

FY2021 Survey Project Commissioned by the Ministry of Land,
Infrastructure, Transport and Tourism

Monitoring Survey in a Ship Recycling Yard in Bangladesh which Received the Ship Recycling Statement of Compliance (SOC)

MARCH 2022

Japan Marine Science Inc.



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List of Abbreviations

Abbreviation	Formal name: explanatory notes
ACM	Asbestos-containing material
EPRP	Emergency Preparedness and Response Plan
HKC	Hong Kong Convention (Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (Ship Recycling Convention/Hong Kong Convention/HKC Convention))
HSE	Health Safety Environment
IHM	Inventory of Hazardous Wastes: a list stating the “quantities and locations of hazardous materials, wastes, stores onboard a ship.” IHM Part I: hazardous materials contained in the ship’s structure and equipment IHM Part II: wastes generated in operation IHM Part III: stores
MEPC	Marine Environment Protection Committee
MIS	Management Information System
MSDS	Material Safety Data Sheet: A Material Safety Data Sheet stating information about the physical and chemical properties, hazard, cautions regarding handling, etc. of chemical materials and the products containing them (designated chemical materials, etc.).
ODS	Ozone-Depleting Substances
PCB	Polychlorinated biphenyls
PCHM	Potentially Containing Hazardous Material (goods potentially containing hazardous materials)
PHP SBRIL	PHP Ship Breaking and Recycling Industries Limited
PPE	Personal protective equipment
SOC	Statement of Compliance (compliance certificates and written expert testimony/convention-compliant written expert testimony)
SRFP	Ship Recycling Facility Plan: this is a document which must be prepared by the facility when gaining approval of the ship recycling facility under the provisions of the Ship Recycling Convention, and it states the processes, etc. for ensuring safety and environmental conservation in the facility. It is necessary to receive approval for the plan from the Competent Authority(ies).
SRP	Ship Recycling Plan: the written plan concerning the details of the ship dismantling procedure, hazardous materials treatment methods, etc. Under the provisions of the Ship Recycling Convention, it is obligatory to prepare and maintain a plan for each ship with reference to the information obtained from the IHM.
VSCP	Visual Sampling Check Plan: a visual/sampling check plan taking into consideration the information which should be gathered and sound specialist knowledge for specifying the hazardous materials inside the ship.

Summary

The ship recycling industry of Bangladesh (“BD”) accounts for over one third of the global ship recycling volume, and is one of that country’s most important industries because it is a major source of supply of iron and steel resources. BD has prepared a roadmap for ratification of the Ship Recycling Convention (Hong Kong Convention: HKC) and is carrying out the infrastructure development necessary to satisfy the requirements of the HKC within at most five years after the establishment of the Ship Recycling Act (2018). The ratification of BD, the largest scrapping country in the world, is essential for satisfying the requirements for the entry into force of the HKC, and for that reason it is important to gain the endorsement of the relevant people in the local yards, etc. while sharing the technical requirements and the areas for improvement to the industrial safety environment, etc. for the environmental improvement of the recycling yards and infrastructure.

In this survey project, we carry out a monitoring survey of the current condition of the ship recycling processes in the BD recycling yard which has received a Statement of Compliance (SOC) with the convention, and in order to analyze whether the recycling is being implemented appropriately in line with the HKC requirements and to analyze the technical requirements and issues, etc., we established a committee and a working group to put in place a forum for consultations by experts to confirm the compliance of said recycling yard with the convention, and carried out mutual confirmation and evaluation regarding compliance with the modalities and standards of industrial safety and environmental conservation, etc. required when Japanese shipping companies send in ships.

In this survey, we made the PHP yard (operated by PHP Ship Breaking and Recycling Industries Ltd. (PHP SBRIL)), the only yard in BD which has acquired the SOC as of the present time (as of March 2022), the subject of the survey. Furthermore, we made a tanker built in the United Kingdom in 1996 the ship subject to the survey. In this survey project, we executed confirmation and evaluation activities in line with the recycling processes of the ship subject to the survey based on the SRP prepared by the PHP yard.

Regarding compliance by the PHP yard, which is the yard subject to the present survey, with the HKC Convention and with the standards required when shipping companies send in ships based on a report in the working group, as a result of evaluations in the committee by committee members in each field of expertise, we evaluated that the level sought by the Ship Recycling Convention is being satisfied, and that outstanding initiatives were being carried out for the industrial safety and environmental contamination measures of the PHP yard. On the other hand, we concluded that for the realization of industrial safety and environmental contamination measures which exceed the level required by the HKC as sought by marine businesses, there is room for improvement in some of the initiatives, such as thorough implementation of the wearing of personal protective equipment, including by subcontractors, etc., and we gave advice on how to achieve those improvements.

Furthermore, it is necessary to take into account the follow-up on the matters for improvement and the actual situation until the completion of the scrapping, so the committee deemed that it was desirable to confirm these matters in the project which succeeds this survey project going forward. In addition, regarding some of the hazardous wastes, we confirmed that the management records and management state are good but the wastes continue to be stored inside the yard because there is no treatment facility in Bangladesh, so we concluded that it is necessary to confirm the development of a final disposal site, etc. going forward. Moreover, the committee reacted to the evaluation of the PHP yard in this survey project by strongly hoping that momentum would grow towards Japanese shipping companies pursuing the scrapping of Japanese ships in Bangladesh going forward.

1. Background to and Purpose of the Survey

1.1 Background and issues

Ship recycling is the series of processes for dismantling ships which have reached the end of their useful life technically or economically and reusing the resources gained from the ships. Ships are excellent candidates for recycling as more than 95% of the ship (on a weight basis) can be recycled. On the other hand, most ship recycling is implemented in developing countries and the industrial injuries of employees and environmental contamination arising from ship recycling have become international issues.

The convention aiming to solve these issues is the Ship Recycling Convention (Hong Kong Convention: HKC) formulated through international discussions led by Japan, a major maritime power and shipbuilding country. The convention stipulates the measures which ship owners and ship recycling yards (hereinafter referred to as “yards”) should carry out in order to recycle ships safely and in an environmentally sound manner.

It is necessary for the convention to enter into force before it can be implemented, but the convention has not entered into force yet because the requirements necessary for entry into force have not been satisfied; namely, (i) the combined fleets of the parties to the convention and (ii) the combined ship dismantling volume of the parties to the convention be at least a certain level.

In the case that the non-entry into force of the convention continues, there is a danger that ship recycling will be limited to some high quality yards, leading to a shortage of capacity inside the yards, a stagnation of ship sales prices at the time of recycling, and obstruction of the smooth decommissioning of ships. Moreover, it is forecast that due to the strengthening of environmental regulations for carbon neutral, the alternative building of ships will be encouraged and ship recycling demand will increase, so there is a possibility that the above issues will become more serious. In order to dispel these concerns, Japan, a major maritime power and shipbuilding country, has actively worked on the early entry into force of the convention, for example by supporting the improvement of yards in the major ship recycling countries.

Currently it is Bangladesh (hereinafter referred to as “BD”), a major ship scrapping country, which holds the key to the early entry into force of the HKC. The ship recycling industry of BD accounts for over one third of the global ship recycling volume, and is one of that country’s most important industries because it is a major source of supply of iron and steel resources. The international community led by the government of Norway and the IMO has united to provide continuous support for the promotion of environmental conservation and industrial safety and health, etc. in that industry, and BD has prepared a roadmap for ratification of the HKC and is carrying out the infrastructure development necessary to satisfy the requirements of the HKC within at most five years after the establishment of the Ship Recycling Act (2018). The ratification of BD is essential for satisfying the requirements for the entry into force of the HKC, and gaining the endorsement of the relevant people in the local yards, etc. while sharing the technical requirements and the areas for improvement to the industrial safety environment, etc. regarding the development of the recycling yards and environmental infrastructure, and lobbying by Japan and other countries involved in ship recycling for BD to ratify the convention are urgent tasks.

1.2 Purposes of the project

The purposes of the project are to obtain the cooperation of the ship recycling yard in BD which has received the SOC (the HKC Statement of Compliance) to monitor the current condition of major processes regarding whether the recycling is being implemented appropriately in line with the HKC requirements, plan web inspections in order to analyze the technical requirements and issues, etc.,

establish a committee and working group to hold exchanges of opinions with the local yard, and mutually confirm and evaluate the modalities of industrial safety and environmental conservation, etc.

1.3 Implementation content

In this survey, we implemented the following matters.

- (1) We conducted a monitoring survey of the current condition of the ship recycling process of the HKC-compliant yard in BD.
- (2) We implemented witnessed inspections and web inspections by third parties in order to analyze the technical requirements and issues, etc.
- (3) We held exchanges of opinions with the local yards, consulted on the current condition of ship recycling processes at the SOC-certified yard in BD, and confirmed compliance as a ship recycling yard with the international standards second only to India.
- (4) We confirmed compliance with the standards required when shipping companies send in ships.

2. About Ship Recycling

2.1 The international environment surrounding the HKC

Of the three requirements for the entry into force of the HKC, the requirement regarding the number of parties to the convention has already been satisfied, but the remaining requirements regarding the percentage of the fleets of the ratifying countries with respect to the global fleets overall and the percentage of the combined maximum of the ship scrapping volume during the preceding ten years with respect to the maximum fleets of the ratifying countries have not been achieved currently.

Regarding the prospects for the entry into force of the HKC going forward, the percentage of the ship scrapping volume (including forecasts) with respect to the fleets of the 17 countries which have ratified the convention (including future forecasts from the outstanding orders) at the present time is not a problem if Bangladesh and China ratify the convention, so it is forecast that the requirements will be satisfied. On the other hand, under a scenario in which only China ratifies the convention, even under the scenario in which Bangladesh and Liberia ratify the convention by 2022, if it is not realized by 2023 then there is a possibility that subsequently the conditions will not be right for satisfying the requirements for entry into force under any scenario. For this reason, we can conclude that the ratification of Bangladesh by 2023 holds the key to early entry into force of the HKC.

Table 2-1 Track record of implementing HKC ratification promotion projects in South Asia

Track record of implementing HKC ratification promotion projects in South Asia	2018	2019	2020	2021	2022
Ship recycling facilities survey and support in India (including an ODA yen loan project)	[Timeline bar from 2018 to 2022]				
Ratification of HKC by India		28 Nov			
Survey for the modernization of ship recycling facilities in Bangladesh			[Survey for the modernization of ship recycling techniques in Bangladesh]		
Bangladesh monitoring survey (holding of the committee)				[Monitoring survey in the SOC-certified yard of Bangladesh]	
Lobbying for early entry into force of the HKC					[Continue to a JICA project (planned)]

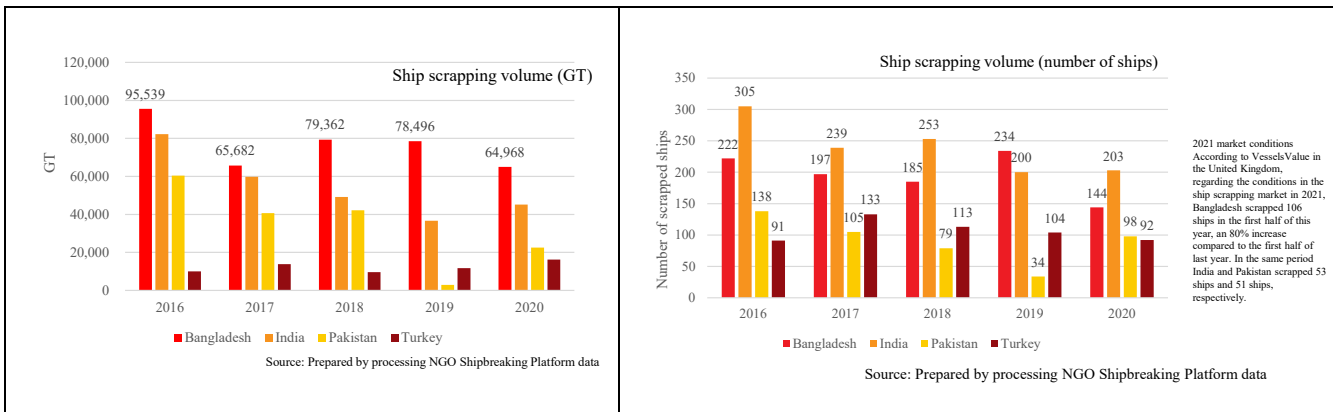
Source: survey team

2.2 The ship recycling industry in Bangladesh

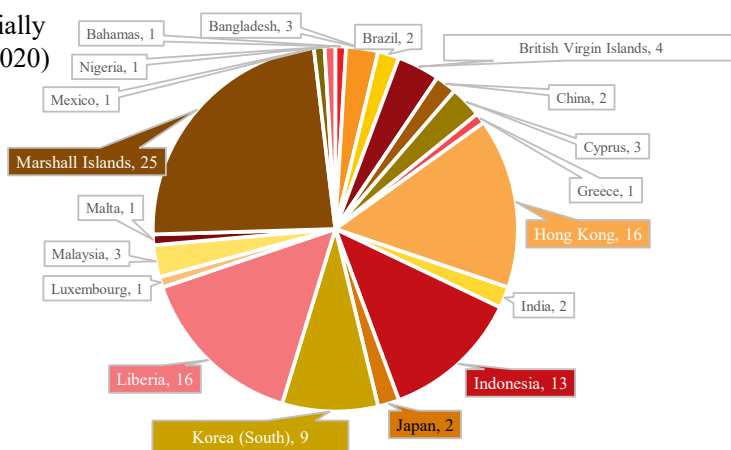
In Bangladesh the ship recycling industry is an extremely important industry. In that country, the importing of iron ore, slabs, etc., the raw materials for iron and steel, was inefficient and expensive because the country does not have a deep water port, among other reasons, so against this background more than 50% of the demand for iron and steel in Bangladesh is steel bars and electrical furnace products which reclaim scrap iron supplied from dismantled ships; moreover many of the ships built domestically are built by reusing the steel sheets unmodified and 2,200,000 tons of steel, equivalent to approximately 74% of domestic demand, is supplied by ship recycling. Moreover, most marine equipment such as the engines, etc. of coastal vessels, uses recycled equipment.

The trends in ship scrapping volume for each scrapping country are as shown in the figure below. The ship recycling market in BD accounts for the top share in the world on a gross tonnage basis, it has a high presence even when viewed internationally, and it has come to function as a major recipient of ship scrapping demand for the maritime industry of the world. On the other hand, the current situation is that it has a poor track record of scrapping ships substantially owned by the major ship owning countries including Japan and countries in Europe. The ship recycling industry of Bangladesh has been taking a variety of measures since 2010, including mechanization and the introduction and expansion of equipment inside the yards, improvement of yard infrastructure, worker training, etc., but it is necessary to make efforts for ratification of the HKC and to continue efforts for enhancement of environmental and safety measures to ensure that the level of environmental and safety measures required by the shipowners of Japan is attained.

