

Information Circular

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Communication dated 15 April 2014 received from the Resident Representative of Norway to the Agency regarding the Working Group on Best practices for Voluntary and Confidential Government-to-Government Communications on the Transport of MOX Fuel, High Level Radioactive Waste and, as appropriate, Irradiated Nuclear Fuel by Sea

1. The Director General has received a communication dated 15 April 2014 from the Resident Representative of Norway to the Agency, referring to the Report of the Working Group on Best Practices for Voluntary and Confidential Government-to-Government Communications on the Transport of MOX Fuel, High Level Radioactive Waste and, as appropriate, Irradiated Nuclear Fuel by Sea.
2. The communication and, as requested by the Resident Representative, the Report of the Working Group are circulated herewith for information.



**PERMANENT MISSION OF NORWAY
TO THE INTERNATIONAL ORGANIZATIONS IN VIENNA**

International Atomic Energy Agency
Director General Yukiya Amano
VIC – PO Box 100
1400 Vienna

Your ref.:

Our ref.:

Date:

15.04.2014

I would like to express my deep appreciation for your staffs support to the *Working Group on Best Practice Guidelines for voluntary and confidential Government to Government Communications on the Transport of Mox Fuel, High Level Radioactive Waste and, as appropriate, Irradiated Nuclear Fuel by Sea*. The Working Group conducted its work between the 2012 and 2013.

At 56th General Conference, the *IAEA Coastal and Shipping States Informal Meeting* tasked The Permanent Representation officers in Vienna of interested states with drafting actual guidelines for Government to Government communications for presentation to the 2013 Coastal and Shipping States Informal Meeting. The Working Group, which I chaired, also found guidance by the 2012 IAEA GC Resolution *Measures to strengthen international cooperation in nuclear, radiation, transport and waste safety*¹.

All IAEA Member States were invited to the first meeting of the Working Group that took place in 4 December 2012 (invitation attached). The Group held in total seven meetings, and the report of the Working Group was agreed by consensus of the participating States.

In total 19 States participated in the Working Group, of which three claimed observer status.

Participants: Argentina, Australia, Austria, Chile, Colombia (observer), Cyprus, France, Ireland, Japan, New Zealand, Norway, Panama, Philippines, Portugal, Russia (observer), South Africa, Spain, United Kingdom, United States of America (observer).

The Working Group conducted its work in a friendly, constructive and flexible manner, and all participants should be credited for the success of the work.

At 57th General Conference, the *2013 IAEA Coastal and Shipping States Informal Meeting* agreed to a Road map to follow up the report, among which one item was to request the circulation of the report.

¹ GC(56)/RES/9 - §§ 43 and 47.

As chair of the Working Group, I therefor request the Secretariat to distribute the report, including the five annexes and the original invitation to the working group, to all IAEA Member States.

Yours sincerely



Jan Petersen
Ambassador and
Governor to the IAEA.

Invitation – Working group on drafting voluntarily, best practice guidelines for Government to Government communications

During the 56th General Conference, the IAEA Coastal and Shipping States Informal Meeting on 19 September (summary attached) tasked The Permanent Representation officers in Vienna of interested states with drafting actual guidelines for Government to Government communications, for presentation to the 2013 Coastal and Shipping States Informal Meeting. The Norwegian Permanent Representative, Ambassador Jan Petersen, accepted to chair this working group, and the Agency will support the work of the group. The working group is also mandated by the 2012 IAEA GC Resolution *Measures to strengthen international cooperation in nuclear, radiation, transport and waste safety*¹. Attached is also a briefing note prepared by the Irish chair, Ambassador Brennan, before the 19 September meeting.

Ambassador Petersen would like to call the first meeting of the group on:

- 4 December at 10.00 in Meeting Room B0401 at VIC.

Before the meeting those states that are interested in participating in the working group are to nominate a permanent representation officer by 23 November, and send the nomination to jim.stewart@iaea.org. As space is limited, it is instrumental that those interested in participating sign up in advance.

The first meeting of the working group will take form of a brainstorming, to gather input on where this group should be going. For this reason representatives will be given the opportunity to give short presentations (max 7 min), on expected end product of the working group. Those representatives that wish to make such presentations should indicate this together with the nomination.

Some key points on the background for the group should though be highlighted: The coastal state – shipping states dialogue was established in the early 2000s, and it came about because of coastal states enquiries for information connected to shipment of nuclear material. Their worries have been especially directed to the risk for accidents, and the possibility to respond to an accident involving nuclear/radioactive material. There is also need for information to conduct a rescue operation, and for the affected state to communicate the nature of the accident to its public. Shipping states have been concerned with the security aspect of sharing information, and that the spread of such information can make the shipments more vulnerable. Also UNCLOS gives the right to free sailings both at open seas but also within territorial waters (innocent passage), and that there is no obligation to sharing such information under UNCLOS.

¹ GC(56)/RES/9 - § 47.

Report of the Working Group

On “best practices for voluntary and confidential Government-to-Government Communications on the Transport of MOX Fuel, High Level Radioactive Waste and, as appropriate, Irradiated Nuclear Fuel by Sea “

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ROYAL NORWEGIAN EMBASSY

Vienna, 17 September 2013

Chairman's presentation: *Working Group on Best Practice Guidelines for voluntary and confidential Government to Government Communications on the Transport of Mox Fuel, High Level Radioactive Waste and, as appropriate, Irradiated Nuclear Fuel by Sea*

At 56th General Conference, the IAEA Coastal and Shipping States Informal Meeting tasked The Permanent Representation officers in Vienna of interested states with drafting actual guidelines for Government to Government communications, for presentation to the 2013 Coastal and Shipping States Informal Meeting. The working group was also mandated by the 2012 IAEA GC Resolution *Measures to strengthen international cooperation in nuclear, radiation, transport and waste safety*¹.

All IAEA Member States were invited to the first meeting of the Working Group that took place on 4th December 2012. The Group held in total 7 meetings, and the report of the Working Group was agreed by consensus of the participating States.

In total 19 States participated in the Working Group, of which three claimed observer status.

Participants: Argentina, Australia, Austria, Chile, Colombia (observer), Cyprus, France, Ireland, Japan, New Zealand, Norway, Panama, Philippines, Portugal, Russia (observer), South Africa, Spain, United Kingdom, United States of America (observer)

The report is structured in 4 parts: Part 1 describes the mandate of the group, Part 2 defines Coastal State and Shipping State, Part 3 gives a short description of the shipments in question (and further described in Annex 1), and finally Part 4 - which is the operative part of the Report - describes what information best practice communication should include.

