Subject

Initial Survey for MARPOL 73/78 ANNEX VI（Regulations for the prevention of air pollution from ships）

ClassNK
Technical Information

No. TEC-0627
Date 20 April 2005

To whom it may concern

An outline of MARPOL ANNEX VI has already been provided in ClassNK Technical Information No. TEC-0620 issued on 3 February 2005.
This ClassNK Technical Information provides details on the procedures for Initial surveys for ANNEX VI.

1. Terminology
   The following definitions for terminology will apply in this Technical Information.
   (1) "New ship" means a ship whose keel is laid, or which is at a similar stage of construction, on or after 19 May 2005.
   (2) "Existing ship" means a ship which is not a new ship.

2. Application
   All ships of 400 gross tons or above shall be subject to surveys irrespective of their year of construction, service area or kind. Notwithstanding the above, the Administration may allow reduction of a part of inspection items for ships solely engaged in domestic services.
   Initial surveys for new ships shall be completed at delivery.
   Initial survey for existing ships shall be completed no later than the completion date of first scheduled drydocking after 19 May 2005, but in no case later than 3 years after 19 May 2005.

3. Issuance of International Air Pollution Prevention Certificate (hereafter referred to as "IAPP Certificate")
   An IAPP Certificate shall be issued after satisfying the requirements of Initial survey, for any ship of 400 gross tons or above engaged in international voyages irrespective of its year of construction.

4. Status of the ratification and authorization given to ClassNK
   (1) Status of ratification by Flag Administrations
   The latest information is available from the following web site of the IMO:
   http://www.imo.org/Conventions/mainframe.asp?topic_id=248
   (2) Flag Authorizations which have delegated the authorization to ClassNK（at the date of 15 April 2005）
   (i) IAPP Certificate and EIAPP Certificate
   (a) Flag Administrations which have ratified Annex VI of MARPOL 73/78

(To be continued)

(ClassNK is to carry out surveys and issue the Statutory Certificate on behalf of these Administrations.)
Bahamas, Bangladesh, Barbados, Cayman Island, Denmark, Greece, Isle of Man*, Liberia, Marshall Island, Panama, Singapore, United Kingdom, Vanuatu
* ClassNK can issue only short term Certificate for IAPP Certificate.

(b) Flag Administrations which have not ratified Annex VI of MARPOL 73/78
(ClassNK is to carry out surveys and issue a Document of Compliance on behalf of the Administrations.)
Antigua and Barbuda, Australia, Bahrain, Brunei, Cape Verde, Dominica, Hong Kong, Israel, Jamaica, Kiribati, Kuwait, Luxembourg, Malta, Mauritius, Myanmar, Papua New Guinea, Philippines, Qatar, Seychelles, St. Vincent and the Grenadines, Tuvalu, United Arab Emirates

(ii) EIAPP Certificate only

(a) Flag Administrations which have ratified Annex VI of MARPOL 73/78
(ClassNK is to carry out surveys and issue the Statutory Certificate on behalf of the Administrations.)
Cyprus, Japan

(b) Flag Administrations which have not ratified Annex VI of MARPOL 73/78
(ClassNK is to carry out surveys and issue a Document of Compliance on behalf of the Administrations.)
Aruba, Belize, India, Netherlands, Netherlands Antilles

ClassNK can issue a Statement of Compliance on a voluntary basis for ships whose flag Administrations have not ratified ANNEX VI and have not delegated authorization to the Society to issue a Document of Compliance. Please ask service sites according to the procedure given in section 8 of this Technical Information.

5. Survey

(1) Ozone depleting substances

New installations which contain ozone depleting substances shall be prohibited on or after 19 May 2005, except that new installations containing HCFCs are permitted until 1 January 2020. Systems or equipment etc. containing ozone depleting substances that are installed before 19 May 2005 can remain installed. In addition, repair or recharge of already installed systems or equipments etc. is permitted.

Installation conditions of ozone depleting substances onboard ships will be checked at Initial survey. The kind, quantity, location and installation date of ozone depleting substances will be confirmed according to the name plates of systems or equipment etc.

Systems or equipment etc. containing ozone depleting substances that were installed before 19 May 2005 can remain installed. In addition, repair or recharge of already installed systems or equipments etc. is permitted.

