



Comprehensive Fissile Material Treaty

Greenpeace Submission

to the IAEA Working Group

August 2004

GREENPEACE

Comprehensive Fissile Material Treaty
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**The Need for a
Comprehensive Fissile Material Treaty**
Greenpeace Submission to the
IAEA Expert Group on the Nuclear Fuel Cycle
August 2004

Executive Summary

Greenpeace welcomes IAEA Director General Dr ElBaradei's initiative for an Expert Group to consider ways to tighten international controls on the nuclear fuel cycle. In particular, strengthening international controls applied to sensitive parts of the nuclear fuel cycle, including uranium enrichment, plutonium separation and spent fuel management, is a necessary, but not sufficient goal in the context of nonproliferation. A legal regime establishing comprehensive controls over all fissile material is long overdue.

While initiatives such as Security Council Resolution 1540 (see [Appendix 8](#)), the Proliferation Security Initiative (see [Appendices 5 and 6](#)) and the G8's Global Partnership ([Appendix 7](#)) have been formulated to deal with nuclear proliferation, none of these address the root cause: halting the production, storage and use of weapons-usable fissile materials and specifically plutonium and highly enriched uranium (HEU).

Instead, the nuclear industry, with the open support of governments that profess commitment to nuclear non-proliferation, is actively promoting reprocessing and MOX fuel in the civil nuclear industry, with MOX being advocated as the way to 'dispose' of surplus military plutonium. This will result in both increased amounts of plutonium in commercial circulation around the world and an increase in shipments of nuclear waste and MOX fuel - both of which increase proliferation and security risks. In contrast to treating plutonium as a waste and immobilizing it, the MOX route for dealing with plutonium is more expensive, will increase reactor safety hazards and will ultimately assist the Russian Federation to close the nuclear fuel cycle, with all the resulting hazards that this entails. The first physical manifestation of this new era will be witnessed within a matter of weeks with the trans-Atlantic shipment of weapons-grade plutonium from the United States to France. The vulnerabilities of the trade in plutonium will be highlighted by this transport which is scheduled to take place on lightly armed nuclear freighters with no dedicated armed escort. (For further details on this see, www.stop-plutonium.org).

In addition to large amounts of military plutonium due to enter the commercial fuel cycle over the coming decades, the amounts of separated weapons-usable plutonium in civilian stocks now rival the amount of plutonium being held in military programs. Civilian reprocessing and MOX fuel fabrication and use presents a growing proliferation risk that must be addressed. There are believed to be more than 215 metric tons of weapons-usable plutonium being held by countries involved in reprocessing. As it would take as little as 5 kilograms of this commercial plutonium for a state or

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terrorist organisation to build a nuclear bomb, the threat posed by the mere existence of plutonium must be addressed by the global community.

While these plutonium programs are a threat to global peace and security, they are driven by a relatively small number of advanced industrialised states, specifically, France, the UK, Japan and Russia, along with client countries in Europe. Given the scale of the threat posed by fissile materials, it is even more appropriate therefore that these nations and their industrial/commercial should be challenged over their misguided nuclear policies.

In the case of the UK, British Nuclear Fuels' (BNFL's) Sellafield MOX plant once it begins commercial operation will increase shipments of nuclear material, increase the amount of plutonium being handled and processed and pose a terrorist threat. The UK Environmental Agency has stated that it would be a relatively straightforward matter to undertake chemical separation of plutonium from MOX fuel,¹ and the US Department of Energy has stated that fresh MOX fuel remains a material in the most sensitive category because plutonium suitable for use in weapons could be separated from it relatively easily. The United Kingdom in 2002 held 38 tonnes of plutonium contained in spent fuel, 90.8 tonnes of civil unirradiated plutonium, 20.9 tonnes of which belongs to foreign bodies,² and 1.579 tonnes of irradiated and unirradiated civil high enriched uranium (HEU).³ A year later, at the end of 2003, stocks of unirradiated plutonium in the UK totalled 96.3 tonnes, the increase being due to reprocessing.⁴ Total plutonium stocks in the UK are set to rise to 160 tons over the next ten years.

(For a backgrounder on MOX fuel see [Appendix 2](#), and for the background on the Sellafield MOX plant see [Appendix 3](#)).

The largest commercial plutonium program currently running is in France. In addition to its plutonium stockpile of around 80 metric tons, an additional 7-10 tons of plutonium is separated each year, of which 5-6 tons is fabricated into MOX fuel. As a large industrial user of weapons material in its nuclear program, France has established a large transport infrastructure to distribute its plutonium throughout the country and neighbouring client states. One serious consequence of this has been the greatly increased risk of nuclear terrorism targeting the poorly protected plutonium transports. (see Appendix 10 for background on security hazards of French plutonium transports). The state-nuclear company, Areva, responsible for creating these large stocks of plutonium, is seeking to continue reprocessing into the second and third decade of this century, leading to further increases in stocks of plutonium.

Both BNFL and Areva/Cogema are seeking new markets for their reprocessing and MOX services, despite the security and proliferation implications. Of most concern is their decade's long pursuit of

¹ UK Environment Agency, "Proposed Decision on the Justification for the Plutonium Commissioning and Full Operation of the Mixed Oxide Fuel Plant," October 1998.

² Believed to primarily be Switzerland, Germany and Japan.

³ IAEA, Communication received from the United Kingdom of Great Britain and Northern Ireland Concerning its Policies Regarding the Management of Plutonium, INFCIRC/549/Add.8.6, 15 September 2003, at <http://www.iaea.org/Publications/Documents/Infcircs/2003/infcirc549a8-6.pdf>. That Note declared (as of 31 December 2002) 8,685 kg of unirradiated separated plutonium stored at reprocessing plants (up from 7,990 kg the previous year), 7,000 kg contained in spent fuel at civil reactor sites (up from 6,000 the previous year), 31,000kg contained in spent fuel at reprocessing plants (down from 35,000 the previous year).

⁴ Parliamentary Under Secretary of State for Trade and Industry, Nigel Griffiths Written Ministerial Statement, 19 July 2004.

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business with the Republic of Korea in direct conflict with efforts to reduce proliferation tensions on the Korean peninsula.

The single greatest threatened new source of plutonium is Japan's proposed reprocessing plant at Rokkasho-mura. This facility, scheduled to start uranium testing this October, with commercial operation in 2006, will produce as much as 6-7 tons each year of operation. Within the first ten years of operation, it is likely to separate 30-40 tons of plutonium.⁵ At this scale of growth, global stocks of commercial plutonium will increase by more than 50% of that produced during the entire 50 years of the Cold War by all nuclear weapon states. Despite years of effort, the planned international safeguards system to be applied at Rokkasho, will be unable to detect the diversion of more than 200kg of plutonium each year of full operation, leading to even greater international suspicion over Japan's intentions. Despite having one of the world's largest stockpiles of plutonium (38 tons), and with no foreseeable prospect of using any significant proportion of this, the decision of the Japanese government to proceed with commissioning of Rokkasho is an act that will further increase the risk of nuclear weapons proliferation in North-east Asia and beyond.

The solution for reducing the threat posed by plutonium reprocessing and MOX programs, is not to establish regional fuel centres (for example Rokkasho's services being offered to the Republic of Korea or Taiwan) but rather to immediately abandon plans for commissioning any new reprocessing plants.

If the Rokkasho-mura facility is commissioned, efforts to control fissile materials, and ultimately the spread of nuclear weapons, will be complicated enormously, if not made completely impossible.

Greenpeace believes one of the most effective ways to address nuclear proliferation is to stop the further reprocessing of plutonium, and to treat existing stocks as nuclear waste. Greenpeace is thus calling for an immediate commencement of negotiations towards a comprehensive fissile material treaty (CFMT) (see [Appendix 1](#)).

Whilst many parties, including Greenpeace, have been arguing this case for years, there are now new strategies in play: while the deadlock continues, the nuclear weapons states are cementing their position as nuclear states through the PSI, SC resolution 1540 and G8 initiatives mentioned above, while at the same time countenancing and even encouraging the proliferation of fissile materials by states viewed to be friendly at the time in question.

After a lengthy policy review, the United States in what has been described as a sudden election-year reversal,⁶ the United States reaffirmed its commitment to negotiation in the Conference on Disarmament in Geneva of a legal binding treaty banning the production fissile material, but stated that verification was 'not achievable'.⁷ U.S. representative Jackie Sanders announced at the Conference on Disarmament that the U.S. has "serious concerns" about the verifiability of a such a

⁵ The actual operation of Rokkasho-mura and therefore the amount of plutonium it will separate each year is at this stage impossible to know. Apart from many anticipated technical problems that will affect annual throughput, political and commercial decisions will also determine the amount of spent fuel actually reprocessed each year. If the plant were to operate without major incident, it can be expected that in year one throughput of spent fuel from 50-100 tons will rise to full operation in year 4 or 5. Thus actual plutonium separation in the first few years will be around 1-2 metric ton.

⁶ International Herald Tribune, July 31, 2004, at <http://www.iht.com/articles/531991.htm>.

⁷ <http://www.unog.ch/news2/documents/newsen/dc04028e.htm>

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treaty. Previously, the United States has supported the negotiation of a verifiable ban on the production of fissile materials.

According to State Department Press guidance:

“Our extensive review has concluded that there are serious concerns as to whether an “effectively verifiable” FMCT is realistically achievable. Effective verification of an FMCT would require an inspection regime so extensive that it could compromise key signatories’ core national security interests and so costly that many countries will be hesitant to accept it. Moreover, we have concluded that, even with extensive verification measures, we will not have high confidence in our ability to monitor compliance with an FMCT. The United States delegation in Geneva will want to discuss these concerns in detail with other CD members.”

These objections have been described as being that such inspections might interfere with making fuel for American nuclear submarines and might let foreign inspectors glimpse secret American nuclear technology.⁸

This position on verification is at odds with the Shannon Mandate to negotiate “a non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices.”⁹ Quite apart from the diplomatic difficulties that will arise from an attempt to depart from the Shannon Mandate, the New York Times has described the decision in an editorial¹⁰ as “astonishing, and frightening, that the Bush administration is now pushing to strip the teeth from a proposed new treaty aimed at expanding the current international bans on the production of weapons-grade uranium and plutonium” and said that

“We live in a world where no nation has a monopoly on bomb technology. The most effective remaining way to curb the spread of nuclear weapons to growing numbers of countries and terrorist groups is to impose strict, verifiable international controls on the production of nuclear bomb ingredients. The Bush administration prefers a treaty that endorses nuclear virtue but that then averts its eyes.”

The Arms Control Association observed that¹¹

“The administration’s ‘trust but not verify’ position on the FMCT will more likely hurt than help efforts to conclude a meaningful treaty and could lead

⁸ New York Times Editorial, “A gift to bombmakers”, August 7, 2004, at <http://www.iht.com/articles/532922.html>

⁹ Report of Ambassador Gerald E. Shannon of Canada on Consultations on the Most Appropriate Arrangement to Negotiate a Treaty Banning the Production of Fissile Material for Nuclear Weapons or Other Nuclear Explosive Devices, CD/1299, (“The Shannon Report & Mandate”), 24 March 1995, at <http://www.reachingcriticalwill.org/political/cd/shannon.html>.

¹⁰ New York Times Editorial, “A gift to bombmakers”, August 7, 2004, at <http://www.iht.com/articles/532922.html>

¹¹ Press Release, Arms Control Association, “Arms Control Experts Say Ban on Production of Key Nuclear Materials for Weapons Should Be Universal and Verifiable,” July 30, 2004, at http://www.armscontrol.org/pressroom/2004/20040730_FMCT.asp.

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some important states to reconsider their support for negotiations on a fissile material treaty altogether.”

One risk is that the United States position, in deviating from the Shannon Mandate, will lead to more stalemate in the CD, just as the United States position in the NPT in refusing to reaffirm decisions already agreed in 2000 lead to an inability to reach any substantive (or indeed meaningful procedural) agreement in the NPT in New York in April 2004. There seems little likelihood that real progress will be made at the remaining weeks in this year’s CD session, meaning negotiations will have to restart in January 2005.

Urgent Recommendation for the IAEA Expert Group

1. The IAEA Expert Group should recommend immediate negotiations on fissile material controls.

Greenpeace believes that no more time can be lost in starting negotiations for a comprehensive fissile material treaty (CFMT) ([Appendix Two](#) explains in more detail this need).

The failure of parties to the NPT to agree on any meaningful substantive recommendations at their 2004 PrepCom cannot be allowed to set the stage for a state of paralysis in the international nuclear non-proliferation and disarmament regime for the next year. Nor can the world stand by while the nuclear States attempt to define the non-proliferation agenda in ways that avoid the 13 Practical Steps, their own Article VI obligations and addressing their own fissile materials.

The creation of a CFMT can no longer be held hostage as we have seen for the last eight years at the Conference on Disarmament (CD) in Geneva.

Greenpeace is thus calling for immediate commencement of negotiations. The IAEA Expert Group should recommend immediate negotiations on fissile material controls.

Other Recommendations for the IAEA Expert Group

2. The IAEA Expert Group should recommend that States Interpret Security Council Resolution 1540 in its broadest context

On 28 April 2004, the Security Council unanimously passed Resolution 1540/2004 on the non-proliferation of weapons of mass destruction ([Appendix Eight](#) provides more analysis of this resolution).¹²

A primary object of this resolution requires nations to make illegal the act of proliferating weapons of mass destruction, including nuclear weapons, and in particular their possession by non-State

¹² S/RES/1540 (2004) 28 April 2004. At [http://daccess-ods.un.org/access.nsf/Get?Open&DS=S/RES/1540%20\(2004\)&Lang=E&Area=UNDOC](http://daccess-ods.un.org/access.nsf/Get?Open&DS=S/RES/1540%20(2004)&Lang=E&Area=UNDOC). See paper by Duncan Currie, “Non-Proliferation Under Security Council Resolution 1540”, 5 May 2004, at <http://www.globelaw.com/Nukes/NonProliferation/NonProlif%20Res%201540.htm>, and some specific suggestions by Alyn Ware, “International Ju-Jitsu: Using United Nations Security Council Resolution 1540 to advance nuclear disarmament,” Alyn Ware, July 2004 at <http://www.disarmsecure.org/publications/papers/Ju-Jitsu.html>.

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actors. However, a careful reading of the resolution and its context shows that it in fact goes wider and raises the wider questions of disarmament and proliferation by all states. As such it encompasses both vertical and horizontal proliferation.

The resolution recognizes the need to prevent proliferation in all its aspects and the need for all member States to fulfil their obligations in relation to arms control and disarmament. This is clear from the references to arms control and disarmament in its preamble and the references made to “all aspects” of proliferation, and the reference to and breadth of the 1992 statement by the then President of the Security Council.

Therefore the IAEA Expert Group should recommend that States in their implementation of the Resolution in its legislation and otherwise, and in their reports to the Security Council, due in October 2004, should accordingly not limit their efforts to non-state actors or horizontal proliferation and should address all aspects of proliferation.

3. The IAEA Expert Group should recommend that States should use their membership of the G8 Global Partnership to bring about real and comprehensive nonproliferation.

Specifically, the IAEA Expert Group should recommend that the Global Partnership should ensure that:

- **Plutonium disposition must not increase proliferation;**
- **Comprehensive fissile material negotiations commence immediately; and that**
- **Non-proliferation and disarmament measures are universal in their application.**

[Appendix Eight](#): “The G8’s Global Partnership Against the Spread of Weapons and Materials of Mass Destruction & the NPT”, addresses these matters in greater detail.

Of particular concern is the possibility that the disposition of decommissioned Russian nuclear weapons will lead to MOX production, increased nuclear transports and increased proliferation concerns.

While G8 countries have in the past offered financial support for the Russian program to dispose of surplus weapons plutonium as MOX fuel, this support must be reassessed, given that it will lead to the creation of a plutonium fuel infrastructure in Russia and massively increase transports of both plutonium oxide and MOX fuel. The MOX program in both Russia and the U.S. is mired in delays that could be fatal, and was not addressed at the recent G8 Summit at Sea Island.

The IAEA Expert Group should recommend that the Global Partnership ensures that there is a concerted effort undertaken to negotiate agreements to dispose of surplus weapons plutonium as nuclear waste and not as MOX fuel.

The disposition of weapons plutonium endorsed by the G8 will have a significant impact on how the international community deals with the proliferation of weapons-usable fissile materials.

The IAEA Expert Group should recommend the Global Partnership does not contribute towards increased proliferation and the growth in the use of MOX fuel but that it is used to work towards a comprehensive fissile material treaty.

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The IAEA Expert Group should recommend that the Global Partnership ensures that steps taken to address non-proliferation reflect its own commitment to multilateralism, universality and discrimination.

Universal adoption of the G8 non-proliferation principles, as called for in the G8 Action Plan, requires adherence to principles already agreed to and a commitment to multilateralism and universality on a non-discriminatory basis. The focus of the Bush Administration on so-called 'rogue states' and the allied Proliferation Security Initiative (PSI) undermines these efforts and will result in failure of non-proliferation efforts to attain widespread acceptance and implementation.¹³ It avoids the commitment that nuclear weapons states have to immediately undertake to abide by their obligations in the Nuclear Non-Proliferation Treaty (NPT), in particular article VI, and the unequivocal undertaking by the nuclear-weapon States given in 2000 to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament to which all States parties are committed under Article VI.