In addition there are 4 more annexes. Annex 2 lists other proposals coming out from the Working Group, that were beyond its original mandate. Annexes 3 – 5 are submissions to the Working Group from shipping states and coastal states.

The Working Group conducted its work in a friendly, constructive and flexible manner, and all participants should be credited for the success of the work.

Jan Petersen
Chairman

¹ GC(56)/RES/9 - §§ 43 and 47.

Report of the Working Group on Best Practice Guidelines for voluntary and confidential Government to Government Communications on the Transport of MOX Fuel, High Level Radioactive Waste and, as appropriate, Irradiated Nuclear Fuel by Sea.

1. Mandate of the group

The purpose of the group was to set out Best Practice Guidelines for voluntarily and confidential Government to Government Communications on the Transport of MOX Fuel, High Level Radioactive Waste and, as appropriate, Irradiated Nuclear Fuel by Sea¹.

The Working Group agreed that a formal review of the implementation of any guidance developed on communications was not intended, but that the annual informal meeting on Government-to-Government communication in the margins of the IAEA General Conference would provide an opportunity to discuss current practices in light of these guidelines.

2. Definitions

- a) **Coastal State:** The term “coastal state” refers to any coastal state with a concern about shipments, irrespective of their geographic proximity to the actual route being used.
- b) **Shipping state:** The term “shipping state” refers to the states regulating consigners, consignees and carriers for transports by sea.

3. Background

Typically 50 % of international maritime shipments carry hazardous cargo, while only 0.5 % of maritime shipments involve radioactive material, and around 1 in 10,000 ships carry material relevant to this paper. See Annex 1.

4. Proposals

Best practice includes the communication of the following information:

Around 10 days before departure, and on the basis of assurances of confidentiality between the relevant Coastal states and the relevant Shipping states;

- a) Type, flag age and name of the ship on which the shipment is to be made;

¹ The scope of the INF Code is "**Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes**", with those given definitions: **Irradiated nuclear fuel** : material containing uranium, thorium and/or plutonium isotopes which has been used to maintain a self-sustaining nuclear chain reaction; **Plutonium** : the resultant mixture of isotopes of that material extracted from irradiated nuclear fuel from reprocessing; **High-level radioactive wastes** : liquid wastes resulting from the operation of the first stage extraction system or the concentrated wastes from subsequent extraction stages, in a facility for reprocessing irradiated fuel, or solids into which such liquid wastes have been converted.

- b) Type of material planned to be transported (MOX Fuel, High Level Radioactive waste and, as appropriate, Irradiated Nuclear Fuel by Sea) and type of package to be used;
- c) Competent Authorities, which have issued the package certificate;
- d) Indication that the transport will take place in around 10 days;
- e) The expected approximate routes that the ship may follow, and whether the country concerned is on the proposed route;
- f) Approximate duration of the transport;
- g) List of relevant points of contact in case of emergency: national competent authority(ies) under the Convention on early notification, other relevant points of contacts, where appropriate, contact details of the shipping owner or organization;
- h) Country of Destination;
- i) A generic précis on emergency preparedness and response listing the applicable requirements, standards and guidelines of the IMO and of the IAEA and describing the general emergency management system of the shipping company(ies);

A number of other suggestions have been made. These are included in Annex 2.

Submissions to the Working Group are attached in Annexes 3 -5, as follows:

- Annex 3: “Best Practices for Government to Government Communication on Transport of Vitrified Waste and MOX Fuel”, submitted by UK/France/Japan – distributed to the WG 13.02.13.
- Annex 4: “Transport of Radioactive Materials: Government-to-Government Communications”, submitted by New Zealand on behalf of a group of coastal states – distributed to the WG on 11.04.13.
- Annex 5: “Review of the proposals of Coastal States for voluntary Gov-to-Gov communication of Transport of MOX Fuel and HLW wastes”, submitted by UK/France/Japan – distributed on 18.04.13.

Annex 1

Characteristics and frequencies of shipments, based on input from World Nuclear Transport Institute (WNTI).

Even when liaising with the IMO it has not been possible to recover a figure regarding the number of maritime shipments of radioactive materials all around the world.

The only – but very instructive – figure WNTI have got is from the Panama Canal AUTHORITY, which reflects the worldwide maritime shipping activities in terms of ratio and percentage.

As indicated in table below, in 2012 :

- In the Panama Canal, **there has been 14545 transits of Merchant ships in 2012**
- Amongst those, **6652 vessels were transporting Dangerous Goods**
- On these 6652, **only 64 were radioactive materials** (IMDG Class 7 materials), most of it being Cobalt 60 materials for sources (industrial & Medical)
- According to WNTI, only 2 of these shipments were related to the back-end of the fuel cycle (e.g. Highly Vitrified waste).

Table:

FY	TOTAL TRANSITS	TOTAL DG	TOTAL IMO 7
2006	14195	5900	39
2007	14721	6384	60
2008	14702	6467	60
2009	14342	6455	55
2010	14230	6026	53
2011	14684	6500	60
2012	14545	6652	64

Annex 2

i) Information being shared openly after departure

- Port of Departure;
- Planned route that the ship will follow, for example "shipment from France to Japan via the Cape of Good Hope and the South West Pacific";
- Approximate date of arrival.

ii) Development of the IAEA Website

The IAEA website should include comprehensive coverage on the international regulation of the transport of radioactive material.

It should include the regulation of the transport of radioactive materials under IMO Instruments applying to ships and the carriage of dangerous goods?

iii) Increased Transparency

That transparency should be enhanced by IAEA promoting peer review mission and for member states to publish their results.

iv) Government and Industry Contact Points and Coverage of Transport Events

A database to be developed on Government and Industry contact points to allow Governments to respond to inquiries in the event of an incident.

This should include Government and Industry contact points on ships, dangerous goods and marine pollution?

v) RANET

The Group suggests that the IAEA review and expand as necessary RANET to cover international assistance in case of emergency during transport of radioactive material by sea.

vi) Updating GOV/1998/17

The Group suggests IAEA to update GOV/1998/17: Safety of transport of radioactive material.

vii) Desktop exercise

The Group suggests to consider a desktop exercise to test the communications channels between shipping and coastal states in the event of an emergency.