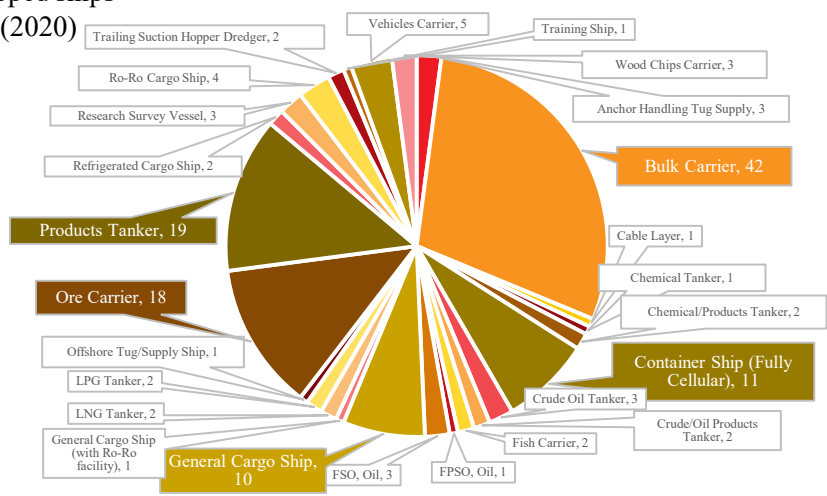
Figure 2-1 Comparison of the ship scrapping volume (GT and number of ships) in the major scrapping countries, the countries which substantially own the ships, and the number of scrapped ships by ship type



Countries which substantially own the scrapped ships (2020)



Number of scrapped ships by ship type (2020)



Source: NGO Shipbreaking Platform (2020)

2.3 The background and requirements pertaining to HKC ratification by Bangladesh

The BD government established the Ship Recycling Act in 2018 and prepared the Roadmap for HKC Ratification. Furthermore, BD has cited the following two requirements when ratifying the convention.

1. Developing environmentally appropriate waste treatment facilities (TSDF: Treatment Storage and Disposal Facilities).
2. Developing a certain number of convention-compliant yards.

Moreover, in addition to the development of these facilities, BD has established the Bangladesh Ship Recycling Board (BSRB), an organization which manages the ship recycling industry, and is proceeding with the parallel development of the legal system and the implementation structure.

On the other hand, many of the ship recycling yards in BD are not yet at the level sought by the Ship Recycling Convention and no more than one yard has received the Statement of Compliance with the convention from Nippon Kaiji Kyokai (ClassNK), so the improvement of many yards is necessary in order to conclude the convention.

In order to improve many yards, it is necessary to continuously increase the number of yards which have received the Statement of Compliance with the convention. For that purpose the formation of a virtuous circle is important, in which firstly the fact that ships are actually being recycled in a safe and environmentally sound manner in yards which have received a Statement of Compliance with the convention is recognized by shipping companies, then the shipping companies which recognized this actively send in ships, and in response to that other yards also voluntarily make the improvements needed for ships to be sent in, and as a result the number of yards which have received a Statement of Compliance with the convention increases, and the shipping companies which recognize that send in more ships.

For expansion of recognition by the shipping companies, the first step in the formation of the above virtuous circle, we used a committee format to verify and evaluate the actual ship recycling processes in the PHP yard operated by PHP Ship Breaking and Recycling Industries Limited (PHP), the only SOC-certified yard in BD, and then transmitted information to motivate other yards to follow this example and acquire the SOC, and it can be concluded that encouraging the voluntary improvement of recycling yards in BD by linking to the technical recommendations for the improvement of yards in that country would be vital for ratification of the HKC by BD.

2.4 Convention requirements pertaining to the ship recycling procedure (excluding the requirements of facility approval, etc.)

In this survey, we implemented confirmation and evaluation of the industrial safety and environmental contamination measures of the yards in line with the requirements pertaining to the ship recycling procedure in the HKC listed below.

Table 2-2 List of HKC requirements

<u>Requirements pertaining to the recycling procedure in the Ship Recycling Convention</u>	<u>Major points in the guidelines, etc.</u>	<u>Status of response by PHP</u>
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<p><u>Regulation 18) Ship Recycling Facility Plan</u></p> <ul style="list-style-type: none"> • Prepare a Ship Recycling Facility Plan (SRFP). The content of the SRFP must be prepared with reference to the IMO guidelines. <p><u>Regulation 19) Prevention of adverse effects to human health and the environment</u></p> <ul style="list-style-type: none"> • Ship recycling facilities must ensure “safe hot work” “safe entry,” etc. while also taking into consideration the IMO guidelines. <p><u>Regulation 20) Safe and environmentally sound management of hazardous materials</u></p> <ul style="list-style-type: none"> • Safe and environmentally sound removal of the hazardous materials contained on ships must be ensured. In particular the Inventory of Hazardous Materials and the Ship Recycling Plan must be actively utilized. <p><u>Regulation 21) Emergency preparedness and response</u></p> <ul style="list-style-type: none"> • A plan concerning emergency preparedness and response must be established and maintained. <p><u>Regulation 22) Worker safety and training</u></p>	<p>Preparation and development of the SRFP. Equipment and sound management and operation for preventing and minimizing environmental contamination and industrial injuries</p> <p>Approval and regular inspections of facilities by the Administration or RO</p> <p>Establish procedures for ensuring “safe hot work” gas-free</p> <p>Ensuring “safe entry” to enclosed spaces</p> <p>Prevention of other adverse effects on health and the environment, such as accidents, leakages, etc.</p> <p>Identification, classification, packing, and removal of hazardous materials before cutting</p> <p>Sound management and disposal of all hazardous materials and wastes</p> <p>Labeling of wastes and storing them so that they do not pose a risk to the health of people or the environment</p> <p>Emergency situation response equipment and implementation of regular comprehensive training</p> <p>Cooperation with the authorities concerned, etc., preparation and response measures for emergency situations</p> <p>Ensuring PPE</p> <p>Ensuring a training plan and implementing it at appropriate intervals</p>	<p>The SRFP has been developed and is operating. Approved by BD</p> <p>Safe hot work</p> <p>Implementation of safe entry</p> <p>Implementation of accident measures, workers measures</p> <p>Implementation of work before cutting</p> <p>Sound management of hazardous materials</p> <p>However, there are no disposal sites, so in the case that outsourcing is not possible, storage in the facility</p> <p>There is an emergency response plan</p> <p>Implementation of training</p> <p>Provision of PPE</p> <p>Implement training regularly</p>
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Source: Prepared by the survey team based on the HKC detailed rules

3. Format of the Monitoring Survey Project

3.1 Yard subject to monitoring

In this survey project, we selected the PHP yard, the only yard to obtain SOC in BD as the yard subject to monitoring. In response to the fact that four yards in India¹ received certification as HKC-compliant yards from ClassNK in 2015, the PHP yard invested approximately US\$7 million to work on development of the yard, including paving 20 acres entirely in concrete, treatment equipment for solid wastes, including asbestos, and discharged bilge water, clinics and residential buildings for employees, etc. until it received certification as an SOC yard from RINA on October 10, 2017 and from ClassNK on January 15, 2020.



- Operating company: PHP Ship Breaking and Recycling Industries Limited
- Operation commencement: March 2000
- Site area: 20.19 acres (8.17 ha)
- Total scrapping volume: 140 ships (1.71 million LDT. Cumulative total until 2019)
- Location: Sitakunda Upazila, Chittagong Division
- Certification to international standards

SOC: Class NK (January 15, 2020)

SOC: RINA Services (October 10, 2017)

ISO 9001:2005, 14001:2015, 45001:2018, 30000:2009

- Key personnel

Mr. Zahirul Islam Chowdhury, Managing Director

Md. Khairuzzaman, Sr. General Manager

Mr. Liton Mazumder, HSE Officer

- Related companies

PHP Ispat Limited (production capacity: 500w TMT bar)

The layout diagram for the PHP yard is shown in Figure 3-1.



¹ RL Kalthia Ship Breaking Pvt. Ltd.,
Priya Blue Industries Pvt. Ltd.,
Shree Ram Vessel Scrap Pvt. Ltd.,
Shree Ram Shipping Industries Pvt. Ltd. Leela Ship Recycling Pvt. Ltd.

For ships to be scrapped, the primary cutting work is carried out in the intertidal zone (PRIMARY BLOCK BREAKING AREA in the layout diagram), where the ship is cut into each block. The cut blocks are hauled using winches (12, 29, 36, 37, 39, 40 and 58 in the layout diagram) or a barge crane, etc. is used to raise them up to the concrete-paved secondary cutting area (SECONDARY CUTTING AREA in the layout diagram). Note that a water drain has been installed between the secondary cutting area and the third cutting area in order to prevent oil leakage. The raised blocks are chopped up at the secondary cutting area and the third cutting area (THIRD CUTTING AREA in the layout diagram), stored in the stock yard (OPEN STORAGE AREA in the layout diagram) as scrap materials, and sold to and picked up by traders.

The incinerator for the treatment of solid wastes generated in the process of recycling (27 in the layout diagram) has a designed combustion temperature of 1,200°C and has the capacity to treat about 200kg per day. A discharged bilge water treatment (oily water separation) device (33 in the layout diagram) was also installed attached to the rain/effluent storage tank (34 in the layout diagram), and it has a designed layout which can separate oily water such as bilge water, etc. generated from scrapped ships to adjust it to the standards stipulated by BD (oil content of 10ppm or less) and then treat the waste water and effluent. After the asbestos has been removed from the ship with appropriate techniques identified using the IHM, it is treated in the negative pressure chambers (76 and 77 in the layout diagram) and solidified into concrete, and it is currently stored in the PHP yard in steel containers. Furthermore, the glass wool is compressed and stored in steel containers in the storage facilities (28, 50 and 92 in the layout diagram) together with the other hazardous materials.

For the employees working in the facility, the yard has prepared a PPE warehouse (6 in the layout diagram) and is providing it free of charge, and in addition it is aiming to improve the working environment, for example by developing residential buildings (19G to 19P in the layout diagram) and a recreation room (19 in the layout diagram). Furthermore, it has also established a facility for education and training inside the facility (21 in the layout diagram).

3.2 Ship subject to monitoring

In this survey, we monitored the recycling processes of the following crude oil tanker under the flag of Comoros.

Item	Ship information
Ship name	LANTIC
IMO number/official (unique) number	9041069
Port of registry and flag	COMOROS/MORONI
Call sign/signal letter	3EWC3
Ship type	CRUDE OIL
Year built	1996
Name of shipbuilder	Harland & Wolff Shipbuilding Heavy Ind. Ltd. (United Kingdom)
Light Displacement Tonnage (LDT)	23,305.75 MT
Light Ship Tonnage (LT)	22,937.44 MT
Gross register tonnage (GRT)	79,001 M.T.
Net register tonnage (NRT)	45,741 M.T.
Deadweight tonnage	146,268 M.T.
Length overall (LOA)	274 Meters
Beam (B)	44.40 Meters
Draft (D)	24.10 Meters
Registered shipowners in the nationality certificate	Iliana Shipping Limited (Liberia)



3.3 Project implementation structure

This monitoring survey project established a two group system comprised of the committee and the working group, held the following meetings, and carried out the verification, confirmation and evaluation of the required events.

Holding of the monitoring committee:

Upon proceeding with this survey, in the first meeting of the monitoring committee we confirmed the format of the monitoring survey project (including the activities policy of the working group), consulted about the matters subject to the monitoring survey which should be confirmed in the working group, and gave instructions about the format of the survey to the working group. Furthermore, after compiling a summary in the working group, in the second meeting of the committee we evaluated the survey results of the working group, carried out confirmation of the ship recycling processes of the PHP yard

from the perspective of the field of expertise of each committee member and carried out a summary evaluation as a committee.

List	Meeting date and time/place	Agenda items
First meeting of the committee	October 18, 2021 (Monday) from 3:00PM to 5:00PM At: Japanese Shipowners' Association	Agenda item 1 Background to the survey and project overview, etc. Agenda item 2 About confirmation of the compliance of the ship recycling processes in the PHP yard with the HKC standards Agenda item 3 About the schedule going forward
Second meeting of the committee	March 22, 2022 (Tuesday) from 3:00PM to 5:00PM At: Japanese Shipowners' Association	Agenda item 1 Overview of the working group, etc. Agenda item 2 Matters subject to the monitoring survey in the PHP yard Agenda item 3 Confirmation of the evaluation regarding the matters subject to the monitoring survey

<<The committee>>

Position	Affiliation	Name
Committee member	Nippon Yusen (NYK Line) Head of the Environmental Regulations Team in the Environmental Group	Shunji Imai
Committee member	Kawasaki Kisen ("K" Line) Manager in charge of the Corporate Planning Group	Kumiko Iwasa
Committee member	Japan Federation of Basic Industry Workers' Unions Deputy Director-General (Head of the Policy Promotion Bureau)	Akira Sakamoto
Committee member	Ryukoku University Professor in the Faculty of Sociology	Akio Sato
Committee member	Ides Inc. Assistant to the manager and senior researcher in the Environmental Projects Division	Takeshi Sato
Committee chair	Yokohama National University Emeritus Professor	Yoichi Sumi
Committee member	Tokyo Occupational Safety and Health Center	Naoki Sotoyama
Committee member	Japanese Shipowners' Association Full-time Vice President	Keiji Tomoda
Committee member	Nippon Kaiji Kyokai General Manager of the Survey Development Center and General Manager of the Transportation and Logistics Department	Junichi Hirata
Committee member	Mitsui O.S.K. Lines Project Leader in the Marine Safety Division	Shuji Miyai
Committee member	Japan Maritime Center Senior researcher in the Planning and Research Division	Seijiro Morimoto

<<Secretariat>>

Affiliation	Name
Japan Marine Science Senior Consultant in the International Operations Group	Sumiyuki Otsuki
Japan Marine Science Head of the International Operations Group and executive officer	Yasuo Nakajo

Holding of the working group:

We surveyed, confirmed and reported to the committee the items subject to monitoring and, based on the information obtained through local inspections utilizing the web and exchanges of opinions with the auditing team (Lucion Marine of the United Kingdom) and the subject of the auditing (the PHP yard), etc., we carried out confirmations of compliance with the HKC standards, including the matters indicated in the first meeting of the committee, and compliance with industrial safety and environmental contamination measures which exceed the level required by the HKC as sought by marine businesses.

	Meeting date and time/place	Agenda items
Preparation working group	October 28, 2021 (Thursday) from 2:00PM to 4:00PM At: Japanese Shipowners' Association	Introduction of the members, activities content of the working group, confirmation of the work processes, etc.
First meeting of the working group	November 19, 2021 (Friday) from 4:00PM to 6:00PM At: Japanese Shipowners' Association	Agenda item 1 IHM/SRP preparation by PHP, work content report pertaining to cold work Agenda item 2 On-site inspections and evaluation reports by Lucion Marine/Mr. Rohit (third party auditing) Agenda item 3 Question and answer session with the WG (working group) committee members
Second meeting of the working group	December 21, 2021 (Tuesday) from 4:00PM to 6:00PM At: Japanese Shipowners' Association	Agenda item 1 Work content report pertaining to the hot work, hazardous wastes treatment, labor training, etc. by PHP Agenda item 2 On-site inspections and evaluation reports by Lucion Marine/Mr. Rohit (third party auditing) Agenda item 3 Question and answer session with the WG (working group) committee members
Evaluation working group	March 18, 2021 (Friday) from 9:00AM to 11:00AM At: Web	Summary of the working group, evaluation of the compliance of the PHP yard, etc.

<<Working group>>

Position	Affiliation	Name
Committee member	Nippon Yusen (NYK Line) Head of the Environmental Regulations Team in the Environmental Group	Shunji Imai

Committee member	Kawasaki Kisen (“K” Line) Environmental Promotion Team in the Environmental Promotion Group	Yasuo Kunitake
Committee member	Japanese Shipowners’ Association (Secretary- General of the Scrapping Secretariat) and Assistant Manager of the Corporate Planning Group at Kawasaki Kisen (“K” Line)	Takahisa Shiratori
Committee member	Japanese Shipowners’ Association Full-time Vice President	Keiji Tomoda
Committee member	Nippon Kaiji Kyokai Group Leader in the Transportation and Logistics Department	Shohei Minegaki
Committee member	Mitsui O.S.K. Lines Project Leader in the Marine Safety Division	Shuji Miyai

Local auditing team

Lucion Marine (United Kingdom): this company implements inspections and evaluations from an international perspective, including VSCP/IHM preparation support for major European shipowners, SRFP and SRP technology support in Europe, North America, and Turkey, and ship recycling processes auditing, etc. In this survey project, as a third party auditor, it implemented auditing of the ship recycling processes inside the yard subject to auditing.

