TECHNICAL CIRCULAR No. 063 of 13th June 2012

To:	All Surveyors/Auditor
Applicable to flag:	All Flags
Subject:	**Annual Inert Gas Surveys**
Reference:	CLASS – MACHINERY SURVEY

ANNUAL INERT GAS SURVEYS

Prior to carrying out the AIGS survey, it is expected that the Surveyor has knowledge of the applicable rules, and has generally prepared for the survey by reviewing the relevant IMO guidelines, including the contemplated survey status. The Surveyor should further understand the chart flow and operation of the Inert Gas System using flue gas from the uptake from the ship's main auxiliary boiler or a gas generator. A typical arrangement is shown in Figure 1:

1. A good place to start the survey would be the scrubber unit. There are three (3) actions in a scrubber: cool flue gases, remove SO2, and remove soot. This is achieved through direct contact between flue gas and a large quantity of water.

a) Check for leakage of flue gas as you walk into the enclosed space; telltale marks on any joints of flue gases would give apparent indication of leakage. Ensure ventilation system is in good working condition.
b) Examine flue gas operating valves to check whether they open or shut based on demand.
c) The scrubber unit is to be visually inspected internally using the sight glass for observation purposes. A general external examination of the shell is to be carried out. Generally, the internal shell is lined with rubber or glass epoxy fiber resin. Signs of external corrosion should be a result of lining breakdown. At the discretion of the Surveyor, the scrubber unit should be opened for internal examination at the earliest opportunity.
d) Examine the inlet/outlet temperature (if provided) of the flue gases. Generally, flue gas temperature of 300oC (approximately) and maximum outlet temperature of 5 ~ 6 oC above sea water temperature will ensure a well maintained plant.
e) Examine the scrubber drain pipe leading all the way to the overboard valve with particular examination in way of the bend for sign of corrosion.

2. Inert Gas Blowers:

Customer Service Center
5201 Blue Lagoon Drive, 9TH. Floor,
Miami, Fl., 33126
Tel: 1 (305) 716 4116,
Fax: 1 (305) 716 4117,
E-Mail:
joel@conarinagroup.com

Technical Head Office
7111 Dekadine Ct.
Spring, Tx., 77379
Tel: 1 (281) 370 9363,
1 (713) 204 6380
E-Mail: tho@conarinagroup.com,
houston@conarinagroup.com

a) Examine the operating condition of gas blowers to check for undue vibration, and the connected expansion bellows for leakage/wear. Also check the ampere rating of the motor and compare with the operating current of the motor. Check the temperature of inert gas at the inlet and outlet of the blower. The maximum difference in temperature of approximately 25 oC would be considered as sound operating temperature.

b) Check the blower casing water drain and external condition of the water seal.

c) Check the operation of gas pressure regulating valves which regulate the flow of gases to the cargo tanks.

(NOTE: Ensure that the minimum pressure of 200mm water gauge to be maintained.)

3. Examine the oxygen analyzer and test for the accuracy with the available certified bottle of N2 gas. The sampling probe fitted with a dust filter should be examined for cleanness.

4. Deck Seal:

This is the principal barrier; the water seal, as fitted, permits inert gas to be delivered to the cargo tanks and prevents any back flow. Examine the shell of the deck seal for any corrosion, sight the flow of water through sight glass, and examine the condition of the drain pipe to the overboard line with particular attention in way of bends.

5. Non-Return Valve & Piping

Examine the operation of the mechanical non-return valve on deck (after the deck seal). A general examination of Inert Gas Piping and bonding arrangements is to be verified.

6. Liquid Filled Pressure Vacuum Breaker

A general examination of the unit to ensure that sight glass is clean and filled with correct level of liquid. For winter transit, generally, the unit is filled with anti-freeze.

7. Sea Water Pumps

The inert gas scrubber and deck water seal main supply water should be through independent pumps, and should be checked to ascertain that alternate source of supply is available and functional.

