate Finance Committee

FROM: Senator Rick Uehling

DATE: May 11, 1987

RE: Scheduling And Backup For SJR42, "An Act relating to the use of state airports for plutonium shipments under a proposed United States agreement with Japan"

I would appreciate it if you would schedule SJR42 for a hearing before the Senate Finance Committee as soon as possible. I have asked staff to provide the following backup for SJR42, regarding the shipment of plutonium through Alaskan airports. Attached is a brief summary, a copy of the resolution, information from the Governor's Office, a report from the Nuclear Control Institute, and miscellaneous newspaper articles. Thank you for your consideration in this matter.

Summary

The United States and Japan have recently gotiated a 30 year agreement permitting the shipment of plutonium by air between European reprocessing factories and Japanese nuclear plants. Alaska is the likely refueling point for the cargo planes due to the guidelines of the agreement which specify using a polar route to avoid major population centers and to decrease flight time. Once submitted, Congress has 90 days to disapprove or recommend changes to the agreement.

There are three major concerns raised by the proposed shipment of plutonium through Alaska. First, the agreement does not specify which safety standards will be used to guarantee the safe transport of the plutonium. The United States' Nuclear Regulatory Commission standards are much more stringent than those established by the International Atomic Energy Agency.

Also, a cask or container for safely shipping large amounts of plutonium by plane has not been designed yet. However, there is apparently nothing in the agreement which precludes air shipment even if a safe cask is not developed.

Finally, no Environmental Impact Statement has been prepared yet. Obviously, the proposed shipments pose potentially great risks to the people of Alaska, especially in the event of an aircraft crash, collision, or terrorist attack. The level of that risk and the potential health hazards have not yet been determined.

This resolution opposes the proposed shipment of plutonium through Alaska because of the lack of information about the hazards involved and because it appears that there is no currently available method for safely shipping large quantities of plutonium by air.

March 24, 1987

MEMORANDUM

TO: STEVE COWPER, Governor

FROM: ERIC LASCHEVER, Associate Director of Fisheries and the Environment

THROUGH: JOHN W. KATZ, Director of State/Federal Relations and Special Counsel to the Governor

SUBJECT: PLUTONIUM SHIPMENTS

This memorandum discusses the issue of plutonium shipments which could require landing in Alaska and summarizes discussions which we have had with State Department officials and members of the Nuclear Control Institute.

Background

The United States and Japan have recently concluded the negotiation of a 30 year agreement which would permit shipments of plutonium, an extremely toxic nuclear fuel, between European reprocessing factories and Japanese nuclear plants. The agreement contemplates that the shipments would occur by air; the guidelines for air shipment specify using a polar route to avoid major population centers and decrease air time. Because of the weight of such shipments the planes would have to refuel in North America. Alaska is the most likely location for such refueling, although the agreement does not authorize or require landing in Alaska explicitly. This agreement would replace the current agreement which requires a case by case review of shipment requests.

President Reagan strongly supports the agreement. According to the State Department officials with whom we met, the United States is interested in protecting its share of the commerce in nuclear fuels and in using U.S. involvement as a way of policing the use of these fuels. Japan considers approval of this agreement to be an important element in the cooperative relationship between the two countries.

Approval and Timing. Several federal agencies are currently reviewing the agreement. Following this review the President must submit the agreement to Congress. Congress must act affirmatively within ninety days to disapprove or recommend changes to the agreement otherwise the agreement is considered approved. The President could make his submittal as early as April or as late as June, according to our sources. At this time the agreement is classified.

Issues

The proposed shipment raises a number of issues. First, the agreement does not specify which standards will be followed to ensure the safety of these shipments. Domestic standards established by the Nuclear Regulatory Commission (NRC) are more stringent than those set by the International Atomic Energy Agency (IAEA), the international organization with responsibility in this area. For example, according to the Nuclear Control Institute, the IAEA impact test for the shipment cask requires that it survive a crash at a velocity of 44 ft./sec., the NRC standard is 422 ft./sec. The State Department is unwilling to say at this time that the shipments be subject to the more stringent NRC requirements.

Second, a cask for shipping such large quantities of plutonium safely has not yet been designed. The State Department indicated that an alternative shipping method would be used if a cask is not developed. According to the Nuclear Control Institute staff, nothing in the agreement precludes using airshipments, even if a new cask is not developed. Based on their discussions with the designer of past casks which are used for smaller shipments, the Institute feels that it is unlikely that a safe cask will be designed in the foreseeable future..

Finally, no Environmental Impact Statement (EIS) has been prepared. The attached district court opinion provides some precedent for the proposition that movement of nuclear fuel is a major federal action that could significantly affect the human environment and therefore requires the preparation of an Environmental Impact Statement.

The State Department believes that it is too early in the process to subject the agreement to the National Environmental Policy Act (NEPA). They concede that it might be necessary to complete an environmental assessment (EA) or statement after the specifics for the shipment are worked out. An EA is a less thorough analysis than an EIS. The Nuclear Control Institute argues that from a legal stand point an EIS should be prepared earlier in the process. They further note that it could be much more difficult politically to prepare an EIS after Congress approves a

general agreement. They argue that the best time to prepare an EIS is before the general agreement has been approved by Congress. Further, pressure to allow shipment to occur will increase along with Japan's needs for the reprocessed fuel.

There are a number of policy options for you to consider. We will be prepared to discuss them in our conversation with you on this subject.

Attachment

cc: Nadine Winters
David Ramseur

STATE OF ALASKA

OFFICE OF THE GOVERNOR
JUNEAU

STEVE COWPER
GOVERNOR

NEWS RELEASE

FOR INFORMATION CONTACT
David Ramseur
Press Secretary

Laury Roberts Scandling
Deputy Press Secretary

Office of the Governor
Box A, Juneau, AK 99811

Bus. Phone (907) 465-3500

FOR IMMEDIATE RELEASE
April 2, 1987
No. 87-35

COWPER REQUESTS STUDY ON JAPANESE PLUTONIUM SHIPMENTS

JUNEAU--Gov. Steve Cowper today requested the federal government to conduct an environmental impact statement before proceeding further with plans to permit aircraft carrying the highly toxic nuclear fuel plutonium from Japan to refuel in Alaska.

In a Thursday letter to Secretary of State George Shultz, Cowper said the proposed shipments could have "tremendous consequences for the health and safety of Alaskans as well as for the state's environment."

He urged that an EIS be undertaken before the issue reaches Congress so the full range of alternatives to shipping the fuel through Alaska can be considered.

"In my opinion, it is not sufficient to prepare an EIS at the time when a stopover site is actually designated," Cowper wrote. ". . . Once the President and Congress have approved the 30-year blanket acceptance embodied in the cooperative agreement, it is difficult to perceive how a truly objective analysis of possible airport sites, safety measures and other relevant considerations could occur."

-MORE-

At issue is a Reagan administration agreement which would permit the shipments of plutonium between European reprocessing factories and Japanese nuclear plants. The 30-year agreement contemplates flying the fuel using a polar route and the weight of the shipments require that they refuel in North America, and perhaps in Alaska.

President Reagan is currently reviewing the agreement and is expected to submit it for congressional approval this spring or early summer. Congress must act affirmatively within 90 days to disapprove the agreement or it becomes effective.

The shipments raise a number of questions which prompted Cowper's concern. For example, there are no safety standards which apply to the shipments nor does a cask for carrying the plutonium exist.

Cowper said federal law requires the preparation of an EIS for major federal action significantly affecting the quality of the human environment. He said there is no question "that a decision to ship plutonium through an Alaskan airport is a major federal action which could affect the human environment."

April 8, 1987

Dear Secretary _____:

I am writing to you in your capacity as a member of the inter-agency team which is reviewing the proposed nuclear cooperation agreement between the United States and Japan.

This agreement may result in the designation of an Alaska airport as an intermediate stop-over point for the shipment of plutonium from Europe to Japan and could have tremendous consequences for the health and safety of Alaskans, as well as for the State's environment. For these reasons, I have requested that the State Department, as lead agency in the process, prepare an Environmental Impact Statement (EIS) which examines the consequences of shipping plutonium through Alaska before the President makes a final decision regarding the agreement.

The enclosed letter to Secretary Schultz outlines in greater details my concerns and the legal basis for this request. I would appreciate your consideration of this request and assistance in ensuring that the full range of alternatives for accommodating Japan's needs for the recycled plutonium are considered prior to reaching a final decision on the matter.

Sincerely,

Steve Cowper
Governor

Enclosure

cc: Delegation
The Honorable George Schultz

bcc: Nadine Winters
Grace Schaible
John Katz
Brenda Yager, State Department
Gerald Brubaker, Assistant for Non-proliferation Policy, Offfice of the Secretary, Pentagon, 2D526, Washington, D.C. 20301-2600
Sen. Glenn's Staff person

Identical letters to:

The Honorable Caspar Weinberger
Secretary of Defense
The Pentagon
Washington, D.C. 20301

The Honorable Elizabeth Hanford Dole
Secretary of Transportation
400 Seventh Street, S.W.
WAshington, D.C. 20590

The Honorable John S. Herrington
Secretary of Energy
Forrestal Bldg.
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Mr. Lando Zech, Jr.
Chairman
Nuclear Regulatory Commision
Matomic Bldg.
1717 H. Street, N.W.
Washington, D.C. 20555

April 2, 1987

TRANSMITTAL MEMORANDUM

TO: STEVE COWPER, Governor

ATTN: NADINE WINTERS, Special Assistant

FROM: JOHN W. KATZ, Director of State/Federal Relations and Special Counsel to the Governor

ERIC A. LASCHEVER, Associate Director for Fisheries and the Environment

SUBJECT: LETTER REQUESTING PLUTONIUM EIS

President Reagan is likely to submit the agreement to Congress as soon as the interagency review is completed. We should get this letter in as soon as possible for maximum effect.