At the latest G8 summit, G-8 States adopted an Action Plan which included a moratorium on new transfers of enrichment and reprocessing equipment and technology to additional states, for one year, while working to implement permanent controls to keep this equipment from terrorists or states seeking to use it to manufacture nuclear weapons.¹⁴

This moratorium, laudable in itself, should logically apply to all shipments of enrichment and reprocessing equipment regardless of destination.

4. The IAEA Expert Group should call for a moratorium on all nuclear shipments until the discriminatory nature of the Proliferation Security Initiative (PSI) can be remedied

The Proliferation Security Initiative or PSI is intended to facilitate the search and seizure of aircraft and ships suspected of carrying 'weapons of mass destruction' or materials for making such weapons.

PSI states that the member states are "working together to stop the flow of these items to and from states and non-state actors of proliferation concern." In its limitation to states and non-states actors 'of proliferation concern', and in not defining these states, PSI is selective and discriminatory.

It is flawed in that it does not address either the ships or the cargoes of material themselves, or, in practice, the proliferating state sending the materials.

Which states are of concern appears to be defined by the states at the time of any interception. As such PSI is inherently discriminatory and inconsistent with the Law of the Sea Convention, the United Nations Charter and with Security Council resolution 1540 which addresses non-proliferation.

While the desire to address the proliferation of nuclear weapons and their precursors is shared by many States, and has found expression in Security Council resolution 1540, questions remain over

¹³ See Greenpeace briefing on PSI, "Nuclear Shipments and the Proliferation Security Initiative", 12 July, 2004.

¹⁴ See G8 Action Plan on Nonproliferation, White House Fact Sheet, June 9, 2004, at <http://www.uspolicy.be/mobile/europe/16.htm>

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the restriction of PSI to shipments to states ‘of proliferation concern’. This restriction appears to be inherently discriminatory and actions could arguably constitute a breach of articles 300 and 301 of the Law of the Sea Convention and article 2 of UN Charter. It is also inconsistent with resolution 1540, which notes that it is the proliferation of the material, rather than the nature of the states of destination, that is the threat to international peace and security.

PSI risks being approached as a substitute for a non-proliferation policy, and as replacing or undermining, rather than supplementing, non-proliferation strategies and policies. In its selective application, it can even be seen as inconsistent with Security Council resolution 1540 in its restrictive ambit and discriminatory approach.

Support for PSI as it is formulated at present may well serve to entrench non-proliferation double standards and increase the divide between nuclear “have” and “have not” states. Thus, to be effective, initiatives to address nuclear shipments need to be consistent with uniform, unbiased, and universal non-proliferation policies. In order for PSI to enjoy universal support and to comply with international law, it must comply with existing instruments, including the NPT and resolution 1540.

As such it should address the shipment of all proliferation material from and to all countries and should do so in such a way as to address concerns that shipments may be the target of terrorist attacks as well as to address environmental and economic threats from such shipments.

A moratorium on the shipment of all plutonium and other fissile material should be implemented immediately, to address terrorist concerns and concerns about theft, as well as to allow time for states to agree on and implement a universal policy on fissile material controls and on nuclear shipments to replace the partial and discriminatory PSI programme.

The upcoming US-France plutonium shipment is a clear example of the discriminatory nature of PSI. The proposed shipment of weapons-grade plutonium is planned to leave the east coast of the United States for the French port of Cherbourg in the late summer of 2004. The plutonium is to be incorporated into experimental MOX fuel at Cogema facilities during the second half of this year, and shipped back to the United States,¹⁵ probably in late 2004 or 2005. The shipment will carry around 150 kilograms of plutonium declared surplus to military use. The weapons-grade plutonium and fresh MOX fuel are expected to be transported by the *Pacific Pintail* and *Pacific Teal*. Greenpeace International requested, and was refused, a public hearing before the U.S. Nuclear Regulatory Commission on the export license requested by the Department of Energy.¹⁶

Greenpeace nuclear expert John Large has noted concerns over increased terrorist activity in Europe, the plutonium dioxide convoy being specifically cited by a terrorist, and the possibility of

¹⁵ See Department of Energy, *Analysis, Fabrication of Mixed Oxide Fuel Lead Assemblies in Europe*, November 2003, US DOE/EIS-0229-SA3.

WISE, “Transfer of MOX production capacity from Cadarache to Marcoule: one scandal after another,” 8 September 2003, at http://www.wise-paris.org/index.html?english/ournews/year_2003/ournews030909a.html&english/frame/menu.html&english/frame/band.html.

¹⁶See Dianne Curran, “Greenpeace intervenes against DOE’s plans to ship weapons grade plutonium to France: Request for hearing on export licence application” (November 2003) at http://www.greenpeace.org/international_en/multimedia/download/1/364454/0/LargeonLTAPu1103.PDF and John Large, “Greenpeace intervenes against DOE’s plans to ship weapons grade plutonium to France: Comments and Opinion on the Applicability as these Apply to the TransAtlantic Shipment, European Waters and France,” at http://www.greenpeace.org/international_en/multimedia/download/1/364454/0/LargeonLTAPu1103.PDF.

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theft.¹⁷ A truly non-discriminatory non-proliferation regime would halt all such shipments unless associated with secure storage or final disposal.

[Appendix Seven](#) discusses the PSI in the context of proliferation and nuclear shipments in more detail.

[Appendix Nine](#) consists of a report released by Greenpeace in March 2004 on the Potential Radiological Impact and Consequences arising from Incidents Involving a Consignment of Plutonium Dioxide under Transit from Cogema La Hague to Marcoule/Cadarache. This report gives a specific and detailed example of the risks from transport that permitting the use of plutonium fuel under multilateral control would entail.

Appendices

1. The need for a Comprehensive Fissile Material Treaty (CFMT)
2. Mixed Oxide (MOX) fuel
3. Background of BNFL's Sellafield MOX Plant (SMP) and discussion of the increase in fissile materials
4. Nuclear shipments and the NPT
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6. Nuclear shipments and the Proliferation Security Initiative
7. The G8's Global Partnership against the spread of weapons and materials of mass destruction & the NPT
8. Non-proliferation under Security Council resolution 1540
9. Potential Radiological Impact and Consequences arising from Incidents Involving a Consignment of Plutonium Dioxide under Transit from Cogema La Hague to Marcoule/Cadarache.

¹⁷ "Second Supplemental Declaration of John H Large in support of Petitioner's Hearing Request and Petition to Intervene," 23 March 2004, submitted in the Matter of US Department of Energy, Docket No. 11005440.

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Appendix One: The need for a comprehensive fissile material treaty (CFMT)

*"I would like to see a civilian cycle completely free from
weapons-useable material if possible,"*

Director General of the International
Atomic Energy Agency, IAEA, March 19th, 2004¹⁸

The need to control nuclear materials and technology has been recognised since it became clear in 1939 that a fission chain reaction could be produced in uranium, releasing large amounts of energy that could be used to make a nuclear explosion.

Demands for control escalated when the awesome devastation produced by nuclear weapons in Hiroshima and Nagasaki became widely known. The first session of the General Assembly of the United Nations in January 1946 created the UN Atomic Energy Commission (UNAEC), charging it with preparing proposals for *"the elimination from national armaments of atomic weapons"*, together with *"effective safeguards by way of inspection and other means to protect complying States against the hazards of violation and evasion"*. Before the UN created the UNAEC, the U.S. Secretary of State established a panel chaired by Dean Acheson *"...to study the subject of controls and safeguards necessary to protect American interests"*.

This panel commissioned a panel of experts chaired by David Lilienthal, chairman of the Tennessee Valley Authority (TVA) to study the issues. The Acheson-Lilienthal report, released in March 1946, concluded that: *"there is no prospect of security against atomic warfare in a system of international agreements to outlaw such weapons controlled only by a system which relies on inspection and similar police-like methods"*.

Verifiable nuclear disarmament, according to the Acheson-Lilienthal panel would require that countries be completely prohibited from producing fissile materials or conducting activities supporting a nuclear-weapon programme. All such activities would be conducted by an international agency created for the purpose.

In March 1946, President Harry Truman appointed Bernard M. Baruch to represent the U.S. at the UNAEC. The Baruch proposal, presented in June 1946, was mainly based on the Acheson-Lilienthal report but insisted that the international control mechanism should include a provision for enforcement that would not be subject to the veto of the Security Council, a provision opposed by the Soviet Union.

The U.S. and the Soviet Union also could not agree on the inspection rights the international agency would have and the mechanism for enforcing the international control regime. In any case, it is unlikely that the U.S. Senate would have ratified any such treaty even if there had been agreement with the Soviet Union.

In December 1953, U.S. President Dwight Eisenhower, in a speech before the UN General Assembly (GA), proposed, as part of his *"Atoms for Peace"* programme, the creation of a new international nuclear agency to take custody of nuclear material, ensure its safe keeping, and use it for peaceful purposes. The U.S. began negotiations to create the International Atomic Energy

¹⁸ UN atomic energy chief warns that terrorists could go nuclear VIENNA (AFP), March 19th 2004.

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Agency (IAEA), which concluded with its establishment in 1957 as an intergovernmental organisation affiliated with the UN.

When the Cold War ended, about 15 years ago, there was a widespread hope that the importance given by political leaders to nuclear weapons would dramatically decrease, and that there would be rapid progress in nuclear disarmament leading to the abolition of nuclear weapons. The first step in this direction would be a Comprehensive Test Ban Treaty (CTBT), closely followed by a ban on the production of fissile materials for use in nuclear weapons, the so-called Fissile Material Treaty.

Unfortunately, this was not to be. In fact, nuclear weapons are now on the agenda to an extent reminiscent of the Cold War. The 2001 U.S. Nuclear Policy Statement describes the role of nuclear weapons well into the future, not as part of a nuclear deterrent policy but as part of America's war-fighting strategy. Apparently, nuclear weapons could be used against targets in seven or more countries – including China, Iran, Iraq, Libya, Russia and Syria.

In March 2002, the UK Defence Minister announced, for the first time ever, that British nuclear weapons could be used in a first strike and against countries that used biological or chemical weapons against British forces or targets in the UK. Both the U.S. and UK governments have now reneged on their security assurance guarantees not to use nuclear weapons against countries that do not have them and are not allied to a nuclear-weapon power.

These new policies have been adopted in spite of the "*unequivocal undertaking to accomplish the total elimination*" of their nuclear weapons entered into by the U.S. and the UK, along with the other established nuclear-weapon states (China, France and the United Kingdom) at the 2000 Review Conference of the Non-Proliferation Treaty (NPT). One hundred and eighty-seven countries have ratified the NPT making it the world's largest multilateral nuclear arms control treaty.

It is generally assumed that the next nuclear arms control measure negotiated will be a multilateral treaty prohibiting the further production of fissile material for nuclear weapons (often called a Fissile Material Cut-off Treaty, FMCT) and that the negotiations will take place in the Conference on Disarmament (CD) in Geneva.

Six decades of waiting – and for what ?

The concept of a FMCT was first suggested 55 years ago in the Baruch Plan. The FMCT concept was further advanced by President Dwight Eisenhower in his 'Atoms for Peace' speech at the UNGA, when he said: "*The United States would seek more than the mere reduction or elimination of atomic materials for military purposes*".

During the 1960s, when the negotiations for a NPT were in progress, a ban on the production of fissile materials for military purposes was included in a group of measures - together with a CTBT, reductions in the nuclear arsenals of the nuclear-weapon powers, and the international management, control, and storage of plutonium. After 1978, resolutions calling for a ban on the production of fissile materials for nuclear weapons were passed by the General Assembly but there was little hope of progress while the Cold War was on.

With the end of the Cold War and the perceived need to make progress in arms control, the concept in its own right was given renewed impetus by U.S. President Clinton. In his speech to the General Assembly in September 1993 he said:

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"We will pursue new steps to control the materials for nuclear weapons. Growing global stockpiles of plutonium and highly enriched uranium are raising the danger of nuclear terrorism in all nations. We will press for international agreement that would ban production of these materials for ever."

In 1993, General Assembly Resolution 48/75L recommended the negotiation of an international non-discriminatory, multilateral, and effectively verifiable treaty banning the production of fissile material for nuclear weapons and other nuclear explosive devices. The treaty described in the Resolution would ban production but it says nothing about existing stocks of fissile materials. The Resolution was adopted by consensus.

As defined in UN Resolution 48/75L a treaty banning the production of fissile materials would cover the production of weapon-grade plutonium (plutonium containing more than 93 per cent of the isotope plutonium-239), weapon-grade highly-enriched uranium (uranium enriched to over 90 per cent uranium-235), and uranium-233 for nuclear weapons or other nuclear explosive devices, or outside of international safeguards.

On 25th January 1994, the members of the CD in Geneva agreed to appoint a Special Co-ordinator to *"seek the views of its members on the most appropriate arrangement to negotiate"* a FMCT. It was soon apparent to the Special Co-ordinator, Canadian Ambassador Shannon, that a crucial political issue was the scope of the FMCT. Would it include the past production as well as the future production of fissile materials for nuclear weapons, what about commercial fissile material programs?

One year on and no agreement had yet been reached on the scope of negotiations. For Ambassador Shannon, the differing views of CD states on the issue of scope and the fact that he could not reach agreement required some pre-ambule language to the official mandate which would allow states to reach consensus without compromising their policy.

The key phrase of Shannon was,

"It has been agreed by delegations that the mandate for the establishment of the ad hoc Committee does not preclude any delegation from raising for consideration in the ad Hoc Committee any of the above noted issues. Delegations with strong views were able to join consensus so we could all move forward on this issue. This means that an Ad Hoc Committee on Cut-Off can be established and negotiations can begin on this important topic. This has for some time been the common objective of all delegations of this Conference."¹⁹

¹⁹ The full preamble states "During the course of my consultation, many delegations expressed concerns about a variety of issues relating to fissile material, including the appropriate scope of the convention. Some delegations expressed the view that this mandate would permit consideration in the Committee only of the future production of fissile material. Other delegations were of the view that the mandate would permit consideration not only of future but also of past production. Still others were of the view that consideration should not only relate to production of fissile materials (past or future) but also to other issues, such as the management of such material. It has been agreed by delegations that the mandate for the establishment of the ad hoc Committee does not preclude any delegation from raising for consideration in the ad Hoc Committee any of the above noted issues". See, "Report of Ambassador Gerald E. Shannon of Canada on Consultations on the Most Appropriate Arrangement to Negotiate a Treaty Banning the Production of Fissile Material for Nuclear Weapons or Other Nuclear Explosive Devices, CD/1299, 24 March 1995. The urgent need for agreement on a mandate was that the 1995 Review and Extension Conference of the NPT was

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Despite securing a mandate, no formal negotiations have taken place since 1995.

For the next three years no progress on discussions in the CD about a FMT was made until after the Indian and Pakistani nuclear-weapon tests. Until then, a number of CD members, mainly non-aligned, wanted the negotiation of a FMT to be linked with discussions of a phased timetable of nuclear disarmament. The established nuclear-weapon powers have consistently refused to agree to such a link. But the most serious obstacle to getting the negotiation of treaty underway were conflicts over how to deal with existing military stockpiles of fissile materials.

The attitudes of the India, Pakistan and Israel to the negotiation of a FMCT are, to say the least, very important. Pakistan has announced its willingness to agree to the negotiation of a FMCT at the CD but wants stocks to be included. Other non-nuclear weapon states have also reiterated the need for stocks to be included in a future Treaty and some states have referred to the need for. The five established nuclear-weapon states India and Israel want stocks to be excluded. Israel agreed to the commencement of negotiations but stated that it “reserved its position on the substance” of the issues negotiated.

Despite years of no formal negotiations prospects for opening of talks at the CD may be better in 2004 than since the mid-1990s. The determinant will be the policy of the U.S. government which may become apparent during the April/May 2004 NPT Review Preparatory Meeting at the United Nations in New York.

From micrograms to hundreds of tons

When the need for effective controls over fissile materials were first recognized sixty-five years ago, available quantities of such material were measured in micro-grams. Today, no precise figure exists for the amount of weapons-usable material in global circulation, but it is in the hundreds of thousands of kilograms of plutonium and highly enriched uranium.

To complicate the threat from these materials further, they are located not just in dedicated military programs of nuclear weapon states, but also in worldwide commercial nuclear programs in advanced non-nuclear weapon states. As a result of plutonium reprocessing, led by the UK and France, commercial stocks of this weapons material now exceed those within the military programs of all nuclear weapon states. Japan’s current stock for example is in excess of the combined stocks of Israel, Pakistan, India, North Korea and China. Germany, Switzerland, the Netherlands, Spain and even Sweden have stocks of plutonium sufficient for thousands of nuclear weapons.

