

GREEN ACTION

グリーン・アクション

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Letters sent to countries potentially on the route of the MOX fuel shipment

We are writing to alert you to plans for a plutonium fuel shipment between France and Japan scheduled to depart in early April 2013. As the route for this shipment remains secret it is possible that your nations coastal waters could be on the route between Europe and Japan.

Given the many concerns expressed by coastal nations over the environmental, public health, security and economic impacts from such ultra hazardous nuclear transports, we would encourage your government to seek immediate disclosure from the Japanese, French and British governments of their plans for this shipment.

This MOX (mixed plutonium uranium oxide) fuel transport, planned by the French nuclear industry (AREVA), Japanese nuclear utilities and UK transport authorities without consultation or notification of en-route states, poses a serious risk to your country's population and environment.

We include a number of specific recommendations in this letter which we hope will assist you in formulating a position of opposition to this unjustified nuclear shipment.

Background - The cargo

On February 26th Greenpeace France released information that in early April 2013 a shipment of plutonium Mixed Oxide (MOX) fuel is scheduled to depart the port of Cherbourg, in northern France bound for Japan. This will be the first plutonium shipment from Europe to Japan since the March 2011 Fukushima Daiichi nuclear accident.

On March 4th Reuters reported on the imminent shipment in an article titled, "Areva plans 1st nuclear fuel shipment to Japan since Fukushima."¹

Although not confirmed, we understand that the shipment will contain 20 assemblies of plutonium MOX fuel destined for the nuclear power plant Takahama, operated by Kansai Electric. The estimated amount of plutonium in these 20 fuel assemblies is over 900kg of plutonium, plus uranium.

Plutonium MOX fuel is a combination of plutonium and uranium oxide in the form of fuel pellets. As a result of reprocessing of Japanese nuclear waste spent fuel in France and the UK as well as reprocessing in Japan, Japan currently has accumulated over 44 tons of plutonium in store in Europe and Japan.

¹ <http://www.reuters.com/article/2013/03/04/japan-nuclear-mox-idUSL4N0BW3TV20130304>

The Japanese program to use this plutonium has been in crisis for several decades and is both over budget and behind schedule. Earlier shipments of MOX fuel have led to the fuel being put into long term storage and unused.

The impact of the Fukushima nuclear accident

Before the Fukushima Daiichi nuclear accident, Japan's plans for using plutonium MOX fuel had already been delayed by safety scandals and public and political opposition. Plutonium MOX fuel had been delivered to the Fukushima Daiichi site in 1999. But due to concerns over its safety it remained in storage at the site for 11 years. A second cargo of plutonium MOX fuel delivered in 2001 has remained unused in storage for the past 12 years and will probably never be used.

The 32 assemblies of plutonium MOX fuel were finally loaded into the reactor in September 2010. Six months later unit 3 and two other reactors at Fukushima Daiichi suffered reactor core meltdown following the earthquake and tsunami of March 11th 2011.

In addition to the four reactors destroyed at Fukushima Daiichi, all remaining 48 reactors in Japan were shutdown after the 2011 accident. Two reactors were restarted in mid-2012, but recent reports suggest no reactors will be restarted in 2013², and it could be three years before a number of reactors are restarted. One of the major lessons from the accident is that Japan does not need nuclear power – there have been no blackouts and support for renewables and energy efficiency and the phase out of nuclear power are supported by a large majority of the Japanese people. Plans for Japan using its large stockpile of plutonium have also been thrown into disarray by the Fukushima accident.

Japan's Nuclear Regulatory Authority (NRA) is still in the process of establishing new nuclear power safety standards. The Takahama plant, as well as all other nuclear power plants in Japan, will not be allowed to operate until these standards are passed and met. The plutonium MOX fuel shipment scheduled early April is being undertaken without any of the nuclear power plants being legally able to operate.

Moreover, even if nuclear power plants restart in Japan, the plants are designed to operate with uranium fuel. There is no shortage of uranium fuel. Lack of plutonium MOX fuel will not deter their operation.

The ships

The vessels to be used for the April 2013 plutonium MOX transport are the British flagged Pacific Heron and the Pacific Egret. The vessels are operated by Pacific Nuclear Transport Limited, which is owned by AREVA of France, the International Nuclear Services/Nuclear Decommissioning Authority of the UK and the Overseas Reprocessing Committee representing Japanese nuclear power companies.