This has been reviewed by an expert on NEPA and atomic energy low.

April 2, 1987

Honorable George P. Shultz
Secretary of State
U.S . Department of State
2201 C. Street, N.W.
Washington, D.C. 20520

Dear Secretary Shultz:

As you know, the United States and Japan have recently completed negotiation of a nuclear cooperation agreement which may result in the designation of an Alaska airport as an intermediate stopover point for the shipment of plutonium from Europe to Japan. This agreement could have tremendous consequences for the health and safety of Alaskans, as well as for the state's environment. Based on the information which I have received from my staff, the press, and other sources, I have concluded that there are a number of critical unanswered questions regarding this agreement. Therefore, I am writing to request that the Departments of State and Energy prepare an Environmental Impact Statement (EIS) which would address these questions before you conclude the executive decision making process and submit the agreement to the Congress for review. My concerns and the legal basis for this request are outlined below.

The National Environmental Policy Act (NEPA) requires that the Federal government prepare a detailed statement on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment. This requirement serves two purposes: protection of the environment, and protection of the integrity of the decision making process to ensure that there is an opportunity adequately to review the environmental consequences of a Federal act. Both of these purposes are best served by the preparation of an EIS to accompany the submission of the agreement to Congress.

First, there is no question that a decision to ship plutonium through an Alaskan airport is a major Federal action which could affect the human environment. In this regard, the Nuclear Regulatory Commission (NRC) prepared a site specific analysis of shipping radioactive fuels through New York City. This document analyzed a range of scenarios, including an accident which resulted in thousands of latent cancer fatalities and billions of dollars in economic loss.

possible airport sites, safety measures, and other relevant considerations could occur. In other words, execution of the agreement will generate a momentum that will make stringent protective measures or outright negative decision making far more difficult and less acceptable in the international relations context.

To conclude, I believe that this agreement represents a major Federal action which could significantly affect the human environment in Alaska. Final action by the President and the submission of the agreement to Congress prior to preparing an EIS could foreclose opportunities for decision makers, as well as the public, to consider the full range of alternatives for accommodating Japan's needs for recycled plutonium. For these reasons, I respectfully request that the Departments of State and Energy prepare an EIS prior to concluding their review of the Agreement and its submission to Congress.

Sincerely,

Steve Cowper
Governor

cc: Senator Ted Stevens
Senator Frank Murkowski
Senator John Glenn
Congressman Don Young

Nuclear Proliferation: Studies and Strategies for Stopping the Spread of the Bomb

NUCLEAR CONTROL INSTITUTE
1000 Connecticut Avenue, N.W., Suite 406, Washington, D.C. 20036 (202) 822-8444

SPECIAL REPORT

AIR TRANSPORT OF PLUTONIUM OBTAINED BY THE JAPANESE FROM NUCLEAR FUEL SUPPLIED BY THE UNITED STATES

Paul Leventhal, Milton Hoenig and Alan Kuperman

March 3, 1987

Paul Leventhal is president of the Nuclear Control Institute. Milton Hoenig is the scientific director. Alan Kuperman is a research associate. The report was jointly researched, and was written by Mr. Kuperman. The Nuclear Control Institute is non-partisan and non-profit and conducts independent research on problems relevant to the spread of nuclear weapons.

Nuclear Proliferation: Studies and Strategies for Stopping the Spread of the Bomb

NUCLEAR CONTROL INSTITUTE

1000 Connecticut Avenue, N.W., Suite 406, Washington, D.C. 20036 (202) 822-8444

FOR IMMEDIATE RELEASE
Tuesday, March 3, 1987

BIWEEKLY FLIGHTS OF HUNDREDS OF POUNDS OF PLUTONIUM TO BE AUTHORIZED UNDER U.S.-JAPAN NUCLEAR ACCORD

President Reagan is preparing to submit to Congress a new 30-year nuclear-cooperation agreement with Japan that would require biweekly flights of cargo planes carrying about 500 pounds of plutonium from Europe to Japan. Because of the enormous weight of shipping casks to be used to transport the plutonium, the flights would cross Canada and land for refueling in Anchorage, Alaska, and then take off again for Japan.

A crash-proof cask being developed for these plutonium shipments failed to survive a high-velocity impact test at Sandia National Laboratories last summer. No new tests have been scheduled, and some experts close to the project believe that it will not be possible to build a large cask, for use in large-scale shipments of plutonium, that can survive a realistic crash test. The cask being developed weighs 5,000 pounds and holds about 15 pounds of plutonium. There would be as many as 40 of these casks on a single Boeing-747 cargo plane.

It is possible that the Reagan Administration will permit Japanese plutonium flights in and out of Anchorage utilizing casks that fail to meet strict safety criteria spelled out by the Nuclear Regulatory Commission after Congress mandated the development of crash-proof casks in a 1975 law.

Plutonium, a manmade element created as a waste byproduct of reactor operation, is highly toxic and can be used in nuclear weapons. The Japanese plan to use recovered plutonium as fuel in their power reactors---an approach that has been rejected by Congress as too hazardous and costly for the United States domestic nuclear power program.

Details of the planned air shipments of plutonium are disclosed in a Special Report, "Air Transport of Japanese Plutonium Obtained from U.S.-Controlled Nuclear Fuel," prepared by the Nuclear Control Institute and released today. The Institute is non-partisan and non-profit and conducts independent research on problems relevant to the spread of nuclear weapons.

The new nuclear agreement---negotiated by the Reagan Administration but still not submitted for Congressional approval---would give the Japanese a 30-year advance approval to recover and use plutonium produced in nuclear fuel originally supplied by the United States for Japanese power reactors. The new agreement would replace the present agreement, which does not expire until the year 2003. Under the existing agreement, the United States can withhold approval on a case-by-case basis of Japanese plutonium activities on safety or security grounds.

The U.S. government blocked for two years a large plutonium shipment by boat that originally was to proceed on its five-week journey from France to Japan without military escort or surveillance. The large risks and costs associated with this shipment, which finally involved the use of French and U.S. warships and satellites in 1984, led to plans to send future shipments by air. Under the new U.S.-Japan agreement, however, the United States would lose its veto power over safety and security arrangements for these shipments, as well as over use of the plutonium itself.

The United States presently exercises legal control over most of the 85 metric tons [187,000 pounds] of plutonium that the Japanese want to recover from their nuclear spent fuel by the year 2000. About half of the plutonium is contained in spent fuel that Japan has sent or has contracted to send, with U.S. consent, to France and the United Kingdom for reprocessing. U.S. controls now apply to at least 80 percent of the 45 metric tons [99,000 pounds] of Japanese plutonium to be separated in France and the U.K., according to an analysis by David Albright, a physicist with the Federation of American Scientists.

Under the new agreement, the United States would provide one approval, in advance, for Japanese shipment and use of plutonium derived from U.S.-supplied nuclear fuel or fuel used in U.S.-supplied reactors, for the 30-year life of the agreement.

The Nuclear Control Institute report was co-authored by Paul Leventhal, the Institute's president, Milton Hoenig, the scientific director, and Alan Kuperman, a research associate.

The report concludes: "There are many technical issues to be resolved before it can be determined whether commercial air transport of plutonium, as envisioned in the upcoming U.S.-Japan nuclear agreement, can be achieved safely and securely . . . . It is premature, therefore, for the Reagan Administration to negotiate away U.S. authority over how Japan makes use of plutonium contained in spent nuclear fuel originally supplied by the United States. The President should not submit the new U.S.-Japan agreement to Congress until all technical issues with regard to air transport of plutonium are resolved."

In addition, the report concluded: ". . . there are also questions concerning the vulnerability of commercial, weapon-usable plutonium to attacks or thefts by terrorists, as well as the eventual spread of this material to nations seeking the capability to build nuclear weapons. From both counter-terrorism and non-proliferation perspectives, the risks of commercial use of plutonium may far outweigh any energy benefits of using this fuel."

SPECIAL REPORT

AIR TRANSPORT OF PLUTONIUM OBTAINED BY THE JAPANESE FROM NUCLEAR FUEL SUPPLIED BY THE UNITED STATES

Paul Leventhal, Milton Hoenig and Alan Kuperman

I. Overview of the Problem

President Reagan may soon approve and submit to Congress a new nuclear cooperation agreement that his Administration has negotiated with Japan. The agreement would give Japan advance approval to reprocess, over the next 30 years, U.S.-supplied and -controlled nuclear fuel after it is removed from Japanese power reactors. The reprocessing of the spent fuel would result in chemical separation of plutonium for use as a fuel in Japan's nuclear power program.

If the new agreement is approved by the President and is not rejected by Congress, the Japanese will have a blanket authorization to separate all the U.S.-controlled plutonium produced in Japanese reactors. This plutonium will make up most of the 85 metric tons [187,000 pounds] of plutonium that will be produced in Japanese spent fuel by the year 2000.