Mr. Rohit Agarwal: Mr. Agarwal is based in Bhavnagar in India and has abundant practical experience of auditing, etc. of ship recycling yards in the Alang-Sosiya area. In this survey project, he carried out witnessed inspections in the PHP yard under the command of the above Lucion Marine and compiled a report.

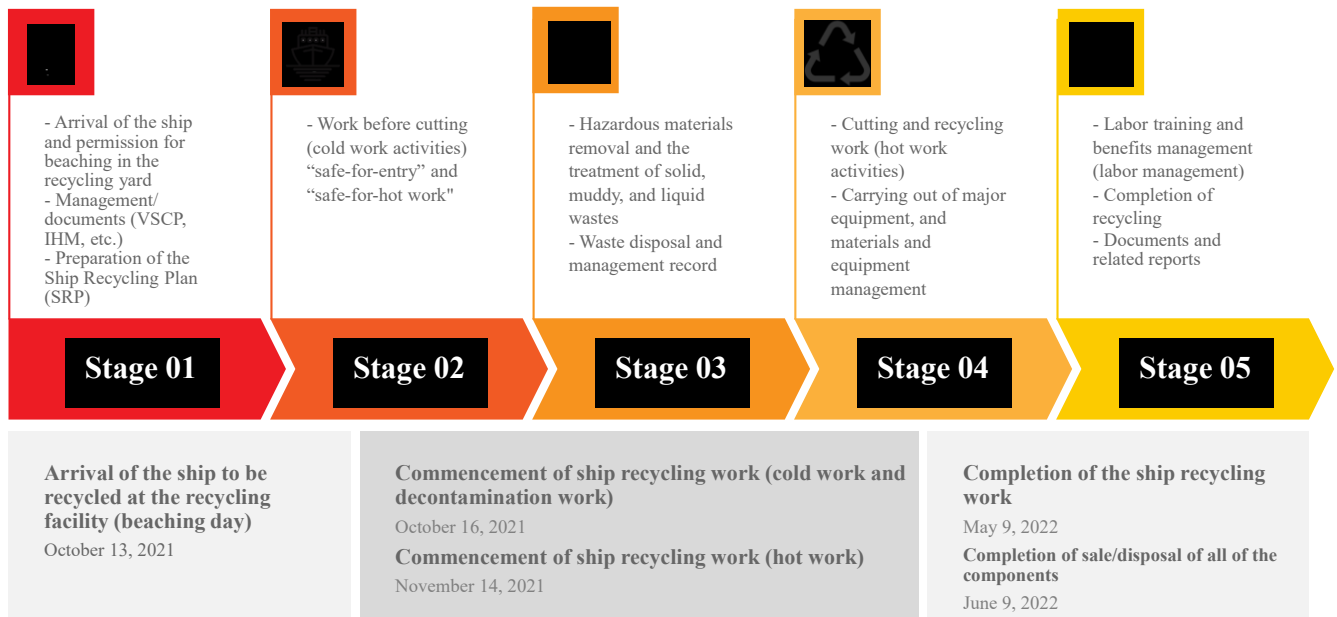
<<Monitoring team>>

Position	Affiliation	Name
Auditor	Lucion Marine Marine Services Director	Kevan O’Neill
Auditor	Lucion Marine Marine HazMat Expert/Recycling Consultant	Stephen Washington
Auditor	Ship Recycling Consultant	Rohit Agarwal

3.4 Stage categories of the ship recycling processes and matters subject to the monitoring survey

In this survey project, we categorized the recycling processes of the ship subject to the survey into five stages based on the SRP prepared by PHP as shown in the figure below and implemented confirmation

and evaluation regarding industrial safety and environmental contamination measures in each stage.



4. Monitoring Survey Results

We confirmed and evaluated in line with the above five stage categories the matters subject to the survey which were confirmed and evaluated in the working group and committee, as follows.

4.1 Stage 01

At this stage, we confirmed whether the documents stated below which are prepared in advance of the ship recycling work had been prepared appropriately and reliably and carried out evaluations of each document which had been prepared.

- (1) The Ship Recycling Facility Plan (SRFP) approval document issued by the BD Ministry of Industries
- (2) The hazardous wastes test report and IHM (in the case it had not been developed)
- (3) The approved Ship Recycling Plan (SRP)

Note that the IHM had not been developed for the ship subject to the survey, so we prepared a VSCP and implemented on-board sampling based on the VSCP to confirm whether the IHM had been prepared appropriately.

4.1.1. Ship Recycling Facility Plan (SRFP)

In this survey, we confirmed whether the SRFP developed by the yard subject to the survey comprehensively explains work and procedures such as the following which are implemented in the ship recycling facility in order to reliably comply with the HKC rules.

- Compliance with all of the applicable conventions, laws and regulatory requirements
- A strong commitment to the health and safety of the workers and protection of the environment
- Operational processes and procedures related to the recycling of ships

As a result, we confirmed that the SRFP provides information concerning the organizational structure and management policy of the recycling yard, the overview of the ship recycling facility, and techniques related to ship recycling, so it has adequate content.

Furthermore, regarding the equipment aspects, we were able to confirm whether impermeable floors and waste oil, etc. leakage prevention measures, etc. have been developed through the laying of concrete in the dismantling work area and the layout of the incinerator, hazardous materials storage facilities, oily water separator, fire hydrant, health facilities (canteen and recreation room, etc.), etc., and we confirmed consistency between the actual work procedure and the procedure manual currently provided within the company, etc. Furthermore, as previously stated, the PHP yard is advancing initiatives for improvement of the facility, such as paving the entire facility with concrete, etc., and we confirmed that its industrial safety and environmental measures are steadily improving.

Figure 4-1 Panoramic view of the PHP yard



Source: PHP yard

4.1.2. Visual/sampling check plan (VSCP) and on-board sampling

We confirmed that PHP is checking the country where the ship was built, the year in which the ship was built and the rebuild/refurbishment record, the IAFS certificate (International Anti-Fouling System Certificate), the IAPP certificate (International Air Pollution Prevention Certificate), the Asbestos-free Declaration, the insulation plan and other related plans for the ship subject to the survey and we

confirmed that PHP is developing in-house rules with reference to the regulations list. Moreover, we confirmed that it has prepared a VSCP in order to execute the sampling appropriately based on the rules.

Furthermore, we confirmed that the company is implementing the sampling based on the prepared VSCP and in-house rules and using adequate sample points and appropriate methods.

PHP Ship Breaking and Recycling Industries Limited				
Hazardous Material	Maximum Checks (No. of Samples)	Regulated and Availability of Documents (Low Risk)	Regulated and No Documents Available (Medium Risk)	Not Regulated & No Documents Available (High Risk)
Annex I (Table A)		Target analysis		
Asbestos in Bulk	80	35-40	40-50	50-80
Ozone-depleting Substances	3	0	1-2	2-3
Polychlorinated Biphenyls in Solids (PCB)	15	2-5	5-10	10-15
Perfluorooctane Sulfonic Acid (PFOS)	10	1-2	2-5	5-10
Anti-fouling Compounds and Systems	1	0	0	1
Annex II (Table B)		Target analysis		
Cadmium (Cd)	15	5-15 (Depending on how many different Paints have been used)		
Chromium VI (CrVI)				
Lead (Pb)				
Mercury (Hg)				
Polychlorinated Naphthalene (PCN)	6	1-2	2-4	4-6
Certain Shortchain Chlorinated Paraffins (CSCCP)	6	1-2	2-4	4-6
Polybrominated Biphenyls (PBB)	6	0	2-4	4-6
Polybrominated Diphenyl Ether (PBDE)				
Hexabromocyclododecane (HBCDD)				
Maximum	Planned Chemical Analyses	68	94	142
Maximum	Expected Actual Chemical Analyses After Inspection	54	75	114

Test Item	Suggestion	Sample Amount	
		Minimum	Maximum
Asbestos	10g	0.5g	
PCBs	20	2g	
ODS	20	2g	
Organotin compounds (TBT,TPT,TBTO)	20g	4g	
Cadmium	5g	0.3 or 50 cm ² for galvanization	
Hexavalent chromium	10g	1g or 50 cm ² for galvanization.	
Lead	5g	0.3g or 50 cm ² for galvanization.	
Mercury	5g	0.3g or 50 cm ² for galvanization.	
PBBs	20g	0.4g	
PBDEs	20g	0.4g	
PCNs	20g	2g	
Radioactive substances	100g	50g	
SCCPs	20g	2g	
PFOS	20g	2g	
HBCDD	20g	2g	

Guidelines for on-board sample collection points

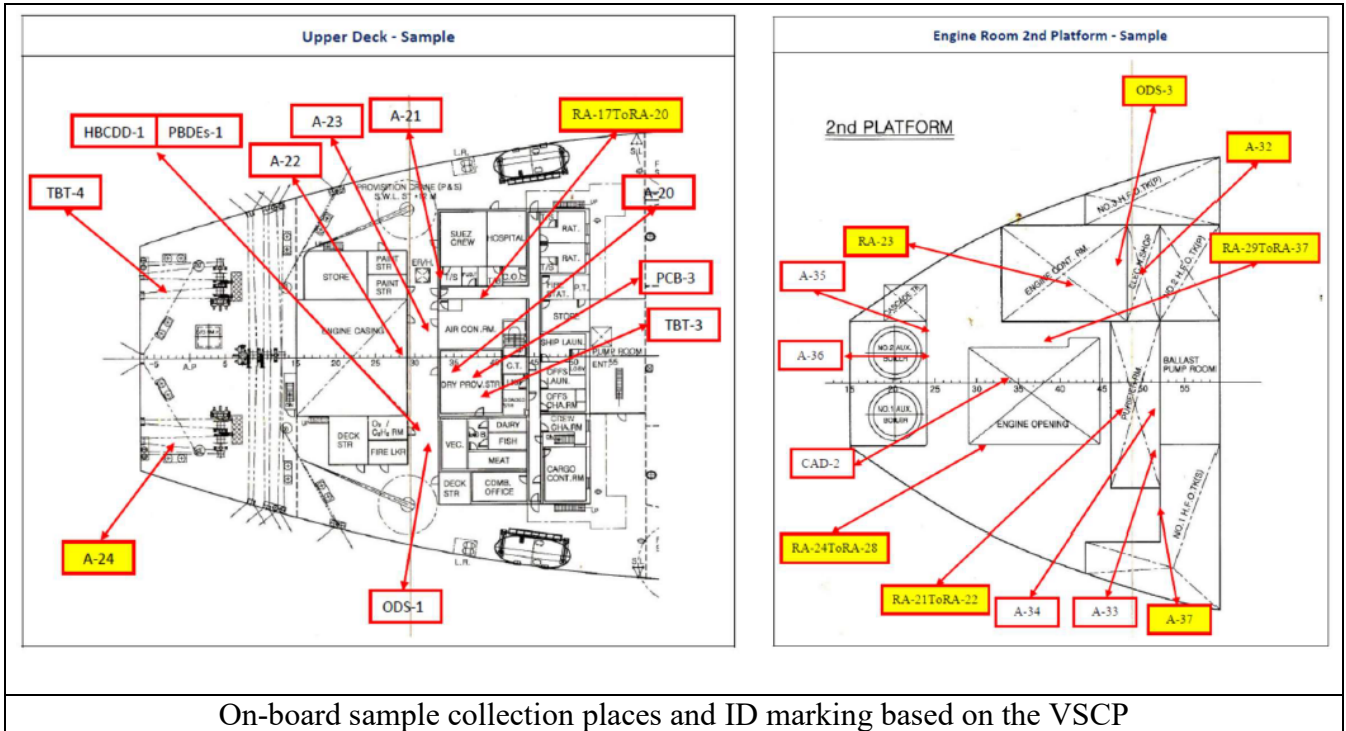
Guidelines concerning the on-board sample collection amount

Visual / Sampling Check Plan							
Team Members: HazMat Expert, HSE Manager, HSE Supervisor, DIGM - Operations and Consultant							
Vessel Name: MT. LANTIC		IMO No.: 9043069	VSCP Date: 14/10/2021	Sample Taken By: Mr. Liton Mazumder & HSE Team		Date:	
Table (A/B) and No.	Location on Ship	Description of Item or Material / Name of Structural Element	Object to Check (Asbestos, PCB, ODS, TBT etc.)	Material (e.g. Insulation, Covering, Refrigerant etc.)	Check Procedure (Sampling / Visual)	Sample No.	Approx. Volume of Area from where sample is taken and related area on ship with same material (This will be prepared after receipt of Testing Report)
B-2	Top of Wheel House	Floor Paint	Hexavalent	Paint Chips	Sampling	HEX-1	
B-3	Top of Wheel House	Floor Paint	Lead	Paint Chips	Sampling	LEAD-1	
EU	Top of Wheel House	Floor Paint	PFOS	Paint Chips	Sampling	PFOS-1	
B-4	Top of Wheel House	Floor Paint	Mercury	Paint Chips	Sampling	MER-1	
B-1	Top of Wheel House	Floor Paint	Cadmium	Paint Chips	Sampling	CAD-1	
A-1	Top of Wheel House	Cable Penetration Filler	Asbestos	Putty Facking	Sampling	A-1	
B-9	Navigation Bridge	Floor Covering	CSCCP	Rubber Material	Sampling	CSCCP-1	
B-8	Navigation Bridge	Smoke Detector	Radio Active Material	Smoke Detector	Visual	Visual	No. of Radio Active Contained Smoke Detector @ 01
A-1	Navigation Bridge	Floor Covering	Asbestos	Rubber Material	Sampling	A-2	
A-1	Navigation Bridge	Floor Cement	Asbestos	Cement	Sampling	A-3	
A-1	Navigation Bridge	Ceiling Panel Insulation	Asbestos	Insulation	Sampling	A-4	
A-1	Navigation Bridge	Wall Towards Steel Insulation	Asbestos	Insulation	Sampling	A-5	
A-1	Navigation Bridge (Toilet)	Floor Tiles	Asbestos	Insulation	Sampling	A-6	
A-2	Navigation Bridge	Door Sealing	PCB	Rubber Sealing Material	Sampling	PCB-1	
A-1	Navigation Bridge	Inside the Electric Panel Cable Penetration Filler	Asbestos	Putty Facking	Sampling	A-15	
A-2	Navigation Bridge	Electric Cable Inside the Electric Panel	PCB	Cable Insulation	Sampling	PCB-5	



VSCP implementation guidelines

Views of the on-board sample collection work based on the VSCP



On-board sample collection places and ID marking based on the VSCP

4.1.3. IHM Part I, II, III

Regarding the ship subject to the survey, we were not able to receive provision of the IHM documents from the shipowners, so we confirmed at the PHP yard itself that the IHM was being prepared based on information from on-board sampling. Our evaluation was that the results of the on-board sampling are reflected appropriately in the prepared IHM, and that on the whole its content (documents, photographic materials, etc.) has been organized appropriately.