Best Practices for Government to Government Communications on Transports of Vitrified Waste and MOX Fuel

Introduction

1. All transports at sea, including transports of nuclear materials, should be conducted in accordance with international law, in particular, the United Nations Convention on the Law of the Sea (UNCLOS), which effectively guarantees freedom of navigation in the high seas and EEZ. UNCLOS also guarantees the right of innocent passage to vessels in the territorial sea. Ships carrying nuclear materials can enjoy the right of innocent passage provided they are conducted in conformity with the relevant provisions of UNCLOS.
2. Under the freedom of navigation, there is no obligation on any shipping state to provide any information regarding the cargo, route or timing of vessels transiting the high seas and EEZ to any coastal state. Nonetheless, some shipping states and some coastal states recognise that there are mutual benefits to be gained through the sharing of information in confidence on a voluntary basis at a Government to Government level.
3. Nuclear transports, by their very nature, are security sensitive, and public disclosure of key information can increase the threat against the vessels. For this reason, where transports of vitrified waste and MOX Fuel are undertaken, any information provided to coastal states by shipping states have been and will be done on a voluntary basis and usually in confidence. A failure to provide information, or unauthorised disclosure of information provided, would damage trust between the shipping and coastal states.
4. It is also important to recognise that when a transport of nuclear material is undertaken, there are two important considerations: the transport vessel which will convey the cargo, and the transport package which provides the robust environment shield between the material and the outside world. IMO members have agreed to the design requirements for vessels that carry nuclear materials, and IAEA members have agreed to the performance requirements of the transport package.
5. Nuclear shipments by their nature can raise concerns over safety and security; this is particularly the case among members of the public in coastal states en-route. It is therefore only right that their governments feel empowered to offer reassurance that such transports, whether they agree with them or not, are undertaken in full compliance with all international obligations and transport safety, security and environmental regulations. It is far easier for coastal states' governments to provide this reassurance when they have been notified of such shipments in advance.
6. The type and detail of information provided will depend upon the situation. For example:

A. Generic safety information

This information will be provided periodically, and is not specific to a particular voyage. Generic information is not generally sensitive. Annex 1 gives an example of generic information that is already in the public domain. Providing this general safety information benefits both shipping and coastal states, as it helps build working relationships between the countries concerned. However, it should not be seen as a way of challenging either the IMO or IAEA regulatory requirements; proposed changes to regulatory requirements would be through the established forums and processes.

B. Information specific to a particular voyage for Vitrified waste and MOX Fuel maritime transports

This information is usually highly sensitive and would continue to be provided on a confidential basis, usually by diplomatic demarche on a verbal basis only. Just how much information is able to be shared will need to be agreed between the governments representing the consigning country, receiving country and shipping country. It has to be recognised that if one of these countries does not wish to release information, then it is likely that the others will be very limited in the amount of information they will be able to share. To observe the best practise guide, we suggest that the following information should be shared before departure:

- the name of the ship on which the shipment is to be made
- the approximate route that the ship is expected to follow
- the general geographical destination, for example "a northern European port"
- an indication that the transport will take place soon
- the type of cargo

C. Information in the event of an incident at sea

The International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code) of the IMO includes provisions on shipboard emergency plans and notification in the event of an incident involving materials subject to the Code. The IMO has also promulgated guidelines for developing such plans, including provisions related to information in the event of an incident. Any discussion on this issue should anyway be under the auspices of the IMO.

In addition, the IAEA has developed a guidance document entitled "Planning and Preparing for Emergency Response to Transport Accidents Involving Radioactive Material" (IAEA Safety Guide TSG 1.2). This document, currently under review, is established and revised through well established IAEA safety standards procedures. Any discussion on this document should be under the auspices of the IAEA TRANSSC Committee.

Finally, the Convention on Early Notification of a Nuclear Accident provides general legal provisions for notifying nuclear accidents, including those during transport activities.

ANNEX 1

Examples of generic safety information in the public domain

A. General information

The following information is from the PNTL website:

PNTL complies with all security requirements recommended by the International Atomic Energy Agency (IAEA); the UK's Nuclear Industries Security Regulations 2003; and is regulated by the United Kingdom's Office for Nuclear Regulation (ONR).

The Pacific Heron and Pacific Egret have been fitted with additional security features that enable them to transport MOX fuel and plutonium dioxide. For mutual protection, these vessels travel together, each escorting the other. They are fitted with fixed naval cannon and have other additional physical protection systems, only some of which are visible from outside.

For shipments of MOX fuel and plutonium, armed officers of the CNC provide on-board protection from departure to arrival. The CNC officers are specially trained to protect nuclear materials during sea transit, as well as nuclear facilities.

In addition, the same measures that provide protection in the event of an accident also provide protection against potential acts of sabotage.

B. Information relating to the design and capability of the transport packages

From the WNTI website:

Type B packages

Type B packages are required for the transport of highly radioactive material. These packages must withstand the same normal transport conditions as Type A packages, but because their contents exceed the Type A limits, it is necessary to specify additional resistance to release of radiation or radioactive material due to accidental damage.

The concept is that this type of package must be capable of withstanding expected accident conditions, without breach of its containment or an increase in radiation to a level which would endanger the general public and those involved in rescue or clean-up operations. The adequacy of the package to this requirement is demonstrated by stringent accident conditions testing (see Table 3).

Type B packages are used to transport material as different as unencapsulated radioisotopes for medical and research uses, spent nuclear fuel, and vitrified high-level waste.

Table 3: Type B Package Requirements

Criteria	Requirements
Design requirements	<ul style="list-style-type: none"> • General requirements for all packages • Additional pressure and temperature requirements if transported by air • Type A additional requirements • Type B additional requirements (internal heat generation and maximum surface temperature)
Test requirements - normal transport conditions	<p>Each of the following tests must be preceded by a water spray test:</p> <ul style="list-style-type: none"> • free drop (from 0.3 to 1.2 metres, depending on the mass of the package) • stacking or compression • penetration 6kg bar dropped from 1 metre
Test requirements - accidental transport conditions	<p>Cumulative effects of:</p> <ul style="list-style-type: none"> • free drop from 9 metres or dynamic crush test (drop of a 500kg mass from 9 metres onto a specimen) • puncture test • thermal test (fire of 800°C intensity for 30 minutes) • immersion (15 metres for 8 hours) <p>Enhanced immersion test for packages carrying a large amount of radioactive material:</p> <ul style="list-style-type: none"> • 200 metres for 1 hour

C. Information relating to contingency planning

From the PNTL website:

The PNTL Safety In Depth system provides much greater protection than typically exists for much more common shipments of hazardous cargo, such as chemicals, oil and liquid gases. This means that PNTL is not reliant on specialist emergency assistance being available from countries adjacent to shipping routes.