Plutonium is a man-made element that is created as a waste byproduct of reactor operation. It is highly toxic, and it can be used in nuclear weapons. Laboratory experiments show that microgram quantities can cause cancer. Five to eight kilograms [11 to 18 pounds] is sufficient for use in a "primitive" fission bomb of the type that destroyed Nagasaki. (The United States now has about 100 metric tons [220,000 lbs.] of plutonium in its stockpile of nuclear weapons.)

More than half of the 85 metric tons would be separated by reprocessors in Europe, and then transported back to Japan. The first such shipment was made by ship from France to Japan in 1984. The five-week voyage involved such large risks and required such massive military escort and surveillance activities, that both the United States and Japan agreed that future shipments should be made by air.

Present plans call for air shipments of plutonium to cross over Canada, land for refueling in Alaska, and then proceed to Japan. There are a number of problems with the execution of these plans:

1. Commercial air shipment of multi-ton quantities of plutonium is unprecedented. A few flights of no more than 100 pounds each had come into the United States before enactment of the Scheuer Amendment (P.L. 94-79) in 1975. This law barred the Nuclear Regulatory Commission from licensing "any shipments by air transport of plutonium in any form, whether exports, imports or domestic shipments" until the NRC certified a cask capable of surviving "the crash and explosion of a high-flying aircraft."

2. A cask large enough for efficient, large-scale shipment of the Japanese plutonium has not been certified by the NRC. A prototype cask, weighing 5,000 pounds and designed to hold about 15 pounds of plutonium, failed a crash test last summer.

3. If the cask now being developed is eventually used, one Boeing-747 shipment of more than 500 pounds of plutonium would be required every two weeks---taking off from France or the United Kingdom, overflying Canada, landing for refueling in Alaska, and then taking off again and finally landing in Japan. These flights may prove to be of considerable local and national concern. Canada has had one experience with radioactive fuel falling from the sky, during the reentry of an orbiting Soviet satellite in January, 1978.

4. If the cask proves to be technically unfeasible---as some experts advise us will be the outcome---plutonium air transport (PAT) may have to be accomplished with existing, smaller PAT-1 casks, which were never intended for such large-scale transport.

5. The Japanese shipments may not be subject to licensing by the NRC because, although the Commission is responsible for licensing initial exports of uranium fuel, all subsequent arrangements involving spent fuel and the plutonium contained in it are approved by the Department of Energy. The safety of DOE-approved shipments of separated plutonium comes under the jurisdiction of the U.S. Department of Transportation when any such shipments are flown into U.S. airports and/or air space. According to a DoT official, the Transportation Department probably would consult with the NRC on approving a cask, but the DoT would make clear to the NRC that only the International Atomic Energy Agency (IAEA) standards for safe transport need be met.

The IAEA standards are far less demanding than those set by the NRC. For example, the IAEA impact test requires a velocity of only 44 ft./sec., while the NRC-mandated test requires a velocity of at least 422 ft./sec. Further, the IAEA crash standards are no more stringent for plutonium casks than they are for casks used for less hazardous nuclear materials.

The Scheuer Amendment prescribes extra precautions for NRC-licensed plutonium transportation, owing to plutonium's extreme toxicity. The Administration, however, appears to be interpreting the Atomic Energy Act in a way that could permit foreign plutonium to be flown into an Anchorage airport in casks that need not meet the NRC's strict crash standards.

The Atomic Energy Act requires NRC licensing of domestic, commercial plutonium shipments, as well as imports of plutonium for commercial use in the United States. (There are presently no such shipments because of Congressional actions resulting in the shutdown of all elements of the U.S. commercial plutonium program---spent-fuel reprocessing, fresh-fuel fabrication and breeder-reactor development.) However, plutonium-bearing cargo planes landing for refueling in the United States, on their way from Europe to Japan, apparently are viewed by the Administration as neither domestic nor import shipments. This interpretation could create a loophole not intended by Congress:

flights of foreign plutonium stopping in the United States may be approved by the DoE on the basis of cask-safety criteria substantially inferior to those set by the NRC.

In the face of known dangers and high clean-up costs associated with environmental releases of plutonium, the United States---under the agreement negotiated by the Reagan Administration with Japan---would acquiesce in the development of a Japanese plutonium fuel economy that could result in a planeload of plutonium landing in Anchorage as often as every two weeks.

Crashes of two U.S. military aircraft carrying nuclear warheads, which resulted in the release of substantial amounts of plutonium, serve to illustrate the problem. One crash occurred at Palomares, Spain, in January, 1966 after a bomber and a tanker collided in a routine mid-air refueling operation. Clean-up of 1,400 tons of contaminated soil and vegetation at Palomares cost $500-million. The crash of a bomber carrying four nuclear weapons at Thule, Greenland, in January, 1968, required the removal of one and a half million gallons of contaminated snow, ice and water at a cost of $300-million. Both of these sites were unpopulated. Plutonium contamination of a more densely populated crash site would involve a public health risk, and evacuation and decontamination costs would be many times higher.

Under the present U.S.-Japan nuclear agreement, which expires in 2003, the Japanese must obtain U.S. approval of each of their reprocessing, plutonium-transfer and plutonium-use requests. Thus, the existing agreement permits the United States to withhold approval of air shipments of U.S.-controlled plutonium in the absence of a crash-proof cask that meets NRC's specifications. The new agreement would replace the existing case-by-case review process with a blanket U.S. approval of Japanese plutonium activities for the 30-year life of the agreement.

By the late 1990s, Japan will have 5,250 kg. [11,550 lbs.] of plutonium separated each year from spent fuel by reprocessors in the UK and France---the equivalent of 5,950 kg. [13,090 lbs.] of plutonium oxide---according to David Albright in "Civilian Inventories of Plutonium and Highly Enriched Uranium."[1] Out of a total of 48 metric tons of plutonium to be separated in Europe for Japan by the year 2000, 45 metric tons are from fuel irradiated in light water reactors (LWRs). According to Albright, a physicist with the Federation of American Scientists, at least 80 percent, if not virtually all, of this LWR-produced plutonium was separated from fuel supplied by the U.S. or used in U.S.-supplied reactors and, therefore, comes under U.S. control.

Air shipments of commercial plutonium of the magnitude to be authorized by the Japanese agreement have never occurred. Indeed, these shipments may exceed the amounts of plutonium now shipped by air for the U.S. nuclear weapons-program.

1/ This paper appears in Preventing Nuclear Terrorism: The Report and Papers of the International Task Force on Prevention of Nuclear Terrorism, A Nuclear Control Institute Book, Lexington Books, 1987, pp. 265-291.

The significance of the plans to ship plutonium by air is underscored by the on-going development of a communications system for the International Atomic Energy Agency to continuously monitor the integrity of casks during flight. The system, called Artemis, is being designed and set up by the U.S. Arms Control and Disarmament Agency. It will use the private Inmorsat satellite to monitor tamper-indicating seals in "real-time" and the U.S. Navstar Global Positioning System to accurately track the position of the aircraft.

II. Brief Historical Background

In January 1978, the NRC, pursuant to the Scheuer Amendment, published NUREG-0360, "Qualification Criteria to Certify a Package for Air Transport of Plutonium," which detailed: (1) a rigorous set of crash, burn and submersion simulations, to which any potential cask would have to be subjected before its certification; and (2) operational conditions for air transport of plutonium, which would have to be followed to ensure the integrity of the cask and its contents.

By June 1978, the safety analysis report on the first prototype cask, the PAT-1, was published, and by August 1978, the NRC officially certified the cask for use. The PAT-1 weighed approximately 500 lbs. and was cylindrically shaped, with a length of 42.5 inches and a diameter of 24.5 inches. It was authorized to hold up to 2 kg. [4.4 pounds] of plutonium oxide, uranium oxide, their daughter products, or any mixture thereof.

The only real need for air transport of plutonium at the time, however, was for quick, international delivery of IAEA plutonium samples---for analysis as part of their international safeguards procedure. The amounts with which the IAEA was dealing were very small, but were still large enough to require a cask under the law's provisions. The size of the PAT-1 was overkill for these small samples, and as a result, its use would have strained the budget of the IAEA.

The IAEA thus asked the U.S. government to help develop a Light Weight Air Transportable Accident Resistant Container (LATARC), later known as the PAT-2. By September 1981, the PAT-2 had been developed, tested and licensed for use by the NRC, weighing only 73 pounds but holding only 40 grams of plutonium oxide, which was satisfactory for the IAEA's needs, but clearly inadequate for large scale transport. Because the operating procedures specified by NUREG-0360 still made the casks' use prohibitively expensive, the NRC reviewed these operational guidelines and eventually relaxed the restrictions on tying-down the casks and on what other types of hazardous cargo could be aboard flights containing the casks. The NRC concluded that the new, less stringent guidelines did not "significantly" affect the ability of the PAT-2 package to withstand the crash and explosion of a high flying aircraft.

Since then, the only major advance in the development of these casks was the development of a modified PAT-1, which could carry 3.15

kg. of plutonium metal, as opposed to the original 2 kg. of plutonium oxide. This modified PAT-1 was licensed for use by the Department of Energy, but was never submitted to the NRC, because there were no NRC-licensed transports of plutonium taking place at the time. There are no indications that the Japanese are considering shipping the plutonium in its highly flammable (pyrophoric) metallic form, which is also the preferred form for use in weapons.