Despite claims that the vessels are safe and secure, like all ocean-going vessels they are vulnerable to accidents and despite years of concern expressed by en-route governments, issues of liability and salvage in the event of accident remain unresolved.

The route

² See, "Japan Won't Start Nuclear Plants in 2013, Wood Mackenzie Says" <http://www.bloomberg.com/news/2013-02-28/japan-won-t-start-nuclear-plants-in-2013-wood-mackenzie-says.html>

There are three principle routes for the 2013 plutonium MOX shipment:

- ⤴ France - west coast of Africa, via Cape of Good Hope, Indian Ocean/Southern Ocean, Tasman Sea, South Western Pacific, to East Sea/Sea of Japan;
- ⤴ France - Caribbean Sea, via Panama Canal, central/northern Pacific to East Sea/Sea of Japan;
- ⤴ France - South America/Atlantic, via Cape Horn, South Eastern and Central Pacific to East Sea/Sea of Japan.

All three routes have been used for Japanese nuclear shipments in recent years and it is the policy of the Japanese, British and French Governments not to rule out any particular route and not to announce the route prior to departure.

The risks

We have a number major concerns with this plutonium shipment:

- ⤴ the route chosen will not be made public to the tens of en route nations prior to departure;
- ⤴ plutonium MOX fuel transports are an environmental, public health and security risk;
- ⤴ no nuclear reactors are currently operating in Japan that are capable of using this plutonium MOX fuel – its pursuit of a plutonium program is a major nuclear proliferation threat;

Route - Over the last twenty years nations in the Caribbean, Central and South America, sub-Saharan Africa, the South Pacific and in East Asia have expressed their concerns and opposition to Japanese nuclear shipments. These concerns have been wholly justified under international maritime law, with demands including prior notification, information on the cargo and safety measures (including salvage plans) resolving issues of nuclear liability in the event of an accident, prohibition from the nuclear transport vessels entering a nations 200 miles Economic Exclusion Zone.

As a result of the controversy over such nuclear shipments, and the opposition of Japanese citizens, plans for tens of plutonium shipments have not materialised. The 2013 shipment is a desperate attempt by AREVA to restore business relations with the Japanese nuclear industry, and those in Japan desperate to restart their nuclear program after the catastrophe of the Fukushima accident. Our principle issues of concern for this shipment are the following:

Safety – the sea shipment of plutonium MOX fuel exposes the environment of en-route nations to the risk of accident and resultant radiological contamination. The plutonium MOX shipment's transport casks are only required to withstand emersion underwater at 15 meters for 8 hours (or 200 meters for 30 minutes). Shipboard fires can last much longer (days or even weeks) than the fire duration the containers are tested for. Reviews of the type of cask that are used for plutonium MOX sea shipments---a modified spent fuel shipping cask---do not provide confidence that they can withstand mechanical and thermal loads far in excess of those for which they were designed. Once the plutonium in the MOX fuel disperses it poses would pose a direct threat to coastal marine ecosystems, including severe economic impacts to fisheries and tourism as well as human health.

The commercial factors that determine the safety standards set by the nuclear industry, were recently revealed by Section Chief Masato Mori at the Japanese Ministry of Transport (MLIT), the official in charge of the MOX shipment's transport cask safety stated on 13 February 2009,

“The Japanese transport ministry is not the party which is fully in charge of this transport. The primary party responsible is the [Japanese] electric utilities. We’ve told them time and time again that they should put more effort into the safety of sea transports, just like [the effort] they put into the safety of their nuclear power plants. As far as we are concerned, they can put much, much more effort into the safety of the sea transports.”³

Security – The plutonium MOX to be shipped to Japan is classified as Category 1 direct-use nuclear material by the International Atomic Energy Agency (IAEA), which means that the plutonium in the MOX fuel can be used to construct nuclear weapons and requires the highest possible security.⁴ States or terrorists could extract the plutonium from the fuel and use it as weapons material.

The Pacific Heron and Pacific Egret are armed with five 30mm naval canon, and 42 armed police from the UK Office of Civil Nuclear Security. A U.S. Department of Energy study concluded that the risk of attack on the shipment required the need for, “providing continuous backup support for the vessel by military security assets.”⁵ The 1992 shipment of 1.7 tons of plutonium from France to Japan on board the Akatsuki-maru, was escorted by a Japanese coast guard vessel.