The ships have been designed to travel non-stop between Europe and Japan, they are routed away from areas of international instability and do not travel through seas that are considered vulnerable to acts of piracy.

PNTL ships have a satellite weather routing system and also use professional shore-based maritime services that provide up to the minute local meteorological data. Together with prudent voyage scheduling procedures, these systems enable the ships to follow the safest routes and avoid severe weather patterns.

While at sea, PNTL ships maintain a communications link with a report centre that is manned 24 hours a day. This voyage monitoring system automatically reports the vessel's latitude and longitude, speed and heading every two hours. If a message is not received by the report centre within a pre-determined time, PNTL's emergency response system is automatically activated. This system is backed up with secondary systems such as satellite and radio telephones.

Transportation and nuclear experts in Europe are always available to provide technical support to the ships and, in line with International Atomic Energy Agency (IAEA) recommendations a fully trained and equipped team of nuclear experts is available on a 24-hour emergency standby system. In the event of an emergency, this team would be dispatched to the ship and would direct and manage all remedial operations.

D. Information relating to salvage

The following can be found on PNTL factsheets:

PNTL contracts with the world's most experienced international salvage experts, who have operations in all regions of the globe. They are able to respond quickly to all requests for assistance and have successfully recovered large vessels from the seabed. Special monitors in the holds of each PNTL ship would provide information about the status of the cargo to a salvage team.

E. General Information relating to typical nuclear materials carried

From the PNTL website:

The first engineered barrier is the material itself, which is usually used nuclear fuel, vitrified waste or MOX fuel.

Used nuclear fuel and newly manufactured MOX fuel comprise of solid pellets contained within sealed, corrosion-resistant metal fuel rods. They are designed to withstand the extreme heat and pressures of a nuclear reactor. In turn, the fuel rods are loaded into assemblies.

High level nuclear waste is transformed from a liquid into a solid by mixing it with borosilicate glass – vitrifying it. The vitrified waste is solid, stable and passive, making it ideal for transportation and long-term storage.

Each material, if exposed to seawater, would maintain its integrity over long periods. None would dissolve readily – they would physically behave in much the same way as a marble in a glass of water.

In other words, if this material were somehow to become exposed to seawater, even though it is highly radioactive, the environmental impact would be negligible.

Environmental impact assessments have calculated that the maximum radiation exposure to the public in such a scenario would be more than one thousand times smaller than radiation levels found naturally in the environment.

Transport of Radioactive Materials: Government-to-Government Communications

The Coastal states position

Goal is improved arrangements that serve the interests of Shipping and Coastal states.

Concerns and interests of Coastal states

Coastal states face threat of very substantial (but indeterminate) harm, compounded by perceived risk and consequent economic losses. Yet most derive no benefit from the transport of radioactive materials near their waters.¹

High political sensitivity/need for quick response and information

There continues to be great sensitivity around the sea shipment of hazardous radioactive materials, and this sensitivity is reinforced by awareness of the continuing possibility of accidents, however well one seeks to safeguard against them, and of the uncertainties around the extent of harm sustained when releases of radiation occur.

Given the transboundary effects which an incident involving the international maritime transport of radioactive materials may have, there is a clear mutual interest in Shipping states exchanging certain information in advance with concerned Coastal states about these shipments so that, if an incident should ever occur, each has sufficient information to be able to respond quickly, effectively and in a coordinated manner.

States need to be in a position to respond immediately to the issue at hand and to allay public concerns. Any inability on their part to respond would risk exacerbating fears about the nature and scale of the accident and the risks posed, thereby accentuating the potential of economic effects or losses being sustained.

Coastal states can come under substantial political pressure for assurance that the health, environmental, economic and other interests of its citizens will not be harmed by any accident or incident involving the transportation of radioactive materials close to their waters.

Coastal states seek to cooperate with others to:

- prevent and control activities close to their waters;
- prevent any transboundary environmental harm.

¹ In this paper, references to the waters of a Coastal state as “their waters” are intended to encompass both the waters of the Coastal state’s EEZ and the waters of its territorial sea, recognising that a Coastal state has an interest in the prevention of pollution of such waters.

This can be addressed by identifying key information the sharing of which, both in advance and following an accident or incident, will help them to respond to the concerns of its citizens.

This should cover all shipments that might pass in proximity to the waters of a Coastal state and include having lines of communication and information provided in advance. Key information should include emergency response preparedness information shared in advance so that Coastal states are well informed in the event of an incident about the steps that will be triggered.

Coastal states can then respond in a reassuring and timely way to their publics and – while noting the primary responsibility rests on the Shipping state or Operator – where necessary coordinate closely with a Shipping state or Operator who is rescuing people and containing damage/risk.

Such a prompt response would serve the interests of both the Shipping and Coastal states.

Safety and security concerns should be taken into account in relation to the sharing of particular information, recognising that arrangements around such sharing should be consistent with the measures for the physical protection and safety required for the maritime transport of radioactive materials.

Given the safety and security considerations associated with the transportation of such materials and the sensitivity of some of the information being shared, it should primarily cover government-to-government exchange of information.

Coastal states also note that information supplied by the Shipping states to individual Coastal states as part of advance information exchange would be subject to appropriate protection and confidentiality.

The importance of maximising transparency should also be recognised in order to nurture public understanding of, and greater confidence in, the safety and security arrangements in place for the transportation of these materials and to avoid the development of misperceptions around the levels of risk involved in the event of an accident or incident.

Ultimately the information exchanged should aim to serve the interests of both the Shipping state and any affected Coastal state.

Other Areas of Current Information Exchange

There are certain existing information exchange commitments in place for the transboundary movement of hazardous wastes under the following conventions:

- non-radioactive hazardous wastes – Basel convention
- radioactive waste – IAEA Code of Practice on International Transboundary Movement of Radioactive Waste

- Spent fuel and radioactive waste – Joint Convention of Safety of Spent Fuel Management and Safety of Radioactive Waste Management.