III. The Present Situation

The PAT-1 and PAT-2 are thus the only two NRC-certified casks in existence for air transport of plutonium. A number of firms around the world, including PNC (Japan), COGEMA (France), and BNFL (UK), are working on developing a larger cask that would make commercial shipment of reprocessed plutonium economically viable.

The only acknowledged test of such a cask took place at Sandia National Laboratories in the summer of 1986. It was an impact test of a prototype PAT-3 cask developed jointly by PNC and Battelle-Columbus. The cask weighed about 5000 lbs. and was designed to hold 6-7 kg. [about 13-15 lbs.] of plutonium oxide. The cask was propelled into a hard target at more than 422 ft/sec. (250 knots---the maximum legal air speed below 10,000 ft. and the speed specified by NUREG-0360). The cask failed the test, and no new prototype has yet been tested or scheduled for testing at Sandia, according to knowledgable Sandia officials. One such official said Battelle has "gone back to the drawing board."

When we asked a leading expert on the engineering of casks to predict when a large, crash-proof cask with a capacity of 6-10 kg. of plutonium oxide would be developed, he replied: "Never." He explained that due to the rigor of the NUREG-required tests, there was a limit to the size of any cask, because past a certain size, the cask "committed suicide"---that is, it collapsed on itself. Thus, he felt that there was an absolute limit---barring an unforeseen developmental breakthrough---to the size of a crash-proof cask, and a corresponding limit to the amount of plutonium that it could hold.

The limitation on size results from a basic principle of engineering which states that as the size of a structure is increased, the weight of the structure grows much faster than the strength. Thus, as bigger casks are developed, the force of impact eventually overwhelms the strength of the package.

IV. Air Transportation Facts for Proposed New PAT-3

According to various informed sources, the PAT-3 cask, if successfully developed, would weigh 5,000 pounds, hold 6 to 7 kilograms of plutonium oxide, and be packed three casks at a time into shipping containers for transport in Boeing-747 cargo planes. The 747s have a maximum cargo load of 255,000 lbs. according to NUREG-0360.

Thus, we can calculate the maximum capacity of plutonium flights using the PAT-3 casks:

Each shipping container would hold 3 casks. A typical container would have a capacity of 12.5 short tons and itself weigh 2,600 lbs. The weight of a packed container would be at least 15,000 pounds for the casks [3 x 5,000 lbs.] plus 2,600 lbs. for the container, or a total of 17,600 pounds. With the addition of packing materials, the total weight of a filled container would likely be as large as 20,000 pounds, or 10 short tons.

Based on its total weight capacity, a 747 could carry some 12 or 13 containers, depending on the added packing materials. Given that each cask can hold 6-7 kg. of plutonium oxide, each container would hold 18-21 kg. [40-46 lbs.] of plutonium oxide, and there would be from 216 kg. to 273 kg. [475 to 600 lbs.] of plutonium oxide in a single 747. Thus, the likely load on each 747 shipment to Japan would be about 250 kg. [550 lbs.] of plutonium oxide. Because of the heavy load, a 747 would need to refuel in Alaska enroute from Europe to Japan.

Volume capacity would not be a problem. According to our calculations, a 747 cargo flight could hold 14 of the above-discussed containers plus additional containers of smaller size if weight were not a factor.

As discussed above, the Japanese will have 5,250 kg. of plutonium per year separated by reprocessors in Europe by the late 1990s, or the eqivalent of 5,950 kg. of plutonium oxide. At 250 kg. [550 lbs.] per 747 flight, that would mean at least 23 flights per year.

Thus, in order to move the estimated 45 metric tons of plutonium that European reprocessors will separate from LWR spent fuel for Japan by the year 2000, a 747 carrying over 500 pounds of plutonium would have to fly over Canada and land in Alaska every two weeks by the mid-to late 1990s.

It is by no means clear, however, that a PAT-3 crash-proof cask can be developed. Such flights may use a cask that does not meet the NRC's present strict requirements, if DoE and DoT choose not to require it. It also should be noted that the last time the NRC's operational requirements hindered use of a cask (the PAT-2), those safety restrictions were relaxed by the NRC itself.

V. Calculations for Air Transport Using PAT-1

If use of a PAT-3 cask eventually is barred because one cannot be developed to meet the NUREG 0360 crash standard, the only NRC-certified cask that exists for potential large-scale shipment of plutonium is the PAT-1.

We estimate that as many as 350 PAT-1 casks, each weighing 500 lbs., could be carried on one dedicated 747 flight. At 2 kg. of plutonium oxide per cask, this yields a capacity of 700 kg. [1540

lbs.] of plutonium oxide per flight. Thus, transporting 5,950 kg. [about 13,000 lbs.] of plutonium oxide per year could be done with as few as nine flights, each carrying about 1,500 pounds of plutonium oxide per 747.

There are serious obstacles, however, to the use of this cask for such commercial transport. According to an NRC official, substantial safety issues would have to be resolved in connection with shipments of such large quantities of plutonium. For example, a 747 fully loaded with PAT-1 casks would be more vulnerable to severe consequences from an engine-rotor accident or a mid-air collision (see next section).

An additional problem is that neither of the two versions of PAT-1 now in existence is capable of holding a COGEMA plutonium container, which is used to store Japanese plutonium in France. Nevertheless, according to an NRC official, there were indications in 1986 of possible Japanese interest in using the PAT-1 for large-scale plutonium transport. However, when COGEMA was asked to modify its plutonium container for use in the PAT-1, the French plutonium producer refused, according to a knowledgeable source. Further, this official said, the three firms actively working on casks---PNC (with Battelle-Columbus), BNFL, and COGEMA---all have resisted suggestions simply to modify the PAT-1 design in order to fit the COGEMA plutonium container, even though, according to him, that modification could be performed by the right engineer. The clear preference has been to develop a crash-proof PAT-3 cask.

VI. Other Cask Issues

1. If a PAT-3 cask is developed that survives the simulated crash test required by NUREG 0360, it would be desirable to further ascertain, and to demonstrate to the public, that a full complement of casks will survive an actual plane crash. This objective can be accomplished by crashing a 747 with a full load of casks containing non-radioactive material. As learned from a December 1984 FAA crash test of a Boeing-720, actual crashes can have very different consequences than simulated crashes in a laboratory. In a test that cost $11.8-million, flame-proof fuel that had been tested successfully in laboratory crash tests, burst into a fireball when the Boeing 720, using the fuel, was actually crashed.

According to knowledgeable officials, the NRC originally considered crashing the PAT-1 cask in a retired naval plane, which was set aside at Sandia specifically for such a test, but they decided not to because of the expense---less than $10-million---of monitoring equipment. An actual crash test of the PAT-3 casks and containers in a Boeing-747 may cost (including the price of an older 747) as much as $25-million---an expense that should be considered in relation to the enormous cost of cleaning up a plutonium spill, and in the context of increased assurance of the casks' integrity.

2. There is the possibility of a terrorist attack on a plane carrying these casks, especially during take-off and landing, during

refueling, and during loading and unloading of the cargo. When the cask specifications were developed, the terrorist contingency was not specifically considered, according to knowledgeable officials.

3. The NUREG-0360 cask specifications do not take into account the possible consequences of a mid-air collision in which a cask is directly hit. The regulation states (page 47) that "in the event of fuselage-to-fuselage collision,...if the package is in a position to be struck directly, the severity of the resulting impact is difficult to predict." Such a collision could occur near a busy airport or during mid-air refueling, as occurred at Palomares, Spain. At present, Japanese plans are to land for refueling in Alaska, not to refuel in mid-air.

4. At the time NUREG-0360 was written, there was concern that an engine-rotor accident could damage a cask. Since the NRC was considering the transport of no more than a few casks at a time, it required that the casks be placed in the aft-most section of the main deck in order to preclude placement near the engine rotors. A plane that is fully loaded with casks would, however, have casks near the engine rotors. According to an NRC official, a complete reevaluation would be required before a cask for use in a plane fully loaded with casks would be licensed, and the issue of an engine-rotor accident would have to be reconsidered.

5. Three firms are known to be working on PAT-3 casks: PNC (through Battelle-Columbus), BNFL, and COGEMA. At the PATRAM-86 (Packaging and Transportation of Radioactive Materials) conference in Davos, Switzerland, each gave presentations on the progress of their work and predicted success by the end of 1986. To date, there have been no reports of any tests in the technical journals. The PATRAM-86 proceedings are being published, but are not yet available. Attempts to acquire the individual presentations through the firms and their embassies, as well as any test results, have not yet proved successful. It is understood within the technical community, however, that the French tested their prototype PAT-3 about one year ago and that the test was a complete failure, resulting in a shattered cask.

6. The Japanese are developing their own plutonium air transport regulations, which are likely to be very similar to the NUREG specifications. It is not clear, however, what the final Japanese specifications will be in the event a crash-proof PAT-3 cannot be developed. It is expected that the Japanese will require at least two more years to develop their regulations and that the first air shipments of plutonium will begin after 1990.

IX. Conclusion

There are many technical issues to be resolved before it can be determined whether commercial air transport of plutonium, as envisioned in the upcoming U.S.-Japan nuclear agreement, can be achieved safely and securely. Considerable uncertainty still surrounds the development of a crash-proof cask suitable for use in large shipments of plutonium. Further, there are environmental and

security implications important to the United States in the establishment of a plutonium fuel economy in Japan. It is premature, therefore, for the Reagan Administration to negotiate away U.S. authority over how Japan makes use of plutonium contained in spent nuclear fuel originally supplied by the United States. The President should not submit the new U.S.-Japan agreement to Congress until all technical issues with regard to air transport of plutonium are resolved.