8. Cargo Control Room

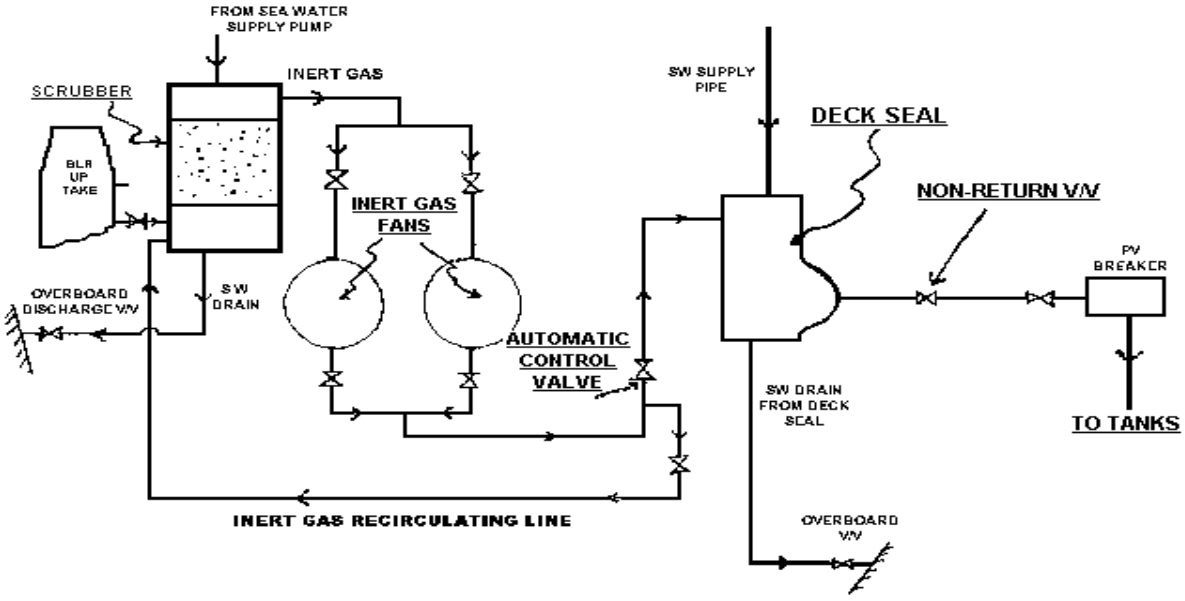
a) Check for all functional alarms (simulated) as deemed necessary

b) An important item is the emergency cargo oil pump trip. This function test can only be tested at the time of completion of the cargo.

9. Check and review record data or graph in response to operation of inert gas system during the voyage.

Customer Service Center
5201 Blue Lagoon Drive, 9TH. Floor,
Miami, Fl., 33126
Tel: 1 (305) 716 4116,
Fax: 1 (305) 716 4117,
E-Mail:
joel@conarinagroup.com

Technical Head Office
7111 Dekadine Ct.
Spring, Tx., 77379
Tel: 1 (281) 370 9363,
1 (713) 204 6380
E-Mail: tho@conarinagroup.com,
houston@conarinagroup.com



SCHEMATIC FLOW DIAGRAM OF INERT GAS SYSTEM

Figure 1

REFERENCES:

CLASS – MACHINERY SURVEY

ATTACHMENTS: No.

Kindest Regards,
Cosmin Bozenovici
Naval Architect – Conarina Technical Head Office

Customer Service Center
5201 Blue Lagoon Drive, 9TH. Floor,
Miami, Fl., 33126
Tel: 1 (305) 716 4116,
Fax: 1 (305) 716 4117,
E-Mail:
joel@conarinagroup.com

Technical Head Office
7111 Dekadine Ct.
Spring, Tx., 77379
Tel: 1 (281) 370 9363,
1 (713) 204 6380
E-Mail: tho@conarinagroup.com,
houston@conarinagroup.com