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The major findings are highlighted as following:

Part I – Potentially Hazardous Materials in the Ship Structure and Equipments

Location on Ship	Equipment Description	Objects Checked	Material	Sample No.	Laboratory Results	Approximate Quantity
Top of Wheel House	Floor Paint	Hexavalent	Paint Chips	HEX-1	Not Detected	
Top of Wheel House	Floor Paint	Lead	Paint Chips	LEAD-1	Not Detected	
Top of Wheel House	Floor Paint	PFOs	Paint Chips	PFOs-1	Not Detected	
Top of Wheel House	Floor Paint	Mercury	Paint Chips	MER-1	Not Detected	
Top of Wheel House	Floor Paint	Cadmium	Paint Chips	CAD-1	Not Detected	
Top of Wheel House	Cable Penetration Filler	Asbestos	Putty Packing	A-1	Not Detected	
Navigation Bridge	Floor Covering	CSCCP	Rubber Material	CSCCP-1	Not Detected	
Navigation Bridge	Floor Covering	Asbestos	Rubber Material	A-2	Not Detected	
Navigation Bridge	Floor Cement	Asbestos	Cement	A-3	Not Detected	
Navigation Bridge	Ceiling Panel Insulation	Asbestos	Insulation	A-4	Not Detected	
Navigation Bridge	Wall Towards Steel Insulation	Asbestos	Insulation	A-5	Not Detected	
Navigation Bridge (Toilet)	Floor Tiles	Asbestos	Insulation	A-6	Not Detected	
Navigation Bridge	Door Sealing	PCB	Rubber Sealing Material	PCB-1	Not Detected	
Navigation Bridge	Inside Electric Panel Cable Penetration Filler	Asbestos	Putty Packing	A-15	Not Detected	
Navigation Bridge	Electric Cable Inside the Electric Panel	PCB	Cable Insulation	PCB-3	Not Detected	
Wing Deck	Floor Paint	Hexavalent	Paint Chips	HEX-2	Not Detected	
Wing Deck	Floor Paint	Lead	Paint Chips	LEAD-2	Not Detected	
Wing Deck	Floor Paint	PFOs	Paint Chips	PFOs-2	Not Detected	

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Location on Ship	Equipment Description	Objects Checked	Material	Sample No.	Laboratory Results	Approximate Quantity
Station No. 02 Accommodation A - Fire Station No. 03 Door	Door Sealing	PBBs	Rubber Material	PBBs-3	Not Detected	
Accommodation A - Deck (Gallery)	Floor Covering	CSCCP	Rubber Material	CSCCP-2	Not Detected	
Accommodation A - Deck Emergency Generator Room	Exhaust Insulation	Asbestos	Insulation	A-18	Not Detected	
Emergency Generator Room (Oil Tank)	Manhole Gasket	Asbestos	Gasket	A-19	Not Detected	
Upper - Deck (Gallery)	Floor Tiles	Asbestos	Tiles	A-20	Not Detected	
Upper - Deck (Crew Mess)	Floor Covering	Asbestos	Tiles	A-21	Not Detected	
Upper - Deck (Crew Mess)	Floor Covering	Asbestos	Tiles	A-22	Not Detected	
Upper - Deck (Gallery)	Cable Penetration Filler	Asbestos	Putty Packing	A-23	Not Detected	
Upper - Deck (Cold Store)	Wall Insulation	HBCDD	Insulation	HBCD D-2	Not Detected	
Upper - Deck (Cold Store)	Pipe Insulation	HBCDD	Insulation	HBCD D-3	Not Detected	
Upper - Deck (Cold Store)	Door Sealing	PCB	Insulation	PCB-4	Not Detected	
Upper - Deck (Cold Store)	Wall Insulation	PFOs	Insulation	PFOs-4	Not Detected	
Upper - Deck (Cold Store)	Wall Insulation	PBDEs	Insulation	PBDEs-1	Not Detected	
Upper - Deck (Cold Store)	Wall Insulation	ODS	Insulation	ODS-1	Not Detected	
Aft Peak Winch	Brake Liner	Asbestos	Brake Liner	A-24	Detected	Approx. Weight #25 kg. x No. of Winches Onboard (10). So Approx. Total Qty. #250 kg.
Aft Peak Winch	Winch's Paint	Lead	Paint Chips	LEAD-3	Not Detected	
Aft Peak Winch	Winch's Paint	CSCCP	Paint Chips	CSCCP-3	Not Detected	
Aft Peak Winch	Winch's Paint	Hexavalent	Paint	HEX-3	Not	

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IHM Part I

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Part II – Operationally Generated Waste

The wastes in Part II are designated for delivery with the ship to the ship recycling facility. The quantities of the operationally generated wastes are based on their approximate quantities and locations as per inspection during cold lay-up status. Figures may change during recycling of vessel.

Item No.	Location	Name of Item	Approximate quantity	Remarks (N/A if not applicable)
1	Water Ballast tank Port and Stbd side	Ballast Water	28,582 MT	
2	Bilge Water Tank	Bilge Water	12.6 M ³	
3	Sludge Oil Tank	Sludge Oil	10 M ³	
4	Diesel Oil Tank (Port side and Stbd side)	Diesel Oil	75.6 MT	
5	Furnace Oil Tanks (Port side and Stbd side)	Furnace Oil	347 MT	
6	Storage tank	Lube Oil (Unused)	4,200 Ltr.	
7	Steering Gear Room (Paint & Chemical Store)	Used Grease	40 Kg.	
8	Sump tank	Lube Oil (Used)	27,300 Ltr.	
9	Hydraulic Oil Reserve Tank	Hydraulic Oil (Used)	600 Ltr.	
10	Sewage tank	Sewage	0.5 M ³	
11	Different Location on Ship	Garbage & Galley Waste	90 Kg.	
12	Engine Room	Oily Rags	20 Kg.	
13	Engine Room	Incineration Ash	02 Kg.	
14	Hospital Room	Bio-medical Waste (Used and Expired Medicine)	20 Kg.	
15	Different Location on Ship	Biological waste including food waste	08 Kg.	
16	Navigation deck	Rubber waste	15 Kg.	
17	Steering Gear Room	Empty Chemical Pressurized Container and Waste	20 Kg.	
18	Navigation Bridge Room	Broken Lights and Lightening Material including Glass and Ceramic Waste	02 Kg.	
19	Different Location on Ship	Plastic Waste	25 Kg.	

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Part III – Stores

The stores in Part III are designated for delivery with the ship to the ship recycling facility. The quantities of the relevant stores are based on their approximate quantities and locations as per inspection during cold lay-up status. Figures may change during recycling of vessel.

Item No.	Location	Name of Item	Approximate quantity	Remarks (N/A if not applicable)
1	Near CO2 Room	Oxygen Cylinder	01 Nos.	Full
2	Battery Room	Lead Acid Battery	06 Nos.	
3	Accommodation A Deck	Nitrogen Cylinder	01 Nos.	11.4 Kg.
4	Overall Accommodation / Navigation Bridge	DCP, Foam and CO2	28 Nos.	
5	Accommodation D - Deck (Electrical Cable Route)	Lead Acid Battery	02 Nos.	
6	Rescue Boat's Battery Box P&S	Lead Acid Battery	03 Nos.	
7	On Main Deck Oil Spill Response Locker	CO2 Fire Extinguisher	08 Nos.	
8	On Main Deck Oil Spill Response Locker	Foam Type Fire Extinguisher	10 Nos.	
9	Bosun Store	CO2 Fire Extinguisher	03 Nos.	
10	Bosun Store	Foam Type Fire Extinguisher	02 Nos.	
11	Oxygen Room	Oxygen Cylinder	03 Nos.	Full
12	Oxygen Room	Oxygen Cylinder	04 Nos.	Empty
13	Oxygen Room	Argon Cylinder	02 Nos.	
14	Oxygen Room	Nitrogen Cylinder	02 Nos.	
15	Oxygen Room	R 417 Cylinder	01 Nos.	
16	Oxygen Room	R 22 Cylinder	01 Nos.	
17	Oxygen Room	Foam Type Fire Extinguisher	01 Nos.	
19	Oxygen Room	CO2 Fire Extinguisher	01 Nos.	
20	Acetylene Room	Acetylene Cylinder	06 Nos.	Empty
21	Emergency Generator Room	Foam Type Fire Extinguisher	01 Nos.	
22	Emergency Generator Room	CO2 Fire Extinguisher	01 Nos.	
23	Emergency Generator Room	Lead Acid Battery	04 Nos.	

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IHM Part II (left table) and IHM Part III (right table)

4.1.4. Ship Recycling Plan (SRP)

We were able to confirm that the overall forms had been developed adequately while on the other hand we gave the advice that the yard layout diagram should be updated to match the actual situation of the yard and the list of companies cooperating with the yard (suppliers) should be updated to match the actual situation. Furthermore, it is necessary for the SRP to reflect the circumstances specific to ships, but we were unable to confirm any record of the evaluation of risks specific to ships. In addition, our evaluation was that there was room for improvement in some of the detailed points of the content, such as the need to clearly define the cautions for when there is bad weather or flooding, the management of the pump room, etc.

Note that we confirmed that based on above criticisms, during the period of this survey, the layout diagram was updated to the latest version which matches the actual situation, and after reviewing all of the activities the supplier list was updated, so improvements have been made regarding the above criticisms. In addition, every time new services to be received from the supplier going forward were added, PHP immediately guaranteed that the list would be updated and declared regarding ships that it planned to recycle going forward that it would implement an evaluation of the risks specific to the ships.

List of Sub-Contractor / Suppliers and Service Provider has been Revised and CTI has been Incorporate in page no. 05 or point no. 32 of this list

List of Sub-contractors / Suppliers and Waste Recycler / Users							List No.: IMS / L / 20 Rev. No.: 04 Rev. Date: 01/12/2021	
Sr. No.	Description of Product and / or Services	Suppliers Name	Contact Person	Registered Address	Contact Details	Field of Activities and / or Services	License and / or Permits	License and / or permit Valid
A. Waste - Buyer / Recycler / Users								
1.	Other Oily Products and / or Oily Wastes	M/S. Sha Amanat Oil Supply	Md. Joyal	North Solim per,Fujdarhat CDA, P/o-Jafarabad, P/s- Sitakunda, Chittagong	01819-056800	Other Oily Products and / or Oily Wastes	ECC No.: 21-58711 Date: 03.06.2021	16 th April, 2022
2.	Lead Acid Batteries	General Battery Company Limited	Mr. Joyal Abodin	Plot no: 01, Kodamtali Road, Shyampur Kadamtali VA, Dhaka	01718-598301	Lead and Battery production	ECC No.: 20-41639, Date: 02.02.2021	28 th Jan. 2022
3.	Bio-Medical Waste	Chattagram Seba Sangstha	Md. Zamir Uddin	Dudu Flaso (6 th floor), 1059, OR Nazim Road, Panchlaish, Chittagong.	01755-487760 01707-007313	Waste Handler	License No.: 46.11.1601.006.39.03.20-89, Date: 12.01.2021	11 th Aug. 2024
4.	Gases (CO ₂)	M/S Nowsin Fire Enterprise	Md. Aziz	1549/1503, Penwala Para, Agrabad, Doublemorning, Chittagong.	01819-532937	CO ₂ Gas Buyer/Fire extinguisher Supplier	License No.: D A D/Cig/zone-3-951-19-20, Date: 16.09.2021	30 th June. 2022
5.	Gases (CO ₂)	Lucky Enterprise	Md. Monir	96 Butali road, Kothowali, Chittagong.	01718-134320	CO ₂ Gas Buyer/Fire extinguisher Supplier	License No.: D A D/Cig-923-2012-2013, Date: 14.07.2021	30 th June. 2022
6.	Non Ferrous Material	M/S. Sha Amanat Enterprise	Md. Abdur Rahman	Shagorika road, North Sattoli, Pahantoli, Chittagong	01819-369965	Copper, Brasses, Aluminium, Iron, Zink and Scrap lead	ECC No.: 21-58075 Date: 14.04.2021	2 nd April, 2022
7.	Medicine	Progoti Medical Hall	Rupok Karri Dhor	170, G.C market Hazari lone, Kothowali, Chittagong	01821-060060	Medicine Seller	Trade License No.: CG-1222 A/B Date: 01.03.2019	29 th Feb. 2021
8.	Electronic Waste	Anzu Recycling & E-waste Company Ltd.	Md. Malik Hossain Al Maman	Deipara, Kutubpur, Fatullah, Narayanganj, Narayanganj Sadar, Narayanganj	01716-531067	E-waste	ECC No.: 20-35403, Date: 13.01.2020	15 th Sep. 2020
9.	Glass Waste	PHP Float Glass Ind. Ltd.	Mr. Avjit	Barabandha, Sitakunda, Chittagong	01914-326679	Manufacturer of Float Glass	ECC No. 21-65928 Date: 02.11.2021	1 st Nov, 2022
10.	Bunker, Oily Waste and Other Oily Products Transport Service	O.T. Serjil-1	Md. Hyridoy	High speed Navigation Com. Ltd. 103, Ground floor, Motijil B/A, Dhaka-1000.	01888-788325	Transport Service for Bunker, Oily Waste and Other Oily Product by Lighter Vessel	License No.: 101-3(N)-0073, Date: 02.01.2019	31 st Dec. 2021
11.	Bunker, Oily Waste and Other Oily Products Transport service	O.T. Malek Sha	Md. Hyridoy	M/S Sea Green Enterprise, Shang-318, 5K Muzib road, Agrabad, Chittagong.	01888-738325	Transport Service for Bunker, Oily Waste and Other Oily Product by Lighter Vessel	License No.: 140-3(N)-4865, Date: 22.10.2020	31 st Dec. 2022

Updated supplier list

4.1.5. Ship scrapping permission system

In accordance with the local laws and regulations, PHP used a permit issued by the Ministry of Industries to confirm that it had been granted cutting/recycling permission by the authority with jurisdiction (the Ministry of Industries).

4.1.6. Evaluation of Stage 01

Regarding the matters to be confirmed in Stage 01, our evaluation is that appropriate response measures based on the HKC have been taken. In particular, we reached the evaluation that the information about hazardous materials acquired with on-board sampling has been reflected appropriately in the scrapping

plan, which contributes to ensuring the safety of the workers (protective clothing, etc.) when implementing the scrapping work.

On the other hand, regarding the SRP, our evaluation is that although PHP declared regarding ships it plans to recycle going forward that it would implement evaluations of the risks specific to the ships, at the present time it has not achieved the industrial safety and environmental contamination measures sought by Japanese shipping companies, so we evaluated that PHP had achieved conditional compliance predicated on implementation of the measures in its declaration going forward.

4.2 Stage 02

At this stage, we used an auditing report by a third party auditor and the results of the hearing of opinions from the PHP yard to confirm and evaluate the pre-cutting work in the ship recycling processes of the PHP yard (cold work activities), in particular the activities pertaining to “safe-for-entry” and “safe-for-hot work” listed below, whether an effective safety management structure (document management, checklists, a certification and permission system, a contact and command structure, etc.) has been built and whether plans and preparations pertaining to the industrial safety response and the response at times of emergency (PPE, fire extinguishing and disaster prevention equipment, instrument development, etc.) have been prepared and executed.

Activities pertaining to “safe-for-entry”:

- Establishment of safe-for-entry standards (development of in-house manuals, inspection procedures, work equipment, etc.)
- Safe entry inspection and issuance of an entry permit (management sheet, management certificate)
- Posting of warning signs and labels in dangerous locations
- Judgments by people with adequate knowledge
- Confirmation of the oxygen concentration when working in confined spaces
- Confirmation of the atmosphere of flammable gases before the workers go on board
- Confirmation of the atmosphere of toxicity, corrosiveness and irritating properties and the degree of permeation of smoke and the amount of smoke remaining before the workers go on board
- Operational measures such as clear indication of dangerous zones, lighting, installation of ladders, clear indication of evacuation routes, etc.

Activities pertaining to “safe-for-hot work”:

- Establishment of safe-for-hot work standards
- The presence of people with adequate knowledge for judging safety during field work
- Inspections, tests, and work completion judgments after work completion
- Posting of hot work permits, warning signs and labels
- Operational measures such as fire extinguishing equipment, ventilation, lighting, wearing PPE, preparation of transportation fixtures, etc.