In addition to air-transport safety questions, there are questions concerning the vulnerability of commercial, weapon-usable plutonium to attacks or thefts by terrorists, as well as the eventual spread of this material to nations seeking the capability to build nuclear weapons. From both counter-terrorism and non-proliferation perspectives, the risks of commercial use of plutonium may outweigh any energy benefits of using this fuel. Further, use of plutonium fuel is no longer regarded as economical because of abundant, low-cost supplies of uranium now available on the world market. The uranium used to fuel nuclear power plants, in contrast to plutonium, is not suitable for use in nuclear weapons.

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U.S. Negotiates a 30-Year Draft Accord Approving Japan's Plutonium Shipments

By Robert E. Taylor
Staff Reporter of The Wall Street Journal

WASHINGTON—With Japan planning to step up international shipments of bomb-grade plutonium, the Reagan administration is moving toward ending case-by-case approval of such shipments.

The administration has negotiated a draft 30-year agreement with Japan that would give blanket U.S. approval of all Japanese shipments of such plutonium, administration officials said.

The agreement also covers shipments of spent nuclear fuel from Japan's electricity generating plants to Europe for reprocessing into a form of plutonium that can be returned to Japan for use in a new type of nuclear reactor.

Currently, the U.S. must separately approve each Japanese shipment of plutonium made from U.S.-supplied fuel or fuel from U.S.-made plants.

Reagan Pledge

The draft agreement, circulating for comment within the Reagan administration and the Japanese government, would carry out a pledge by President Reagan to give Europe and Japan a more predictable supply of plutonium reprocessed from nuclear reactors' spent fuel, according to the officials, who declined to be identified.

The draft agreement stems from the administration's belief that it cannot stop the spread of civilian uses of plutonium, so it should focus on improving security arrangements.

But the Nuclear Control Institute, a Washington group dedicated to reducing nuclear weapons proliferation, argues that the agreement should be delayed because the U.S. and Japan haven't demonstrated that they have found a safe way to ship large amounts of plutonium. The agreement, which still must be submitted to Congress, can be blocked only if both houses reject it. The Institute concedes this is unlikely.

"There are many technical issues to be resolved," the Institute said in a report to be released today. The report calls it "premature" for the administration to "negotiate away U.S. authority over" the shipments.

Air Shipments

The report predicts air shipments of the material as often as twice a month from Europe to Japan, starting in the next few years. The group cites estimates that about 45 metric tons of plutonium will be produced for Japan in European reprocessing plants by the year 2000.

It says flights are expected to cross Canada and refuel in Alaska, which would require approval by the U.S. Transportation Department. Brian Smith, energy counselor in the Canadian Embassy in Washington, said Canada has discussed the prospect with Japan and the U.S., but won't assess the issue until a specific proposal is made.

Japan, France, West Germany and Britain have or are building plants to reprocess spent nuclear reactor fuel to produce plutonium, which then is used in specially designed reactors. Plutonium arouses far more concern than other radioactive materials because only 11 to 18 pounds of it are needed to make a bomb the size of the one dropped on Nagasaki, Japan, during World War II. It also is long-lived and is among the most toxic materials on Earth.

The U.S. forged agreements with European countries in the 1950s and with Japan in 1968 while it had a monopoly on nuclear fuel. The agreements give the U.S. extensive control of any reprocessing and shipment, but the pressure is rising to relax those controls.

Concern Voiced

In an interview, Nuclear Control Institute president Paul Leventhal expressed concern that no plutonium cask large enough for bulk air shipments has passed stringent crash tests mandated by the U.S. Nuclear Regulatory Commission.

The NRC has certified a cask capable of carrying about 4.5 pounds of plutonium, but only for single-cask flights. Several nations are working to develop clusters of crash-proof casks, each of which would carry about 15 pounds of plutonium. Joe Stiegler, manager of nuclear transportation system development at the Sandia National Laboratory, confirmed that one cask developed by Battelle Memorial Institute's Columbus, Ohio, lab had failed the tough NRC crash test.

Mr. Leventhal argued that it may be impossible to design a large cask capable of passing the NRC test. He also doubted that international safeguards can keep plutonium out of the hands of terrorists or prevent high levels of radioactivity at accident sites.

The only large plutonium shipment so far from Europe to Japan was by boat in 1984, escorted by French and U.S. war ships. The cumbersome effort forced Japan to look to the air for the future. In the meantime, reprocessed fuel from Japan has been stored in France.

Large-Scale Shipments

Mr. Leventhal's group hopes to prevent large-scale international shipments of plutonium. But the Reagan administration contends that Europe and Japan already are well on their way toward launching a plutonium reprocessing industry and developing sources of fuel independent of the U.S.

The U.S. "is simply not in a position to dictate or prescribe a policy on reprocessing or plutonium use" by advanced nuclear nations, Richard Kennedy, U.S. nonproliferation ambassador, told the Senate Governmental Affairs Committee recently. "Our only realistic course," he said, "is to work with these select countries to help improve safeguards and controls."

agreement on plutonium

Flights with nuclear cargo would refuel in Alaska

By DAVID WHITNEY
Daily News reporter

WASHINGTON — An agreement giving the Japanese a blanket waiver to fly plutonium from Europe — with a likely fueling stop in Alaska — could be ready for submission to Congress for approval within three months, Alaska Sen. Frank Murkowski said Thursday.

But Murkowski said the agreement would be in exchange for Japanese acceptance of tough standards for handling all nuclear materials under non-proliferation treaties. He said the United States has been trying to negotiate such agreements with other countries using nuclear power since 1978 to minimize the chance that terrorists might seize the materials.

The standards would deal with such issues as the number of people assigned to protect a nuclear shipment, a Murkowski aide said.

In addition, Murkowski said, no flights in which a lot of plutonium would pass over or land in Alaska are likely for many years because there is no safety-certified containers of the sort the Japanese want and because Japanese law prohibits an aircraft carrying plutonium from landing there.

"I am not underplaying the significance of this," Mur-

See Page B-3, PLUTONIUM

Plutonium flights to Japan

Continued from Page B-1

kowski said in an interview. "But we need to find out what we are talking about before we get overly excited.

"I am not going to condone anything that's a threat to my state. But there's nothing going to happen in the near future. And to me, it's probably safer (flying the plutonium) than moving it by ship."

Concern about plutonium-carrying flights was raised in a report March 3 by the Nuclear Control Institute in Washington, D.C.

Murkowski's comments came after his chief counsel, Thomas C.L. Roberts, was briefed on the agreement and its implications by representatives from the State Department, Department of Transportation and the Nuclear Regulatory Commission this week.

According to Roberts, the NRC said that contamination from a ruptured cask in case of an aircraft crash most likely would be confined to a relatively small area.

"If there is a breach (of a cask), the area affected would probably be between five and 25 acres," Roberts said. "Plutonium oxide is very heavy. Even if there were a fire, it would fall quickly to the ground."

Anchorage Daily News — Friday, March 20, 1987

Nuclear cooperation agreement may bring plutonium through Anchorage

By DAVID HULEN
Daily News reporter

Jumbo jets carrying highly toxic, bomb-grade plutonium may regularly fly in and out of Anchorage within several years under a nuclear cooperation agreement being negotiated by the United States and Japan, according to a Washington, D.C., group following the talks.

If approved by both governments, the agreement would permit shipments of nuclear fuel between European reprocessing factories and Japanese nuclear plants. The possibility of refueling stops in Alaska is causing concern among members of Alaska's congressional delegation and officials in state government.

Officials in the U.S. State Department are reluctant to discuss what would happen under the agreement until it is approved by President Ronald Reagan. Once signed, the deal will be sent to Congress for consideration.

But a report last week by the Nuclear Control Institute, a group concerned with nuclear weapons proliferation, said the agreement, if ratified, would mean flights as often as twice a month from France and Great Britain to Japan, with refueling stops in An-

See Back Page, PLUTONIUM

PLUTONIUM: Anchorage me

Continued from Page A-1

chorage. The group predicts that as much as 40 metric tons of plutonium would be shipped from Europe to Japan over several years, starting in the early 1990s.

The institute argues that the agreement is premature because neither the U.S. nor Japan has developed a safe way to transport large amounts of the material.

Plutonium is a by-product of uranium fuel used in nuclear power plants. It is considered one of the most long-lived and toxic materials on Earth, and is the primary ingredient in nuclear explosives. Microscopic amounts of plutonium have been found to cause cancer and other health problems when ingested, and a bomb can be made from as little as 33 pounds of it.

Japan now sends much of the spent fuel from its electric-generating nuclear plants to a reprocessing factory in France, where plutonium is extracted from other wastes. Japan would like to ship the plutonium — oxidized into a powder — from France back to Japan, where it would be combined with uranium oxide to produce fresh fuel, officials have said. Great Britain also is building a plant expected to reprocess spent Japanese reactor fuel into plutonium.