In addition, significant stocks of highly enriched uranium have been dispersed to tens of countries around the world to fuel research reactors. Supplied from U.S. stocks, under its Atoms for Peace Program as well as Soviet supplies to allied states, successive U.S. administrations recognising the proliferation threat have spent the last 20 years seeking to secure this material and return it to the U.S. This effort is on going.

As far as the scope of a future fissile material treaty, the nuclear weapon states and most of their allies support only a narrow scope that would ban future production of fissile material for nuclear

looming within weeks and without agreement on one of the key disarmament objectives prospects for the nuclear weapons states securing indefinite extension would be less. In the end, indefinite extension was secured despite widespread opposition amongst the non-aligned group of nations. Of course since 1995 no formal negotiations have begun on a fissile material treaty.

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weapons – hence the Fissile Material “Cut-off” Treaty, (FMCT). Their position is hardly surprising given the fact that they have spent the past half-century creating vast stocks of both plutonium and highly enriched uranium, more than sufficient for tens of thousands of nuclear weapons, but then largely stopped as of the mid 1990’s.

However, despite the end of the Cold War, during the last decade or so the amount of separated plutonium has grown at a faster rate than at anytime in the previous fifty years. In 1993 at the time of the GA 48/75L resolution global commercial stocks of reprocessed or separated plutonium was around 147 tons. Seven years later and around the start of the new millennium, the stockpile had nearly doubled, surpassing the amount in the combined military programs of all nuclear weapon states.

According to official data submitted to the IAEA by the leading plutonium states, by December 2002, commercial stocks had risen to around 220 metric tons, compared with 249 tons in military stockpiles.²⁰ Most of this plutonium was located in the UK, France and Russia all declared nuclear weapon states. However, Japan’s stock had risen from less than 10 tons in 1990, to greater than 38 tons.²¹ Other non-nuclear weapon states with commercial contracts with the plutonium industry and with access to significant quantities of fissile material are Belgium, the Netherlands, Switzerland, Sweden, Germany, Spain, Italy, and Canada.

Even with the use of some plutonium in the form of mixed oxide fuel (MOX) for nuclear reactors, this growth of weapons usable fissile excess stocks will continue over the next decade. In particular, continued reprocessing in France, the UK and Russia will see an increase of total plutonium, rising by a further 85 tons. In the case of the UK and France, this includes plutonium belonging to Japan, Germany, Canada, Spain, Switzerland and Italy.

In addition to these on-going operations, a new plutonium reprocessing plant is scheduled to begin operation in Japan at Rokkasho-mura. This facility is scheduled to start operation up in 2006 as planned will produce as much as 6-7 tons each year of operation. Within the first ten years of operation, it’s likely to separate 30-40 tons of plutonium. At this scale of growth, almost unbelievably, global stocks of commercial plutonium will increase by as much as 50% of that produced during the entire 50 years of the Cold War.

Better no treaty than a flawed one

In the post-Cold War for the five nuclear weapons states in the NPT an FMCT was largely a non-proliferation measure – not a disarmament initiative. Having produced most of their fissile material in the previous fifty years, a ‘Cut-off’ in the 1990’s and beyond would restrict those emerging

20 See, Declarations of the Permanent Missions to the IAEA, published under the reference n°549 of the IAEA "Information Circular" <http://www.iaea.org/Publications/Documents/Infcires/>

21 Predicting the amount of plutonium in Japan’s future stockpile is complicated by the confused operational plans for the new US\$20 billion plant. Full scale operation of the plant is unlikely in the first several years, with the prospects of major delays caused by technical problems and accidents are highly likely. However, the Government seems determined to maintain its policy. One suggestion is that the plant would operate at a maximum of 50% capacity, separating up 4 tons of plutonium each year. Like all aspects of Japan’s controversial plutonium program, nothing so far has gone to plan, and despite shipping more than 2300kg of plutonium over the last 12 years from Europe, not one gram has been loaded into a nuclear reactor. Given the reality in North-east Asia, Japan’s plutonium stockpile has to be seen in the context of North Korea’s plutonium program (measured in the tens of kilograms at most), and China’s nuclear weapons program.

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nuclear states from increasing their far smaller stocks of fissile material, while not addressing their own vast stocks of military material and restricting their options on what to do with the material's in their future military programs.

At the same time the commercial nuclear industry in large industrialised states are opposed to a Treaty that would restrict their production, transport and use of weapons usable fissile materials. With the backing of their governments they have cited the existence of IAEA safeguards and a commitment not to use these weapons materials for military purpose as justification for their opposition to a broad Treaty.

However, the reality is that the international safeguards system, as predicted nearly sixty years ago by Lilienthal, is fundamentally incapable of detecting the diversion of significant quantities of fissile material into a military program, and therefore continuation of the use of such materials in commercial nuclear programs will fatally weaken the effectiveness of a limited Fissile Material Treaty.

Bush and ElBaradei – concerned but still ineffective

Against the backdrop of stalemate in the CD on this issue, both U.S. President Bush, and IAEA Director-General ElBaradei have cited the threat from fissile materials proliferation as an issue requiring radical steps. As far as the U.S. policy is concerned, little real substance has yet emerged. In February 2004, he called for greater efforts to stop countries from acquiring nuclear enrichment and reprocessing technology under the guise of building civilian power facilities. Under the Bush plan, nuclear fuels containing fissile materials could continue to be exported to advanced countries that already have facilities for enriching uranium and extracting plutonium, or programs to load the fuel in reactors (such as MOX fuel) but denied to those that hope to build such facilities in the future. These countries would be obliged to abandon these projects and rely on advanced countries to supply nuclear fuel containing only low enriched uranium, and therefore not weapons material.²²

Of course this policy would be consistent with the record of the U.S. over decades. Specifically, a non-proliferation policy that is inconsistently applied, discriminatory, and therefore ultimately flawed. The growth of Japan's plutonium program sanctioned by the U.S. despite the proliferation implications for security in North-east Asia, while the U.S. has consistently blocked South Korea and Taiwan from acquiring plutonium is one clear example. The threat of war over North Korea's plutonium program another.

In addition to Bush, the IAEA Director has since the middle of 2003 been making regular calls for greater controls over fissile materials. Motivated by a sense of inevitability of terrorists acquiring and using fissile materials, as well as the on-going revelations of the scale of proliferation in such countries as Iran, Pakistan, and even Libya, ElBaradei is trying to go further than Bush. In a hark back to the 1970's debate on international plutonium storage and management (under the IAEA and the even earlier Baruch plan), the IAEA Director wants to put facilities capable of enriching uranium and extracting plutonium under international control. But some countries that are advanced in nuclear development and which are trying to press ahead with plutonium fuel recycling projects of their own in particular Japan are vehemently opposed to his plan.²³

²² Bush Pushes Effort to Stop Spread of WMDs President Bush Calls for Tougher Action Against Dangerous Regimes, Terror Groups Seeking WMDs. The Associated Press, Washington, Feb. 11th 2004.

²³ "Profound discussions are needed to make world safer," The Asahi Shimbun, Feb. 16(IHT/Asahi: February 17,2004) (02/17)

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The solution

For many non-nuclear weapon states, as well as for Greenpeace, waiting 55 years to negotiate a narrow, flawed and ultimately ineffective Treaty is unacceptable. In the ten years since the 1993 UNGA resolution calling for Treaty, stocks of plutonium that can be used directly in nuclear weapons has doubled to surpass those contained in all nuclear weapons programs. If the Treaty is to be worthwhile it needs to be both a disarmament and non-proliferation initiative, addressing the vast stockpiles of weapons material located around the world. For Greenpeace the only effective solution is a Comprehensive Fissile Material Treaty (CFMT).

A treaty banning the further production of fissile materials for nuclear weapons (a Comprehensive Fissile Material Treaty (CFMT) is needed to:

- Restart negotiations on further nuclear arms control and disarmament measures - without a CFMT there is unlikely to be any progress in nuclear arms control and disarmament;
- Control the spread of nuclear weapons to countries that do not now have them;
- Stop the production, transport and use of plutonium.
- Increase the amount of weapon-usable fissile materials under international safeguards;
- Improve the effectiveness of nuclear export policies; and
- Reduce the risk of nuclear terrorism.

Greenpeace has prepared a draft CFMT that does include all such material, including plutonium produced in civil nuclear-power reactors and separated from the spent reactor fuel elements. Under the Greenpeace Treaty, each State Party is committed:

- not to undertake the separation or processing of plutonium or the production or processing of highly-enriched uranium, meaning the enrichment of uranium to any level above 20 per cent in the isotope uranium-235;
- to put all existing stocks of weapon-usable fissile materials which are under its jurisdiction or control under international control;
- undertakes not to encourage the separation or processing of plutonium or the enrichment of uranium to any level above 20 per cent in the isotope uranium-235 or to supply others with weapon-usable fissile materials;
- and to submit all facilities owned or possessed by it, or located in any place under its jurisdiction or control, and which have been used, or which are capable of being used, for the separation or processing of plutonium, or the enrichment of uranium to any level above 20 per cent in the isotope uranium-235 or the processing of such material, or the storage of these materials to the international verification.

The Greenpeace Treaty takes into account the fact that all plutonium, including that produced in civil nuclear reactors, can be used to produce effective nuclear weapons. Greenpeace argues that unless a CFMT includes all weapon-usable fissile materials, including civil ones, within its scope it will be ineffective and not worth the effort of negotiation.

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Text of the Greenpeace Proposed Comprehensive Fissile Material Treaty

Greenpeace Proposed Draft (May 3rd 2004)

TREATY BANNING THE PRODUCTION OF FISSILE MATERIALS FOR NUCLEAR
WEAPONS AND OTHER NUCLEAR EXPLOSIVE DEVICES

PREAMBLE

The States Parties to this Treaty,

Desiring to contribute to the fulfilment of the purposes and principles of the Charter of the United Nations,

Determined to make significant progress towards general and complete disarmament under strict and effective international verification, particularly rapid progress towards a Convention on the total abolition of nuclear weapons,

Recalling General Assembly resolution 48/75L of 16 December 1993, which recommended the negotiation of a non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices,

Noting that all separated fissile materials can be used to fabricate nuclear weapons and other nuclear explosives,

Convinced that the complete and effective prohibition of the production and processing of fissile materials for nuclear weapons or other nuclear explosive devices represents an essential step towards the achievement of their common objectives,

Have agreed as follows:

ARTICLE I
Definitions and Scope

1. For the purposes of this Treaty:

(a) "Fissile material" means an isotope whose nucleus readily fissions after absorbing a slow (thermal) neutron, emitting 2 or 3 neutrons, and includes, uranium-235, plutonium-239 and uranium-233.

(b) "Weapon-usable" fissile material means a fissile material that can be used to fabricate effective nuclear explosives.

(c) "Weapon-usable plutonium" means plutonium of all isotopic compositions, with the exception of plutonium containing more than 80 per cent of the isotope plutonium-238.

(d) "Weapon-usable uranium" or "highly enriched uranium" means uranium enriched to more than 20 per cent in the isotope uranium-235.

(e) "Production" means the production of fissile materials in designated plutonium-production reactors, uranium-enrichment plants or any other production facility.

(f) "Separation of plutonium" means the chemical, laser, and any other separation of plutonium from nuclear reactor fuel elements.

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(g) "Processing" means all activities involved in the handling of and operations with weapon-usable fissile materials, including all fabrication of plutonium-fuel elements and the nuclear activities and operations involved in manufacturing nuclear weapons and other nuclear explosives from weapon-usable fissile materials.

(h) "Enrichment plant" means a facility used to increase the proportion of uranium-235 in natural uranium above 0.7 per cent.

(i) "Laser isotope separation" means an enrichment process in which desired isotopes are separated by differentially exciting a vapour gas with a laser..

(j) "Controlled storage," means the storage of weapon-usable fissile material under the international verification system defined in Article IV.

(k) "Fuel elements" means material containing weapons usable plutonium or weapons usable uranium.

2. The production, separation and processing facilities to which this Treaty shall apply are listed in Annex II.

ARTICLE II
General Obligations

1. No State Party shall undertake the separation or processing of weapon-usable plutonium.

2. No State Party shall undertake the production of highly-enriched uranium, or the processing of such material.

2. Each State Party shall submit all existing stocks of weapon-usable fissile materials, which are under its jurisdiction, or control to international verification and control as set out according to in Article IV.

3. No Each State Party undertakes shall not to undertake, permit or facilitate or permit or facilitate any person under its jurisdiction or control undertaking encourage the separation or processing of plutonium or the enrichment of uranium to any level above 20 per cent in the isotope uranium-235.

5. No State Party shall supply or permit the supply of weapon-usable fissile materials to any States or otherwise export or permit the export or transit through its territory or waters under its jurisdiction of weapons-usable fissile materials or other persons or entities weapon-usable fissile materials.

5. Each State Party undertakes to submit all facilities owned or possessed operated by it, or located in any place or operated by any person under its jurisdiction or control, and which have been used, or which are capable of being used, for the separation or processing of plutonium, or the enrichment of uranium to any level above 20 per cent in the isotope uranium-235 or the processing of such material, or the storage of these materials to the international verification according to Article IV.

6. Each State Party undertakes not to enrich uranium above 20 per cent in the isotope uranium-235 or process such enriched uranium for use as fuel for nuclear reactors in ships. Existing stocks of such fuel shall be submitted to international verification according to Article IV.

ARTICLE III

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Production, Separation, Processing and Storage Facilities

1. Each State Party shall immediately cease all activity prohibited by this Treaty, with the exception of essential activity required for the closure of the facilities listed in Annex I.
2. No State Party shall construct any new production, separation or processing facility or modify any facility that has been used for any activity prohibited by this Treaty for any purpose other than the discontinuation of activities prohibited by this Treaty.
3. Each State Party shall:
 - (a) Shut down, in accordance with Article IV, no later than 60 days after this Treaty enters into force, all facilities which have been used or could be used for the production, separation or processing of weapon-usable fissile material and give notice thereof to the Organization;
 - (b) Submit its existing storage facilities to international verification according to Article IV; and
 - (c) Provide access to such facilities for the purpose of the application of the international verification system set out in Annex II in order to ensure that the facilities remain shut down and are subsequently decommissioned.

ARTICLE IV
The Organisation

1. The States Parties to this Treaty hereby establish the Comprehensive Fissile Material Treaty Organisation (hereafter referred to as "the Organisation") to achieve the objective and purpose of this Treaty, to ensure the implementation of its provisions, including those for international verification of compliance, and to provide a forum for consultation and cooperation.
2. The seat of the Organisation shall be The Hague.
3. The Organisation, as an independent body, shall seek, where practicable, to utilize use existing expertise and facilities, as appropriate, and seek to maximize cost efficiencies, through cooperative arrangements with other international organizations (such as the International Atomic Energy Agency). Such arrangements shall be set out in agreements to be submitted to the Conference of the States Parties for approval.
4. The Organisation shall verify that all production, separation and processing facilities within the territory, jurisdiction or control of each State Party to this Treaty are shut down and do not produce, separate or process fissile materials in violation of Article II. The Organisation shall control the storage of weapon-usable fissile materials but shall devolve responsibility for the verification of other nuclear facilities, such as nuclear-power reactors, to the International Atomic Energy Agency.
5. All States Parties to this treaty shall be members of the Organisation.
6. The costs of the Organisation's activities shall be paid by States Parties to this treaty in accordance with the United Nations scale of assessment adjusted to take into account differences in membership between the United Nations and the Organisation.
7. There are hereby established as the organs of the Organisation: the Conference of Member States, the Council, the Technical Secretariat, and the International Data Centre. The composition and principal powers of the organs shall be as laid down in the following provisions.

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8. The Organisation shall adopt its rules of procedure. Such rules may include provisions concerning the number of terms of office, which its officers may serve, and for the rotation of such offices.

9. The Organization may establish such subsidiary bodies as are necessary for the performance of its functions.

10. The Organization may decide to establish a permanent headquarters.

11. The Organization shall have legal personality and shall enjoy in the territory of each Party such legal capacity as may be necessary to perform its functions and achieve the objectives of this Convention.

12. The privileges and immunities to be enjoyed by the Organization, the Secretariat and representatives attending meetings in the territory of a Party shall be determined by agreement between the Organisation and the Party concerned.

ARTICLE V

The Conference of Member States

1. The Conference of Member States ("the "Conference") shall be the principal organ of the Organisation. It shall be composed of all the members of the Organisation. Each Member shall have one representative in the Conference.

2. The Conference shall:

- (a) Oversee the implementation of this Treaty and review compliance with its provisions;
- (b) oversee the activities of the Council and the Technical Secretariat;
- (c) elect the members of the Council; and
- (d) appoint the Director of the Technical Secretariat.

ARTICLE VI

The Council

1. The Council shall be the executive organ of the Organisation. It shall be accountable to the Conference and shall carry out the functions entrusted to it under this Treaty. In particular, it shall supervise the activities of the Technical Secretariat.

2. The Council shall consist of 24 members elected by the Conference for two-year terms with due regard to equitable geographical distribution. Twelve members shall be chosen from among those States Parties to this treaty which have produced the largest stocks of weapon-usable fissile materials and the other twelve members shall be chosen from those State Parties which have produced no weapon-usable fissile materials.