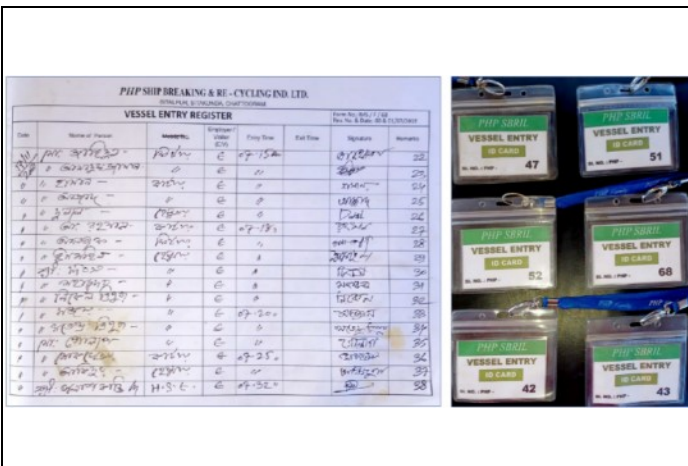
4.2.1. Ensuring accessibility pertaining to work times

Regarding the route for access onto the ships, we confirmed that a pier has been installed, ensuring a safe access route. Furthermore, a structure has been built under which visitors are managed using a visitor management sheet when entering a ship, and in addition a management certificate is distributed to the visitors, so when an accident occurs the workers on-board can be confirmed promptly.

We confirmed that on the ships there are no obstacles, etc. on the routes and emergency meeting places have also been reliably established. Furthermore, we confirmed that sawdust and sand for removing oil or grease in the case that oil or grease gets on the floor was stored in a variety of places.

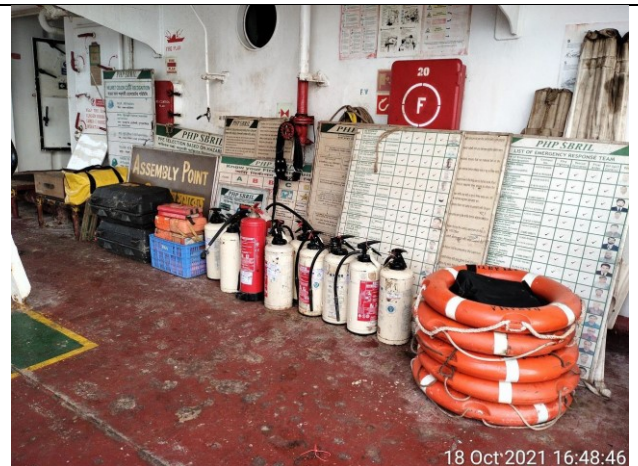
Regarding dangerous zones, we confirmed that, based on the SRP, PHP is using marking to clearly indicate the storage locations for dangerous objects such as fuel tanks, etc. and other dangerous zones and entry prohibited zones, etc. and to alert the employees. Furthermore, we confirmed that PHP is clearly marking the route for emergency evacuation routes as well. On the other hand, regarding the warning labels notifying the employees, etc. of dangerous locations, warning labels with a design that catches the eye have been posted in appropriate places, but we found flaws in the posting of some of the labels. The PHP yard responded to this criticism by adopting laminated posted labels which do not peel off easily and are able to prevent the deterioration of the display due to rain water, etc., and made improvements promptly.

In addition, at low tide the intertidal zone turns into mud which is difficult to get a foothold on, so there are concerns that this will obstruct emergency transportation and the transportation of equipment for fire extinguishing work, etc.; therefore, the PHP yard took measures such as mock drills (emergency response training) and advance preparations for emergency transportation, etc.



On-board visitor management sheet and management certificate

Pier used for entry

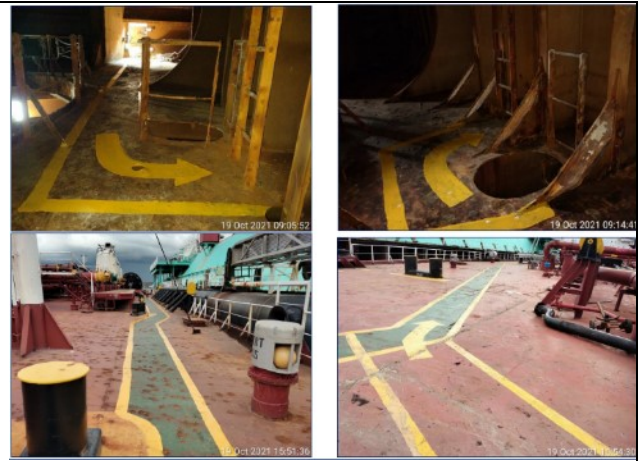


Aperture used for entry

Installation of fire extinguishing/disaster prevention equipment



Designated evacuation places on board



On-board evacuation route signs



Installation of laminated warning labels

4.2.2. Safe-for-entry/safe-for-hot work certification system

We confirmed that in order to manage the number of people on board at the time of an emergency evacuation, PHP has established standards for entering a ship, maintained the posting of alerts and warnings, developed a system for the surveillance of safe work by the workers, and deployed people in charge for that purpose. On the other hand, one criticism was that we found room for improvement in the techniques for managing the number of people who have entered the ship. Furthermore, we confirmed through a witnessed inspection by the third party auditor that the removal/decontamination of explosive materials such as residual oil/sludge, etc. inside the oil tank zone and in the adjacent zones is being implemented appropriately before the hot work. Note that based on the criticism in the monitoring survey, regarding the ways of managing the number of people who have entered the ship, the PHP yard is newly considering the adoption of a system for managing the number of people using electronic sensors, and we confirmed that entry points for security checks have been established.



Establishment of entry points

4.2.3. Work in high places

Concerning work in high places, we confirmed that under the supervision of the HSE Department, in order to prevent employees falling accidentally, PHP is appropriately implementing fall prevention measures for when carrying out work in high places, such as the use of fall arresting equipment fixed to a harness, installation of footholds, introducing work stop positions for the workers based on the clearance calculations, etc., and as necessary it is taking safety measures such as installing additional barricades on warning lines and the deck, etc. On the other hand, regarding the methods used to install stairs/ladders, flaws in the way some of them were fixed in place were found. In response to this evaluation, the PHP yard committed to adopting additional measures when fixing ladders in place in order to ensure the safety of the workers and a safe work environment.



Installation of fall prevention gears for work in high places

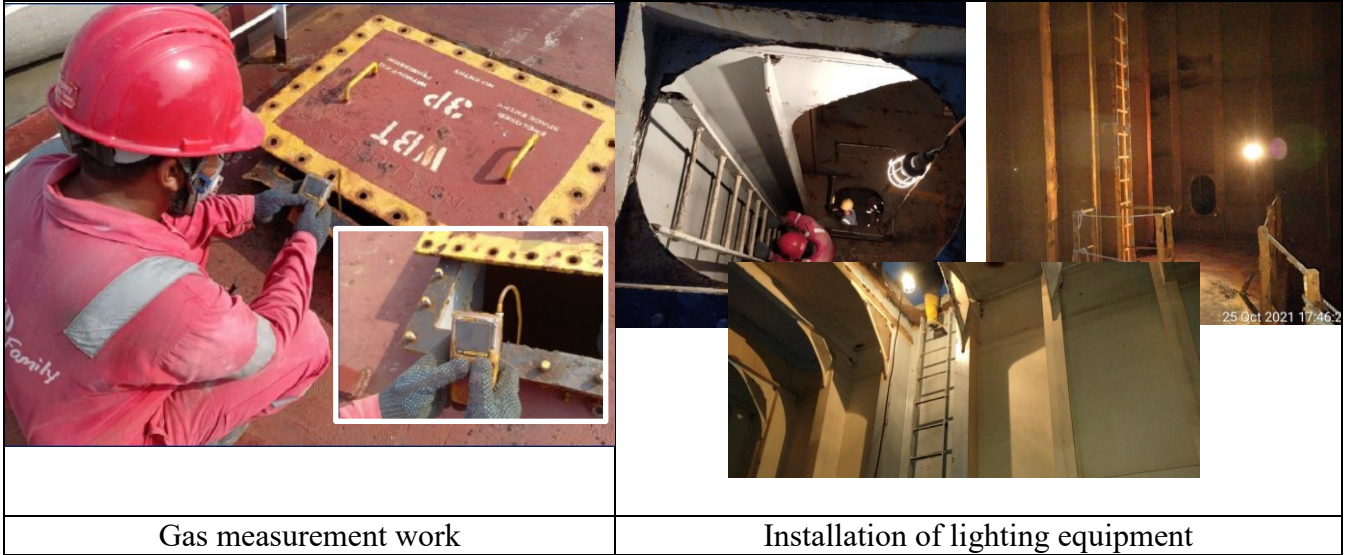


Installation of fall prevention fences (work in high places)

4.2.4. Work in confined spaces

Concerning work in confined spaces, we confirmed that persons with knowledge nominated by the HSE Department are implementing risk assessments. Furthermore, we confirmed that PHP is appropriately implementing responses to ensure safety on the work front line, including surveillance of gas monitors (oxygen, carbon monoxide, hydrogen sulfide and the lower explosive limit (LEL)

concentration, etc.), pre-work meetings, deployment of attendants, installation of fire extinguishers, first-aid kits, the development of communication (transceivers), etc. Note that in the case that the ventilation is inadequate, PHP uses mechanical fans or electrical fans to improve the ventilation, and as necessary it installs lighting equipment to ensure illuminance of 300 lux or more.



Gas measurement work

Installation of lighting equipment

4.2.5. Preparatory activities for hot work

We confirmed that when engaging in the preparation activities (cold work) carried out in advance of the use of fire, such as the burners, etc. used when cutting the deck, PHP implements the work after obtaining commencement permission from the HSE Department in light of the in-house rules stipulated in advance as matters for compliance. Furthermore, we confirmed that safety and environmental measures for hot work such as opening pipes to remove the flammable gases, etc. inside the pipes, and cut line paint removal work for preventing the emission of smoke containing heavy metals during the cutting work and preventing marine contamination by paint chips, etc. are being appropriately implemented in accordance with the in-house manuals.



Cold work commencement permit

Paint removal work on the cut line

4.2.6. Evaluation of Stage 02

Regarding the matters to be confirmed in Stage 02, our evaluation is that appropriate response measures based on the Hong Kong Convention have been taken.

On the other hand, flaws in the methods for fixing ladders in place were found, so we evaluated that at the present time PHP has not achieved the industrial safety and environmental contamination measures sought by Japanese shipping companies and evaluated that PHP had achieved conditional compliance predicated on taking additional measures to safely fix the ladders in place.

4.3 Stage 03

At this stage, we used an auditing report by a third party auditor and the results of the hearing of opinions from the PHP yard to confirm and evaluate the status of the removal, storage, and disposal methods for the hazardous materials listed below.

Hazardous materials subject to the survey:

- Asbestos (removal using a negative pressure chamber system, a dedicated storage facility, solidification)
- PCBs (removal of all of the solid, muddy and liquid forms, a dedicated storage facility, incineration)
- Ozone-depleting substances (removal of the solids and gases, a dedicated storage facility, delivery to the vendor)
- Ship bottom antifouling paint (removal by peeling off, airtight container storage, incineration after delivery to the vendor)
- Materials containing heavy metals (removal overboard, airtight container storage, delivery to the vendor)
- Persistent organic pollutants (removal overboard, a dedicated storage facility, incineration after delivery to the vendor)
- Radioactive materials (mainly smoke detectors) (removal in original form, a dedicated storage facility, delivery to the authorities)
- Insulating materials such as glass wool, etc. (removal overboard, a dedicated storage facility, delivery to the vendor)
- Paint chips, plastic waste, rubber waste (removal overboard, a dedicated storage facility, incineration after delivery to the vendor)
- Medical waste (removal overboard, a dedicated storage facility, delivery to the vendor)
- Electronic waste (removal overboard, a dedicated storage facility, delivery to the vendor)
- Oily contaminated waste (rags, sand, etc.) (removal overboard, a dedicated storage facility, incineration after delivery to the vendor)
- Bilge water (removal overboard, an oily water separation device, the oil content is delivered to the vendor and the other content is given effluent treatment), etc.

4.3.1. Asbestos

We confirmed that negative pressure chambers have been developed as equipment for the decontamination and solidification treatment of asbestos, and PHP is using said equipment to carry out the treatment appropriately. Furthermore, we confirmed regarding zones and pieces of equipment which are suspected to contain asbestos that PHP is posting alerts and warnings, workers wearing appropriate protective clothing are carrying out the removal work on the ships, appropriate solidification treatment is being implemented in the negative pressure chambers, and the treatment records are being stored appropriately.

4.3.2. Ozone-depleting substances

We confirmed that PHP is storing in bottles the gaseous ODS which were recovered from the compressors of the refrigeration system using recovery units. We confirmed that training pertaining to ODS recovery was implemented during the monitoring survey period while on the other hand we could not confirm any record of past training.



ODS removal work



Implementation of training pertaining to ODS recovery

4.3.3. Waste oil, waste work oil, paint chips, PCBs, waste plastics

We confirmed that before the hot work the work of removing residual oil and sludge from fuel tanks, bilge tanks, etc. in order to prevent in advance fires and maritime oil spill contamination during the steel sheet cutting action is carried out as manual work, the oily waste generated by this tank cleaning, etc. is extracted for a fee by a certified external service supplier (commonly called a “vendor”), and the PHP yard carries out training for the waste oil transportation workers of the subcontractors. Furthermore, we confirmed regarding the waste oil inside the ships (including oily water mixtures (slop) and polluted mud (sludge)) that a team which has received training pertaining to such work is dispatched to recover all of it on the ships by putting it into steel drums, moving it to crude oil storage tanks inside the yard, and reselling it.

Note that we confirmed that currently this yard is not operating its own incinerator but it is carrying out the treatment properly in the form of outsourcing to LafargeHolcim’s Geocycle brand (a clinker and cement manufacturing factory in the Sylhet area in northern BD). On the other hand, PCBs, etc. are stored in storage facilities equipped with ventilation fans, but there is increasing pressure on the warehouse, so it seems that going forward it will be necessary to upgrade its capacity.



Waste work oil removal work



The work of extracting residual oil



Tank cleaning work

LafargeHolcim

Ref: LA02/AF08P Date: June 22, 2021

Certificate of Acceptance and Zero-Waste Disposal

This is to certify that LafargeHolcim Bangladesh Limited, having waste in processing approval from Department of Environment, has received and re-processed the following items:

Company/Generator : PHP Ship Breaking and Recycling Industries Limited
 Type of Waste : Oil used, Oil rags, Flammable, Plastic and Rubber waste
 Total Quantity/Volume : 9.15 MT

Date Delivered	Challan No.	Type of Waste	Received (in MT)	Date of Disposal	Co-Processed (in MT)
May 9, 2021	01082	Oil used	2.32	June 22, 2021	232
		Oil rags	0.06		0.06
	01083	Plastic rags	2.38		2.38
	01084	Plastic and Rubber waste	4.29		4.29
			9.15		9.15

This certificate is issued as per the terms and conditions mentioned in the existing offer contract between PHP Ship Breaking and Recycling Industries Limited and LafargeHolcim Bangladesh Limited.