(To be continued)

"Ozone depleting substances" defined in ANNEX VI originated in Annexes A, B, C and E to the Montreal Protocol 1987, and the production of them had already been prohibited sequentially after adoption of the Protocol. Therefore, at the present time, new installations may basically be in compliance with ANNEX VI.

For your information, the basic uses of ozone depleting substances are shown below and the kinds of ozone depleting substances are listed in attachment 1.

(i) Halons: Fire extinguishers etc.
(ii) CFCs: Refrigerant for refrigerators, freezers or air-conditioners
(iii) HCFCs: Refrigerant for refrigerators, freezers or air-conditioners
(iv) HBFCs: Fire extinguishers etc.

(2) Nitrogen oxides (NOx)

Diesel engines (excluding engines to be used solely in case of emergency) with a power output of more than 130kW which are installed on a ship constructed on or after 1 January 2000, or which undergo a major conversion on or after 1 January 2000 are subjected to Surveys. Basically, every engine shall have its NOx emissions measured and pre-certified, and an EIAPP Certificate or a Statement of Compliance "STATEMENT OF COMPLIANCE FOR ENGINE AIR POLLUTION PREVENTION" shall be issued to the engine before the engine is installed on board a ship. In cases where on-board diesel engines do not have an EIAPP Certificate nor the Statement of Compliance, please confirm with the engine manufacturer and contact ClassNK Machinery Department promptly.

At Initial survey, it is to be confirmed that the EIAPP Certificate (or Statement of Compliance) and Technical file are retained on board ships, and it is also to be confirmed that the NOx emissions remain within the limits (on-board NOx verification), in accordance with the procedures described in the approved Technical file, after adjustment of injection timing etc. which are generally conducted on board ships.

For on-board NOx verification, engine parameter check method and simplified measurement method etc. are available. In the parameter check method, the Engine parameter record book which contains records of change or adjustment of NOx critical components is to be checked and confirmation of ID number of actual components etc. is to be carried out.

Therefore, at Initial survey, please prepare the EIAPP Certificate (or Statement of Compliance), Technical file and Engine parameter record book for the relevant engines. When carrying out the parameter check method, to confirm ID numbers around combustion chamber, an open up inspection may be required.

In addition, at present, adoption of a simplified measurement method has not been implemented for ClassNK ships because of difficulties in its measurement procedure.

(To be continued)

(3) Sulphur oxides (SOx)

For any bunkering on or after 19 May 2005, the sulphur content of fuel oil is required not to exceed 4.5%m/m.

It is to be confirmed from the bunker delivery note that the sulphur content of fuel oil is within the limit, and is also to be ensured that bunker delivery notes and the corresponding fuel oil samples (more than 400*ml*) are retained on board ships for more than 3 years and for more than 12 months respectively. For your information, guidelines for sampling and storage of fuel oil are provided in IMO MEPC Resolution 96(47).

While ships are within designated SOx Emission Control Areas, it is required that the sulphur content of any fuel oil used on board ships shall not exceed 1.5%m/m, or otherwise an SOx reducing device must be applied to reduce the total emission of sulphur oxides from the ship to 6.0g/kWh or less. In the former case, installations for fuel oil changeover and a log-book by which fuel oil changeover prior to entry into a SOx Emission Control Area can be proven are required. At the present time, the Baltic Sea area (application starts on 19 May 2006) and North Sea area (application is scheduled to start on November 2007) are designated as SOx Emission Control Areas by IMO.

Bunker delivery notes are to be written in English, French or Spanish and shall contain the following items:

(i) Name and IMO Number of the receiving ship
(ii) Port
(iii) Date of commencement of delivery
(iv) Name, address and telephone number of the fuel oil supplier
(v) Product name(s)
(vi) Quantity in metric tons
(vii) Density at 15°C (kg/m3) derived from the test in accordance with ISO 3675
(viii) Sulphur content (% by mass) derived from the test in accordance with ISO 8754
(ix) A declaration signed and certified by the fuel oil supplier's representative that the fuel oil supplied is in conformity with requirements of ANNEX VI.

Bottles of fuel oil sample are to be sealed and the following information shall be labelled on them.