Currently, the U.S. must separately approve each Japanese shipment of plutonium made from U.S.-supplied fuel or fuel from U.S.-made plants. Because of security and safety concerns, there has only been one large-scale plutonium delivery from Europe to Japan, aboard a ship in 1984. The vessel, carrying 557 pounds of plutonium, had a crew of more than 40 armed guards and was accompanied by U.S. warships and tracked by spy satellites as it made its way across the Atlantic and Pacific oceans, according to news reports at the time.

The new agreement would give a 30-year, blanket U.S. approval of certain plutonium shipments, with stipulations over how the material can be moved, according to officials involved in the discussions. The idea is to give Japan a more predictable supply of plutonium. European countries already can ship U.S.-originated plutonium without U.S. approval.

John Moseman, legislative director for Sen. Frank Murkowski, R-Alaska, said officials from the State Department told him Thursday that specifics about how the material would be shipped will not be finalized until after the agreement is ratified. But they said the plutonium likely would be shipped "by the shortest route possible away from populated areas," which would apparently be over Canada and Alaska, he said.

Paul Leventhal, director of the nuclear institute, said his group understands that tentative plans call for the material to be shipped in Boeing 747 cargo jets, with refueling stops in Anchorage. It has not been decided whether Anchorage International Airport or Elmendorf Air Force Base would be used, he said. The institute learned of the plans from officials involved in the negotiations and others familiar with the proposal, Leventhal said.

Some flights travel nonstop between Europe and Japan using polar routes, but the weight of the heavy metal casks used to ship the material would make refueling necessary, Leventhal said. There are few, if any, other airports on the route capable of handling refueling of a jumbo jet aside from those in Alaska, he said.

Anchorage may one day be on flight plan

its way across the Atlantic and Pacific oceans, according to news reports at the time.

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In its report, Leventhal's group raises questions about the safety of the casks now available, and it contends there is little evidence that safe containers can be developed that could survive a plane crash without releasing high levels of radioactivity into the environment. The group also says the shipments would boost the chance of terrorists getting control of materials to make nuclear weapons.

The U.S. Nuclear Regulatory Commission has certified a cask capable of carrying about five pounds of plutonium, but only on single-cask flights. The report says at least three countries are working to develop larger casks to make shipments of plutonium more economical. The only such cask tested under the NRC crash standards failed a test last summer, although it is unclear whether the shipments would have to meet U.S. standards or less-stringent international guidelines, the report says.

The new casks being developed would weigh about 5,000 pounds each and hold about 15 pounds of plutonium oxide. Citing NRC data, the report says a 747 cargo plane would be capable of holding about 40 casks, containing a total of between 500 and 600 pounds of plutonium — the same amount that was carried under such tight security on the ocean freighter three years ago.

The material would be shipped as a powder, which is far less flammable than when plutonium is in its metallic form, and also is more difficult to use in a nuclear explosive device, according to the report. But plutonium oxide also may present a greater health risk when being transported because it would be more easily dispersed into the air if it left its casks, the group contends.

Officials in the State Department, and an official in the Japanese embassy in Washington, all of whom declined to be identified, disputed that detailed plans for plutonium shipments have been developed, and stressed in telephone interviews that it would be years after the agreement is approved before the flights would occur.

Murkowski's aide, Moseman, said the State Department officials assured him that a series of safeguards would have to be met for the flights to ever occur.

Once submitted to Congress by the president, the agreement can be blocked only if rejected by Congress within 90 days, and Leventhal conceded that's not likely. He suggested that an environmental impact statement on the project be required before the agreement is sent to Congress.

Nadine Winters, an aide to Alaska Gov. Steve Cowper, said state officials were trying to learn more about the agreement and were scheduled to speak with State Department officials within the next several days. But she said it was unclear what jurisdiction, if any, state government would have over such shipments. U.S. Rep. Don Young and Sen. Ted Stevens also have asked for more information after learning of the agreement this week, aides said.

"This is nasty stuff," said Winters. "The state hasn't been consulted. It is a few years in the future, apparently, but we're definitely concerned." Young's spokesman, Chuck Davis, said the congressman "would certainly oppose" the flights landing in Alaska if casks fell short of NRC safety standards.

By Robert E. Taylor
Staff Reporter of The Wall Street Journal

WASHINGTON—With Japan planning to step up international shipments of bomb-grade plutonium, the Reagan administration is moving toward ending case-by-case approval of such shipments.

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Currently, the U.S. must separately approve each Japanese shipment of plutonium made from U.S.-supplied fuel or fuel from U.S.-made plants. Japan ships spent nuclear fuel from its electricity generating plants to Europe where it is reprocessed into a form of plutonium that can be returned to Japan for use in a new type of nuclear reactor.

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But the Nuclear Control Institute, a Washington group dedicated to reducing nuclear weapon proliferation, argues that the agreement should be delayed because the U.S. and Japan haven't demonstrated that they have found a safe way to ship plutonium. The institute says the agreement, which still must be submitted to Congress, can be blocked only if both houses reject it. The institute concedes this is unlikely.

Technical Issues

"There are many technical issues to be resolved," the Institute said in a report to be released today. The report calls it "premature" for the administration to "negotiate away U.S. authority over" the shipments.

The report predicts air shipments of the material as often as twice a month from Europe to Japan, starting in the next few years. The group cites estimates that about 45 metric tons of plutonium will be produced for Japan in European reprocessing plants by the year 2000.

It says flights are expected to cross Canada and refuel in Alaska, which would require approval by the U.S. Transportation Department. Brian Smith, energy counselor in the Canadian Embassy in Washington, said Canada has discussed the prospect with Japan and the U.S., but won't assess the issue until a specific proposal is made.

Japan, France, West Germany and Britain have or are building plants to reprocess spent nuclear reactor fuel to produce plutonium, which is used in specially designed reactors. Plutonium arouses far more concern than other radioactive materials because only about 33 pounds of it are needed to make a bomb. It also is long-lived and among the most toxic materials on Earth.

Previous Agreements

The U.S. forged agreements with European countries in the 1950s and with Japan in 1968 while it had a monopoly on nuclear fuel. The agreements give the U.S. extensive control of any reprocessing and shipment by the U.S. Nuclear Regulatory Commission.

The NRC has certified a cask capable of carrying about 4.5 pounds of plutonium, but only for single-cask flights. Several nations are working to develop clusters of crash-proof casks, each of which would carry about 15 pounds of plutonium. Joe Stiegler, manager of nuclear transportation system development at the Sandia National Laboratory, confirmed that one cask developed by Battelle Memorial Institute's Columbus, Ohio, lab had failed the tough NRC crash test.

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Shipping Methods

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Mr. Leventhal's group hopes to prevent large-scale international shipments of plutonium. But the Reagan administration contends that Europe and Japan already are well on their way toward launching a plutonium reprocessing industry and developing sources of fuel independent of the U.S.

The U.S. "is simply not in a position to dictate or prescribe a policy on reprocessing or plutonium use" by advanced nuclear nations, Richard Kennedy, U.S. nonproliferation ambassador, told the Senate Governmental Affairs Committee recently. "Our only realistic course," he said, "is to work with these select countries to help improve safeguards and controls."

Bally Buys Complex At Atlantic City, N.J., From Golden Nugget

By a Wall Street Journal Staff Reporter

CHICAGO—Bally Manufacturing Corp. said it completed its previously announced acquisition of the Golden Nugget casino and hotel complex in Atlantic City, N.J., from Golden Nugget Inc.

Bally, which said last week that it expected to close the transaction shortly, paid $140 million in cash and stock and assumed a $299 million mortgage on the property.

DEADLY CARGO

How safe would it be to fly plutonium over Anchorage skies?

By DEBBIE McKINNEY
Daily News reporter

Alaskans go about their day, oblivious to the rumble of a Boeing 747 approaching from the north, 32,000 feet over their heads. Inside the jet, quarantined deep within 5,000-pound steel cylinders, is a substance that looks as innocuous as sand.

But this flight is guarded by armed men and monitored by satellite. So formidable is this cargo that public knowledge of it could threaten national security.

Inside the cylinders is one of the most powerful and deadly elements on Earth: plutonium oxide. A particle too small to see could cause terminal cancer if inhaled. And the plane roaring overhead contains 600 pounds of such particles.

The jet cruises over Big Lake, dropping to 2,000 feet on approach to Anchorage International Airport. Then the unthinkable happens. A small plane obscured by clouds slams into the jet's side, ripping through the fuselage.

Startled by the explosion, people below squint toward the sky as fiery debris plunges toward the ground. Then it starts raining sand. Those who watch haven't a clue what it is or how it will change their lives.

□

This scenario is not beyond the realm of possibility. According to the Federal Aviation Administration, there have been 158 midair collisions in the United States in the past 6½ years. Eight of them occurred in Alaska.

What such a crash would mean is just one of many questions yet to be answered by those considering routing plutonium through the state.

An agreement being negotiated between the United States and Japan would give a 30-year blanket approval for jumbo jets carrying U.S.-supplied plutonium to fly from reprocessing plants in Europe to Japan. Although a route has yet to be chosen, one option being considered includes refueling stops in Alaska, most likely Anchorage.

The transporting of plutonium by air was stopped in 1975 after about a half-dozen such flights passed through Kennedy International Airport in New York. Dr. Marvin Resnikoff, at the time a physics professor at State University of New York in Buffalo and among those who urged Congress to stop the shipments, calculated that 2.8 pounds of plutonium released in a crash could cause as many as 500,000 people to develop lung cancer. If winds were high and the plutonium widely scattered, he testified, 100,000 people eventually would die.