Nur-E-Tareen Chowdhury
 Executive-Sales, Marketing and Communication (Geocycle)
 LafargeHolcim Bangladesh Limited

Faisalul Alam Sarkar
 Deputy Manager (Geocycle)
 LafargeHolcim Bangladesh Limited

LafargeHolcim Bangladesh Limited
 a company of Lafarge and Holcim

Head Office: Bhaba, Unit 27A, 13 Road, Dhaka-1212, Bangladesh. Phone: +880 2100 1310. Fax: +880 2100 1300. www.lafargeholcim.com

A proper treatment certificate issued by LafargeHolcim's Geocycle brand (shipment of just over nine tons of flammable hazardous waste)

4.3.4. Bilge water

We confirmed that waste water such as bilge water, etc. from scrapped ships is transported to oily water collector tanks inside the yard and subsequently treated with an oily water separation device (separation capacity: 3L/hour). Furthermore, we confirmed that the water filtered using the oily water separation device is transported to an effluent treatment facility (capacity: 450KL) and the oil content is 10ppm or less, the legal standard, then we confirmed that the water is discharged. Note that the recovered oil is resold in the same way as the waste oil above, so it is transported to oil collector tanks. Also note that we confirmed that rainwater, etc. is also treated at the effluent treatment site installed attached to the waste water treatment facility,² and the water is discharged in accordance with the above standards.

² Rainwater which has fallen on the complete floor unambiguously contains oil content, so PHP ensures that it firstly flows into the waste water treatment device.



Oily water separation device



Waste water treatment facility

4.3.5. Treatment and storage of other wastes/hazardous wastes



Oil sludge, electronic waste, lead storage batteries, and medical waste are packed on the ships and after removal are sold to officially recognized vendors. Furthermore, the current situation is that the glass wool is stored appropriately inside the yard, and we are waiting for a judgment by PHP on whether to ship it to the hazardous wastes treatment facility that the government is considering developing after it is developed, or whether it is possible to ship it to a domestic clinker manufacturing factory. On the other hand, the intrusion of rainwater into the on-board battery room was found, so there was the criticism that measures should be taken to ensure that rainwater does not intrude into the battery room, and that foodstuffs should be recovered promptly without leaving them unattended in the provision store. In addition to this, we gave the advice that when engaging in the storage of hazardous wastes a Material Safety Data Sheet (MSDS) should be posted in order to ensure the safety of the workers. Note that the PHP yard responded to the above criticism and advice by analyzing the composition of the water that inundated the battery room to confirm that there was no contamination and taking steps to ensure that the door of the battery room closes tightly, and in addition by reliably implementing ventilation in the provision store and committing to promptly disposing of food waste in the case that resale of the food items is not possible. Furthermore, we confirmed that MSDSs are now being posted to all of the hazardous wastes stored inside the yard, so the management of hazardous wastes has been improved.



18 Oct 2021 14:15:56



8 Nov 2021 12:21:33

Removal of medical waste and packaging used for its transportation off the ship	Lead-acid battery removal work
	
Storage and management of hazardous wastes using MSDSs	Waste stored inside the yard

4.3.6. Tracing of hazardous wastes

We used a certificate (stating the date, treatment contractor, delivery volume, estimated amount in the IHM, treatment method, and approver) and a document certified by the authorities to confirm that all of the hazardous wastes treated externally are being treated properly based on internal rules and manuals. Furthermore, PHP is commencing surveillance processes for its service suppliers, and has declared that it will visit and survey the facilities of its subcontractors regularly as necessary.

4.3.7. Evaluation of Stage 03

Regarding the matters to be confirmed in Stage 03, our evaluation is that appropriate response measures based on the Hong Kong Convention have been taken.

On the other hand, it was confirmed that for some of the hazardous wastes there are no treatment facilities in BD so the hazardous wastes continue to be stored inside the yard and it was pointed out that it is necessary to establish a final disposal site for the hazardous wastes and to continue to closely watch the trends regarding the development of related laws.

4.4 Stage 04

At this stage, we used an auditing report by a third party auditor and the results of the hearing of opinions from the PHP yard to confirm and evaluate the series of cutting procedures and related recycling processes such as block transport, etc. listed below, which are carried out on the impermeable floor at the intertidal zone and inside the yard.

Activities subject to the survey:



- Cutting the composite boards of the covers, hatches, etc.
- Removal and carrying out of the ship fittings such as anchors, wiring, hydraulic circuits, winches, etc.
- Cutting and dismantling of each block of the ships in the intertidal zone
- Selection of the cutting zone taking into consideration the resilience (stability) of the ship
- Transporting the dismantled blocks using cranes, etc.
- Confirmation of the work conditions in the work area, including the meteorological conditions

- Ensuring safety during work in the cutting area (including confirmation of the safety of the nearby vicinity when using winches)
- Sorting, storage and cleaning inside the yard of materials such as iron and steel, non-ferrous metal, wood, plastic, etc.
- Confirmation of the gas concentration and removal of all of the residual material which could not be removed at the decontamination stage
- Cleaning of the cutting lines until the steel sheets are exposed

4.4.1. Primary cutting work in the intertidal zone

We confirmed that in the primary cutting work to cut the ship’s hull into each block, PHP considers the internal part of the ship itself to be an impermeable floor and implements the work in the intertidal zone while taking care to ensure that there is no leakage of oil to the beach. Furthermore, we confirmed that blocks with no oil, etc. stuck on them and posing no danger of contamination are directly dropped into the intertidal zone and transported to the onshore yard using winches, whereas blocks with oil, etc. stuck on them are transported to a concrete floor which oil does not permeate, using tower cranes for blocks dropped to the inside part of the ship or using barges for blocks dropped to the barge cranes, to ensure that these blocks do not make contact with the beach.

In addition, we confirmed that cold opening technologies (techniques for manually opening materials such as pipes and pipe sections, etc. using tools that do not generate friction or sparks) have been adopted in the cutting of pipelines and that work to close apertures in the double bottom so that seawater does not intrude has been implemented appropriately.

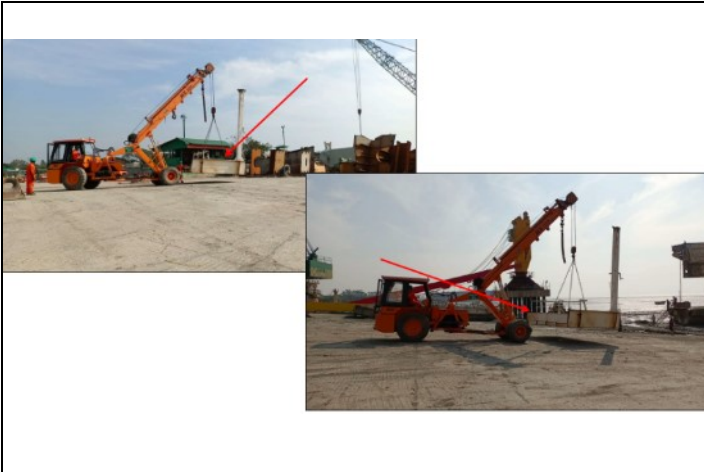
	
<p>Clean scrapping block cutting to the low tide zone</p>	<p>Sealing of the double bottom</p>

	
<p>Scrapping block cutting to on-board (the ship's bottom)</p>	<p>Scrapping block transportation using a barge crane</p>
	
<p>Scrapping block transportation to the impermeable floor (tower cranes and barge cranes)</p>	<p>Impermeable floor with concrete laid on top</p>

4.4.2. Secondary and third cutting work

We confirmed that the secondary and third cutting work is being implemented on an impermeable concrete floor, and an appropriate effluent system has been developed and is operating in the area. On the other hand, there was the criticism that appropriate illumination had not been ensured in the night cutting work and there was the criticism that not all of the workers, including workers who were probably cleaners and employees of subcontractors, were made to wear appropriate personal protective equipment (PPE) inside the yard.

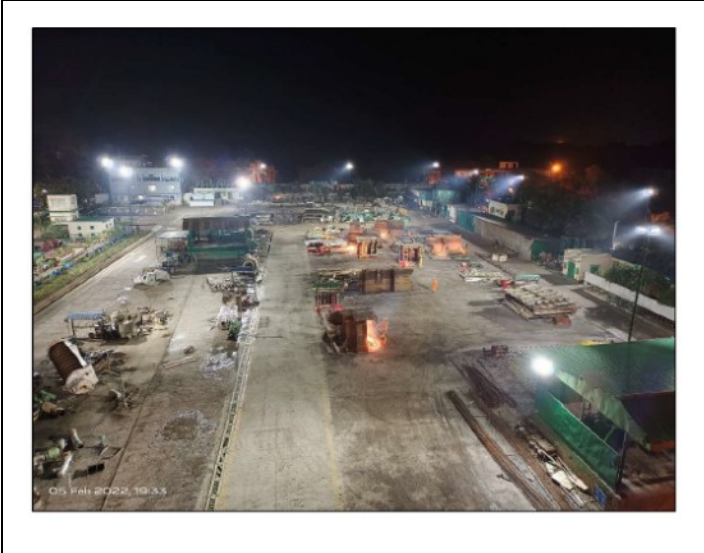
In response to these criticisms, PHP made capital investments in night lighting and implemented improvements so that it could carry out evacuation training at night as well. Furthermore, it committed once again to thoroughly implementing the wearing of PPE, including by the workers of subcontractors, and to providing PPE to workers free of charge. Moreover, PHP decided to make an investment of approximately US\$400,000 to develop additional drainage canals to prevent oil contamination in the secondary cutting area and it is currently commencing their construction.



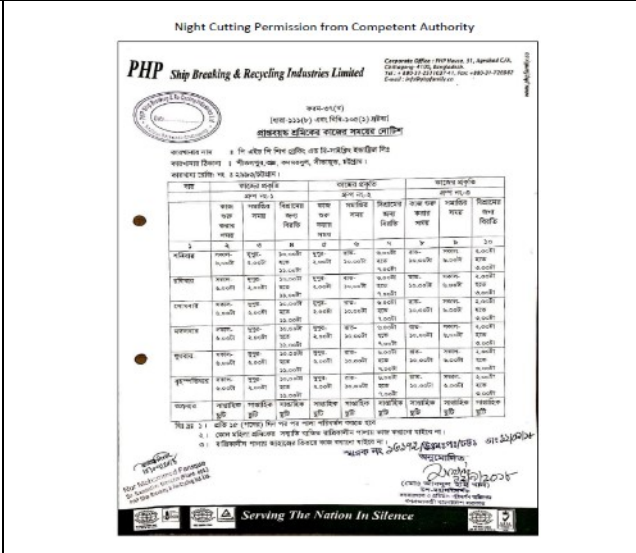
Transportation of a scrapped block inside the yard



Development of additional drainage canals in the secondary cutting area



Renewal of the night lighting equipment



Night work permit

4.4.3. Stockyard and winches

We confirmed that a safe stacking height is maintained when storing scrap materials, pipes, and plates and that barricades have been installed on the periphery to ensure safety. Furthermore, we confirmed that measures have been taken such as a supervisor paying close attention and restrictions on the movements of the people nearby, etc. when the winches are operating. On the other hand, there was the advice that PHP should take measures such as installing visual and auditory alarms, etc. in order to notify workers of the danger in the case that the winch engine is overloaded. In response to this, the PHP yard installed a tachometer to prevent overloading and it is at the stage of selecting the procured components for the installation of the alarms.



Barricades and stacks in the stock yard

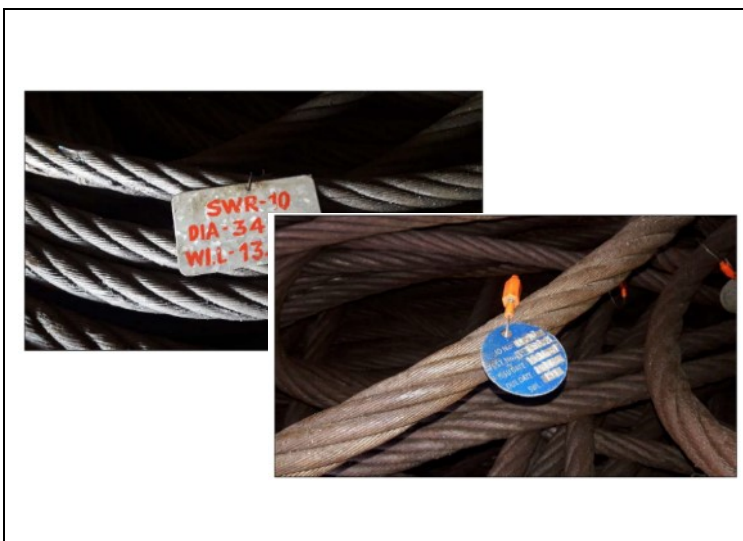


Winch installed inside the yard

4.4.4. Maintenance system for the instruments, work machinery and equipment

We confirmed through the load test certificates, certification, etc. that the machinery and devices were being tested and calibrated regularly by a third party testing institution. On the other hand, there were criticisms saying that PHP should thoroughly implement a policy of not storing unnecessary things in the oil recovery tools storage box in order to respond immediately when there is an emergency, and that it should add gloves and gumboots to the equipment list of the oil recovery tools. Furthermore, the wire ropes used in the winches were not identified individually, so the attachment of tags, etc. which can identify each wire rope in order to manage the inspection status of the wire ropes, etc. was encouraged.

We confirmed with an on-site investigation that in response to these criticisms, etc., the PHP yard has revised the inventory list of the oil spill kit in order to develop appropriate oil recovery tools, has newly introduced the proposed fixtures content, and has taken measures for improvement. Moreover, we confirmed that all types of haulage devices, including the winches and wires, are being regularly tested and verified, and that the HSE team is carrying out additional safety checks on wires which are found to have lost their tags.



Tag management used in confirmations and inspections of the state of the wires

INVENTORY LIST OF OIL SPILL KIT PHP Ship Breaking and Recycling Industries Limited		
No.	Name of Item	Remarks
01	Oil absorbent booms	
02	Oil absorbent pad	
03	Oil absorbent roll	
04	Oil absorbent pillow	
05	Oil spill dispersant (SPAD)	
06	Sea float	
07	Shovel	
08	Waste collection bag	
09	Chemical hand gloves	
10	Overboots	
11	Coverall	
12	Safety goggles	
13	Helmet	
14	Life jacket	
15	Ring buoy with rope	



Confirmation of the full provision of the oil spill kit and inventory list

4.4.5. Evaluation of Stage 04

Regarding the matters to be confirmed in Stage 04, our evaluation is that appropriate response measures based on the HKC have been taken. In particular, it was confirmed that in work in the intertidal zone beach, work taking into consideration oil spills and other marine contamination risks is being implemented and environmental contamination measures are being taken.

On the other hand, our evaluation is that although PHP declared that it would install alarms which give a notification when the winch engine is overloaded, an improvement which we pointed out was necessary, and that going forward it would work toward improvement in the wearing of PPE, including by cleaners and external traders, at the present time it has not achieved the industrial safety and environmental contamination measures sought by Japanese shipping companies, so we evaluated that it had achieved conditional compliance predicated on implementation of the measures in its declaration going forward.

4.5 Stage 05-1

At this stage, we used an auditing report by a third party auditor and the results of the hearing of opinions from the PHP yard and its employees to confirm and evaluate labor training and benefits package management (labor management) centered on the matters subject to the survey listed below.

Activities subject to the survey:

- Implementation of job hazard analysis
- Posting of alerts and warnings
- Development of laundry facilities, showers, eating and drinking areas, toilet facilities, changing rooms, etc.
- Benefits package system (provision of paid holidays, recreational facilities, etc.)
- Implementation of safety training
- Development of safe protective clothing (PPE)
- Development of fire prevention/disaster prevention measures and training, an evacuation route plan, posted signs
- Elimination of forced labor, whether or not there is a system for hearing the opinions of workers

4.5.1. Training for workers

A wide range of training programs have been established and they are adequate for enabling the workers to fulfill specific tasks and functions safely. Regarding the training techniques, the lecture format is used most generally, and video/animation techniques have also been introduced for illiterate people. We confirmed that the PHP yard guarantees that it will provide opportunities for all of the workers to receive appropriate training in accordance with their tasks and that the training records are stored appropriately.