(i) Location at which, and the method by which, the sample was drawn
(ii) Date of commencement of delivery
(iii) Name of the bunker tanker / bunker installation
(iv) Name and IMO Number of the receiving ship
(v) Signatures and name of the supplier's representative and the ship's representative
(vi) Details of seal identification
(vii) Bunker grade

(4) Volatile organic compounds (VOCs)

Any emission of VOCs from tankers at designated ports or terminals under the jurisdiction of a contracting party is prohibited by ANNEX VI.

(To be continued)

At the present time, no port or terminal is designated as a place where VOCs are regulated. In the case where a port or a terminal is designated, the controls comes into effect 6 months after the designation and the ports or terminals may accept existing tankers which are not fitted with vapour collecting system.

In cases where a vapour collection system is equipped, plan review is to be carried out to confirm that the system is in accordance with the provisions of IMO MSC/Circ. 585, and it is to be ensured that the system is in good working order. In addition, it is to be confirmed that the operation manual is retained on board ships.

(5) Shipboard incinerator

Incinerators installed on or after 1 January 2000 are required to comply with IMO MEPC Resolution 76(40). As for the application, please refer to ClassNK Technical Information No. TEC-0592. Furthermore, as for "Maximum shock-cooled flue gas temperature" stated in the same Technical Information, the maximum shock-cooled flue gas temperature of 350℃ may be acceptable for an incinerator installed on Japanese flagged ship also. The following items are to be confirmed for the relevant incinerators:

(i) Confirmation of Type approval certificate etc.

(ii) Certificate issued by ClassNK, The Ship Equipment Inspection Society of Japan (HK), Japanese Government (JG) or Flag Administration should be confirmed.

(iii) Confirmation of Product verification

(iv) Product verification certificate issued by ClassNK, HK or JG, or test record prepared by the manufacturer should be confirmed. In cases where such certificates or test records are not available on board, the confirmation/tests of items (1) through (6) listed in the attached table should be carried out.

(v) Confirmation of Installation examination

(vi) An installation examination certificate issued by ClassNK should be confirmed. It should be confirmed that the incinerator is in good order and the items (1) through (3) listed in the attached table are satisfactory.

(vii) In cases where such a certificate is not available on board, the confirmation/tests of items (1) through (6) listed in the attached table should be carried out.

(viii) Confirmation of documents

(ix) A complete set of instructions and maintenance manual with drawings, electric diagram, spare lists, etc., should be confirmed.

(x) A Manufacturer's certificate that an incinerator has been constructed in accordance with IMO MEPC Resolution 76(40) should be confirmed (by letter, certificate, or instruction manual).

6. Certificates and other documents which are to be prepared at Initial survey

It is to be ensured that the following Certificates etc. are retained on board the ship, and are appropriate.

(1) Bunker delivery notes (for any bunkering on or after 19 May 2005)

(2) EIAPP Certificate or equivalent Statement of Compliance (when the requirements for NOx are applied)

(3) Technical file (when the requirements for NOx are applied)

(To be continued)

(4) Record book of engine parameters (when the requirements for NOx are applied and Parameter check method is adopted)
(5) Log book (when the requirements for fuel oil with the sulphur contents of less than 1.5%m/m are applied)
(6) Operation manual for vapour collection system (when the requirements for VOCs are applied)
(7) Operation manual for shipboard incinerator (when the requirements for onboard incinerator are applied)
(8) Type approval certificate etc. for shipboard incinerator (when the requirements for onboard incinerator are applied)
(9) Manufacturer's certificate that an incinerator has been constructed in accordance with IMO MEPC Resolution 76(40) (when the requirements for onboard incinerator are applied)
(10) Product verification certificate for shipboard incinerator (when possessed)
(11) Installation examination certificate for shipboard incinerator (when possessed)

7. Application for Initial survey
(1) Ships under construction
Please send an "Application for Classification and Statutory Services during Construction (Form 1A)" to service sites upon ticking the box for "Air Pollution Prevention Certificate" for "International Convention Certificates" and "Issuance of Certificates" on Form 1A-ATT1. For the existing ships which will be delivered on or after 19 May 2005, ClassNK will issue the statutory certificates. Please request service sites accordingly.
(2) Ships in service
Please send an "Application for Surveys and Issue of Certificate (Form 2A)" to service sites upon ticking in the box "Initial" for "Marine Pollution Prevention Installation [MARPOL VI]" in "1.(2) Survey for maintenance of Installation Registration" and ticking in the left box of "APP certificate" in "3. Certificate to be issued".