3. The Organisation shall conclude a Comprehensive Verification Agreement with each State Party to this Treaty. The Council shall determine the content of such Agreements, which shall include an undertaking by the State concerned to accept international verification in respect of all its facilities covered by Article II (5) of the Treaty.

ARTICLE VII

The Technical Secretariat and the International Data Centre

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1. The Technical Secretariat ("the "Secretariat) shall assist the Conference and the Council in the performance of their duties and shall carry out the verification and other functions entrusted to it by this Treaty, as well as those functions delegated to it by the Conference or the Council in accordance with this Treaty.
2. The Secretariat shall be headed by the Director, who shall be appointed for a four-year term by the Conference on the recommendation of the Council.
3. The Director shall appoint the staff of the Secretariat and shall establish the rules to be followed by the Organisation's inspectors.
4. The Director shall communicate to all States Parties to this treaty the inspectors' names, nationalities and ranks.
5. The Secretariat shall include the International Data Centre.
6. In discharging its responsibilities for verification as specified in this Treaty, in cooperation with the States Parties, the Secretariat shall:
 - (a) Make arrangements to receive and distribute data and reports relevant to verification of compliance with this Treaty in accordance with its provisions;
 - (b) Through its International Data Centre, which shall be the focal point within the Secretariat for data storage and data processing:
 - (i) Receive and initiate requests for data;
 - (ii) Receive data, resulting from the process of consultation and clarification, from on-site inspections and from confidence-building measures; and
 - (iii) Receive other relevant data from States Parties and international organisations in accordance with this Treaty.
 - (c) Process, analyse and report on data according to agreed procedures so as to permit the effective verification of compliance with this Treaty and to contribute to the timely resolution of any concerns.

ARTICLE VIII
National Implementing Measures

Each State Party to this treaty shall, in accordance with its constitutional processes, adopt the necessary measures to implement the treaty. In particular, it shall:

- (a) Prohibit natural and legal persons anywhere on its territory or in any place under its jurisdiction or control from undertaking any activity prohibited by this Treaty;
- (b) Not permit in any place under its jurisdiction or control any activity prohibited by this Treaty;
- (c) Enact penal legislation with respect to all activities prohibited by this Treaty; and

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(d) Extend such legislation, in conformity with international law, to any activity prohibited by this Treaty undertaken anywhere by persons possessing its nationality and to vessels flying its flag.

ARTICLE IX
Settlement of Disputes

1. Disputes that may arise concerning the application or interpretation of this Treaty shall be settled in accordance with the provisions of the Charter of the United Nations.
2. When a dispute arises between two or more State Parties to this treaty, or between one or more States Parties and the Organisation, relating to the application or interpretation of this Treaty, a State shall following notification by another State shall consult with other State or States concerned with a view to the expeditious settlement of the dispute by negotiation or by other peaceful means of the Parties' choice.
3. If expeditious settlement cannot be reached within thirty days of the first notification by a party, the dispute shall be referred to the International Court of Justice for binding determination in conformity with the Statute of the Court. The States Parties involved shall keep the Council informed of actions being taken.

ARTICLE X
Duration

1. This Treaty shall be of unlimited duration.

ARTICLE XI
Status of Annexes

The Annexes shall form an integral part of this Treaty. Any reference to this Treaty shall include the Annexes.

ARTICLE XII
Signature

This Treaty shall be open to all States for signature before its entry into force.

ARTICLE XIII
Ratification

This Treaty shall be subject to ratification by signatory States.

ARTICLE XIV
Accession

Any State which does not sign this Treaty before its entry into force may accede to it at any time thereafter.

ARTICLE XV
Entry into force

1. This Treaty shall enter into force thirty days after the date of the deposit of the thirtieth instrument of ratification.

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2. For States whose instruments of ratification or accession are deposited after the entry into force of this Treaty, it shall enter into force on the 30th day following the date of deposit of their instrument of ratification or accession.

ARTICLE XVI
Reservations

No reservations shall be made to this Treaty.

ARTICLE XVII
Depositary

The Secretary-General of the United Nations is hereby designated as the depositary of this Treaty. He shall, *inter alia*:

- (a) Promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or accession and the date of entry into force of this Treaty;
- (b) Transmit duly certified copies of this Treaty to the Governments of all signatory and acceding States; and
- (c) Register this Treaty pursuant to Article 102 of Charter of the United Nations.

ARTICLE XVIII
Authentic texts

This Treaty, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

IN WITNESS WHEREOF the undersigned, being duly authorised to that effect, have signed this Treaty.

Done at [Geneva] on the [xx] day of [xxxx], two thousand and xxxxx.

.....
ANNEX I
VERIFICATION

- 1. The Organisation shall ensure that all facilities and materials are verified in accordance with this Treaty. For this purpose it shall send inspectors into the facilities designated in Annex II.
- 2. Methods used by the Organisation to monitor compliance with the Treaty shall include: declarations, material accountancy, operating records, containment, surveillance, third party information and inspections.
- 3. Inspections may be ad hoc, routine or challenge. The legal basis of the Organisation's right to make challenge inspections shall be the Comprehensive Verification Agreements referred to in Article VI(3) of the Treaty.

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4. An initial inspection shall be made promptly after a facility has been declared. Thereafter, inspections shall be conducted at least once a year. A minimum of 24 hours' notice of an ad hoc or routine inspection shall normally be given to the State party concerned.

5. The Director shall transmit inspection reports to the Conference of Member States and shall inform the Council of all cases of non-compliance with the Treaty. In the event of non-compliance, the Council shall call upon the State Party concerned to fulfil its obligations under the Treaty within thirty days and shall report all breaches of the Treaty to the Security Council of the United Nations.

Appendix Two: Mixed Oxide (MOX) Fuel

Mixing plutonium oxide with uranium oxide produces MOX (mixed oxide) fuel for nuclear reactors. MOX fuel typically contains between 3 to 10% plutonium by weight and the rest normally consists of depleted uranium. The plutonium oxide is produced in reprocessing plants by separating it from spent nuclear-power reactor fuel.²⁴

The IAEA describes MOX as “[a] mixture of the oxides of uranium and plutonium used as reactor fuel for the recycling of plutonium in thermal nuclear reactors (“thermal recycling”) and for fast reactors. MOX is considered a special fissionable material (see NO. 4.5) and a direct use material (see No. 4.25).”²⁵

Arguments for and against the production and use of MOX

The arguments for:

- The use of MOX allows plutonium to generate more energy in nuclear reactors;
- The use of MOX reduces the stockpiles of separated plutonium owned by some countries, stockpiles that are politically embarrassing because the plutonium could be used to fabricate nuclear weapons.

The arguments against:

- The cost of MOX fuel is much higher than that of normal uranium oxide fuel;
- Technical considerations may make reactors fuelled by MOX less safe;
- The need to protect and secure MOX fuel elements kept at nuclear reactors will involve reactor operators in new physical security problems and extra expense;
- The risk of serious accidents during the transportation of nuclear spent fuel and MOX is increased;
- International safeguards designed to prevent nuclear proliferation are difficult to enforce at reprocessing and MOX facilities; and
- The use of MOX, which is classified by the International Atomic Energy Agency as a material of “direct use”²⁶ for nuclear weapons, increases the risk of nuclear-weapon

²⁴ See Greenpeace report, “The Sellafield MOX Plant,” November 2001, at <http://www.greenpeace.org.uk/MultimediaFiles/Live/FullReport/4324.PDF>.

²⁵ IAEA Safeguards Glossary, 2001 Edition, International Nuclear Verification Series No. 3., para. 4.16, page 27. Para. 4.25 defines Direct Use Material as “Nuclear material that can be used for the manufacture of nuclear explosive devices without transmutation or further enrichment. It includes plutonium containing less than 80% ²³⁸Pu, high enriched uranium and ²³⁸U. Chemical compounds, mixtures of direct use materials (e.g. mixed oxide (MOX), and plutonium in spent reactor fuel fall into this category. Unirradiated direct use material is direct use material which does not contain substantial amounts of fission products; it would require less time and effort to be converted to components of nuclear explosive devices than irradiated direct use material (e.g. plutonium in spent reactor fuel) that contains substantial amounts of fission products.”

“Special fissionable material” is defined in para. 4.5 as “plutonium-239; uranium-233; uranium enriched in the isotopes 235 or 233; any material containing one or more of the foregoing; and such other fissionable material as the Board of Governors shall from time to time determine; but the term ‘special fissionable material’ does not include source material.”

²⁶ Ibid.

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proliferation by countries and, perhaps more seriously these days, by terrorist organizations.

Appendix Three: Background of BNFL's Sellafield MOX Plant (SMP) and Discussion of the Increase in Fissile Materials

BNFL began producing MOX at Sellafield more than 30 years ago, originally mainly for the Prototype Fast Reactor at Dounreay. The MOX Demonstration Facility (MDF) began operating in the autumn of 1993, producing MOX for Pressurised Water Reactors. It is a pilot (demonstration) plant, with a nominal production capacity of up to 8 tonnes of MOX fuel (heavy metal) for light-water reactors per year. The use of MDF is now confined to research and development activities. SMP is a commercial MOX production plant, with a capacity of 120 tonnes of heavy metal per year (tHM/y). Although SMP was completed in 1997 it was only authorised by the British Government to operate in 2001. It is designed to manufacture fuel for Light-Water Reactors, both Pressurised Water Reactors and Boiling-Water Reactors. It is still (as at July 2004) not operating satisfactorily. SMP has produced pellets and rods but not assemblies.

The technology used by BNFL to produce MOX is called the Short Binderless Route process, a dry powder process developed by BNFL from its experience in developing and fabricating MOX fuel for fast breeder reactors. Both the MDF and SMP plants use the Short Binderless Route.

In the fuel rod, the MOX pellets are placed end to end in the sealed zircalloy tubes and the tubes are filled with helium. The pellet stack in a fuel rod is compressed along the axis of the rod by a spring at the end of the rod.

The fuel rods are inserted into the reactor core as an assembly; the rods are held in geometric (square) array by lightweight spacers to form fuel assemblies for a Pressurised Water Reactor or a Boiling-Water Reactor.

A typical MOX fuel assembly consists of a square array of rods: each rod contains about 300 MOX pellets. For a Pressurised Water Reactor the array is typically 17 by 17 rods; for a Boiling-Water Reactor it is 8 by 8 rods. The customers for MOX require that the pellets are soluble in a pure nitric acid solution so that spent MOX fuel rods can be reprocessed.

The specified properties of MOX pellets produced by BNFL are: density, 10.45 grams per cubic centimetre (g/cc); the green pellet density is more than 6 g/cc; the average grain size is 7.4 microns, with a standard deviation of 0.54 micron. A typical MOX pellet for a Pressurised Water Reactor is 1.0 centimetre long and 1.0 centimetre in diameter and weighs 8.2 grams. A Boiling Water Reactor pellet is typically 1.03 centimetres long and 1.04 centimetre in diameter and weighs 9.15 grams. In summary, SMP consists of two separate lines. Each line contains an attritor mill (fed by uranium oxide and plutonium oxide dispensers), a blender, a second attritor mill, a spheroidiser, a pellet hopper, a pellet press, sintering furnaces, and a grinder. After grinding, the pellets go to the sintered pellet store. Zinc stearate and a conditioner are added to the blender and the spheroidiser.

Unsuitable pellets, after passing through a pellet crusher, and arisings from the grinder can be recycled through the line. Most of the SMP operations up to the loading of filled fuel rods into fuel magazines and assemblies are carried out in glove boxes.

The SMP is a remotely operated (automated) plant relying extensively on a software-based control system for control of the process. The plant is operated from a control room provided with equipment to control the production and inspection stages of the pellets and equipment to monitor and control the environment of the plant.

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The Sellafield Mixed-Oxide Plant (SMP) will discharge relatively small amounts of radioactivity into the air and into the Irish Sea by comparison with other discharges from the Sellafield site. To this extent, the SMP will add to the contamination of the environment by the discharge of radioactive pollution. Of greater consequence are the discharges that will arise from the THORP plant as a result of the requirements of the SMP.

The contracts so far negotiated by BNFL for reprocessing oxide nuclear fuels at THORP amount to a total of about 6,400 tHM. These contracts are called the baseload contracts. In addition, BNFL has reportedly negotiated post-baseload contracts with Germany, for 950 tHM, and with British Energy, for about 2,500 tHM. THORP's initial baseload period was for 10 years, originally due to end on March 31, 2004 but, given the rate at which THORP is able to operate, this amount will keep THORP functioning until 2007 or later. BNFL is actively trying to obtain new contracts to keep THORP going; the future of THORP depends on BNFL's success in persuading customers to sign new contracts. But BNFL is not having much success in getting new contracts.

The baseload contracts for THORP cover the eventual reprocessing of a total of about 4,300 tonnes of spent fuel from foreign customers, producing about 43 tonnes of plutonium. The 43 tonnes of foreign plutonium, when it has all been separated, could produce about 860 tonnes of MOX fuel containing 5 per cent by weight of plutonium, or about 720 tonnes of MOX fuel containing 6 per cent by weight of plutonium.

THORP discharges relatively large amounts of both liquid radioactive waste into the sea and radioactive gases into the air. Because of the link between the operation of the SMP and the operation of THORP, so far as the radioactive contamination of the environment is concerned, it is appropriate to also consider discharges of radioactive isotopes from THORP when considering the environmental effects of the operation of SMP. They are directly related as THORP produces the 'feedstock' for SMP.

THORP, which started operating in 1994, reprocesses foreign spent fuel (generally from Light Water Reactors, LWRs) and British spent fuel from reactors operated by British Energy (Advanced Gas-Cooled Reactors and one Pressurized Water Reactor). Most of the foreign fuel comes from Japan; the rest comes from Germany, Switzerland, Sweden, and the Netherlands. Apart from the Advanced Gas-Cooled Reactors (AGRs), these reactors are LWRs, either Pressurised Water Reactors or Boiling Water Reactors. AGRs and LWRs are originally fuelled with uranium-oxide fuel, in stainless steel cladding.

Reactors, such as Magnox reactors, are fuelled with metal uranium fuel, clad in magnesium alloy. At Sellafield, metal fuel is currently reprocessed in another reprocessing plant – called B-205. Since 1965, the B-205 plant has reprocessed about 27,000 tonnes of spent Magnox fuel. According to current plans, B-205 will shut down by 2012. Approximately 2,500 tonnes of LWR spent fuel and approximately 1,400 tonnes of AGR fuel have been reprocessed at THORP.

The reasons put forward for continued reprocessing are as follows:

- Reprocessing is the only way of producing plutonium for nuclear weapons – this was in fact the original reason for building reprocessing plants;
- It recovers unused uranium and plutonium from spent fuel that can be reused as nuclear fuel;
- It makes the management of radioactive waste easier by separating out radioactive materials that can be stored and eventually permanently disposed of.

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The reasons against reprocessing include that reprocessing:

- results in large discharges of radioactivity into both the marine environment and the atmosphere and accounts for the vast majority of Europe's radioactive contamination from the nuclear industry.
- it increases the volume of radioactive waste by about 150 times;
- recovered uranium is contaminated and is essentially nuclear waste;
- the cost of separation of plutonium and fabrication into MOX fuel is far more expensive than use of uranium fuel and storage of resulting spent fuel after irradiation in a reactor;
- it results in the transportation by road, rail and sea of spent fuel from reactors that may be overseas to a reprocessing plant and the subsequent transport of high-level waste and plutonium, (possibly in the form of mixed-oxide nuclear fuel (MOX)), back to the country that owns it; and
- it is the only way of producing plutonium for nuclear weapons.

BNFL had contracted to reprocess about 7,000 tHM in its first 10 years of operation. With only about 3,800 tHM reprocessed in the first 8 years of operation, BNFL has had to extend the baseload to 11 years. This extension is unlikely to be enough for BNFL to fulfil its contractual obligations.

To meet this target, THORP would have to reprocess more than 1,000 tHM per year for the next three years. Judging by past performance (in which the highest throughput was 879 tHM in FY 99-00), a throughput of about 650 tHM per year is all that can reasonably be expected. This suggests that the 7,000 tHM baseload will not be reprocessed until March 31, 2007 or even later. It has been argued that it will take until 2010.

Nevertheless, BNFL's best estimates for the throughput of spent fuel in THORP are 1,015 tHM of fuel in 2001/02; 1,015 tHM of fuel in 2002/03; 1,011 in 2003/04; 850 tHM in 2004/05; and 850 tHM in each year until 2008/09. BNFL plans to have reprocessed 8,316 tHM between 2000 and 2009, a total that includes about 1,600 tonnes of fuel for which contracts have yet to be signed. Past performance suggests that these predictions may be rather optimistic.

About two-thirds of the baseload contracts are from overseas customers. Five overseas customers, Japan, Germany, Switzerland, Sweden and the Netherlands, account for about 4,271 tHM of the 6,400-tHM baseload contracts. Japan and Germany, together account for about 86 per cent of the overseas baseload contracts. Most of the remaining one-third of the baseload contracts, more than 2,100 tHM, is contracted by British Energy.