We confirmed that the types and frequency of training are regularly reviewed and a variety of training is implemented for a variety of work positions. Note that under the curriculum the same lecture content is implemented twice a year. However, in many cases, there is a lack of training in which the lecturers and the students can communicate with each other, so we gave the advice that training which gets the attention of the students, such as using visual media, etc., should be incorporated.

In addition, we confirmed that evacuation training, training in the transportation of people who need aid, firefighting training, etc. are implemented regularly. Note that we confirmed that the training activities postponed due to the impact of Covid-19 were resumed in January 2022. Furthermore, regarding fire extinguishing equipment, we confirmed that two fire pumps have been installed on the ships, and that the authorities are implementing regular pressure testing of said pumps.



Safety confirmation before work



Classroom lecture training

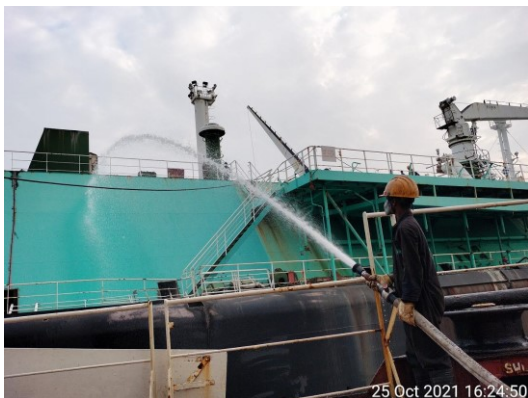
No.	Name of Trainees	Signature	Signature
1	Mr. Subal Das	[Signature]	[Signature]
2	Mr. Subal Das	[Signature]	[Signature]
3	Mr. Subal Das	[Signature]	[Signature]
4	Mr. Subal Das	[Signature]	[Signature]
5	Mr. Subal Das	[Signature]	[Signature]
6	Mr. Subal Das	[Signature]	[Signature]
7	Mr. Subal Das	[Signature]	[Signature]
8	Mr. Subal Das	[Signature]	[Signature]
9	Mr. Subal Das	[Signature]	[Signature]
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14	Mr. Subal Das	[Signature]	[Signature]
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27	Mr. Subal Das	[Signature]	[Signature]
28	Mr. Subal Das	[Signature]	[Signature]
29	Mr. Subal Das	[Signature]	[Signature]
30	Mr. Subal Das	[Signature]	[Signature]



List of trainees and training completion certificate



Emergency transportation training



Inspection of fire prevention equipment



Training for rescuing people who need aid

4.5.2. Prevention of child labor/forced labor

We confirmed the in-house rules at the PHP yard, and in addition used an interview survey of the management team and the general workers to confirm that only workers 18 years old or older are working inside the yard and there are no child laborers. However, provisions for child labor rectification policies and child labor prevention procedures had not been established. Furthermore, an internal policy in writing for avoiding forced labor in all of its forms had not been prepared. For this reason, there were the criticisms that it was necessary to implement procedures and training for preventing harassment, coercion, threatening behavior, physical abuse, sexual abuse, or verbal abuse towards workers, and that

it was necessary to establish internal rules in writing for equality and avoiding all forms of discrimination in the workplace.

In response to these criticisms, the PHP yard has established a system for complaints and proposals in writing and has already begun implementing training for that system for all of the workers. Furthermore, we confirmed that documents presenting the policies and shared procedures of the company concerning employment and working conditions have been issued. Note that PHP is complying with all of the requirements provided for in the domestic laws related to labor management.

Roles, Responsibility and Authority has been given to HSE Officer / Supervisor in written document

PHP Ship Breaking & Recycling Industries Limited

Corporate Office : PHP House, 21, Agrabad CA, Chattogram-4100, Bangladesh
Tel: +880 31-2511037-41, Fax: +880 31-726982
E-mail: info@phpmly.com
Factory : Situlpur, Sitakunda, Chattogram.

www.phpmly.com

01 February 2022

Mr. Sehal Anwar
Safety, Health and Environment Officer
PHP Ship Breaking and Recycling Ind. Ltd.
Situlpur, Sitakunda, Chattogram

Sub: Roles, Responsibility and Authority

Dear Mr. Sehal Anwar,

With reference to your appointment letter issue on 27 March 2019, we would like to provide you your roles, responsibility and authority at PHP Ship Breaking and Recycling Industries Limited in written:

You are authorized to stop the production or any work activity at SRF, if any abnormal situations, risks or hazards are identified during the work period.

- To issue and approved the work permit at site and on ship.
- To liaison with different stakeholders on matters related to environment, health and safety.
- To ensure the good practices followed on environment, health and safety.
- To identify proper root cause of the incidents and take necessary actions to reduce or eliminate the incidents during ship recycling operation.
- To identify and inform the top management for any resource requirements related to EH&S.
- To ensure that integrated management system is established, implemented and maintained in accordance with International Standards and ensure about HSE team is well aware about it.
- To ensure all work to be done as per the requirement of HKC, MEPC and others international standard which is adopted by the organization.
- To arrange necessary training to all employees as per the training matrix and plan.
- Review on health & safety risk rating and performance of significant health, safety, risks and hazards.
- Review of management programme and objective.
- To maintain applicable records of the ship recycling facility.
- To prepare ship recycling report, involve in preparation of SRP and relevant document related to ship recycling.
- Responsible for overall EH&S compliance of the SRF and ensures that any activity of the SRF or contract entered into the compliance with the SRFP and other relevant requirements.
- To ensure that SRF is well prepared and able to handle any emergency situation. To arrange mock drill as per emergency preparedness and response plan.
- To ensure and arrange proper identification, removal, collection, storage and disposal of hazardous and non-hazardous waste generated during recycling operation.
- To assist and guide HSE supervisors on matters related to EH&S.
- To remove the workers from danger when they have reasonable justification to believe that there is an imminent and serious risk to their safety and health, and to allow such concerns to be immediately communicated to management.
- To report top management in case of any abnormal situation occurred.

Thanking you
For – PHP Ship Breaking and Recycling Industries Limited

Md. Khaliduzzaman
Md. Khaliduzzaman – Sr. General Manager

Serving The Nation In Silence

Document recognizing the granting of authorization to stop production for industrial safety reasons (reissuance on February 2022 of this document which is similar to a document already issued in March 2019)

4.5.3. Benefits package system

Through interviews with the employees, we confirmed that paid holidays which cover the national holidays can be taken, free dormitory facilities (fully equipped with cooking and laundry facilities, showers, toilets, bedrooms, recreation facilities) are provided, and PPE is provided to the workers free of charge.

4.5.4. The rights of the employees (opportunities for employees to declare their opinions, etc.)

We confirmed that complaints boxes for the employees to state their opinions to the company have been installed in two places: near the security room and near the PPE storage and provision center inside

the yard. Furthermore, we confirmed using documents that workers representatives, consisting of three people, are appointed, and they have been given the authority to suspend work for which there are doubts about safety.

On the other hand, there were the criticisms that the mechanism for processing internal complaints has not been documented, and documents guaranteeing that the anonymity of workers will be ensured and they will be protected from retribution have not been created. Furthermore, there were the criticisms that training has not been provided to workers regarding policies and rights claims concerning employment and working conditions, including the internal complaint mechanism, and a complaints processing committee has not been established either. The voluntary adoption of international standards concerning social accountability such as ISO 45001, etc. demonstrates a commitment to social standards concerning corporate governance, so it was recommended that as a company in charge of businesses which are engaged in international activities, PHP should actively tackle this field. In response to these criticisms, the PHP yard has already implemented training on the themes of the rights of workers, etc., established a complaints processing committee, installed complaints boxes in multiples places inside the accommodation buildings where there is no surveillance, etc., and implemented improvement activities.

4.5.5. Evaluation of Stage 05-1

Regarding the matters to be confirmed in Stage 05-1, our evaluation is that appropriate response measures based on the HKC and other international standards, etc. have been taken. Furthermore, we evaluated that PHP is implementing prompt improvement measures regarding the criticism and advised matters and is a business operator carrying out outstanding initiatives.

4.6 Stage 05-2

At this stage, we used an auditing report by a third party auditor and the results of the hearing of opinions from the PHP yard to carry out confirmations and evaluations centered on the major matters subject to the survey pertaining to the completion of the ship recycling work listed below. Note that completion of the scrapping work for the ship subject to the monitoring survey is planned for after the end of this survey project, so for the confirmation and evaluation work at this stage we carried out the confirmations and evaluations using the method of surveying the actual results in different ships for which the scrapping has already been completed in the yard subject to the survey.


Activities subject to the survey:

- The Statement of Completion issued by the ship recycling facility and reported to the authority with jurisdiction (the Ministry of Industries in the case of BD) after completion of the recycling
- The matters reported in the Statement of Completion (which must be issued within 14 days from the date the ship recycling is completed in accordance with the Ship Recycling Plan (SRP), and contain reports concerning the incidents and accidents which cause damage to human health and/or the environment)

4.6.1. Environmental monitoring

We confirmed that the results of the environmental monitoring carried out by the Department of Environment in accordance with the rules stipulated by the authorities (the Ministry of Environment, Forest and Climate Change) are being published in the scrapping completion report. On the other hand, there was the criticism that provisions for the methods and standard permissible limits, etc. of the environmental tests were not stated in the report so improvement with respect to these points was desirable. Furthermore, there was the criticism that it was necessary for the PHP yard to take into consideration the characteristics of the facility to implement in-house the sampling of the soil and water inside the company's own yard at least, and it was evaluated that it was necessary for PHP to specify

and monitor the chemical, biological, and physical changes to the environment surrounding the ship recycling facility. In response to this evaluation, the PHP yard noted that the sampling and testing is being implemented by the authorities, but it has decided to consider whether regular implementation of those kinds of tests in-house is possible and is considering the introduction of the tests with reference to the practices of neighboring country India.



গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
পরিবেশ অধিদপ্তর
ইউটোম গবেষণার কার্যালয়
পরিবেশ ভবন, মন্ত্রিসভা ভবনের পাশে
ফকির মোকাম, পূর্ব দি, উত্তরায় .৪২০
www.doe.gov.bd

স্মারক নং: ১০৮৭

তারিখ: ১৪.০৪.২০১৩

স্বত্ব: PHP Ship Breaking and Recycling Industries Ltd.(OIL WATER SEPARATOR) , Shitalpur, Sitakunda, Chattogram.

বিষয়: মনুচিত স্থানে সঠিক পদ্ধতিতে পরিষ্কার করা।


স্থান:


মনুচিত স্থানে সঠিক পদ্ধতিতে পরিষ্কার করা:


Location	Sampling Date	Lab code	pH	DO mg/L	BOD mg/L	COD mg/L	TDS mg/L	TSS mg/L	Oil & Grease mg/L	Remarks
Outlet of oil separator	১৬.০৪.১৩	L-1836	7.88	4.86	16	41	819	10	2.1	
Bangladesh Standard of Waste Water for Industrial Units. Discharge to inland surface water as per ECR 1997.			6-9	4.5-8.0	≤ 50	≤ 200	≤ 2100	≤ 150	≤ 10	


স্বাক্ষর: পরিষ্কার করা হয়েছে।

Remarks:-All the tested parameters of the treated effluent are within the acceptable limit of ECR1997.


 Shafiqul Islam
 পরিষ্কার কর্মকর্তা


 Md. Kamrul Hassan
 পরিষ্কার কর্মকর্তা


 Md. Farouq Anwar
 পরিষ্কার কর্মকর্তা


 Ishrat Reza
 পরিষ্কার কর্মকর্তা

Environmental monitoring report

4.6.2. The accident report and the Emergency Preparedness and Response Plan (EPRP)

This is not an example related to the ship subject to this survey, but we confirmed from the activities records to date that detailed accident records (excluding accidents and cases causing damage to human health and the environment which can be recovered from within 48 hours) are being prepared on each occasion and are being submitted to the competent authority (the Ministry of Industries) as incident reports. On the other hand, it was recommended that ways be found to ensure that all of the people can know and learn from the reports and near misses, such as translating them into the local language and posting them on bulletin boards, etc., in order to ensure that the same accidents do not occur repeatedly.

Furthermore, we confirmed that the Emergency Preparedness and Response Plan (EPRP) has been developed appropriately and training (mock drills) is being implemented based on the plan, but there was the advice that the content of the plan should be organized in order to make the actions taken at the time of emergencies effective; for example, the stipulated instruction content should be made clearer, etc. We confirmed that in response to this PHP revised the EPRP taking into account said advice. Furthermore, we confirmed that it took the measures of translating the incident reports/near misses into the local language and posting them on the bulletin boards.

PHP Ship Breaking and Recycling Industries Limited

Form No.: IMS / F / 10
Rev. no.: 02
Rev. date.: 01/12/2019

INCIDENT REPORT

This form is for recording events causing safety or environmental hazards at SHF.

Sr. No.: 109 Date: July 07, 2021

SECTION 1 - GENERAL INFORMATION

Type of Incident: Fatality Medical Treatment Case First Aid Case Environmental Pollution
 Lost Time Injury Restricted work case Property damage Other (Specify below)

Name of injured-Worker: Md. Masur Rahman
 Worker's Job Title: Wire Handler
 Date and Time of Occurrence: July 07, 2021 / 12:31PM
 Repeated incident occurrence for the employee:
 Occurrence - 1 Occurrence - 2 Occurrence - 3

SECTION 2 - TRAINING DETAILS OF INJURED PERSON

Attended general safety induction training if yes, attach record: Yes No
 Attended job specific training if yes, attach record: Yes No

SECTION 2 - INCIDENT SCENARIO:

Location of Occurrence:
 Near winch no. 03.
 On ship Second Out. Zone Third Out. Zone Storage area Other

Description of incident:
 Oil spill occurred during removal of oil from oil drum for wire oiling near winch no. 03 due to improper handling.

SECTION 3 - IMMEDIATE ACTION / TREATMENT:

Details of injury to worker or damage:
 Immediately informed the concerned supervisor, cleaned the area by dry sand and transferred the contaminated sand to the designated storage area.