In addition, at Initial survey, in cases where diesel engines installed on the relevant ship have a Statement of Compliance equivalent to EIAPP Certificate "STATEMENT OF COMPLIANCE FOR ENGINE AIR POLLUTION PREVENTION", please make an application for replacement of the Statement of Compliance with an EIAPP Certificate at the same time.
The latest application form is available from the following web site:
http://www.classnk.or.jp/hp/download/dl_appli.asp

8. Application for issuance of a Statement of Compliance
As for issuance of a "STATEMENT OF COMPLIANCE FOR AIR POLLUTION PREVENTION" which is equivalent to IAPP Certificate, please send a prescribed application form to service sites in the same way as in case of issuance of IAPP Certificate shown in above 7.
The latest application form is available from the following web site:
http://www.classnk.or.jp/hp/download/dl_appli.asp

(To be continued)

ClassNK has amended the Rules “Rules/Guidance for Marine Pollution Prevention Systems”. The amendment can be referred to at the following web site. Please make a reference to it.
http://www.classnk.or.jp/hp/Rules_Guidance/amendments/e-Amendments/05.03.01/MarinePollution_E.pdf

For any questions about the above, please contact:

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Attachment:

1. Kinds of Ozone Depleting Substances
2. Confirmation/Test items for Shipboard Incinerator

Attachment 1. to
ClassNK Technical Information No. TEC-0627

Kinds of Ozone Depleting Substances

Kind	Refrigerant No.	Substance	Name
Halons		Halon-1211	Bromochlorodifluoromethane
		Halon-1301	Bromotrifluoromethane
		Halon-2402	Dibromotetrafluoromethane
CFCs	R11	CFC-11	Trichlorofluoromethane
Chlorofluorocarbons	R12	CFC-12	Dichlorodifluoromethane
	R113	CFC-113	Trichlorotrifluoroethane
	R114	CFC-114	Dichlorotetrafluoroethane
	R115	CFC-115	Chloropentafluoroethane
	R13	CFC-13	Chlorotrifluoromethane
		CFC-111	Pentachlorofluoroethane
		CFC-112	tetrachlorodifluoroethane
		CFC-211	Heptachlorofluoropropane
		CFC-212	Hexachlorodifluoropropane
		CFC-213	Pentachlorotrifluoropropane
		CFC-214	Tetrachlorotetrafluoropropane
		CFC-215	Trichloropentafluoropropane
		CFC-216	Dichlorohexafluoropropane
		CFC-217	Chloroheptafluoropropane
	R500	CFC12/HFC152a (73.8/26.2)	*Mixed (ratio)*
	R501	HCFC22/CFC12 (75/25)	*Mixed (ratio)*
	R502	HCFC22/CFC115 (48.8/51.2)	*Mixed (ratio)*
	R503	HFC23/CFC13 (40.1/59.9)	*Mixed (ratio)*
	R505	CFC12/HCFC31 (78/22)	*Mixed (ratio)*
	R506	HCFC31/CFC114 (55.1/44.9)	*Mixed (ratio)*
HCFCs		HCFC-21	Dichloromonofluoromethane
Hydro-Chlorofluorocarbons	R22	HCFC-22	Chlorodifluoromethane
		HCFC-31	Chlorofluoromethane
		HCFC-121	Tetrachlorodifluoroethane
		HCFC-122	Trichlorodifluoroethane
	R123	HCFC-123	Dichlorotrifluoroethane
	R124	HCFC-124	Chlorotetrafluoroethane
		HCFC-131	Trichlorofluoroethane
		HCFC-132	Dichlorodifluoroethane
		HCFC-133	Chlorotrifluoroethane
		HCFC-141	Dichlorofluoroethane
		HCFC-142	Chlorodifluoroethane
		HCFC-151	Chlorofluoroethane
		HCFC-221	Hexachlorofluoropropane
		HCFC-222	Pentachlorodifluoropropane

(To be continued)

Kinds of Ozone Depleting Substances (Continuance1)