The Falsification Scandal

In 1999, an agreement was made to deliver MOX fuel to the Kansai Electric Power Company in Japan. The first transport of MOX from BNFL's Mox Demonstration Facility (MDF) was shipped to Japan in July 1999. However, in September 1999, it was discovered that the safety analyses of BNFL's MOX fuel had been falsified. Later that year, it became clear that this also applied to the fuel that had been delivered to Japan. Consequently, Kansai Electric Power Company refused to use the fuel, and demanded that BNFL should take it back immediately. The Japanese government issued a temporary restraint on all business relations with BNFL.

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In March 2000, the Swiss Nuclear Safety Inspectorate, HSK, discovered insufficient safety information about the MOX pellets in the fuel delivered by BNFL. This followed discovery of a weakness in the cladding of the MOX fuel delivered by BNFL to the Swiss Beznau reactor. In view of this defect, HSK forbade all import and use of MOX fuel from BNFL.²⁷

Germany had also instituted a moratorium on reprocessing fuel at Sellafield after German radiation authorities discovered enhanced radiation values on the outside of BNFL's transport bottles.²⁸

While the reprocessing of fuel from Switzerland and Germany was later restarted, the moratorium on the use of BNFL's MOX fuel remained in place until early 2003.²⁹

The increase of fissile materials and its relevance to nuclear proliferation

This section of the Appendix describes some alarming developments that will undermine non-proliferation efforts and substantially increase the production of plutonium as well as the circulation and transport of plutonium around the world. The last decade or so has seen the amount of separated plutonium grow at a faster rate than at anytime in the previous fifty years. Global commercial stocks of reprocessed or separated plutonium have nearly doubled from 147 tonnes since the General Assembly called for fissile material controls in 1993. According to official data submitted to the IAEA by the leading plutonium states, by December 2002 commercial stocks had risen to around 273 metric tons, compared with 249 tons in military stockpiles.³⁰ Most of this plutonium was located in the UK, France and Russia all declared nuclear weapon states.³¹ Continued reprocessing in France, the UK and Russia is expected to result in an increase of total global plutonium by a further 85 tons in the next decade.

Japan's stock rose from less than 10 tons in 1990, to over 38 tons.³² The single greatest threatened source of plutonium is Japan's proposed reprocessing plant at Rokkasho-mura. This facility, scheduled to start operation in 2006, will produce as much as 6-7 tons each year of operation. Within the first ten years of operation, it is likely to separate 30-40 tons of plutonium.³³ At this

²⁷ See Bellona, "Working Paper 5:2001, Sellafield Reprocessing Plant in Great Britain," at http://www.bellona.no/en/energy/nuclear/sellafield/wp_5-2001/index.html, at 3. Mox Production.

²⁸ Bellona, 3.1, citing *The Independent* April 13, 2001.

²⁹ Bellona, 3.1

³⁰ See Declarations of the Permanent Missions to the IAEA, published under the reference No 549 of the IAEA "Information Circular", see <http://www.iaea.org/Publications/Documents/Infcircs>

³¹ Other non-nuclear weapon states with commercial contracts with the plutonium industry and with access to significant quantities of fissile material are Belgium, the Netherlands, Switzerland, Sweden, Germany, Spain, Italy, and Canada.

³² Predicting the amount of plutonium in Japan's future stockpile is confused by the operational plans for the new US\$20 billion plant. Full scale operation of the plant is unlikely in the first several years, with the prospects of major delays caused by technical problems and accidents are highly likely. However, the Government seems determined to maintain its policy. One suggestion is that the plant would operate at a maximum of 50% capacity, separating up 4 tons of plutonium each year. Like all aspects of Japan's controversial plutonium program, nothing so far has gone to plan, and despite shipping more than 2300kg of plutonium over the last 12 years from Europe, not one gram has been loaded into a nuclear reactor. Given the reality in North-east Asia, Japan's plutonium stockpile has to be seen in the context of North Korea's plutonium program (measured in the tens of kilograms at most), and China's nuclear weapons program.

³³ The actual operation of Rokkasho-mura and therefore the amount of plutonium it will separate each year is at this stage impossible to know. Apart from many anticipated technical problems that will affect annual throughput, political and commercial decisions will also determine the amount of spent fuel actually reprocessed each year. If the plant were to operate without major incident, it can be expected that in year one throughput of spent fuel from 50-100 tons will rise to full operation in year 4 or 5. Thus actual plutonium separation in the first few years will be around 1-2 metric ton.

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scale of growth, global stocks of commercial plutonium will increase by more than 50% of that produced during the entire 50 years of the Cold War by all nuclear weapon states.

If the Rokkasho-mura facility is commissioned, efforts to control fissile materials, and ultimately the spread of nuclear weapons, will be complicated enormously, if not made completely impossible. We have a very small window to prevent this escalation in the production of plutonium and this threat to non-proliferation and the NPT. With the start-up of Rokkasho in mind, we note that Dr Mohamed ElBaradei, director General of the IAEA recently said that a country with plutonium can produce a nuclear weapon as quickly as within one month.³⁴

IAEA and EURATOM³⁵ safeguards, which rely on inspection and similar police-like methods, are fundamentally incapable of detecting the diversion of significant quantities of fissile material into a military program. Consequently continuation of the use of such materials in commercial nuclear programs will fatally weaken the effectiveness of a Fissile Material Treaty.

Initiatives such as the Proliferation Security Initiative are fatally flawed as they only address the transport of plutonium and other nuclear material to selected, unspecified countries, while shipments of plutonium and MOX fuel continue unabated. Security Council Resolution 1540, while a step in the right direction, in that it does recognise in its preamble the need to address non-proliferation 'in all its aspects', will not prevent the commissioning of Rokkasho-Mura, or the continued proliferation of plutonium.

In a seminal article in the Economist in October 18th last year, IAEA Director-General Dr Mohammed ElBaradei observed that controlling access to nuclear technology has grown increasingly difficult. He noted that most advanced nuclear arsenals favour plutonium, which can better be used in weapons designed for nuclear missiles. At least 35 or 40 countries have the knowledge to create nuclear weapons.

Dr ElBaradei therefore proposed to limit reprocessing, which gives rise to separated plutonium, to facilities under multinational control, as well as called for multinational approaches to the management and disposal of spent fuel and radioactive waste. One important goal is to "turn off the tap" on the production of new material for nuclear weapons. As it is, the trend, almost irrevocable, is toward increasing the number of states possessing nuclear weapons, with all the feared consequences for humanity. As he has stated that, "eventually not having any plutonium or highly-enriched uranium is really the way to go."³⁶

However, we cannot wait as long as 'eventually'.

Greenpeace has responded to that call by drafting a proposed Comprehensive Fissile Material Treaty.

³⁴ Dr ElBaradei was reported to state that "A country which has plutonium or highly enriched uranium is probably one month away in terms of capability of developing a nuclear weapon, should they decide to do that". ABC, 7 May, 2004, at <http://www.abc.net.au/news/newsitems/s1103144.htm>.

³⁵ The European Atomic Energy Community is one of the founding treaties of the European Union, established to secure European nuclear industry independence from the United States. Euratom operates a parallel safeguards system to the IAEA for all EU member states. Over the years many issues have arisen as to the problems, inadequacies and failures of the EURATOM system, in addition to the fundamental discrepancy of having a separate safeguards system for privileged nuclear states within the EU.

³⁶ Newsweek, May 20, 2004

Appendix Four: Nuclear Shipments and the NPT



Pacific Pintail Photographed Inside Federated States of Micronesia EEZ – July 2002

Shipments of nuclear material – predominantly high level waste and plutonium fuel (MOX) – represent a security risk and threat to the economies and environment of coastal States that is both unnecessary and unacceptable. Nuclear shipments are inextricably linked to nuclear proliferation and any discussions on proliferation, fissile material controls and the disposition of plutonium from dismantled nuclear weapons must take into account the need to drastically reduce the shipment of nuclear material. Proposals that will perpetuate or increase nuclear shipments must be challenged due to the security vulnerabilities and environmental threats they present.

Greenpeace is calling for all nations to support long-term solutions that avoid nuclear shipments, eliminate reprocessing as an option for dealing with used nuclear fuel and which also avoid introduction of weapons-usable fissile material into commerce.

There have been further important developments concerning nuclear shipments since the beginning of the year:

- One of the most important was the Nassau Declaration and AOSIS Strategy for the Further Implementation of the BPOA (Barbados Plan of Action) issued on 30 January 2004 stated that “*there is a growing concern with the security and environmental implications of the disposal and transport of radioactive materials and the lack of adequate liability and compensation regimes... The following action is therefore required: ...The transportation of radioactive materials in and through the SIDS regions must cease. Ongoing dialogue, including through the IMO, with the shipping states should be urgently strengthened towards that end.*”
- Southern California Edison announced on 3rd February 2004 that its proposed shipment of a decommissioned reactor around South America has been stopped. An important factor was the injunction issued by the Argentinean court and opposition from coastal States.
- It was reported on 2nd February that the Pacific Swan, one of British Nuclear Fuels (BNFL) fleet of

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vessels operated by Pacific Nuclear Transport Ltd (PNTL) for the transport of high-level waste (HLW), is to be retired. A BNFL press spokesperson is quoted as saying that *'the ship had completed all its scheduled work'*. This follows the retirement of the Pacific Crane in 2002 following reports of corrosion. This leaves three operational vessels: the Pacific Sandpiper, Pacific Pintail and Pacific Teal.

- The high level waste shipment onboard the Pacific Sandpiper arrived in Japan on March 4, after a journey from France to Japan via the Panama Canal. This was the ninth shipment of vitrified HLW, with five casks containing 132 canisters, believed to be the largest so far.
- After years of delay to its plutonium MOX program, Kansai Electric, one of the country's largest electrical utilities, has announced plans to sign a contract with Areva/Cogema for MOX fuel manufacture. Negotiations are due to be completed before mid-2004, with delivery to Japan not before 2006/7. Opposition in Japan is still growing against the MOX program. All three previous shipments of MOX fuel to Japan have ended in failure with no loading of one gram of the plutonium loaded into a reactor.
- The proposed shipment of weapons-grade plutonium is still planned to leave the east coast of the United States for the French port of Cherbourg in the summer/autumn of 2004.

The plutonium from this shipment is to be incorporated into MOX fuel at Cogema facilities during the second half of this year, and shipped back to the United States late 2004 or early 2005. The shipment will carry around 150 kilograms of plutonium declared surplus to military use.

As with the Japanese MOX shipments, the weapons-grade plutonium and fresh MOX fuel will be transported by Pacific Nuclear Transport Limited vessels, the Pacific Pintail and Pacific Teal. No additional security beyond the limited armed guards and cannon on the transport ships is planned to be put in place by the U.S. Department of Energy, despite a promise to protect this material the same as if it were nuclear weapons.

Greenpeace International has requested a public hearing before the U.S. Nuclear Regulatory Commission on the export license requested by the Department of Energy. Those proceedings are ongoing.

Last year the 2003 Review Conference report noted that some States parties called for effective liability arrangements, prior notification and consultation, while States carrying out international transport stated that those transports were carried out in a safe and secure manner and in strict conformity with all relevant international standards.

Since then the IAEA General Conference passed a resolution welcoming the practice of some shipping States and operators of consulting with shipping States.

This follows the decision of the International Tribunal for the Law of the SEA (ITLOS) finding that the duty to cooperate is a fundamental principle in the prevention of pollution of the marine environment under Part XII of the Convention and general international law. Shipping States can no longer deny their obligation to consult coastal States.

Appendix Five: The Proliferation Security Initiative

There is no doubt that there is a need to address the issue of what the IAEA Director General describes as a “*sophisticated worldwide network that can deliver systems for producing material usable in weapons*”³⁷.

However the way to achieve this is to give the nuclear Non-Proliferation Treaty teeth, rather than setting up a new elite club. The US led Proliferation Security Initiative, is supposed to enhance existing national and international export control enforcement mechanisms. But without official UN backing, and China and Russia notable by their absence, it is merely yet another ‘coalition of the willing few in a self-serving effort to circumvent the fundamental principles of non-discrimination and universality.’

It is also of dubious legal status and will be in breach of the UN Convention on the Law of the Sea if it is extended to interdiction on the high seas of vessels not flying their flags or in the territorial waters of nations that have not signed up to the PSI interdiction principles.

In addition, the PSI is actually very limited in what it can achieve. Whilst in theory it allows for the interdiction of transports that are suspected of carrying “*weapons of mass destruction (WMD), their delivery systems, and related materials*”³⁸ in practice it is not so simple. To board a ship in international waters, the boarding ship must have the permission of the country whose flag they are flying and states cannot unilaterally invade another country to interdict a land transport. So unless the transporter flies a PSI member’s flag or passes through the territorial waters or across the territory of a PSI member there is nothing legally that can be done; the PSI has not improved the position.

The US is trying to solve this by signing boarding agreements with ‘flags of convenience’ countries so that if permission is not granted or refused after two hours of a request being made the silence will be taken as consent. Liberia has just signed such an agreement and Panama is being pressured to sign up. But the US has a long way to go and this is still a patchwork solution resting on the power of the nuclear states rather than international law and consensus.

But by far the biggest problem, is that the PSI does not fit into, and in fact subverts, the existing multilateral nuclear non-proliferation framework. Most nations already have national or regional anti-proliferation laws and regulations that would result in most, if not all, of the measures proposed in the PSI; the PSI simply provides an alternative which follows a unilateralist approach.

Adding another ‘club’ to the list that already includes the Zangger Committee, the Nuclear Suppliers Group, the Australia Group, the G8 Global Partnership to name but a few, simply does not deal with the fundamental problem of nuclear proliferation, which as recent experience has shown are increasing. “International cooperation on peaceful use of nuclear energy” is legal as long as you agree to abide by or at least be seen to be abiding by the rules; but as recent history has shown, rules are there to be broken and can be circumvented with enough cash and political will.

The only route for the international community to take if they are serious about dealing with the growing international nuclear proliferation problem is to halt the production, processing, transport and sale of nuclear materials and technology through a legally binding international instrument such as a Fissile Material Treaty, and to faithfully implement the NPT and CTBT to address both nuclear nonproliferation and disarmament.

³⁷ “Saving ourselves from self-destruction”, Op-Ed by IAEA Director General Dr Mohamed ElBaradei published in the New York Times, 12 February 2004

³⁸ Proliferation Security Initiative, Statement of Interdiction Principles

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Only then will the international community have ‘buy-in’ and only then will the proliferation of nuclear materials at the core of the problem be addressed.

Appendix Six: Nuclear Shipments and the Proliferation Security Initiative

Duncan Currie
12 July, 2004

Introduction

The Proliferation Security Initiative or PSI is intended to facilitate the search and seizure of aircraft and ships suspected of carrying ‘weapons of mass destruction’ or materials for making such weapons. PSI states that the member states are “working together to stop the flow of these items to and from states and non-state actors of proliferation concern.” In its limitation to states and non-states actors ‘of proliferation concern’, and in not defining these states, PSI is selective and discriminatory. It is flawed in that it does not address either the ships or the cargoes of material themselves, or, in practice, the proliferating state sending the materials. Which states are of concern appears to be defined by the States at the time of any interception. As such PSI is inherently discriminatory and inconsistent with the Law of the Sea Convention, the United Nations Charter and with Security Council resolution 1540 which addresses non-proliferation.

In order for PSI to enjoy widespread support and to comply with international law, it must comply with and be consistent with existing international instruments addressing non-proliferation, including the Non-proliferation Treaty (NPT) and Security Council resolution 1540. As such it should address the shipment of all proliferation material from and to all countries and should do so in such a way as to address concerns that shipments may be the target of terrorist attacks as well as to address environmental and economic threats from such shipments.

A moratorium on the shipment of all plutonium and other fissile material should be implemented immediately, to address terrorist concerns and concerns about theft, as well as to allow time for states to agree on and implement a universal policy on fissile material controls and on nuclear shipments to replace the partial and discriminatory PSI programme.

Background

The Proliferation Security Initiative (PSI) was launched in May 2003³⁹ to facilitate the search and seizure of planes and ships suspected of carrying ‘weapons of mass destruction’ or materials for making such weapons. Since its launch, there have been meetings in Madrid in June 2003, in Paris in September 2003, in Brisbane in July 2003⁴⁰, London in October 2003⁴¹, Washington in December 2003⁴², Lisbon in March 2004⁴³, and an annual meeting in Poland⁴⁴. PSI member states have carried out a number of exercises⁴⁵ in the past year. One such exercise, called Exercise Pacific Protector⁴⁶, ironically involved the Japanese Coast Guard vessel

³⁹ PSI was announced by President Bush on May 31, 2003, at Wawel Royal Castle in Krakow, Poland. See Rebecca Weiner, “Proliferation Security Initiative to Stem Flow of WMD Matériel”, CNS, at <http://cns.miis.edu/pubs/week/030716.htm>. The First Anniversary Meeting was held at Krakow, on 31 May - 1 June 2004. See <http://www.msz.gov.pl/start.php?page=126000001>.