The U.S. State Department is reluctant to discuss details of the proposed agreement. One spokesman says information is vague because details have not been worked out. But the plan, only one component of a major nuclear cooperation agreement, is expected to be signed by President Reagan within weeks. If subsequently approved by Congress, plutonium shipments could resume as soon as 1990.

Gov. Steve Cowper, state Sen. Rick Uehling and other Alaskans are finding this prospect unsettling for one main reason: Containers large enough to make these shipments economical, yet strong enough to survive a midair collision, do not exist. Although the government insists no shipments will be made until such a cask is designed, state officials want assurance before the agreement is signed.

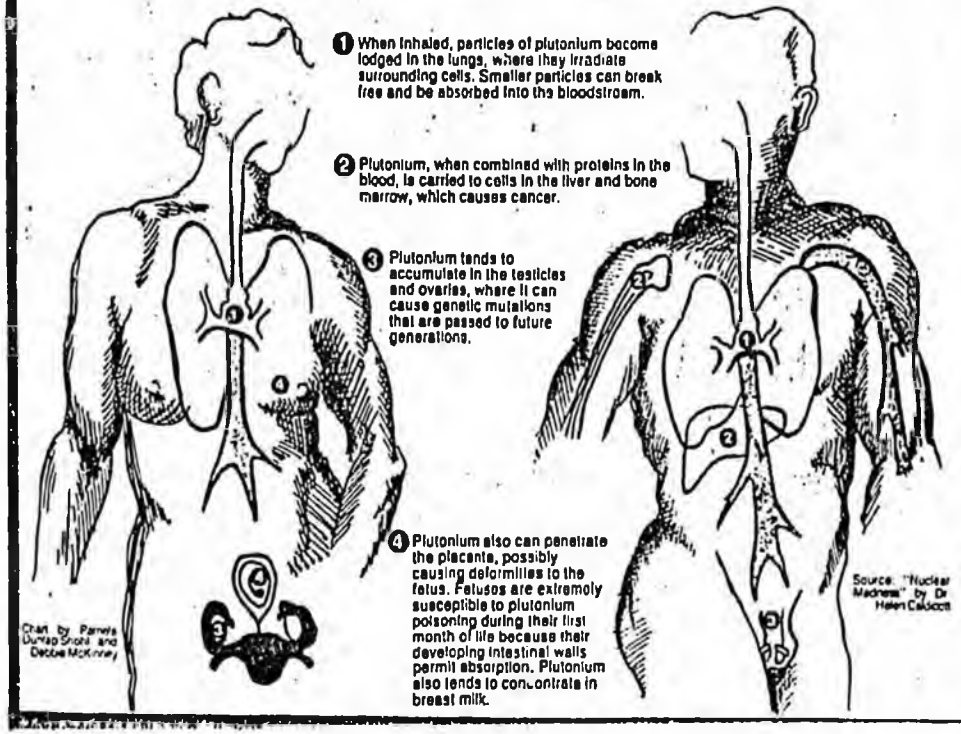
The Nuclear Control Institute, a Washington, D.C.-based non-proliferation group, was the first to raise questions regarding the safety of the proposed flights. Its board of directors includes a former chief of naval development, a Pulitzer Prize-winning writer on modern warfare, and a former member of the federal Nuclear Regulatory Commission. The group doubts that plutonium can be transported safely by air in quantities suggested by the agreement.

If the plan is approved, the institute estimates 45 metric tons of plutonium would be shipped to Japan by the year 2000, as many as two flights each month. The casks being developed weigh 5,000 pounds and hold about 15 pounds of plutonium each. According to NRC data, a 747 cargo plane could carry up to 40 such casks for a total of 600 pounds of plutonium per flight.

Among the institute's concerns is the spread of nuclear material. If Japan were to rebuild its military, it would have the plutonium to devel-

See Page J-2, DEADLY

HOW PLUTONIUM AFFECTS YOUR BODY



Element presents two-edged sword

By DEBBIE McKINNEY
Daily News reporter

Pluto, mythical god of the underworld and ruler of the dead, was worshipped by ancient Greeks and Romans. But he was also feared. Subjects turned their faces away while sacrificing black sheep upon his altar.

Like the god from which its name is derived, the element plutonium is a dichotomy, with the capacity to promote life — and destroy it. At least 1,500 Americans owe longer lives to plutonium-powered pacemakers in their chests. These heart-stimulating devices contain less than one-hundredth of an ounce of plutonium. Even so, wearers are asked to notify the Nuclear Regulatory Commission when they leave the country.

Dr. Helen Caldicott, in her book "Nuclear Madness," describes how plutonium affects the body.

Plutonium molecules are large and therefore not easily absorbed directly into the body through the skin or gastrointestinal tract. But when inhaled, particles become lodged in the lungs, where they bathe surrounding tissues with alpha radiation. Smaller particles may break loose and be absorbed through the lungs into the bloodstream. Because plutonium has properties similar to iron, it combines with proteins in the blood and is carried to cells in the liver and bone marrow, where it irradiates surrounding cells.

The human body is made up of more than 10 trillion cells, which take in nutrients, excrete wastes, produces proteins and reproduce themselves. Radiation inflicts damage by ionizing, or altering, the electrical charge of the atoms and molecules that comprise these cells.

In controlled doses, radiation is used to kill cancerous cells, explains Dr. Darwin Zellmer, chief of medical physics at Providence Hospital. Radiation at large, however, can cause one of several things to happen. The radiation may pass through a cell without causing damage. It may cause

See Page J-2, EFFECTS

Anch Daily News
5-7-87

1 of 4

DEADLY CARGO: Plans to transport plutonium raise questions

Continued from Page J-1

op nuclear weapons, the Institute says. The group also fears that terrorists could sabotage or steal the shipments en route. A crude bomb can be fashioned from as little as 13 pounds of plutonium oxide.

"Anyone who thinks terrorists aren't cunning and ruthless enough to pull off a nuclear attack has forgotten the Munich Olympics, the showdown at Entebbe and the shooting of the pope," Rep. Richard A. Gephardt (D-Mo.) told members of the Nuclear Control Institute-sponsored conference on international terrorism.

"Transportation is the most vulnerable activity in the nuclear fuel cycle," a spokesman for the State Department admits. But the government will take "extraordinary measures" to ensure the safety of these shipments, he says.

"I think the likelihood of terrorist action is very low ... and the likelihood that it would succeed is zero."

Although the form in which the plutonium would be shipped — plutonium oxide — could reach critical mass and create an atomic explosion if huge quantities were compressed, the chance of that happening during a midair collision is extremely remote. Alan Kuperman, a researcher for the Institute, says a crash releasing plutonium into the environment is much more likely.

Plutonium in its oxide form doesn't burn. But it has the consistency of fine sand, which can be dispersed by high winds. Because the oxide is relatively heavy, the State Department says no more than 25 acres — the equivalent of six city blocks — would be contaminated in the event of a ground crash. However, if the oxide were released at high altitude in a midair collision, contamination could be much more widespread.

Since plutonium is highly radioactive, an accident could be particularly nasty. Plutonium has a half-life of 24,400 years. If a spill were to occur today, its radioactivity would be reduced only by half sometime by the late 24th century A.D.

Dr. Rodman Wilson, the Municipality of Anchorage's top health official, is greatly concerned about the proposed shipments. "I strongly disapprove of that kind of transport through Alaska," he says. "So far as I know, plutonium is the most dangerous toxic substance ever discovered or invented by man. There is no minimum safe level. Every atom is destructive. If there was a spill at Elmendorf or Anchorage International, it might close the airport forever."

□

Plutonium's primary use is in making nuclear bombs. It was first synthesized in America in 1940. The fission of 6 kilograms leveled Nagasaki, Japan, killing 36,000 people and injuring 40,000 others at the end of World War II.

A less explosive form of plutonium is used to produce power. Plutonium fuels only a few reactors in Germany, France and Japan. Most of the world's 374 commercial nuclear plants are powered by uranium because it's cheaper, much less toxic and cannot be used to make weapons.

Plutonium can be one of most carcinogenic substances on Earth when inhaled. A dose the size of a speck of dust can start a tumor capable of killing in a matter of months. Some scientists say an invisible particle weighing as little as one-millionth of a gram is enough to cause cancer.

Scientist Harry Daghlian is said to be plutonium's first American victim. On Aug. 21, 1945, two weeks after Nagasaki, a plutonium experiment at Los Alamos National Laboratory in New Mexico went awry, dousing Daghlian with a fierce dose of radiation. A month later he was dead.

Dr. Glenn Shaw is a professor of physics at the University of Alaska-Fairbanks who monitored radiation levels in Alaska after the Chernobyl disaster. People's fears of plutonium exposure, he believes, are well-founded.

"I've never seen a hunk of plutonium," he says. "And, frankly, I wouldn't care to see a bunk of plutonium. If I did see one, I'd run."

On the other hand, Bernard Cohen, professor of physics and radiation health at the University of Pittsburgh, believes plutonium is no more dangerous than caffeine — if swallowed.

If swallowed, only one part per 10,000 is likely to get through the gastrointestinal tract into the bloodstream, Cohen says. While some scientists would argue that one part is enough to set a mutation cycle in motion, Cohen is willing to eat the stuff to prove his point. He's had a long-standing offer to eat plutonium for a television audience and has told consumer activist Ralph Nader that he would eat as much plutonium as Nader would drink caffeine. Cohen has not, however, offered to breathe it.