Under these particular conventions, these take the form of prior notification and consent requirements. Shipping states are also expected to take account of the relevant points in the IAEA Action Plan on Nuclear Safety.

Information to be provided

In the paper presented by the 'Shipping states' at the Second Meeting of the Working Group on Best Practice Guidelines for Government-to-Government communication a number of requests were made for the "*potential needs for additional information or communication*" from the Coastal states. The Coastal states group has met informally and provides the following as an example of additional information or communication, the exchange of which would serve the mutual interests of both Coastal and Shipping states.²

The exchange of such information in advance of every shipment would enable Coastal states to be more confident that adequate safety arrangements and response plans are in place for any vessels carrying radioactive materials in proximity to their waters and thereby help them to reassure the public of such adequacy should an incident ever arise.

Subject	Information to be provided
<i>Timeframe for provision of information on a specific shipment</i>	Advance information on a specific shipment should be provided in a demarche from the Shipping state to the relevant Coastal state 10 working days ahead of the estimated departure of the vessel. An Operator's Press Release providing information to the public on a specific shipment should be issued shortly (1-2 days) ahead of the departure of the vessel.
<i>Name of Vessel</i>	Name/s of vessel/s should be provided in demarche ahead of departure. Name/s of vessel/s departing should be included in Operator's Press Release before departure.
<i>Date of departure</i>	Date of departure should be provided in demarche ahead of departure and included in Operator's Press Release

² Information supplied by the Shipping states to individual Coastal states as part of advance information exchange would be subject to appropriate protection and confidentiality.

	before departure.
<i>Port of Departure</i>	Port of departure should be provided in demarche ahead of departure. Port of departure should be included in Operator's Press Release before departure.
<i>Planned route</i>	Planned route should be provided in demarche ahead of departure and included in Operator's Press Release issued shortly before departure.
<i>Final destination</i>	Final destination should be provided in demarche ahead of departure and included in Operator's Press Release issued shortly before departure.
<i>Dates and estimated timing and duration of passage in proximity to the waters of a Coastal state</i>	While acknowledging security principles Shipping states should advise when vessel/s are approaching the waters of the Coastal state and to indicate the approximate duration of the trip past those waters.
<i>Date of arrival at destination</i>	<p>Approximate arrival date should be provided in demarche ahead of departure.</p> <p>This should be supplemented by the inclusion of this information in the Operator's Press Release issued shortly before departure of the vessel/s.</p>
<i>Type of Vessel</i>	Should include activity and Transport Index and be provided in demarche.
<i>General description of radioactive cargo</i>	Description at high level, e.g. HLW, MOX etc, to be provided in demarche.
<i>Type and volume of cargo and number of flasks</i>	<p>In reference to the above, this information should be consistently provided in the demarche and should include:</p> <ul style="list-style-type: none"> ○ nature of the cargo; ○ number of casks and canisters;

	<ul style="list-style-type: none"> ○ packaging.
<i>Safety and Integrity standards of transport casks in an incident</i>	Provision of a concise summary of the key relevant standards, and assurance that the packaging used for a particular shipment complies with these, would be useful for us to be able to draw on in reassuring the public in the event of an incident.
<i>Competent Authority Certificate(s)</i>	Certificates of approval for package design.
<i>Coastal states want assurance vessels will not pass through their waters</i>	<p>Shipping states should informally advise that it is not proposed that the vessel/s would enter either the EEZ or territorial sea of a Coastal state.</p> <p>This practice should be affirmed by the Shipping states in relation to any regular, future shipments.</p>
<i>Details of vessel's shipboard emergency plans</i>	<p>Information about the safety and security features of the vessel/s and the casks and canisters containing the nuclear material being transported, as well as the on-board capabilities for dealing with fire or monitoring the release of radiation should be provided (<i>see below</i>).</p> <p>Information should also be provided about emergency plans should an incident of any kind actually occur (for example the shipboard Standard Operating Procedures governing such responses).</p> <p>While specific details may need to be protected for security, general knowledge of the steps which would be taken should be provided, including in the various emergency scenarios (e.g. fire, explosion, collision, grounding, sinking, terrorist attack) and the extent to which outside support might be looked for, when, in what form, and from whom (accompanying vessel, response team, Coastal state assistance). This should include approximate response times for the relevant Search and Rescue Region (SRR).</p> <p>Such information should be provided so Coastal states can be confident that adequate response plans are in place, assess any capabilities that might potentially be requested of the closest Coastal state(s) and can also reassure the</p>

	public of the likely adequacy of such plans in the event of an incident ever occurring.
<i>Details of emergency response procedures</i>	<p>As above. In addition, it is essential that information is exchanged on:</p> <ul style="list-style-type: none"> ○ key points of contact in the event of an incident (see below); ○ any capabilities that might potentially be requested of the closest Coastal state(s) which the Shipping states and Operator might incorporate into their planning; ○ this should include any emergency response plans or infrastructure a Coastal state might be advised to have in place in the event of an incident; ○ arrangements to be made if it had to seek access to a port en route.
<i>Details of contingency plan if vessel fails to communicate</i>	<p>This should form part of the emergency response procedures (as above).</p> <p>General knowledge of Shipping state/Operator intentions if this scenario were to arise, to link in with any responsibilities which the Coastal states may have for any search and rescue arrangements required if the vessel/s fail to communicate while in the states Search and Rescue Region (SRR).</p>
<i>Details of salvage company which has been retained and operational contingency (e.g. response times and equipment available)</i>	<p>Details of the salvage company which has been retained and of the operational capability which the Operator has in place e.g. its response time, the equipment which it could deploy, the expertise on call and the procedures in place for the rescue, salvage or recovery of the vessel and of any dislodged casks etc.</p> <p>If a vessel is in difficulties such that issues of salvage seem likely to arise (sinking, fire, collision etc), then early knowledge by Coastal states of the salvage arrangements being put in place or contemplated will be important to help respond to public interest/concern and/or potentially</p>

	coordinate with the Operator and/or salvage company.
<i>Information on clean up and liability for damage arising</i>	It is important to ensure that relevant Coastal state authorities are informed of the nature and extent of any possible harm to the environment and consulted in regard to any remedial action being contemplated so that they can provide input, assistance and communicate with the public as appropriate. Information on what steps might be taken on remedial action should also be provided ahead of any shipment so it can be considered for contingency planning purposes.
<i>Details of reporting procedures to Coastal states following an incident.</i>	Shipping states should provide advanced notice of details of reporting procedures should an incident occur so as to allow Coastal states to respond rapidly in the event of an incident by implementing appropriate communication plans to reassure the public.
<i>Points of contact</i>	Points of contact for coordination of arrangements related to any incident should be established in advance. This should include key contacts in the Shipping state (regulatory and consignor) and as necessary in the Coastal state.