⁴⁰ See Chairman’s Summary at http://www.dfat.gov.au/globalissues/psi/chair_statement_0603.html

⁴¹ See Chairman’s Summary at http://www.dfat.gov.au/globalissues/psi/psi_2003_chairman_conclusions.html

⁴² See <http://usinfo.state.gov/topical/pol/terror/texts/03121822.htm>

⁴³ See Chairman’s summary at http://www.dfat.gov.au/globalissues/psi/psi_2004_chairman_conclusions.html

⁴⁴ See <http://www.msz.gov.pl/start.php?page=1260000001> and White House press release <http://www.whitehouse.gov/news/releases/2004/06/20040608-19.html>

⁴⁵ See list of exercises at http://www.disinfopedia.org/wiki.phtml?title=Proliferation_Security_Initiative

⁴⁶ http://forum.apan-info.net/winter04/4_09/4.html

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Shikishima: it was the *Shikishima* which in 1992 escorted the plutonium freighter *Akatsuki-Maru* in 1992. Greenpeace has been calling for military escorts of plutonium ships for many years.

One cited example of PSI in action is the seizure of centrifuge tubes on a German flagged freighter *BBC China* destined for Libya, which was diverted on instructions by the shipowner to an Italian port, in January 2004⁴⁷.

The Interdiction Principles themselves state that States are “working together to stop the flow of these items to and from states and non-state actors of proliferation concern.” Principle 1 states that ““States or non-state actors of proliferation concern” generally refers to those countries or entities that the PSI participants involved establish should be subject to interdiction activities because they are engaged in proliferation through:

- (1) efforts to develop or acquire chemical, biological, or nuclear weapons and associated delivery systems;
or
- (2) transfers (either selling, receiving, or facilitating) of WMD, their delivery systems, or related materials.”

According to a State Department fact sheet,⁴⁸ the United States believes this definition goes as far as it is necessary to go in defining what constitutes a "state of proliferation concern" for PSI. However, that ‘definition’ is so wide and vague it can catch each of the nuclear weapons states which develop nuclear weapons systems or which transfers, either by selling or receiving, WMD, delivery systems or related materials. It would catch the Netherlands in its role with A Q Khan, Pakistan, the United States in its developments of nuclear weapons, most other nuclear states.

However, in its implementation, as stated above, it is not the ships or cargo or their navigation that is the concern, but the State of destination. Further, based on the PSI in practice, it is doubtful whether stopping the flow of material *from* states ‘of proliferation concern’ is in fact a goal. As such, PSI is inherently discriminatory and actions taken consequently could arguably a breach of articles 300 and 301 of the Law of the Sea Convention and the UN Charter.

The United States and its partners in PSI, which include Australia, France, Germany, Italy, Japan, the Netherlands, Portugal, Spain, United Kingdom, Canada, Norway, Singapore and now Russia, have claimed that the PSI is legal under the general rights of self-defence⁴⁹ and have cited the UN Security Council Presidential Statement of January 1992. Under-Secretary of State James Bolton has additionally based claims of authorisation to interdict when ships do not display a national flag and effectively become pirates, when ships fly ‘flags of convenience’, when permission is granted by home nations or when self-defence can be employed against a vessel suspected of carrying WMD material⁵⁰.

⁴⁷ See “US confirms uranium seizure,” Sunday Mail, at http://www.thesundaymail.news.com.au/common/story_page/0,5936,8297821%255E1702,00.html.

⁴⁸ “Proliferation Security Initiative Frequently Asked Questions (FAQ)”, May 24 2004, at <http://www.state.gov/t/np/rls/fs/32725.htm>.

⁴⁹ Under Secretary of State James Bolton stated that “It’s not only legitimate, it’s necessary self-defence,” in “High Stakes on the High Seas in Korean Blockade,” July 12, 2003, Sydney Morning Herald, <http://www.smh.com.au/articles/2003/07/11/1057783354653.html>.

⁵⁰ Reported in The Australian, 9 July 2003, cited in BASIC Briefing, Nigel Chamberlin, “Interdiction under the Proliferation Security Initiative: Counter-Proliferation or Counter-Productive” , 6 October 2003, at http://www.basicint.org/nuclear/UK_Policy/psi20031006.htm

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PSI members rely heavily on bilateral agreements, such as with Liberia and Panama, which allow United States to board and search Liberian flagged vessels suspected of carrying WMD. If a Panamanian flag vessel is suspected of carrying proliferation-related cargo, for instance, the United States can request Panama to confirm the nationality of the ship in question and, if needed, authorize the boarding, search and possible detention of the vessel and its cargo⁵¹.

The PSI in the G8

At the 2004 G8 summit at Sea Island, G8 member states, all of which are PSI members, adopted an Action Plan on non-proliferation⁵². The Action Plan stated that:

“We reiterate our strong commitment to and support for the Proliferation Security Initiative (PSI) and the Statement of Interdiction Principles, which is a global response to a global problem. We will continue our efforts to build effective PSI partnerships to interdict trafficking in weapons of mass destruction, their delivery systems, and related materials. We also will prevent those that facilitate proliferation from engaging in such trafficking and work to broaden and strengthen domestic and international laws supporting PSI. We welcome the increasing level of support worldwide for PSI, which now includes all G-8 members. The Krakow meeting commemorating PSI's first anniversary, attended by 62 countries, evidences growing global support.”

The stated partnerships “to interdict trafficking in weapons of mass destruction, their delivery systems, and related materials” does not draw the distinction between transport of WMD and material to states ‘of proliferation concern’ and other transports, which is drawn in the Interdiction Principles which are nevertheless strongly supported.

The Action Plan in effect seeks to draw the PSI within the ambit of resolution 1540, which, as is seen below, addresses proliferation ‘in all its aspects’. However PSI in its present form is discriminatory and inconsistent with resolution 1540.

The Action Plan adopted a moratorium on new transfers of enrichment and reprocessing equipment and technology to additional states, for one year, while working to implement permanent controls before the 2005 G8 Summit to keep this equipment from terrorists or states seeking to use it to manufacture nuclear weapons.⁵³ This moratorium, laudable in itself, should logically apply to all shipments of enrichment and reprocessing equipment.

Such a moratorium should also include radioactive spent fuel, since it is both a terrorist target and a threat to the marine environment.

A shipment of weapons grade plutonium is proposed to leave the east coast of the United States for the French port of Cherbourg in the summer of 2004. The plutonium is to be incorporated into experimental MOX fuel at Cogema facilities during the second half of this year, and shipped back to the United States⁵⁴, probably in late

⁵¹ See State Department announcement, “Signing of the US-Panama ship Boarding Agreement to support the Proliferation Security Initiative (PSI), May 12 2004., at <http://www.state.gov/t/us/rm/32413.htm>.

⁵² http://www.g8usa.gov/d_060904d.htm

⁵³ See G8 Action Plan on Nonproliferation, White House Fact Sheet, June 9, 2004, at <http://www.uspolicy.be/mobile/europe/16.htm>.

⁵⁴ See Department of Energy, *Analysis, Fabrication of Mixed Oxide Fuel Lead Assemblies in Europe*, November 2003, US DOE/EIS-0229-SA3

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2004 or 2005. The shipment will carry around 150 kilograms of plutonium declared surplus to military use. As with the Japanese MOX shipments, the weapons-grade plutonium and fresh MOX fuel are expected to be transported by lightly-armed Pacific Nuclear Transport Limited vessels, the *Pacific Pintail* and *Pacific Teal*.⁵⁵

A moratorium on the shipment of plutonium and other fissile materials should apply to this shipment, in order for terrorist concerns and concerns about theft to be addressed, as well as for states to agree on and implement a universal policy on fissile material controls and on nuclear shipments to replace the partial and discriminatory PSI programme.

PSI as Discriminatory

Legal analyses of PSI⁵⁶ have highlighted the discriminatory nature of PSI.

A catalyst for PSI has been said⁵⁷ to be an incident in December 2002, when following United States intelligence reports, Spanish special forces from helicopters rappelled onto the *So San*,⁵⁸ which had left North Korea and was steaming towards the Middle East. Onboard were 15 Scud missiles, 15 conventional warheads, and missile fuel oxidizer⁵⁹.

Yemen claimed ownership of the Scud missiles, which it had purchased the missiles from North Korea for defensive purposes. While according to some reports the vessel was flying a Cambodian flag, its original name of the ship had been painted over and its registry papers were not in order⁶⁰, US Defence officials stated that she was not flying a flag and called the vessel a stateless vessel⁶¹.

A US spokesperson said that “Yemen is a partner of the United States in the war on terrorism,” and that “As conversations took place with Yemen, Yemen has given the United States assurances that it will not transfer these missiles to anyone.”⁶² The US let the vessel proceed. If indeed the vessel was not flying a flag, then she was a stateless vessel and would not have been entitled to the protection of any state if she were seized⁶³.

Thus PSI would not have made a difference to the outcome. In fact, the *So San* incident can hardly be cited as an example of the need for the PSI: a vessel not flying a flag whose papers were not in order and which was

⁵⁵ WISE, “Transfer of MOX production capacity from Cadarache to Marcoule: one scandal after another,” 8 September 2003, at http://www.wise-paris.org/index.html?english/ournews/year_2003/ournews030909a.html&english/frame/menu.html&english/frame/band.html

⁵⁶ See Bipartisan Security Group Briefing by Benjamin Friedman, “Proliferation Security Initiative: the Legal Challenge,” September 2003, at http://www.gs institute.org/docs/09_03_PSI_brief.pdf, and Sue Soo-ha Yang, “Legal Basis for State Interception of Shipments on High Seas: Legality of the Naval Interdiction under the “Proliferation Security Initiative”, October 1 2003, at http://www.lcnp.org/disarmament/MEMO_NK_interdiction.PDF.

⁵⁷ See for instance John Bolton, stating that “[the *So San* interdiction] was certainly one of the factors that led us to think that we do need to do this on a broader basis and have it be more systematic and be better trained and prepared, and get more other countries involved.” Bolton Says Proliferation Security Initiative Has “Twofold Aim”, Washington File, December 19 2003, at <http://usembassy-australia.state.gov/hyper/2003/1219/epf502.htm>.

⁵⁸ See Yemen Times, 16-22 December 2002, at <http://www.westerndefense.org/articles/Yemen/jan03.htm>

⁵⁹ See NTI report December 11, 2002, at http://www.nti.org/d_newswire/issues/thisweek/2002_12_11_misp.html

⁶⁰ T. Ricks and P. Levin, “Spain and U.S. Seize N. Korean Missiles,” *Washington Post*, December 11, 2002

⁶¹ See Thom Shanker, “U.S. Allows Scud Missile Shipment to Continue to Yemen”, *New York Times*, December 11, 2002, at <http://www.nytimes.com/2002/12/11/international/11CND-SCUD.html>

⁶² Shanker, *op. cit.*

⁶³ See R. R. Churchill and A.V. Lowe, *The Law of the Sea* (3rd 3d., 1999), 214.

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carrying possible components of WMD was permitted to proceed. In fact, the *So San* incident has highlighted that the real issue for PSI is not the shipments themselves or even the cargo, but the State of destination of the shipments.

In response to a question whether shipments to India, Pakistan or Israel would be interdicted, John Bolton stated that:

“There are unquestionably states that are not within existing treaty regimes that possess weapons of mass destruction legitimately. We’re not trying to have a policy that attempts to cover each and every one of those circumstances. What we’re worried about are the rogue states and the terrorist groups that pose the most immediate threat.”⁶⁴

The stated restriction of PSI to states of proliferation concern, could lead to a breach of articles 300 and 301 of the Law of the Sea Convention. Article 300 provides that:

“States Parties shall fulfil in good faith the obligations assumed under this Convention and shall exercise the rights, jurisdiction and freedoms recognized in this Convention in a manner which would not constitute an abuse of right,”

and Article 301 provides that:

“[i]n exercising their rights and performing their duties under this Convention, States Parties shall refrain from any threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the principles of international law embodied in the Charter of the United Nations.”

Through Article 301, in its reference to the Charter, States must observe the principles in Article 2 of the Charter of sovereign equality, good faith, peaceful settlement of disputes, and the use of force.

Under the Interdiction Principles⁶⁵, PSI is stated to be a response to the growing challenge posed by the proliferation of weapons of mass destruction (WMD), their delivery systems, and related materials worldwide.

It is stated to be “consistent with and a step in the implementation of the United Nations Security Council Presidential Statement of January 1992, which states that the proliferation of all WMD constitutes a threat to international peace and security, and underlines the need for member states of the U.N. to prevent proliferation.”

The Statement of Interdiction Principles goes on to state that:

“the PSI is also consistent with recent statements of the G8 and the European Union, establishing that more coherent and concerted efforts are needed to prevent the proliferation of WMD, their delivery systems, and related materials. PSI participants are deeply concerned about this threat and of the danger that these items could fall into the hands of terrorists, and are committed to working together to stop the flow of these items to and from *states and non-state actors of proliferation concern*.”(emphasis added)

⁶⁴ “Arms Control Today, An Interview with John Bolton,” December 2003, at http://www.armscontrol.org/act/2003_12/PSI.asp.

⁶⁵ Proliferation Security Initiative Interdiction Principles, at <http://www.msz.gov.pl/start.php?page=1260800001>

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However the Presidential Statement is not restricted to some proliferation of WMD and material but all proliferation. It states that:⁶⁶

“The members of the Council underline the need for all Member States to fulfill their obligations in relation to arms control and disarmament, to prevent the proliferation *in all its aspects* of all weapons of mass destruction; to avoid excessive and destabilizing accumulations and transfer of arms; and to resolve peacefully in accordance with the Charter any problems concerning these matters threatening or disrupting the maintenance of regional and global stability. They emphasize the importance of regional and global arms control arrangements, especially the START and CFE Treaties.

The proliferation of all weapons of mass destruction constitutes a threat to international peace and security. The members of the Council commit themselves to working to prevent the spread of technology related to the research for or production of such weapons and to take appropriate action to that end.

On nuclear proliferation, they note the importance of the decision of many countries to adhere to the Non-Proliferation Treaty and emphasize the integral role in the implementation of that Treaty of fully effective IAEA safeguards, as well as the importance of effective export controls. The members of the Council will take appropriate measures in the case of any violations notified to them by the IAEA.”

As such, the Presidential Statement encompassed all weapons of mass destruction: not only those of so-called rogue states, or non-state actors, or non-nuclear States. The Statement clearly addresses proliferation of weapons of mass destruction by and in all States and includes vertical as well as horizontal proliferation. In the PSI, on the other hand, nuclear weapons states avoid meeting their disarmament obligations, and perpetuate double standards in proliferation. Proliferation can only be seriously addressed when controls are placed on all fissile material, including plutonium, in all States.

This has important implications, as shipments of weapons usable plutonium, such as the shipment planned by the United States, and even of MOX fuel, which contains plutonium and can be made into nuclear weapons, themselves contribute to nuclear proliferation. Thus coastal States have a solid legal basis to object to shipments of MOX fuel or plutonium destined for nuclear States just as shipping States which are members of the PSI initiative object to shipments of nuclear materials destined to non-nuclear States. Such shipments contribute to proliferation in all its aspects.

The crucial definition in the PSI Statement is that members are “working together to stop the flow of these items to and from states and non-state actors of proliferation concern.” While the PSI members may restrict their concerns to some States, such as Libya, North Korea, Iran and, until recently, Iraq, other UN Members may view all proliferation activities as being of proliferation concern.

Cuba has made a similar point in a recent working paper at the 2004 NPT PrepCom⁶⁷, in calling for a multilateral and non-discriminatory approach to fighting against the possible use of WMD by terrorists.

⁶⁶ Emphasis added. Note by the President of the Security Council, S/23500, 31 January 1992, at <http://projects.sipri.se/cbw/docs/cbw-uns23500.html>.

⁶⁷ “The Proliferation Security Initiative and its implications for the Treaty on the Non-Proliferation of Nuclear Weapons,” Working Paper submitted by Cuba, 30 April 2004, NPT/conf.2005/PC.III/WP.20.

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Nonproliferation in Resolution 1540

Non-proliferation was more comprehensively addressed in the recent Security Council Resolution 1540/2004 passed on 28 April 2004 on the non-proliferation of weapons of mass destruction⁶⁸. The United States sees this resolution as requiring the criminalisation of the proliferation of weapons of mass destruction, including nuclear weapons⁶⁹, particularly in the hands of non-State actors. However a careful reading of the resolution and its context, including amendments made after an open debate, shows that it in fact goes wider and raises the wider questions of disarmament and proliferation by all states. As such it encompasses both vertical and horizontal proliferation. Horizontal proliferation refers to nuclear weapons states transferring nuclear weapons, technology or materials to nuclear or non-nuclear entities, whereas vertical proliferation refers to nuclear weapons states researching and developing new types of nuclear weapons, technology, materials and means of warhead delivery.

