April 22 2011
(partially revised on August 3 2011)
〔Attachment 2〕

GUIDELINE FOR MEASUREMENT OF DOSE RATE FOR SHIPS IN PORT

Inspection and Measurement Division, Maritime Bureau

This guideline provides a method of measurement of dose equivalent rate (hereinafter referred to as "dose rate") for ships in port to be conducted by ship operators or third parties undertaking the measurement. Ship operators are requested to use this guideline as a reference in the conduct of the measurement in port.

1) Location
As a matter of principle, measurement should take place at berth or at places for anchoring. Places of measurement may be decided otherwise in consultation with parties concerned in a case where measurement in the aforementioned places is difficult.

2) Equipment
The equipment to be in use for the measurement should meet the following specifications:
Type: GM, scintillator, ionization chamber and semi-conductor survey meter;
Emitter: γ ray is to be detected;
Range for detection:
Energy range: 150 keV to 1.25 MeV for γ ray detection;
Measurement range: 0.1 μ Sv/ h to 10 μ Sv and wider for 1cm dose equivalent rate;
Accuracy: $\pm$20 % for ^{137}Cs;
Calibration: It should be clarified that proper calibration is implemented by the certificate of recognized organizations or their equivalent companies; inspection records by equipment supplier or photocopy of in-house inspection records. Annual calibration is to be desired.

It should be noted that some countries/regions have the criteria set by Bq/cm2 instead of μ Sv/h, whereby requiring cautious consideration in selection of the equipment.

3) Method
Dose rate should be measured at five points in total. The five points comprise one point for deck of the bow, two points in total for deck of both sides in the vicinity of mid-ship,

one point for deck of the stern, and one point in the vicinity of forecastle. Other points may be subject to measurement as a result of consultation amongst ship operators and measurement companies, taking into account the ship destination, cargoes to be carried and time needed for measurement. The measurement should be conducted in accordance with operational manuals for the equipment and the equipment should be placed as close as possible to the surface of the measurement points, but caution should be taken not to be in contact with the surface. The measurement should take place in such a manner that the interval of measurement is sufficient for the equipment to stabilize in indicating the dose rate (approximately three times of response time) and that the both maximum and minimum values for respective point are to be recorded. In the conduct of the measurement the background dose rate should be read and subsequently recorded.

4) Attestation

Ship operators may request the Government or Class NK to issue a document for attestation when they conduct measurement of dose rate following this guideline. The measurement may be conducted by ship operators for themselves or third parties instead and the above mentioned document will be requested in the following manners.

(1)Request for attestation by Government

Ship operators may request Maritime Bureau, Ministry of Land, Infrastructure, Transport and Tourism (MLIT) for a document of attestation, submitting to MLIT reports containing the results of measurement to be conducted following this guideline. Maritime Bureau issues the document as set out in FORM-1, having confirmed that the data provided in the reports are based on the measurement method provided in this guideline.

(2)Request for attestation by Class NK

Ship operators may request Class NK for a document of attestation, submitting to Class NK reports containing the results of measurement to be conducted following this guideline. Class NK issues the document as set out in FORM-2, having confirmed that the data provided in the reports are based on the measurement method provided in this guideline.

5) Criteria for recommending decontamination

In accordance with the IAEA technical document, IAEA-TECDOC-1162, the value to recommend decontamination of ships in port is provided as three times of measured background dose rate.

Ship operators should ensure that decontamination takes place when the measured dose rate

exceeds 5 μ Sv/h, which is provided in paragraph 7.1.14.12 of the IMDG Code.

6) Action to be taken in excess of the criteria

It is recommended that measures for decontamination be taken in a case where the measured dose rate is in excess of three times of measured background dose rate. Ship operators are requested to take measures for decontamination when the measured dose rate exceeds 5 μ Sv/h. Appropriate measures to decontaminate should be decided upon in close consultation among interested parties.

It should be noted that some countries or regions have schemes in place in which decontamination or detailed investigations are required in such cases that the measured dose rate for ships have exceeded three times of measured background dose rate, on the grounds that ships may potentially be contaminated.

7) Miscellaneous

This guideline will be subject to review on the basis of the experiences gained in the application of this guideline.

FORM - 1

＜SAMPLE＞

No.2011-

Date：

ATTESTATION

MEASUREMENT OF RADIAION DOSE
FOR SHIPS DEPARTING JAPAN IN PORT

This is to attest, on the basis of a declaration by the applicant, that the measurement of radiation dose rate for the following ship in port provided in the report was conducted based on “the Guideline for Measurement of Radiation Dose Rate for Ships in Port (dated 22 April 2011)” developed by the Ministry of Land, Infrastructure, Transport and Tourism. A photocopy of the report is herewith attached.

Name of ship:
Port of Registry:
Gross Tonnage:
IMO Number:
Date of measurement:
Place of measurement:

Issued by

Director, Inspection and Measurement Division
Maritime Bureau
Ministry of Land, Infrastructure, Transport and Tourism

FORM-2

＜SAMPLE＞

No.2011-

Date：

ATTESTATION

MEASUREMENT OF RADIAION DOSE
FOR SHIPS DEPARTING JAPAN IN PORT

This is to attest, on the basis of a declaration by the applicant, that the measurement of radiation dose rate for the following ship in port provided in the report was conducted based on “the Guideline for Measurement of Radiation Dose Rate for Ships in Port (dated on 22 April 2011)” developed by the Ministry of Land, Infrastructure, Transport and Tourism. A photocopy of the report is herewith attached.

The attestation is issued in accordance with the request by Ministry of Land, Infrastracture, Transport and Tourism of Japan.

Name of ship:
Port of Registry:
Gross Tonnage:
IMO Number:
Date of measurement:
Place of measurement:

Issued by

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General Manager of ClassNK Survey Department