Information which would be provided to Coastal states in the event of an incident (Note an initial report would be provided by the vessel to the nearest Coastal state as required by the INF code and Marpol and other obligations under the IAEA Safety Standards and Convention on Early Notification. Some of the information below would then be provided as the response developed.)

Subject	Information to be provided
<i>Timeframe for provision of information</i>	Without delay and to the fullest extent possible to the nearest Coastal state.
<i>Vessel/s particulars</i>	Name, IMO number, call sign, age of the vessel etc.
<i>Details of event</i>	Given the potentially high level of interest and concern, this description would need to be sufficient to provide a sense of

	<p>both the nature of the incident and, at that point, the assessed areas of potential risk (injury to crew, contamination, harm to environment).</p> <p>This should include:</p> <ul style="list-style-type: none"> ○ time, exact location, nature of accident; ○ cause and general characteristics of the radioactive release; ○ information on meteorological or hydrological conditions; ○ results of environmental monitoring; ○ other data essential for assessing the situation; ○ and, information which should be supplemented at appropriate intervals by further information on the development of the emergency situation.
<i>Vessel/s status</i>	<p>Sufficient information as to a vessel's status (hull integrity etc) would be needed to help a Coastal state understand the nature of the problem having to be dealt with in terms of potential risks to life, health and the environment.</p>
<i>Cargo status</i>	<p>As above (<i>under Vessel/s status</i>).</p> <p>Information would need to be provided as to any damage to cargo, including evidence of releases of radiation (including the Operator's own radiation readings) and for Coastal state (and/or independent – IEC) experts to be allowed access to monitor any releases (depending on the nature of the threat and the evidence of any releases of radiation).</p> <p>The information provided should also include the source term and timing to facilitate any necessary computer modelling.</p>
<i>Composition and timeframe of emergency response</i>	<p>Information should include how assistance required prior to arrival of any response team is to be provided.</p>

<i>Request for assistance from Coastal state</i>	Coastal states should be advised as to any assistance that may be sought of them including to the vessel and crew.
<i>Ongoing reporting</i>	Information should be supplemented at appropriate intervals by further information on the development of the emergency situation. This should continue to be provided without delay and to the fullest extent possible to the nearest Coastal state until the incident is resolved.

DISCUSSION DOCUMENT FOR COASTAL-SHIPPING STATES MEETING, 19 APRIL 2013

Review of the proposals of Coastal States for voluntary Gov-to-Gov communication on Transport of MOX Fuel and HLR wastes

N°	Coastal State Proposal	Comments	FR-JP-UK Position
1	Timeframe for provision of information on a specific shipment: <i>Advance information on a specific shipment should be provided in a demarche from the Shipping state to the relevant Coastal state 10 working days ahead of the estimated departure of the vessel. An Operator's Press Release providing information to the public on a specific shipment should be issued shortly (1-2 days) ahead of the departure of the vessel.</i>	Consignor/carrier/consignee generally issue press release but it is out of scope Gov-to Gov communication.	The timeframe « around 10 working days ahead of the estimated departure of the vessel » can be added for the voluntary Government to Government communication, on a confidential basis through bilateral contacts.
2	Name of Vessel: <i>Name/s of vessel/s should be provided in demarche ahead of departure.</i> <i>Name/s of vessel/s departing should be included in Operator's Press Release before departure.</i>	Included in the UK/JP/FR proposal	Type and name of vessel can be communicated before departure (Included in the UK/JP/FR paper), on a confidential basis through bilateral contacts
3	Date of departure: <i>Date of departure should be provided in demarche ahead of departure and included in Operator's Press Release before departure.</i>	Cf proposal in the UK/JP/FR paper	Indication that the transport will take place soon can be communicated before departure (Included in the UK/JP/FR paper), on a confidential basis through bilateral contacts
4	Port of Departure: <i>Port of departure should be provided in demarche ahead of departure. Port of departure should be included in Operator's Press Release before departure.</i>	Detailed information (port etc.) more than general geographical place are confidential for security reason	General geographical place of departure can be communicated before departure, on a confidential basis through bilateral contacts.
5	Planned route: <i>Planned route should be provided in demarche ahead of departure and included in Operator's Press Release issued shortly before departure.</i>	Cf proposal in the UK/JP/FR paper	Approximate route that the ship is expected to follow can be communicated on a confidential basis through bilateral contacts before departure
6	Final destination: <i>Final destination should be provided in demarche ahead of departure and included in Operator's Press Release issued shortly before departure.</i>	More detailed information (port etc.) than General geographical destination are confidential for security reason – We see more over no interest for Coastal States to get them	General geographical destination can be communicated before departure, for example “a northern European port”, on a confidential basis through bilateral contacts
7	Dates and estimated timing and duration of passage in proximity to the waters of a Coastal state: <i>While acknowledging security principles Shipping states should advise when vessel/s are approaching the waters of the Coastal state and to indicate the approximate duration of the trip past those waters.</i>	Cf proposal in the UK/JP/FR paper	Approximated route of transport can be communicated before departure, on a confidential basis through bilateral contacts
8	Date of arrival at destination: <i>Approximate arrival date should be provided in demarche ahead of departure.</i> <i>This should be supplemented by the inclusion of this information in the Operator's Press Release issued shortly before departure of the vessel/s.</i>	Cf proposal in the UK/JP/FR paper	Approximated date of arrival can be communicated openly after departure
9	Type of Vessel: <i>Should include activity and Transport Index and be provided in demarche.</i>	Total activity and total transport index for the vessel is of security concern, particularly for	Type and name of vessel can be communicated before departure, on a