First Aid: Yes No Hospitalized: Yes No
 Fire fighting: Yes No Evacuation: Yes No

Treatment Provided or Immediate Action Taken:
 N/A

Whether Correction and / or Preventive Action (CAPA) required: Yes / No. 85, July 07, 2021.
 If Yes, CAPA Ref. No. and Date:

Name of Reporter	Md. Mizanur Rahman	Designation	HSE Supervisor
Report Prepared by	Mr. Sehal Anwar	Designation	HSE Officer

PHP Ship Breaking and Recycling Industries Limited

Form No.: IMS / F / 11
Rev. No. & Date: 02 & 01/12/2019

Corrective and Preventive Action Form

Corrective and Preventive Action:

Action to be taken	Responsibility	Target Date
1. Onsite training shall be arranged for wire group workers, foremen and maintenance department on maintenance activity.	HSE Officer	15-07-2021
2. HSE supervisor shall verify such activity during daily safety round.	HSE Team	Regular

Verification (if required):

Verification Details	Verified by	Verified on
It is verified that a wire group worker was doing wire greasing / oiling work under the supervision of senior foremen with proper tools / machineries.	HSE Team	18-07-2021

Effectiveness:

Effectiveness Details	Done by	Done on
During such activity senior foremen has started proper supervision and work is going in line.	HSE Team	18-07-2021

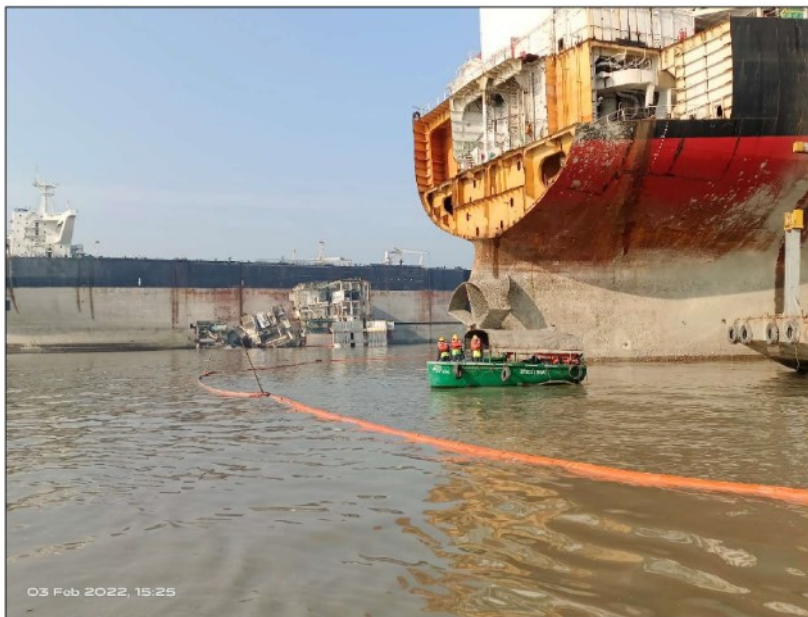
Team Members Involved during Investigation:

Name	Designation	Signature
Mr. Litan Mazumdar	HSE Officer	<i>[Signature]</i>
Mr. Sehal Anwar	HSE Officer	<i>[Signature]</i>
Md. Mizanur Rahman	HSE Supervisor	<i>[Signature]</i>
Md. Sultan Ahmed	Sr. Wire Foreman	<i>[Signature]</i>
Mr. Sucharit Mutsuddi	Mechanical Engineer	<i>[Signature]</i>

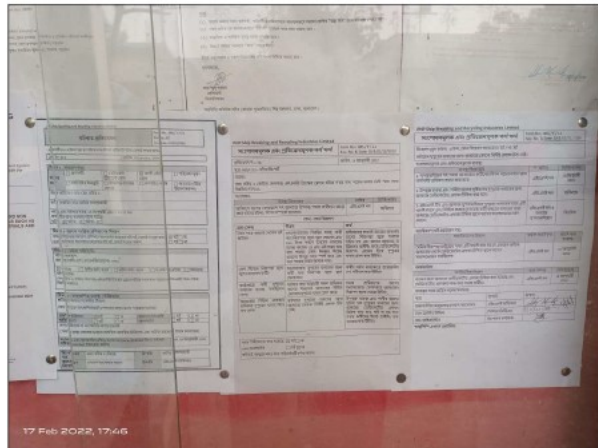
Copy circulated to:

- Sr. General Manager
- Production Department

Accident report (past scrapped ship track record/references to actual examples)



Oil spill response training based on the revised EPRP



Posting of the accident report/near misses in the local language

4.6.3. Ship scrapping completion report

It is necessary to notify the Statement of Completion of ship scrapping to the Competent Authority(ies) within 14 days after the ship scrapping work is completed, and we confirmed from the activities records to date that the PHP yard is making timely reports to that effect to the Ministry of Industries by email, in accordance with the format in Appendix VII of MEPC 210(63). Furthermore, we confirmed that the detailed completion reports are stored in database format in a management information system (MIS), an outstanding report sharing structure, in order to ensure that the full range of activities records and documents can be viewed when this is requested by the shipowners, etc. and that they are in a state in which viewing of the daily activities records whenever required is possible.

STATEMENT OF COMPLETION OF SHIP SCRAPPING

This document is a statement of completion of ship scrapping for: **MV SHANGHAI**

Particulars of the Ship as received for recycling:

1. Distinctive number or letters: **AB P37**
2. Port of Registry: **MORONI**
3. Gross Tonnage: **80994 MT**
4. IMO Number: **8915407**
5. Name and address of ship owner: **GENERAL ORE CARRIER CORPORATION XIN JIAI, PANAMA, 80 DRAGON STREET, HANNOY, LAOS**
6. IMO registered owner identification number: **3398646**
7. IMO company identification number: **0207625**
8. Date of Construction: **28th Feb. 1995**

THE COMPANY CONFIRMS THAT:
The ship has been recycled in accordance with the Ship Recycling Plan as part of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereinafter referred to as "the Convention") at **PHP SHIP BREAKING & RECYCLING IND. LTD.**

And the recycling of the ship as required by the Convention was completed on: **23rd Nov. 2021**
(Date of completion)

Issued at: **MINISTRY OF INDUSTRIES**
(Place of Issue of the Statement of Completion)
04th Dec. 2021
(Date of Issue)

(Signature of the owner of the Ship Recycling Facility or a representative acting on behalf of the owner)

PHP SHIP BREAKING & RECYCLING IND.LTD.

Waste Generation From MV Shanghai

Sr. No.	Waste Name	Generated Qty.	Unit
1	Blue Water	11042	Ltr.
2	Paint Chips	110	Kg.
3	Batteries	04	No.
4	Sewage	1138	Kg.
5	Ballast Water Sediments	3020	Kg.
6	Bio Medical Waste	53	Kg.
7	Food Waste	23	Kg.
8	Smoker Detector	35	Nos.
9	Oil Res.	205	Kg.
10	Asbestos Waste	185.21	Kg.
11	DOG	1	Nos.
12	Dry Sand	809	Kg.
13	Electronic Waste	9.7	Kg.
14	Plastic and Rubber Waste	23	Kg.
15	Broken Light and Lighting Material	4.6	Kg.
16	Garbage	83	Kg.
17	Glasswool	4828	Kg.
18	Electrical Cable Waste	40	Kg.

Incidents		
1	First Aid Case	0 Nos.
2	Environmental Pollution	0 Nos.

Mail Copy

↓

PHP SBRL

From: PHP SBRL [sbri@phpfamily.co]
 Sent: Saturday, December 4, 2021 5:46 PM
 To: 'wshw@moind.gov.td'
 Cc: 'Rinku-PHP-Breaker', 'Damesh Jan'
 Subject: **Ship Completion Report- MV SHANGHAI**
 Attachments: **Completion Report.pdf**

Dear Sir,

Greetings from PHP Family !!

Refer attached file along with ship completion report of MV SHANGHAI; IMO No. 8915407. Please have a look at the attachment and let us know for any further queries.

Thanks and Regards,

LITON MAZUMDER
 PHP Ship Breaking & Recycling Industries Ltd.
 PHP Corporate Office: PHP Centre | 4071 | Zahir Hossain Road | South Khulshi | Chittagong | Bangladesh.
 Yard Address: U/S Shikapur, P.O. Sonailkari, P.S. Sitakunda, Dist- Chittagong, Bangladesh.
 Ph No.: +880319676772, +8801619526772
 E-mail: sbri@phpfamily.co, lton_maz@yahoo.com
 Web Page: www.phpfamily.com

Statement of Completion of ship scrapping (existing ship track record/references to actual examples)

4.6.4. Evaluation of Stage 05-2

Regarding the matters to be confirmed in Stage 05-2, our evaluation is that appropriate response measures based on the HKC have been taken for all of them.

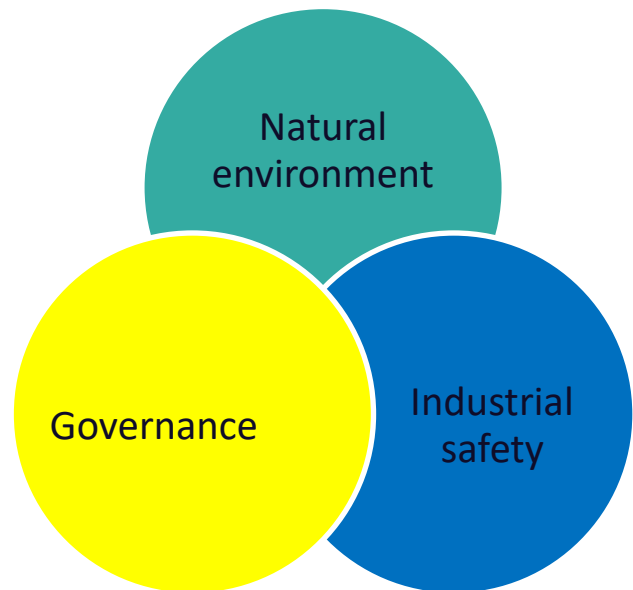
5. Summary Evaluation by the Committee

5.1 Methods of summary evaluation

In this survey project, we established a two group system comprised of the committee and the working group, as stated in “3. Format of the Monitoring Survey Project” above. In the working group, we evaluated the matters subject to the survey confirmed through an evaluation by a third party auditor and exchanges of opinions with the PHP yard, and carried out a summary evaluation of the results at a summary meeting of the committee in accordance with the following process, while also incorporating the opinions from the committee members in each field of expertise.

(1) Preparation of the checklist (working group work)

We defined the confirmation standard in this survey project as “the ship scrapping being carried out without harming the natural environment and based on facility and equipment design, work procedures, and working environments which ensure the safety of workers, and the yard operator expressing the position that it will independently maintain these environmental improvement states,” established standards for natural environment aspects, industrial safety aspects, and governance aspects as the standards for judging whether this definition has been met, and prepared a checklist.



(2) Confirmation of the checklist (working group work)

We confirmed the compliance of each item based on the checklist prepared in (1). When doing so, we carried out the confirmation in light of the survey materials/PHP materials/working group report, etc. submitted by third parties.

(3) Evaluation (working group work)

Based on the content confirmed in accordance with the checklist items, we carried out an evaluation of whether the yard subject to the survey has satisfied the HKC requirements and an evaluation of the further industrial safety and environmental measures exceeding the compliance level based on the Hong Kong Convention sought by Japanese shipping companies. When doing so, we carried out a three-stage evaluation as shown in Table 5-1 based on the evaluation standard of whether any concerns or critical flaws which could lead to long-term environmental damage or serious accidents causing injury or death could be found.

(4) Results summary (work of this committee)

Based on the results of the evaluation regarding the compliance of the checklist items, we summarized the results in the committee in a form reflecting the opinions of each expert committee member in this committee.

5.2 Evaluation results

When we confirmed the industrial safety and health, environmental contamination measures, waste treatment, etc. pertaining to the ship scrapping work of the PHP yard subject to the survey using the web inspection method, we confirmed that appropriate response measures based on the HKC have been taken regarding the work methods, equipment, structure, etc.

Furthermore, when we confirmed the industrial safety and environmental measures of PHP from the perspective of the users and experts, we were able to confirm that the company is carrying out extremely outstanding initiatives. In addition, advice was given regarding measures such as thoroughly implementing the wearing of personal protective equipment, including by subcontractors, etc., as improvement of the further industrial safety and environmental measures exceeding the compliance level based on the Hong Kong Convention sought by Japanese shipping companies.

Going forward, it is necessary to take into account the follow-up on the response to the above matters and the actual situation throughout the entire scrapping process of the ship subject to the survey, so the committee deemed that it was desirable to continue confirming these matters. Moreover, we confirmed that some hazardous wastes continue to be stored inside the yard because there is no treatment facility in Bangladesh, so the opinion was given that additional confirmation of the issue of the development of a final disposal site and the development of laws was necessary.

Furthermore, the committee reacted to the high evaluation of the PHP yard in this survey project by strongly hoping that momentum would grow towards Japanese shipping companies pursuing the scrapping of Japanese ships in Bangladesh going forward.

Table 5-1 Checklist using the confirmation and evaluation in the working group

Checklist						
Perspective	No.	Check item	Compliance	Conditional compliance	Non-compliance	Comment (conditions, etc.)
Common	1.	Are you carrying out appropriate preparation of the VSCP and IHM?	✓	✓	✓	
	2.	Are you carrying out appropriate preparation of the SRP?	✓	✓	✓	This refers to carrying out the risk evaluation unique to ships regarding ships for which recycling at PHP is planned going forward.
Natural environment	3.	Have you identified the hazardous materials (asbestos, ozone-depleting substances, waste oil, waste work oil, paint chips, PCBs, waste plastics, etc.) stated in the IHM and removed, carried out and disposed of them all appropriately?	✓	✓	✓	
	4.	Have you appropriately implemented the decontamination inside the tank before the hot work?	✓	✓	✓	
	5.	Have you achieved appropriate operation of the bilge water treatment, oily water separation device, and waste water treatment?	✓	✓	✓	
	6.	Are you managing the stored hazardous materials using a safe and environmentally sound method? (Ensuring sufficient capacity, tracing/records management of the amount carried out and the amount delivered to vendors)	✓	✓	✓	
	7.	Are measures to prevent the outflow of pollutants arising from intertidal zones/cutting blocks in the yard/transportation of pieces of equipment/haulage being taken appropriately?	✓	✓	✓	
	8.	When cutting a contaminated block on a concrete floor, are appropriate environmental measures (oily water recovery and treatment, etc.) being taken?	✓	✓	✓	
	9.	Are a series of activities executed for "safe-for-entry" (including on-board access and the removal of obstacles) being implemented appropriately?	✓	✓	✓	
	10.	Are a series of activities executed for "safe-for-hot work" (cold work activities) being implemented appropriately?	✓	✓	✓	
Industrial safety	11.	Has an effective safety management structure (including the contact and command structure) been built?	✓	✓	✓	
	12.	Have preparations and plans pertaining to your industrial safety response and response at the time of an emergency (including PPE, fire extinguishing/disaster prevention equipment, instrument development, barricade installation) been formulated and implemented?	✓	✓	✓	This refers to installing alarms which give a notification when the winch engine is overloaded.
	13.	Are disaster prevention measures involved in industrial safety (including safety measures for work in high places, work in confined spaces and worksites which have dark places and warning labels) and appropriate personal protective equipment based on risk assessments (including safety equipment and fixtures) being provided and used?	✓	✓	✓	This refers to employing additional measures to fix ladders in place. This refers to thoroughly implementing the wearing of PPE, including cleaners and subcontractors.
	14.	Have safe areas, danger zone markings, and emergency evacuation routes been appropriately established in the workplaces?	✓	✓	✓	
	15.	Is the asbestos treatment in the negative pressure chambers being implemented in an appropriate environment?	✓	✓	✓	
	16.	Is appropriate maintenance/calibration of equipment being carried out and are the records being stored?	✓	✓	✓	
	17.	Have you established the detailed work scope and scope of responsibilities of the workers, grasped the appropriate risks based on the job hazard analysis, and implemented proper training commensurate with them?	✓	✓	✓	
	18.	Has personnel selection and training tailored to the status of the workers been implemented (training of illiterate workers, prevention of child labor, learning in classrooms, on-site learning every day, etc.)?	✓	✓	✓	
	19.	Have wake-up calls and warning notices been implemented appropriately?	✓	✓	✓	
	20.	Has a risk evaluation plan/the measures at the time of an emergency been developed appropriately?	✓	✓	✓	
Governance	21.	Have the beaching permission procedures in BD been implemented appropriately?	✓	✓	✓	
	22.	Has a benefits package system for the workers (development of laundry equipment, showers, eating and drinking areas, toilet facilities, changing rooms, recreational facilities, etc., and paid leave, etc.) been provided and is it functioning?	✓	✓	✓	
	23.	Have the elimination of forced labor and the rights of workers (opportunities for employees to express their opinions, etc.) been introduced appropriately as a system?	✓	✓	✓	
	24.	Have document management/checklists/protocols/certification/permission systems (safe ship boarding, grasping of the number of people on board, block and steel sheet cutting permission, waste water/waste treatment, training/industrial relations contracts, etc.) been implemented appropriately?	✓	✓	✓	
	25.	Have reporting procedures for oil spill accidents/hear misses, etc. been established?	✓	✓	✓	
	26.	Is the completion report on the ship scrapping work being implemented in an appropriate form?	✓	✓	✓	
	27.	Is regular environmental monitoring (preparation and maintenance of a environmental surveillance program) being achieved?	✓	✓	✓	