However, in an attempt to reduce the financial burden of shipping plutonium fuel from Europe to Japan, the planned shipment will not have a dedicated armed escort vessel. Even so, the U.S. Pentagon concluded in its assessment of sea shipments of plutonium that, “even if the most careful precautions are observed (for sea shipment) no one could guarantee the safety of the cargo from a security incident, such as an attack on the vessel by small, fast craft, especially armed with modern anti-ship missiles.”⁶

Proliferation – Reprocessing and the use of plutonium MOX fuel increase risks of nuclear proliferation. Plutonium in spent nuclear fuel is harder to extract for use in nuclear weapons than separated plutonium and plutonium in MOX fuel. Since the 1970’s when Japan, France and others were warned about the proliferation dangers inherent with commercial plutonium, the global stockpile of commercial plutonium has risen to in excess of 250 metric tons, sufficient for tens of thousands of nuclear weapons.

Japan currently has a stockpile of over 44,000 kg sufficient for over 5000 nuclear weapons. Regional tensions in North-east Asia, including recent North Korean nuclear tests and the presence of nuclear armed states make Japan's continued pursuit of plutonium a major proliferation issue.

The planned shipment will only compound the proliferation problems. Rather than acknowledge that its stockpiling of plutonium and pursuit of reprocessing is a nuclear proliferation threat, the Japanese authorities, supported by the United States, are seeking to restart the much stalled plutonium program. There is little prospect that this latest plutonium MOX fuel will be loaded into the Takahama reactor during 2013. Instead it is likely to sit in the storage pool at the site for an undetermined period. The same justification that were given to concerned en route states by Japan, that the plutonium is essential for energy purposes will once again prove to be false. Japan is without exception in the support it receives for its plutonium program. Uniquely the United States

3 As quoted by Green Action Japan, International Press Release February 24th 2009. <http://www.greenaction-japan.org/modules/wordpress0/index.php?p=62>

4 As the IAEA safeguards glossary states, conversion of MOX fuel or powder to finished plutonium (metal) is of the order of 1-3 weeks. IAEA Safeguards Glossary, IAEA/SG/INF/1, Vienna, IAEA 1990.

5 See the U.S. Japan Peaceful Nuclear Cooperation Agreement, 1988. Citations are by Paul Leventhal, President Nuclear Control Institute, Gentsu Seminar, Tokyo April 17th 1990.

6 Ibid.

actively encourages Japan to produce, transport and stockpile nuclear weapons material, with no prospect of its use. This ineffective and double standard approach to nuclear non proliferation only encourages other nations to pursue their own programs and ultimately will lead to greater nuclear proliferation.

Conclusion

Our conclusion is that the risks from this and any future plutonium shipment are wholly unjustified. It is therefore all the more important that Japan, France and the UK are challenged over this imminent shipment.

Since the 1990's tens of en-route states have made important statements of opposition and launched initiatives to challenge Japan, France and the UK over sea shipments of nuclear material.⁷ One of the most significant initiatives against nuclear sea shipments was taken at the 2005 UN International Meeting on Small Island Developing States (SIDS).⁸ The SIDS, including the Caribbean, the Pacific, and the AIMS (Atlantic, Indian Ocean, and Mediterranean and South China Seas) regions, were united in their opposition to the transport of radioactive material through their regions.⁹

Most recently the CARICOM has courageously reiterated its decades long opposition to nuclear shipments calling for the Caribbean Sea to be a nuclear free zone. Stating at its December 2012 annual meeting CARICOM, ***"It is with gravest concern that the Caribbean Community reiterates and intensifies its opposition to the passage of shipments of high level waste through the Caribbean Sea. The Caribbean Sea constitutes not only a part of the way of life of the Caribbean people but also a principal source of livelihood and socio-economic activity,"*** said CARICOM Chairman Dr. Kenny Anthony.¹⁰

On the eve of this plutonium MOX shipment, we urge you once again to oppose these dangerous shipments and confirm that commercial plutonium programs are unacceptable and must be terminated.

We include the following suggested measures for your consideration:

In the first instance,

- ⤴ request immediate clarification from Japan as to which operating nuclear reactors this plutonium MOX fuel is intended;
- ⤴ demand an immediate cessation to all shipments of plutonium (MOX) fuel;
- ⤴ requesting allied countries to join you in demanding an immediate cessation to all shipments of plutonium (MOX) fuel.

If this shipment goes ahead,

- ⤴ demand prior notification of the intended route as well as contingent routes, including the

7 These have included: the African, Caribbean Pacific Summit (ACP); Pacific Islands Forum; Caribbean Community (CARICOM); and Association of American States (AOS).