"Anybody who wants to get people upset about plutonium has an ax to grind," Cohen says. "The important thing about plutonium is that it could provide all the electrical power this world would need for the next billion years. It would be the answer to our energy problems forever."

But critics say the risks of nuclear power outweigh the benefits. The disasters at Chernobyl and Three Mile Island, they say, have proven the impossible can happen.

In the 1960s, two U.S. military planes carrying nuclear warheads crashed. In both cases, the detonators — but not the bombs — blew up, spewing plutonium over large, mostly unpopulated areas.

In 1966, when a B-52 bomber and a tanker collided over Palomares, Spain, more than 1,400 tons of soil and vegetation were contaminated. Clean-up cost $500 million.

In the winter of 1968, another B-52 bomber crashed near Thule, Greenland. It took 1,400 Americans and 100

See Page J-4, DEADLY

EFFECTS: A little plutonium goes a long way

Continued from Page J-1

damage, but the cell may be able to recover before it divides. The radiation may kill the cell. Or, the cell may be damaged in such a way that the damage is repeated when it divides. Such mutations, Zellmer says, result in malignancy.

The affects of radiation are cumulative. The risk of developing cancer may depend on how many other carcinogens a person is exposed to. The greater the exposure, the more difficult it is for cellular repair systems to keep damage under control.

"It's like ... playing darts," Zellmer says. "The more you're exposed — the more darts you throw — the more likely you're going to hit a bull's eye."

DEADLY CARGO

Continued from Page J-2

Danes four months in the arctic darkness to retrieve radioactive debris and remove 1.4 million gallons of contaminated snow, ice and water. Clean-up that time cost $300 million.

"The potential exists that aircraft would crash within our jurisdiction," says Jack Cervantes, director of emergency management for the municipality of Anchorage. "Depending on what type of containers they come up with, we could have to deal with a hazardous waste materials spill of catastrophic proportions."

In 1984, a DC-10 cargo plane crashed and burned after running into a commuter plane at Anchorage International Airport. In 1975, the fuselage of a Japan Air Lines 747 was cracked after the plane was blown off an icy runway at Anchorage International by a gust of wind.

Low-level radioactive materials, such as X-ray supplies and other pharmaceuticals, are flown through Anchorage all the time, Cervantes says. In fact, many planes carry low-level uranium as ballast in their wings and tail sections.

A city response team within the Anchorage Fire Department is trained to deal with low-level contamination. But the strongest radioactive material the team has worked with, Cervantes says, is cobalt 60, used in condensers to measure soil compaction. "(Plutonium) is something that's 100 times more powerful than what we're used to dealing with."

The municipality and the local military bases have a mutual-aid agreement, meaning they can call upon each other for help in emergencies. A spokesman for Elmendorf Air Force Base says military teams are trained to respond to high-level radioactive spills. But if the government decides to ship plutonium through Anchorage, Cervantes wants the city's response team to be prepared, as well. He says he'll request special training and equipment if and when the time comes.

Japan has been shipping its spent reactor fuel to Europe for reprocessing for years — but by sea, not by air. Spent fuel rods are literally too hot to handle and cannot be used to make weapons. It's the return trip carrying reprocessed, high-grade plutonium that's causing all the commotion.

Reprocessing is a clean-up procedure in which plutonium and uranium are separated from other highly radioactive fission by-products. Construction of the United State's only commercial reprocessing plant in Barnwell, S.C., was halted in 1984 when the government determined reprocessing for civilian use was uneconomical and unsafe. Spent fuel from domestic reactors is stored on-site instead.

The last time a large amount of plutonium was transported from reprocessing plants in Europe to Japan was in 1984. The shipment of 557 pounds of plutonium left the French port of Cherbourg at night and was escorted through the English Channel by three British warships. Once on the open sea, the Japanese ship was under constant satellite surveillance, with 10 U.S. warships and 40 armed men standing by as it crossed the Atlantic. The U.S. Coast Guard accompanied it through the Panama Canal. Then, three U.S. warships, the Coast Guard and Japanese patrol boats intermittently escorted the vessel until it reached Tokyo Bay.

The voyage took 41 days. After that, the United States and Japan agreed that future shipments would be made by air in order to reduce the amount of time the shipment would be vulnerable.

The Scheuer Amendment of 1975, sponsored by Congressman James H. Scheuer (D-N.Y.), prohibited the NRC from licensing air transport of plutonium until a cask capable of remaining intact in a midair collision could be certified.

Since then, crash-proof casks capable of carrying only small amounts of plutonium have been certified. Now, at least three companies are trying to design casks large enough to make plutonium shipments on the scale needed for overseas transport. One such cask was tested at Sandia National Laboratory last summer using standards set by the NRC. According to Alan Kuperman of the Nuclear Control Institute, the cask was propelled by rocket into a concrete and steel wall at 288 mph — the maximum cruising speed for airplanes flying under 10,000 feet. The cask failed.

Some engineers doubt a large, crash-proof cask can ever be built. Since Japan must import about 90 percent of its energy needs, the institute and others are worried that economic and diplomatic pressures may whittle away at loopholes in the Scheuer Amendment, allowing the casks to slip by NRC certification, and instead be approved by the International Atomic Energy Agency, a United Nations-related agency created in 1956 that sets minimum safety standards for international transport. IAEA standards are dramatically lower; the casks need only survive a 30-mph impact.

A State Department spokesman says the suggestion that casks would have to satisfy only IAEA standards "is absolutely false." If the

See Page J-5, DEADLY

3 of 4

DEADLY CARGO

Continued from Page J-4

casks did not meet NRC standards, he says, "the shipments would not be made."

The issue of shipping plutonium, in some ways, parallels the issue of nuclear waste. The problem of how to dispose of high-level nuclear waste was unsolved at the time a commitment was made to develop a nuclear power industry.

The first large-scale nuclear power plant in the United States was built outside of Pittsburgh in 1957. Since then, the industry has proposed injecting nuclear waste into the sea floor, depositing it on polar ice caps and shooting it into outer space. All methods have serious environmental complications. As nuclear wastes pile up in temporary dump sites across the country, the search continues for a state willing to open the first permanent dump for high-level nuclear waste.

To those who oppose the shipments, it makes more sense to address all the issues before the agreement is signed. But the agreement, a State Department official explains, amounts to two or three pages of a 200-page document covering a wide range of foreign policy topics.

Although the agreement says nothing specific about the proposed flights stopping in Alaska, the tremendous weight of, the casks would make refueling necessary. The polar route offers the shortest distance between Europe and Japan. If this route is chosen, Canada, the Soviet Union and Alaska are the only possible pit stops along the way. According to the State Department spokesman, if refueling is necessary, Alaska is the most logical place to do it.

Nobody can or will say whether plutonium shipments eventually will pass through Alaska. At a press conference earlier this month, Sen. Frank Murkowski said government officials are considering alternative routes and ways to avoid refueling stops altogether.

Murkowski answered reporters' questions regarding the shipments while fondling a paperweight-sized cylinder of deactivated, vitrified nuclear waste — a souvenir from the nuclear reprocessing plants he recently toured in Europe. The cylinder represented the waste produced after supplying an average French family with power from 1956 to the year 2000, he noted.

In the meantime, state Sen. Rick Uehling has introduced a resolution opposing shipments being routed through the state. Copies have been sent to President Reagan, Secretary of Defense Caspar Weinberger and the Nuclear Regulatory Commission.

In addition, Gov. Steve Cowper has asked the federal government to prepare an environmental impact statement before proceeding any further in negotiations with Japan. The National Environmental Policy Act requires preparation of an EIS for major federal action significantly affecting the quality of the human environment.

"This agreement could have tremendous consequences for the health and safety of Alaskans, as well as for the state environment," Cowper wrote in his letter to Secretary of State George Shultz. "... I have concluded that there are a number of critical unanswered questions regarding this agreement."

As far as Cowper is concerned, preparing an EIS after the fact just won't do. Once the president and Congress have approved the 30-year agreement, "it is difficult to perceive how a truly objective analysis of possible airport sites, safety measures and other relevant considerations could occur."

Cowper has yet to hear from the State Department regarding his request.

SENATE COMMITTEE REPORT

FIRST COMMITTEE OF REFERRAL

Date of 29 April 1987 5-DAY NOTICE
IN ACCORDANCE WITH UNIFORM RULE 23

FURTHER: LABOR & COMMERCE
FINANCE

**FISCAL NOTE(S) ATTACHED _____ **
IN ACCORDANCE WITH AS 24.08.035
(see below)

4/21/87

DATE TURNED INTO OFFICE 11 MAY 1987

Mr. President:

STATE AFFAIRS Committee considered SJR 42

use of state airports for plutonium shipments under a proposed United States agreement with Japan.

and recommended:

[ ] replace with CS _____ [] same title
[] new title

[ ] attached amendment(s) and

[✓] do pass

[ ] do not pass

[ ] no recommendation

[ ] individual recommendations

[ ] further referral to _____

[ ] letter of intent adopted and attached

** Committee [✓] attached or [ ] adopted fiscal note(s)
[✓] zero [ ] fiscal impact

MEMBERS SIGNING DO PASS

OTHER RECOMMENDATIONS

Chairman signature and recommendation

[ ] Committee Backup Attached