The resolution in its preamble affirms that proliferation of nuclear, chemical and biological weapons, as well as their means of delivery, constitutes a threat to international peace and security. This is noted here since it is the proliferation itself, rather than proliferation to specified countries, that is the threat.

The resolution in its preamble then reaffirms the Statement of its President adopted at the Council's meeting at the level of Heads of State and Government on 31 January 1992, including the need for all Member States to fulfil their obligations in relation to arms control and disarmament and to prevent proliferation in all its aspects of all weapons of mass destruction,

Operative paragraph 8 of the Resolution calls upon all States:

- (a) To promote the universal adoption and full implementation, and, where necessary, strengthening of multilateral treaties to which they are parties, whose aim is to prevent the proliferation of nuclear, biological or chemical weapons;
- (b) To adopt national rules and regulations, where it has not yet been done, to ensure compliance with their commitments under the key multilateral non-proliferation treaties;
- (c) To renew and fulfil their commitment to multilateral cooperation, in particular within the framework of the International Atomic Energy Agency, the Organization for the Prohibition of Chemical Weapons and the Biological and Toxin Weapons Convention, as important means of pursuing and achieving their common objectives in the area of non-proliferation and of promoting international cooperation for peaceful purposes.

Clearly, treaties such as the Non Proliferation Treaty (NPT)⁷⁰, as well as the Comprehensive Test Ban Treaty (CTBT) fall within Operative Paragraph 8. Measures which will promote the universal adoption and full

⁶⁸ S/RES/1540 (2004) 28 April 2004. At [http://daccess-ods.un.org/access.nsf/Get?Open&DS=S/RES/1540%20\(2004\)&Lang=E&Area=UNDOC](http://daccess-ods.un.org/access.nsf/Get?Open&DS=S/RES/1540%20(2004)&Lang=E&Area=UNDOC)

⁶⁹ This resolution followed an address by President Bush to the General Assembly in September 2003. He asked the U.N. Security Council to adopt a new anti-proliferation resolution. "This resolution should call on all members of the U.N. to criminalize the proliferation of weapons – weapons of mass destruction, to enact strict export controls consistent with the international standards, and to secure any and all sensitive materials within their own borders. The United States ready to help any nation draft these new laws, and to assist in their enforcement." President Addresses UN General Assembly, September 23, 2004, at <http://www.state.gov/p/io/rls/rm/2003/24321.htm>. Following the adoption of the resolution seven months later, President Bush said in a statement that "Member states should enact strict export controls, criminalize the proliferation of weapons of mass destruction, and secure all related materials within their borders." Clearly President Bush considers that the resolution achieved the aims. In neither speech did the President distinguish between proliferation between different countries, or between horizontal and vertical proliferation. White House Press Release of April 28 2004 at <http://www.whitehouse.gov/news/releases/2004/04/20040428-7.html>

⁷⁰ Treaty on the Non-Proliferation of Nuclear Weapons. Opened for signature 1 July 1968 at London, Moscow and Washington; entered into force 5 March 1970. 729 UNTS 161, UKTS 88 (1970), 7 ILM 809, 21 UST 483.

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implementation, and, where necessary, strengthening of the NPT or CTBT would thus fall within the resolution.

In Operative Paragraph 3, the Security Council decided that all States shall take and enforce effective measures to establish domestic controls to prevent the proliferation of nuclear, chemical, or biological weapons and their means of delivery, including by establishing appropriate controls over related materials and to this end shall take a number of specified measures, including:

- (a) Develop and maintain appropriate effective physical protection measures; and
- (b) Establish, develop, review and maintain appropriate effective national export and trans-shipment controls over such items, including appropriate laws and regulations to control export, transit, trans-shipment and re-export and controls on providing funds and services related to such export and trans-shipment such as financing, and transporting that would contribute to proliferation, as well as establishing end-user controls; and establishing and enforcing appropriate criminal or civil penalties for violations of such export control laws and regulations;

‘Related materials’ is defined to mean, for the purposes of the resolution, ‘materials, equipment and technology covered by relevant multilateral treaties and arrangements, or included on national control lists, which could be used for the design, development, production or use of nuclear, chemical and biological weapons and their means of delivery.’ Clearly plutonium falls within this definition.

This is a binding obligation to develop effective physical protection measures, as well as the controls specified in paragraph (d). The syntax of the paragraph is confused, but does specifically require controls on transporting that would contribute to proliferation.

Resolution 1540 thus provides a basis for all states to take measures to control the trans-shipment of materials (which would include plutonium) and control services related to such trans-shipment, and transporting that would contribute to proliferation. There is no restriction in its ambit to shipments to specified countries, as in PSI. PSI in its selective application to materials related to weapons of mass destruction thus can be seen to be inconsistent with the application of resolution 1540.

Measures taken by states pursuant to resolution 1540 should not be discriminatory, should be implemented in good faith, and should address all materials, which would include plutonium, wherever transported. It is the proliferation of the materials, as is noted at the preamble of the resolution, rather than their destination, that is the threat to international peace and security.

Conclusion

While the desire to address the proliferation of nuclear weapons and their precursors is shared by many States, and has found expression in Security Council resolution 1540, questions remain over the restriction of PSI to shipments to states ‘of proliferation concern’.

This restriction appears to be inherently discriminatory and actions could arguably constitute a breach of articles 300 and 301 of the Law of the Sea Convention the article 2 of UN Charter. It is also inconsistent with resolution 1540, which notes that it is the proliferation of the material, rather than the nature of the states of destination, that is the threat to international peace and security.

PSI risks being approached as a substitute for a non-proliferation policy, and as replacing or undermining, rather than supplementing, non-proliferation strategies and policies. In its selective application, it can even be seen as inconsistent with Security Council resolution 1540, in its restrictive ambit and discriminatory approach.

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Support for PSI as it is formulated at present may well serve to entrench non-proliferation double standards and increase the divide between nuclear “have” and “have not” states. Thus, to be effective, initiatives to address nuclear shipments need to be consistent with uniform, unbiased, and universal non-proliferation policies. In order for PSI to enjoy universal support and to comply with international law, it must comply with existing instruments, including the NPT and resolution 1540. As such it should address the shipment of all proliferation material from and to all countries and should do so in such a way as to address concerns that shipments may be the target of terrorist attacks as well as to address environmental and economic threats from such shipments.

A moratorium on the shipment of all plutonium and other fissile material should be implemented immediately, to address terrorist concerns and concerns about theft, as well as to allow time for states to agree on and implement a universal policy on fissile material controls and on nuclear shipments to replace the partial and discriminatory PSI programme.

Appendix Seven: The G8's Global Partnership Against the Spread of Weapons and Materials of Mass Destruction & the NPT

The Global Partnership Against the Spread of Weapons and Materials of Mass Destruction⁷¹ was launched in 2002 at the G8's Kananaskis Summit in Canada. A key part of the programme, the disposition of surplus Russian weapons plutonium via plutonium fuel (MOX), has been substantially delayed due to a variety of problems in both the U.S. and Russia. Financial support for the controversial and costly MOX program should now be halted given the proliferation threat it presents. Funds by the G8 and Global Partnership countries must be redirected to management of plutonium as nuclear waste, a more "proliferation resistant" form of plutonium disposition.

There are three points that are central to the plutonium disposition programme and G8 proliferation concerns that this briefing note will address:

- (a) Plutonium disposition must not increase proliferation concerns
- (b) Comprehensive Fissile Material Cut-Off Negotiations Must Commence Immediately
- (c) Non-Proliferation and Disarmament Must be Universal

Plutonium disposition must not increase proliferation concerns

When the deployment of strategic nuclear weapons is reduced, the weapons withdrawn from service must be dismantled and fissile materials removed from them must be placed in secure storage and then rendered unusable, lest they be reused as new weapons, diverted by nefarious "insiders," or stolen by terrorists. While G8 countries have in the past offered financial support for the Russian program to dispose of surplus weapons plutonium as nuclear fuel (mixed oxide fuel, MOX), now is the time to reassess such support. It is clear that the MOX program in both Russia and the U.S. is mired in delays that could be fatal.⁷² Given the serious problems confronting the programs, a concerted effort should be undertaken to negotiate agreements to manage the plutonium as nuclear waste.

One indication of problems came in July 2003, when the U.S.-Russia technical cooperation agreement from 1998 was allowed to lapse due to disputes about liability in Russia in the event of an accident.⁷³ Likewise, lack of agreement on liability has become a chronic barrier to progress in the U.S. or Russia of the programme, which Congress has mandated to take place in a "parallel" manner.

⁷¹ The Global Partnership Against the Spread of Weapons and Materials of Mass Destruction, at http://www.g8.fr/evian/english/navigation/g8_documents/archives_from_previous_summits/kananaskis_summit_-_2002/the_g8_global_partnership_against_the_spread_of_weapons_and_materials_of_mass_destruction.html.

⁷² See "U.S.-Russian Plan to Destroy Atom-Arms Plutonium Is Delayed", New York Times, February 8, 2004, at <http://www.nytimes.com/2004/02/09/international/europe/09PLUT.html?ex=1077598800&en=f1e094c1f55cd813&ei=5070>.

⁷³ The 1998 plutonium disposition agreement between Russia and the United States included liability provisions but it did not include language from the Cooperative Threat Reduction (CTR) programme, which the United States insisted on, whereas Russia considered that the Multilateral Nuclear Environmental Programme (MNEPR) liability provisions were adequate. One important difference was an insistence that the United States and its contractors be absolved of responsibility even if they cause an accident intentionally. See Charles Digges, 30 July 2003, "Technical Agreement for Plutonium Disposition Allowed to Lapse by US", at <http://www.bellona.no/en/international/russia/navy/co-operation/30596.html> and Joe Fiorill, "U.S. Fears "Manipulation" of Russian Legal System in Joint Nuclear Security Efforts", January 14, 2004, at http://www.nti.org/d_newswire/issues/2004/1/14/7675da6a-5fcb-470c-bc73-a75dd0e4a4f0.html.

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Given that the June 2004 G8 meeting will take place relatively close to the Savannah River Site (SRS), the site chosen by the U.S. Department of Energy (DOE) to carry out the MOX program, the issue of plutonium disposition will likely garner significant attention. SRS is also the DOE site most likely to be selected for the new nuclear bomb factory (“Modern Pit Facility”), which would rely on shared aspects of the MOX plutonium infrastructure. Thus, it could be hard to clearly separate aspects of the MOX programme in the U.S. from development of new nuclear weapons or rebuilding of other weapons in the U.S. arsenal.

In the Fiscal Year 2005 budget request to Congress, the Department of Energy has finally admitted that great uncertainty faces the MOX program. In the February 2 budget proposal,⁷⁴ DOE stated that the start of construction of the MOX plant has been delayed for at least another year and revealed “uncertainties associated with the international contributions to the Russian program together with Congressional requirements for parallel progress in both nations make estimation of schedule milestones inappropriate at this time.” Given the schedules presented in the DOE budget, it appears that there well could be a three-year delay in the MOX programme, which will likely result in increased Congressional scrutiny of the project.

In a letter sent to Congress on February 17, 2004 as required under law, DOE not only admitted that “liability problems remain unresolved” but indicated the program may well face further delays. In the budget proposal DOE stated that it assumed that the “liability issue will be resolved by April 1, 2004” but it is clear that this ambitious target date was not met. According to a recent news report⁷⁵, the April 1 date has quietly slipped to June, thus threatening another year’s delay in the implementation of the programme.

In addition to delays on the Russian end of the program, there is no certainty that the U.S. Nuclear Regulatory Commission will license U.S. MOX activities. There has been no approval for any aspect of the MOX plan, including both MOX testing and large-scale use of MOX in the reactors as well as the construction and operation licenses for the MOX plant itself. Due to last minute design changes, issuance of the Final Environmental Impact Statement for the U.S. MOX plant has been delayed for an indefinite time. Legal challenges to these numerous licenses will likely result in further delays and may end up in federal courts.

DOE has requested an export license from the NRC to export 150 kilogrammes of weapons-grade plutonium to France for fabrication into MOX “lead test assemblies” (LTAs), which would then be shipped back to the U.S. for testing in a reactor. DOE proposes to ship this material to France on ships owned by British Nuclear Fuels Limited (BNFL) and then overland some 1000 kilometres to a now-closed MOX fabrication facility at Cadarache. These lightly guarded transports across France are arguably one of the most vulnerable global targets for those wishing to attack or seize weapons-usable material. Due to the particular threat it poses, this proposal should thus be rejected.

Ambassador Linton Brooks, head of DOE’s National Nuclear Security Administration (NNSA), the nuclear weapons side of DOE, clearly believes that delays can kill the MOX program. He stated in a November 2003 legal declaration -- filed in relation to the controversial plan to ship weapons plutonium to France for manufacture into MOX for testing in a U.S. reactor -- that “actual or apparent delay in any aspect of the U.S. program [...] could lead the Russian leadership to reconsider its support for the current approach.” Brooks went on to state that: “conceivably, it could kill the program because its success depends on each side believing that the other side is engaging in reciprocal non-proliferation efforts.” Following these elaborations on significant delays now facing the programme, it is clear that doubts inside DOE about its viability are growing.

⁷⁴ <http://www.cfo.doe.gov/budget/05budget/content/defnn/nn.pdf>

⁷⁵ See “No Solution to Liability Issue Yet, But Pu Program Schedule is Still Valid; But One-year Delay Expected If There Is No Resolution by July,” Nuclear Weapons & Materials Monitor, April 12, 2004, page 1

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Given the obstacles now before the MOX program it is time to rethink this strategy and if the simpler, cheaper, more proliferation-resistant path of immobilizing plutonium in existing high-level nuclear waste is by far not the wisest approach to this daunting problem. The G8 should immediately endorse immobilization and ensure donor funding is directed to that end.

Comprehensive Fissile Material Cut-Off Negotiations Must Commence Immediately

Disposition of weapons plutonium endorsed by the G8 will have a significant impact on how the international community deals with the proliferation of weapons-usable fissile materials.

The General Assembly as far back as 1993⁷⁶ called for the negotiation of a non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons and other nuclear explosive devices. As one of the thirteen practical steps for systematic and progressive efforts to implement Article VI of the NPT, the NPT parties agreed on immediate commencement and of negotiations on the Fissile Material Cut-off Treaty (FMCT) with a view to their conclusion within five years.⁷⁷ The General Assembly has annually called for the Conference on Disarmament to agree on a program of work that includes FMCT negotiations.

The amount of weapons-usable plutonium in civilian stocks now rivals the amount of plutonium being held in military programs. Civilian reprocessing therefore presents a growing proliferation risk that must be addressed. In part based on voluntary reporting to the International Atomic Energy Agency (IAEA), there is believed to be more than 150 metric tons of weapons-usable plutonium being held by countries involved in reprocessing. As it would take as little as 5 kilograms of commercial plutonium for a state or terrorist organisation to build a nuclear bomb, the threat posed by the mere existence of plutonium must be addressed by the global community.

The ever-increasing “commercial” stocks of weapons-usable plutonium in Japan, France, the UK and Russia present a proliferation risk that cannot be ignored. IAEA Director General Dr. Mohamed ElBaradei has made strong statements of late about the risk posed by such burgeoning plutonium stockpiles. Failure to address these commercial stocks, and the reprocessing technologies that produce them will only lead to more proliferation.

The double standard of the current non-proliferation policy can be seen by global inaction in the face of start-up of the massive Rokkasho reprocessing factory in Japan. This twenty billion USD facility could separate up to 8 metric tons of plutonium per year despite there being no need whatsoever for plutonium in the commercial nuclear fuel cycle.

President Bush’s non-proliferation initiative of February 11, 2004 is thus facing a major test in relation to “civil” reprocessing factories: will the U.S. take immediate steps to persuade Japan not to start up the new Rokkasho plutonium proliferation factory, now in start-up operations, or will the build-up of weapons-usable plutonium in Japan proceed unabated? This same question can also be posed to the Global Partnership and IAEA and the answer to this question will have a dramatic impact on proliferation of weapons-usable plutonium.

⁷⁶ General Assembly Resolution A/Res/75/L of December 1993, at <http://www.un.org/documents/ga/res/48/a48r075.htm>.

⁷⁷ Final Document adopted at the 2000 NPT Review Conference. At http://www.mint.gov.my/policy/nuc_prolifer/npt2000revcon_finaldoc_vollpart1.htm.

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Non-proliferation and disarmament must be universal

The first of the set of non-proliferation principles announced by the G8 last year at Evian was promoting the adoption, universalisation, full implementation and, where necessary, strengthening of multilateral treaties and other international instruments whose aim is to prevent the proliferation or illicit acquisition of such items and strengthen the institutions designed to implement these instruments.

Universal adoption of the G8 non-proliferation principles requires, called for in the G8 Action Plan, requires adherence to principles already agreed and a commitment to multilateralism and universality on a non-discriminatory basis.