Kind	Refrigerant No.	Substance	Name
HCFCs		HCFC-223	Tetrachlorotrifluoropropane
Hydro-Chlorofluorocarbons		HCFC-224	Trichlorotetrafluoropropane
		HCFC-225	Dichloropentafluoropropane
		HCFC-226	Chlorohexafluoropropane
		HCFC-231	Pentachlorofluoropropane
		HCFC-232	Tetrachlorodifluoropropane
		HCFC-233	Trichlorotrifluoropropane
		HCFC-234	Dichlorotetrafluoropropane
		HCFC-235	Chloropentafluoropropane
		HCFC-241	Tetrachlorofluoropropane
		HCFC-242	Trichlorodifluoropropane
		HCFC-243	Dichlorotrifluoropropane
		HCFC-244	Chlorotetrafluoropropane
		HCFC-251	Trichlorofluoropropane
		HCFC-252	Dichlorodifluoropropane
		HCFC-253	Chlorotrifluoropropane
		HCFC-261	Dichlorofluoropropane
		HCFC-262	Chlorodifluoropropane
		HCFC-271	Chlorofluoropropane
	R401A	HCFC22/HFC152a/HCFC124 (53/13/34)	*Mixed（ratio）*
	R402A	HCF125/HC290/HCFC22 (60/2/38)	*Mixed（ratio）*
	R403A	HC290/HCFC22/FC218 (5/75/20)	*Mixed（ratio）*
	R405A	HCFC22/HFC152a/HCFC142b/FCC318 (45/7/5.5/42.5)	*Mixed（ratio）*
	R406A	HCFC22/HC600a/HCFC142b (55/4/41)	*Mixed（ratio）*
	R408A	HFC125/HFC143a/HCFC22 (7/46/47)	*Mixed（ratio）*
	R409A	HCFC22/HCFC124/HCFC142b (60/25/15)	*Mixed（ratio）*
	R411A	HC1270/HCFC22/HFC152a (1.5/87.5/11)	*Mixed（ratio）*
	R412A	HCFC22/FC218/HCFC142b (70/5/25)	*Mixed（ratio）*
	R509A	HCFC22/FC218 (44/56)	*Mixed（ratio）*
HBFCs			Dibromofluoromethane
Hydro-Bromofluorocarbons	HBFC-22B1		Bromodifluoromethane
			Bromofluoromethane
			Tetrabromofluoroethane
			Tribromodifluoroethane
			Dibromotrifluoroethane
			Bromotetrafluoroethane
			Tribromofluoroethane
			Dibromodifluoroethane
			Bromotrifluoroethane

(To be continued)

Kinds of Ozone Depleting Substances (Continuance2)

Kind	Refrigerant No.	Substance Name
HBFCs Hydro-Bromofluorocarbons		Dibromofluoroethane Bromodifluoroethane Bromofluoroethane Hexabromofluoropropane Pentabromodifluoropropane Tetrabromotrifluoropropane Tribromotetrafluoropropane Dibromopentafluoropropane Bromohexafluoropropane Pentabromofluoropropane Tetrabromodifluoropropane Tribromotrifluoropropane Dibromotetrafluoropropane Bromopentafluoropropane Tetrabromofluoropropane Tribromodifluoropropane Dibromotrifluoropropane Bromotetrafluoropropane Tribromofluoropropane Dibromodifluoropropane Bromotrifluoropropane Dibromofluoropropane Bromodifluoropropane Bromofluoropropane
(Others)		Carbon Tetrachloride 1,1,1-trichloroethane Bromochloromethane Methyl Bromide

Attachment 2. to
ClassNK Technical Information No. TEC-0627

Confirmation/Test items for Shipboard Incinerator

Confirmation/Tests	Test methods
(1) External examination	
(2) Emergency stop switch	
(3) Drip tray	
(4) Operation test	
- Flame safeguard	Simulate flame failure and miss-ignition.
- Limit controls	1. Oil pressure limit control Reduce fuel oil pressure (Applies where pressure is important for the combustion process or a pump is not an integral part of burner.) 2. Others Operate the devices including other interlocking devices.
- Combustion controls	Operate the incinerator using the combustion controls.
- Programming controls	Operate the incinerator using the programming controls and measure the prepurge, ignition, postpurge and time of modulation with a stop watch.
- Fuel supply controls	Operate two series fuel control solenoid valves by simulation.
(5) Low voltage test	Reduce the supply voltage to incinerator.
(6) Switches	Operate all switches.