		MOX Fuel	confidential basis through bilateral contacts
10	General description of radioactive cargo : <i>Description at high level, e.g. HLW, MOX etc, to be provided in demarche.</i>		Type of material transported (MOX, HLW) can be communicated before departure, on a confidential basis through bilateral contacts
11	Type and volume of cargo and number of flasks: <i>In reference to the above, this information should be consistently provided in the demarche and should include: o nature of the cargo; o number of casks and canisters; o packaging.</i>	The number of packages is of security concern, particularly for MOX Fuel	Nature of the cargo and type of packages used can be communicated before departure, on a confidential basis through bilateral contacts
12	Safety and Integrity standards of transport casks in an incident: <i>Provision of a concise summary of the key relevant standards, and assurance that the packaging used for a particular shipment complies with these, would be useful for us to be able to draw on in reassuring the public in the event of an incident.</i>	All transports shall comply with well-known international regulation. See proposal to improve the public information on this regulation through a dedicated website on the regulation of transports of radioactive material.	No need for specific information to communicate to Government
13	Competent Authority Certificate(s): <i>Certificates of approval for package design.</i>	Content of the Certificate can contains some industrial confidential information and they contain no information, which are useful in routine for Coastal States.	Information on the competent authorities which have delivered the Certificates can be provided before the transport, on a confidential basis through bilateral contacts
14	Coastal states want assurance vessels will not pass through their waters: <i>Shipping states should informally advise that it is not proposed that the vessel/s would enter either the EEZ or territorial sea of a Coastal state. This practice should be affirmed by the Shipping states in relation to any regular, future shipments.</i>	This request is in contradiction with UNCLOS Convention. It can moreover not be a good practice. For instance, it can be necessary to evacuate a sick or injured seaman per helicopter. In such a case, it might be necessary to enter an EEZ, and the Coastal State would have the duty to render assistance through SOLAS Convention.	The request cannot be accepted since it is in contradiction with UNCLOS Convention.

15	<p>Details of vessel's shipboard emergency plans: Information about the safety and security features of the vessel/s and the casks and canisters containing the nuclear material being transported, as well as the on-board capabilities for dealing with fire or monitoring the release of radiation should be provided (see below). Information should also be provided about emergency plans should an incident of any kind actually occur (for example the shipboard Standard Operating Procedures governing such responses). While specific details may need to be protected for security, general knowledge of the steps which would be taken should be provided, including in the various emergency scenarios (e.g. fire, explosion, collision, grounding, sinking, terrorist attack) and the extent to which outside support might be looked for, when, in what form, and from whom (accompanying vessel, response team, Coastal state assistance). This should include approximate response times for the relevant Search and Rescue Region (SRR). Such information should be provided so Coastal states can be confident that adequate response plans are in place, assess any capabilities that might potentially be requested of the closest Coastal state(s) and can also reassure the public of the likely adequacy of such plans in the event of an incident ever occurring.</p>	<p>Emergency issues for vessels carrying dangerous goods have to be discussed under the auspices of the IMO.</p> <p>Emergency plans are elaborated according to the international regulation. All the details can be found in the IMO regulation on INF transports and its related "Guidelines for developing shipboard emergency plans for ships carrying materials subject to the INF Code". Cf proposal to improve public information on this regulation through the development by the IAEA of a website on the regulation of transports of radioactive material.</p> <p>No need for specific Gov-to-Gov information on a particular transport.</p>
16	<p>Details of emergency response procedures: As above. In addition, it is essential that information is exchanged on: o key points of contact in the event of an incident (see below); o any capabilities that might potentially be requested of the closest Coastal state(s) which the Shipping states and Operator might incorporate into their planning; o this should include any emergency response plans or infrastructure a Coastal state might be advised to have in place in the event of an incident; o arrangements to be made if it had to seek access to a port en route.</p>	<p>Emergency issues for vessels carrying dangerous goods have to be discussed under the auspices of the IMO.</p> <p>The PNTL Safety In Depth system provides much greater protection than typically exists for much more common shipments of hazardous cargo, such as chemicals, oil and liquid gases. This means that PNTL is not reliant on specialist emergency assistance being available from countries adjacent to shipping routes.</p> <p>No need for specific Gov-to-Gov information on a particular transport.</p>
17	<p>Details of contingency plan if vessel fails to communicate: This should form part of the emergency response procedures (as above). General knowledge of Shipping state/Operator intentions if this scenario were to arise, to link in with any responsibilities which the Coastal states may have for any search and rescue arrangements required if the vessel/s fail to communicate while in the states Search and Rescue Region (SRR).</p>	<p>Emergency issues for vessels carrying dangerous goods have to be discussed under the auspices of the IMO.</p> <p>While at sea, PNTL ships maintain a communications link with a report centre that is manned 24 hours a day. This voyage monitoring system automatically reports the vessel's latitude and longitude, speed and heading every two hours. If a message is not received by the report centre within a pre-determined time, PNTL's emergency response system is automatically activated. This system is backed up with secondary systems such as satellite and radio telephones. Transportation and nuclear experts in Europe are always available to provide technical support to the ships and, in line with International Atomic Energy Agency (IAEA) recommendations a fully trained and equipped team of nuclear experts is available on a 24-hour emergency standby system. In the event of an emergency, this team would be dispatched to the ship and would direct and manage all remedial operations.</p> <p>No need for specific Gov-to-Gov information on a particular transport.</p>