8 See, International Meeting to Review the Implementation of the Programme of Action for the Sustainable Development of Small Island States, Mauritius Declaration, A/Conf.207/L.6 (Port Louis, 14 January 2005), found at <http://www.un.org/special-rep/ohrls/sid/MIM/A-conf.207-L.6-Mauritius%20Declaration.pdf>.

9 The Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island States (Port Louis, 13 January 2005), at found at http://www.un.org/smallislands2005/pdf/sids_strategy.pdf.

10 See, <http://cananewsonline.com/news/85224-nuclear-free-zone.html>

- expected dates of passage;
- ✦ demand details of emergency contingency plans and full consultation with the maritime authorities of en route States to develop and facilitate emergency contingency plans; demanding an assurance and/or securing an agreement that the shipping states will not transit the 200 mile Economic Exclusion Zones (EEZ) of coastal states;
 - ✦ demand full security from attacks and protesting the lack of suitable security in the form of a military armed escort particularly following the events of 11 September 2001;
 - ✦ insist on a fully adequate liability and compensation regime that includes a fund for providing compensation that covers all types of damages, including those that may result from incidents.

As the tragic March 2011 Fukushima Daiichi accident has reminded us, there is no such thing as safe nuclear power and that includes the sea shipment of ultra hazardous material as plutonium MOX fuel. As the Japanese people and industry have demonstrated since 2011, it is not necessary for Japan to rely on nuclear power to generate electricity. That is a view shared by the majority of people in Japan who have no wish to threaten the environments of tens of coastal nations with plutonium MOX shipments such as the one due to take place this April.

Thank you for your consideration of this important issue. If you require further information please do not hesitate to contact me.

Yours sincerely,



Aileen Mioko Smith
Executive Director
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Attachments:

MOX Fuel Shipment 2009: Issues and Controversies--Presented to the Foreign Correspondents' Club of Japan by Aileen Mioko Smith (Executive Director of Green Action), 15 May 2009, page 8, "Japan Ignores International Calls for Shipment Safety"
<http://www.greenaction-japan.org/modules/wordpress0/index.php?p=68>

"Areva plans 1st nuclear fuel shipment to Japan since Fukushima", Reuters, 4 March 2013
<http://www.reuters.com/article/2013/03/04/japan-nuclear-mox-idUSL4N0BW3TV20130304>

Japan ignores international calls for shipment* safety.

FULL ENVIRONMENTAL IMPACT ASSESSMENT:

Despite repeated requests from en route country governments, the Japanese government refuses to conduct international environmental impact assessments of plutonium/MOX fuel shipments as required under customary international law and the U.N. Convention on the Law of the Sea (articles 204, 205, 206).

PRIOR NOTIFICATION:

No prior notification to en route countries of intended route and contingent routes, and expected dates of passage.

EMERGENCY CONTINGENCY PLANS:

No emergency contingency plans including plans to salvage cargo. No consultation with the maritime authorities of en route States to develop and facilitate such plans.

ASSURANCE OF NO EEZ TRANSIT:

Lack of assurance and/or secured agreement that ships will not transit the EEZ of coastal states. (During the 1992 plutonium shipment, the Japanese government promised to keep the shipment more than 200 miles away from other nations' coasts. Those promises were not honored. The 1992 transport, as well as nuclear shipments since then, have sailed inside EEZ waters of a number of countries.)

LIABILITY AND COMPENSATION REGIME:

No liability and compensation regime negotiated with en route countries that includes a fund for providing compensation, and recognizes the need to provide compensation for all types of damages, including those that may result from incidents involving the shipping of radioactive cargoes even if no measurable release of radioactivity occurs.

SUITABLE SECURITY MEASURES:

The IAEA categorizes non-irradiated MOX fuel as direct use nuclear weapons material: the IAEA does not differentiate between separated plutonium and MOX (mixed plutonium and uranium oxide) fuel as far as safeguards are concerned. (See: <http://www.iaea.org/Publications/Documents/Infircs/1998/infirc549.pdf>)

MOX fuel shipments lack dedicated purpose built armed escort as there was for Akatsuki maru plutonium shipment in 1992. (The US approves the transport plan for MOX fuel shipments.)

* Plutonium, MOX fuel, and high-level vitrified waste (VHLW) from France and UK to Japan

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