The Bush Administration's approach to challenging the threat posed by these dangerous materials and technologies will fail as it only focuses on so-called "rogue states". The same is true with the Proliferation Security Initiative (PSI), which aims to interdict clandestine transfers by "rogue states" of weapons materials or technologies. For the world to become safer from the spread of nuclear weapons, proliferation of technologies and weapons-usable materials and their storage, transportation and use must be challenged and controlled uniformly and without discrimination. Likewise, all nuclear weapons states must immediately undertake to abide by their obligations in the Nuclear Non-proliferation Treaty (NPT) to disarm of all nuclear weapons and to pledge that all development of new nuclear weapons will now halt.

The budget request presented on 2 February 2004 to the U.S. Congress includes funds for the new low-yield ("mini-nuke") nuclear weapon, the high-yield bunker buster (Robust Nuclear Earth Penetrator), a reduction in the time it takes to conduct a nuclear weapons test from 24 months to 18 months, and plans for a new nuclear bomb factory (Modern Pit Facility) which could replace the plutonium cores in the entire deployed U.S. stockpile in just a few years. All of these proposals fly in the face of compliance with the disarmament obligations of the NPT and non-proliferation aims of the Global Partnership.

Action by the Global Partnership to halt such double standards is one clear way to ensure that nuclear non-proliferation and disarmament standards will be applied universally and without discrimination.

Appendix Eight: Non-Proliferation Under Security Council Resolution 1540

Duncan Currie
5 May, 2004

Introduction

On 28 April 2004 the Security Council unanimously passed Resolution 1540/2004 on the non-proliferation of weapons of mass destruction.⁷⁸ The United States clearly sees this resolution as requiring the criminalisation of the proliferation of weapons of mass destruction, including nuclear weapons,⁷⁹ particularly in the hands of non-State actors. However a careful reading of the resolution and its context shows that it in fact goes wider and raises the wider questions of disarmament and proliferation by all states. As such it encompasses both vertical and horizontal proliferation. Horizontal proliferation refers to nuclear weapons states transferring nuclear weapons, technology or materials to nuclear or non-nuclear entities, whereas vertical proliferation refers to nuclear weapons states researching and developing new types of nuclear weapons, technology, materials and means of warhead delivery.

Member States in their implementation of the Resolution in their legislation and otherwise, and in their reports to the Security Council, should accordingly not limit their efforts to non-state actors or horizontal proliferation and should address all aspects of proliferation, arms control and disarmament.

Provisions of the Resolution

The Resolution refers to arms control as well as disarmament:

Reaffirming, in this context, the Statement of its President adopted at the Council's meeting at the level of Heads of State and Government on 31 January 1992 (S 23500), including the need for all Member States to fulfill their obligations in relation to arms control and disarmament and to prevent proliferation in all its aspects of all weapons of mass destruction,

and

Encouraging all Member States to implement fully the disarmament treaties and agreements to which they are party,

In the body of the resolution, the Security Council, stating it is acting under Chapter VII of the Charter,

1. *Decides that* all States shall refrain from providing any form of support to non-State actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery;

⁷⁸ S/RES/1540 (2004) 28 April 2004. At [http://daccess-ods.un.org/access.nsf/Get?Open&DS=S/RES/1540%20\(2004\)&Lang=E&Area=UNDOC](http://daccess-ods.un.org/access.nsf/Get?Open&DS=S/RES/1540%20(2004)&Lang=E&Area=UNDOC)

⁷⁹ This resolution followed an address by President Bush to the General Assembly in September 2003. He asked the U.N. Security Council to adopt a new anti-proliferation resolution. "This resolution should call on all members of the U.N. to criminalize the proliferation of weapons – weapons of mass destruction, to enact strict export controls consistent with the international standards, and to secure any and all sensitive materials within their own borders. The United States ready to help any nation draft these new laws, and to assist in their enforcement." President Addresses UN General Assembly, September 23, 2004, at <http://www.state.gov/p/io/rls/rm/2003/24321.htm>. Following the adoption of the resolution seven months later, President Bush said in a statement that "Member states should enact strict export controls, criminalize the proliferation of weapons of mass destruction, and secure all related materials within their borders." Clearly President Bush considers that the resolution achieved the aims. In neither speech did the President distinguish between proliferation between different countries, or between horizontal and vertical proliferation. White House Press Release of April 28 2004 at <http://www.whitehouse.gov/news/releases/2004/04/20040428-7.html>

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2. *Decides also* that all States, in accordance with their national procedures, shall adopt and enforce appropriate effective laws which prohibit any non-State actor to manufacture, acquire, possess, develop, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery, in particular for terrorist purposes, as well as attempts to engage in any of the foregoing activities, participate in them as an accomplice, assist or finance them.

The Security Council also decided⁸⁰ also that all States shall take and enforce effective measures to establish domestic controls to prevent the proliferation of nuclear, chemical, or biological weapons and their means of delivery, and lists a number of methods, including accounting for and securing such items, physical protection measures and effective border controls and export controls.

The resolution establishes⁸¹ a monitoring committee of the Security Council for two years, and States are to report on the implementation of the resolution, the first report on steps states have taken or intend to take being due in six months, being October 28 2004.

Operative paragraph 8 of the Resolution calls upon all States:

- (a) To promote the universal adoption and full implementation, and, where necessary, strengthening of multilateral treaties to which they are parties, whose aim is to prevent the proliferation of nuclear, biological or chemical weapons;
- (b) To adopt national rules and regulations, where it has not yet been done, to ensure compliance with their commitments under the key multilateral nonproliferation treaties;
- (c) To renew and fulfil their commitment to multilateral cooperation, in particular within the framework of the International Atomic Energy Agency, the Organization for the Prohibition of Chemical Weapons and the Biological and Toxin Weapons Convention, as important means of pursuing and achieving their common objectives in the area of non-proliferation and of promoting international cooperation for peaceful purposes;

Operative Paragraph 8(b) means it clearly is within the mandate of the resolution for States, in their implementing legislation, to promote full implementation and strengthening of multilateral treaties relevant to nuclear proliferation and to ensure compliance with key non-proliferation treaties, as well as to renew and fulfil commitment to multilateral cooperation.

The Security Council⁸² calls upon all States to promote dialogue and cooperation on non-proliferation so as to address the threat posed by proliferation of nuclear, chemical, or biological weapons, and their means of delivery. It calls upon all States, in accordance with their national legal authorities and legislation and consistent with international law, to take cooperative action to prevent illicit trafficking in nuclear, chemical or biological weapons, their means of delivery, and related materials.⁸³

Control of Plutonium and Other Weapons Usable Material

In Paragraph 3 the Security Council decides that all States shall take and enforce effective measures to establish domestic controls to prevent the proliferation of nuclear, chemical, or biological weapons and their

⁸⁰ Operative paragraph 3

⁸¹ Operative paragraph 4

⁸² Operative paragraph 9

⁸³ Operative paragraph 10

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means of delivery, including by establishing appropriate controls over related materials and to this end shall take a number of specified measures, including:

- (a) Develop and maintain appropriate effective physical protection measures; and
- (b) Establish, develop, review and maintain appropriate effective national export and trans-shipment controls over such items, including appropriate laws and regulations to control export, transit, trans-shipment and re-export and controls on providing funds and services related to such export and trans-shipment such as financing, and transporting that would contribute to proliferation, as well as establishing end-user controls; and establishing and enforcing appropriate criminal or civil penalties for violations of such export control laws and regulations;

‘Related materials’ is defined to mean, for the purposes of the resolution, ‘materials, equipment and technology covered by relevant multilateral treaties and arrangements, or included on national control lists, which could be used for the design, development, production or use of nuclear, chemical and biological weapons and their means of delivery.’”

This is a binding obligation to develop effective physical protection measures, as well as the controls specified in paragraph (d). The syntax of the paragraph is confused, but does specifically require controls on transporting that would contribute to proliferation.

The Context and Implications of the resolution for Non-Proliferation

The reference in the resolution to the Presidential Statement and the specific quotation places the resolution firmly in context of obligations on all States in relation to arms control, disarmament and proliferation.⁸⁴ Presidential Statements are the product of informal consultations between the Council President and its Members and do not enjoy the status of resolutions. They have never been formalized in any rule of procedure of the Security Council or anywhere else⁸⁵ and have no formal status. However, having been cited in Resolution 1540, the Statement carries considerable weight. That Statement reads under the heading of ‘Disarmament, arms control and weapons of mass destruction’:

“The members of the Council, while fully conscious of the responsibilities of other organs of the United Nations in the fields of disarmament, arms control and non-proliferation, reaffirm the crucial contribution which progress in these areas can make to the maintenance of international peace and security. They express their commitment to take concrete steps to enhance the effectiveness of the United Nations in these areas.

The members of the Council underline the need for all Member States to fulfill their obligations in relation to arms control and disarmament, to prevent the proliferation in all its aspects of all weapons of mass destruction; to avoid excessive and destabilizing accumulations and transfer of arms; and to resolve peacefully in accordance with the Charter any problems concerning these matters threatening or disrupting the maintenance of regional and global stability. They emphasize the importance of regional and global arms control arrangements, especially the START and CFE Treaties.

⁸⁴ The United States has relied on the Presidential Statement in other related contexts. The United States has quoted the Presidential Statement in support of its Proliferation Security Initiative, stating that “the PSI is consistent with and a step in the implementation of the UN Security Council Presidential Statement of January 1992.” US State Department Fact Sheet September 4, 2003, Proliferation Security Initiative Meeting, Paris, September 3-4 2003.

⁸⁵ Sydney D Bailey and Sam Davis, *The Procedure of the UN Security Council* (3rd 3d., 1998), 547, cited in Sue Soo-ha Yang, Brooklyn Law School, October 1, 2003, “Legal Basis for State Interception of Shipments on High Seas: Legality of the Naval Interdiction under the “Proliferation Security Initiative”. At http://www.lcnp.org/disarmament/MEMO_NK_interdiction.PDF.

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The proliferation of all weapons of mass destruction constitutes a threat to international peace and security. The members of the Council commit themselves to working to prevent the spread of technology related to the research for or production of such weapons and to take appropriate action to that end.

On nuclear proliferation, they note the importance of the decision of many countries to adhere to the Non-Proliferation Treaty and emphasize the integral role in the implementation of that Treaty of fully effective IAEA safeguards, as well as the importance of effective export controls. The members of the Council will take appropriate measures in the case of any violations notified to them by the IAEA.”⁸⁶

There can be no doubt that the Presidential Statement encompassed all weapons of mass destruction: not only those of rogue states, or non-state actors, or non-nuclear States. By the breadth of the language, by the reference to accumulation of arms, and by specifically emphasizing the importance of arms control arrangements, the Statement clearly addresses proliferation of weapons of mass destruction by and in all States and includes vertical as well as horizontal proliferation.

Obligations referred to in the Preamble of resolution 1540 would include the obligation under Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons.⁸⁷ Article VI of the NPT provides that “each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.” This is an ongoing obligation that was further described at the 2000 NPT Review Conference as ‘an unequivocal undertaking by the nuclear-weapons States to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament’,⁸⁸ and one that the United States has specifically linked to its conclusion of the Comprehensive Test Ban Treaty (CTBT).⁸⁹

The 13 Practical Steps agreed by all Parties to the NPT in 2000,⁹⁰ including nuclear weapons states, included the early entry into force of the Comprehensive Nuclear Test Ban Treaty and a moratorium on nuclear-weapon-test explosions in the meantime, an unequivocal undertaking by the nuclear-weapon States to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament to which all States parties are committed under Article VI”, steps by all the nuclear-weapon States leading to nuclear disarmament in a way that promotes international stability, and based on the principle of undiminished security for all), negotiations on a fissile material treaty, and placement of fissile material no longer required for military purposes under international verification.

Conclusion

The resolution recognizes the need to prevent proliferation in all its aspects and the need for all member States to fulfil their obligations in relation to arms control and disarmament. This is clear from the references to arms control and disarmament in the preamble to the Treaty and references to “all aspects” of proliferation, and the

⁸⁶ Note by the President of the Security Council, S/23500, 31 January 1992, at <http://projects.sipri.se/cbw/docs/cbw-uns23500.html>.

⁸⁷ Treaty on the Non-Proliferation of Nuclear Weapons (NPT), opened for signature 1 July 1968 at London, Moscow and Washington, and signed by the United States on that date, entered into force 5 March 1970 and ratified by the US on that day. 729 UNTS 161, UKTS 88 (1970), 7 ILM 809, 21 UST 483, at <http://www.nuclearfiles.org/docs/1968/680701-npt.html> (accessed 2 June, 2001). There were some 187 States Party in January 2000.

⁸⁸ 2000 NPT Review Conference final Document, at <http://usinfo.state.gov/topical/pol/arms/stories/finaldoc.htm> (accessed 5 June, 2001).

⁸⁹ “The United States of America Meeting Its Commitment to Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons”, April 2000, at <http://usinfo.state.gov/topical/pol/arms/stories/0425art6.htm> (accessed 4 June, 2001).

⁹⁰ Text: Final Document Issued by 2000 NPT Review Conference

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reference to and breadth of the 1992 Presidential Statement, which itself refers to ‘all aspects’ of non-proliferation and refers to the need for all Member States to fulfill their obligations in relation to arms control and disarmament. The Statement specifically stated that the proliferation of all weapons of mass destruction constitutes a threat to international peace and security and emphasized the importance of regional and global arms control arrangements.

Therefore Member States in their implementation of the Resolution in their legislation and otherwise, and in their reports to the Security Council, should accordingly not limit their efforts to non-state actors or horizontal proliferation and should address all aspects of proliferation, arms control and disarmament.

Appendix Nine: Potential Radiological Impact and Consequences arising from Incidents Involving a Consignment of Plutonium Dioxide under Transit from Cogema La Hague to Marcoule/Cadarache

Source: http://www.greenpeace.org/multimedia/download/1/424600/0/Large_report.pdf

A study by independent nuclear engineering consultants Large & Associates,⁹¹ released by Greenpeace International in March 2003, shows that major failures in security arrangements for transports of weapons-usable plutonium across France pose an enormous environmental and health hazard. The study shows that the Areva/Cogema transports, which routinely pass through Paris and Lyon, are vulnerable to both severe traffic accidents and deliberate terrorist attack that could result in catastrophic plutonium contamination, affecting millions of people.⁹²

The study shows that, in case of serious road traffic accidents or terrorist attacks, the plutonium transport containers were found to be unable to resist fire temperatures and, particularly, fire durations. The transports are frequent (two trucks every 7-10 days), predictable (same route every week), and not well protected, renders them vulnerable to attack. Depending upon the severity of an incident, plutonium fall-out could affect hundreds of square kilometres and millions of people in a range of locations, including near the Palace of Versailles, across Paris and the outskirts of Lyon.⁹³ The effects of a severe accident or terrorist attack would be catastrophic requiring sheltering distances up to 110km from the site depending on the incident severity. The report also recommends a comprehensive assessment of the wider social and economic implications given the scale of disruption likely to occur to the French economy, public and tourism.

The dangers highlighted in the new Greenpeace study were confirmed March 2nd by a French Government appointed Commission. It concluded that there does not exist a strategy in France to deal with nuclear incidents - either accident or terrorist attack. The Director of France's Nuclear Safety Agency, Andre Lacoste, endorsed the findings of the 'Vrousos' Commission Tuesday.⁹⁴

⁹¹ Large & Associates, Consulting Nuclear Engineers (UK) is headed by John Large who for two decades was a United Kingdom Atomic Energy Authority researcher and who has given evidence on the UK nuclear industry to the Energy Committee of the House Commons, as well as consultancy to the Governments of Japan, Russia, Bulgaria; and has published widely on the risks and hazards of nuclear materials transportation and the vulnerability of the nuclear industry to terrorism. Recently (throughout 2001) John Large headed the team of nuclear and naval weaponry experts advising and supervising the world's first salvage of the Russian Federation nuclear powered submarine Kursk.

⁹² The estimated total release of plutonium ranges from 0.5kg up to 25kg, to a maximum of just one-tenth of the total amount of plutonium carried in each transport convoy. The so-called release fraction cited by Large & Associates derives from the U.S. Department of Energy's own calculations contained in recent environmental impact analysis, this is in stark contrast to the French regulators which assume a worst case scenario of 0.07g released. The fall-out patterns were calculated using the NOAA Hysplit model and plume rise prediction is by Hotspot. NOAA HYSPLIT is the USD Air resources Laboratory air concentration and dispersive model and Hotspot is the Lawrence Livermore National Laboratory predictive software for release plumes. The health effects are calculated using the European Commission developed COSYMA radioactive dispersion and health consequence modelling program. Hotspot is also used to provide a check on COSYMA.

⁹³ Two sample locations analysed in the study are a) as the convoy passes round the southern suburbs of Paris, travelling eastwards on the A6 route where it passes through the cut and cover road tunnel on the A12 near Versailles (2.08E48.48N) about 20km southwest of the centre of Paris, and b) where the convoy passes to the east of Lyon on Route A7 in the locality where the road crosses the River Rhône (4.55E48.48N) about 10km to the east of the centre of Lyon.

⁹⁴ "Priority in terms of Radioprotection - conclusions for a better population protection against ionizing radiation," report for the Vrousos Commission, March 2nd 2004, under authority of DGRSN, Director Andre Claude Lacoste.