18	<p>Details of salvage company which has been retained and operational contingency (e.g. response times and equipment available): <i>Details of the salvage company which has been retained and of the operational capability which the Operator has in place e.g. its response time, the equipment which it could deploy, the expertise on call and the procedures in place for the rescue, salvage or recovery of the vessel and of any dislodged casks etc. If a vessel is in difficulties such that issues of salvage seem likely to arise (sinking, fire, collision etc), then early knowledge by Coastal states of the salvage arrangements being put in place or contemplated will be important to help respond to public interest/concern and/or potentially coordinate with the Operator and/or salvage company.</i></p>	<p>Emergency issues for vessels carrying dangerous goods have to be discussed under the auspices of the IMO.</p> <p>PNTL contracts with the world's most experienced international salvage experts, Svitzer, which has operations in all regions of the globe and is able to respond quickly to requests for assistance. In the event of an actual salvage situation, PNTL may take salvage assistance from any other appropriate salvor, in consultation with Svitzer.</p> <p>Svitzer has successfully recovered large vessels from the seabed. Each PNTL ship is equipped with a sonar location system capable of operating in up to 10,000 metres of water. Special monitors in the holds are able to provide information to a salvage team about the position of the ship, its depth and the status of the cargo.</p> <p>PNTL holds several training exercises each year to test its emergency response procedures, the communication systems, the expertise of team members and the ships' crews and the performance of equipment.</p> <p>No need for specific Gov-to-Gov information on a particular transport.</p>
19	<p>Information on clean up and liability for damage arising: <i>It is important to ensure that relevant Coastal state authorities are informed of the nature and extent of any possible harm to the environment and consulted in regard to any remedial action being contemplated so that they can provide input, assistance and communicate with the public as appropriate. Information on what steps might be taken on remedial action should also be provided ahead of any shipment so it can be considered for contingency planning purposes.</i></p>	<p>In France, Japan and UK, the liability of operator for nuclear damage shall be strict and exclusive.</p> <p>No need for specific Gov-to-Gov information on a particular transport.</p>
20	<p>Details of reporting procedures to Coastal states following an incident : <i>Shipping states should provide advanced notice of details of reporting procedures should an incident occur so as to allow Coastal states to respond rapidly in the event of an incident by implementing appropriate communication plans to reassure the public.</i></p>	<p>Emergency issues for vessels carrying dangerous goods have to be discussed under the auspices of the IMO.</p> <p>IMO regulations, specifically IMDG and INF codes, contain requirements to report incidents to the nearest coastal States. This is therefore a matter for the IMO</p> <p>Concerning voluntary information sharing, cf. French proposal n°7: "we are committed to work along with the IAEA to the establishment and maintenance of a database of relevant industries' and Governments' points of contacts in case of any event in the field of transport of radioactive material. The IAEA could also develop an electronic form under the USIE website to help voluntarily circulating information on transport events, which could be used in case of serious incident or accident as well as minor event, to help all Governments answering to press inquiries on a factual basis." The existing database of contacts created for Denials of shipments can be used as a first basis.</p> <p>No need for specific Gov-to-Gov information on a particular transport.</p>
21	<p>Points of contact: <i>Points of contact for coordination of arrangements related to any incident should be established in advance. This should include key contacts in the Shipping state (regulatory and consignor) and as necessary in the Coastal state.</i></p>	<p>One point of contact for the transport, designed by the Government, can be communicated.</p>

IN THE EVENT OF AN ACCIDENT

22	<p>Timeframe for provision of information: Without delay and to the fullest extent possible to the nearest Coastal state.</p>	<p>Emergency issues for vessels carrying dangerous goods have to be discussed under the auspices of the IMO.</p> <p>Already covered by the IMO “Guidelines for developing shipboard emergency plans for ships carrying materials subject to the INF Code”, 2.3 :“Paragraphs 29 and 30 of the INF Code provide that the nearest coastal State should be notified of an actual or probable release. The intent of this provision is to ensure that coastal States are informed without delay of any incident giving rise to pollution, or threat of pollution, of the marine environment, or in the event of damage, failure or breakdown of a ship carrying INF Code materials, so that appropriate action may be taken.”</p> <p>& 2.12 "In order to expedite response and minimize damage from an incident involving INF Code material, it is essential that the nearest coastal States be notified without delay."</p>
23	<p>Vessel/s particulars: Name, IMO number, call sign, age of the vessel etc.</p>	<p>Emergency issues for vessels carrying dangerous goods have to be discussed under the auspices of the IMO.</p> <p>Name of the vessel is communicated before departure.</p>
24	<p>Details of event: Given the potentially high level of interest and concern, this description would need to be sufficient to provide a sense of both the nature of the incident and, at that point, the assessed areas of potential risk (injury to crew, contamination, harm to environment). This should include: o time, exact location, nature of accident; o cause and general characteristics of the radioactive release; o information on meteorological or hydrological conditions; o results of environmental monitoring; o other data essential for assessing the situation; o and, information which should be supplemented at appropriate intervals by further information on the development of the emergency situation.</p>	<p>Emergency issues for vessels carrying dangerous goods have to be discussed under the auspices of the IMO.</p> <p>Already covered by the IMO “Guidelines for developing shipboard emergency plans for ships carrying materials subject to the INF Code”, 2.3 to 2,9</p>
25	<p>Vessel/s status: Sufficient information as to a vessel’s status (hull integrity etc) would be needed to help a Coastal state understand the nature of the problem having to be dealt with in terms of potential risks to life, health and the environment.</p>	<p>Emergency issues for vessels carrying dangerous goods have to be discussed under the auspices of the IMO.</p> <p>Already covered by the IMO “Guidelines for developing shipboard emergency plans for ships carrying materials subject to the INF Code”, 2.3 to 2,9</p>

26	<p>Cargo status: <i>As above (under Vessel/s status). Information would need to be provided as to any damage to cargo, including evidence of releases of radiation (including the Operator’s own radiation readings) and for Coastal state (and/or independent – IEC) experts to be allowed access to monitor any releases (depending on the nature of the threat and the evidence of any releases of radiation). The information provided should also include the source term and timing to facilitate any necessary computer modelling.</i></p>	<p><i>Emergency issues for vessels carrying dangerous goods have to be discussed under the auspices of the IMO.</i></p> <p>Already covered by the IMO “Guidelines for developing shipboard emergency plans for ships carrying materials subject to the INF Code”, 2.3 to 2.9</p>
27	<p>Composition and timeframe of emergency response: <i>Information should include how assistance required prior to arrival of any response team is to be provided.</i></p>	<p><i>Emergency issues for vessels carrying dangerous goods have to be discussed under the auspices of the IMO</i></p> <p>Already covered by IMO “Guidelines for developing shipboard emergency plans for ships carrying materials subject to the INF Code” 2.22 to 2.25</p>
28	<p>Request for assistance from Coastal state: <i>Coastal states should be advised as to any assistance that may be sought of them including to the vessel and crew.</i></p>	<p><i>Emergency issues for vessels carrying dangerous goods have to be discussed under the auspices of the IMO.</i></p>
29	<p>Ongoing reporting: <i>Information should be supplemented at appropriate intervals by further information on the development of the emergency situation. This should continue to be provided without delay and to the fullest extent possible to the nearest Coastal state until the incident is resolved.</i></p>	<p>Emergency issues for vessels carrying dangerous goods have to be discussed under the auspices of the IMO</p> <p>Cf the IMO “Guidelines for developing shipboard emergency plans for ships carrying materials subject to the INF Code”</p>