

**PAME II-2015 Agenda Item 4.7(b)**  
**AMSA II(D)**  
**PAME Regional Reception Facilities Experts Group (RRF-EG)**  
**Regional Reception Facilities Plan (RRFP)**  
**Project Update**

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**References and Related documents:**

*AMSA II(D) Final Report, Specially Designated Marine Areas In The Arctic High Sea, DNV REG NO.: 2013-1442 / 17JTM1D-26, REV 2, 11 MAR 2014*  
*PAME (I) 15/4.5/c/USA, RU, CA, FI, GL(DK), and NO / Project Update for the development of a Regional Reception Facilities Plan (RRFP) Based on IMO Guidelines*  
*Resolution MEPC.264(68) International Code for Ships Operating in Polar Water (Polar Code), 15 April 2015*  
*Resolution MEPC.265(68) Amendments to MARPOL Annex I, II, IV and V, 15 April 2015*  
*MEPC.1/Circ.834, Consolidated Guidance for Port Reception Facility Providers and Users, 15 May 2015*  
*Resolution MEPC.221(63) 2012 Guidelines for the Development of a Regional Reception Facilities Plan, 2 Mar 2012*  
*PAME I-2015 final RoDs*

**Background**

As noted in PAME (I) 15/4.5/c, and in the AMSA II(D) 2014 report, “Projected increases in Arctic shipping, especially in the tourism, fishing, energy and mining sectors, means that increased quantities of ship-generated waste will be generated and transported onboard ships travelling through the Arctic waters with an attendant increase in risk of pollution and discharges to the marine environment.”

The correspondence group has previously noted that due to the unique Arctic marine environment, which is both environmentally sensitive and remote, compliance with MARPOL requirements as shipping increases in the future may require novel approaches. One such requirement for Arctic port states is to ensure the provision of adequate port reception facilities (PRF) for certain ship generated waste, long recognized as a key element in MARPOL for the prevention of pollution from ships. Additionally, now that IMO’s Polar Code amendments to MARPOL Annexes have been adopted and are set to enter into force starting in January 2017, IMO member states must look to implementing regulations in MARPOL as they pertain to Arctic shipping.

PAME determined that one novel approach to meeting PRF requirements in MARPOL would be to consider the concept of regional arrangements for waste management and reception of MARPOL wastes at ports in Arctic and near-Arctic areas. Regional approaches may help solve some of the challenges unique to Arctic shipping and promote achievement of MARPOL objectives in the Arctic. PAME agreed to initiate a regional reception facilities expert correspondence group (RRF-EG) with an initial task to outline a work plan and terms of reference at PAME (II) 2014. PAME agreed to include the project in the 2015-2016 PAME work plan. This paper is an interim report of the RRF-EG.

### **RRF-EG Participants, Points of Contact**

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The Co-chairs are grateful for the input from all Correspondence Group members whose comments and edits are reflected herein.

### **Objective**

The objective of this paper is to provide a report/update of the work of the RRF-EG. As noted in the project plan (*PAME (II) 14/4.6/b/*) the completion for the project is December 2016. It should be noted that while most of the work of the RRF-EG is undertaken via e-mail, the RRF-EG participants plan to meet in conjunction with the Shipping Experts group at PAME (II) -2015 and subsequent meetings to discuss progress, timelines, and gaps as the work proceeds.

There is consensus that that the concept of regional arrangements is one approach that may allow Arctic ports servicing ships calling at those ports, or departing for or returning from Arctic regions, to provide adequate reception of MARPOL wastes without undue delay to ships. Now that the Polar Code has been adopted (Resolution MEPC.264(68)) consideration may be given to specific provisions in Polar Code amendments to MARPOL and relevant IMO guidance.

### **RRF-EG TOR/Project Tasks (PAME (I) 15/4.5/c)**

#### **Task 1. Identification of the region.**

There is no universal definition for Arctic waters. The definition of Arctic waters adopted in the Amendments to MARPOL making the use of the environment-related provisions of the Polar Code mandatory (*RESOLUTION MEPC.265(68), Amendments to MARPOL Annexes I, II, IV and V*), is as follows:

“For the purposes of the Polar Code, Arctic waters means those waters which are located north of a line from the latitude 58°00′.0 N and longitude 042°00′.0 W to latitude 64°37′.0 N, longitude 035°27′.0 W and thence by a rhumb line to latitude 67°03′.9 N, longitude 026°33′.4 W and thence by a rhumb line to the latitude 70°49′.56 N and longitude 008°59′.61 W (Sørkapp, Jan Mayen) and by the southern shore of Jan Mayen to 73°31′.6 N and 019°01′.0 E by the Island of Bjørnøya, and thence by a great circle line to the latitude 68°38′.29 N and longitude 043°23′.08 E (Cap Kanin Nos) and hence by the northern shore of the Asian Continent eastward to the Bering Strait and thence from the Bering Strait westward to latitude 60° N as far as Il'pyrskiy and following the 60th North parallel eastward as far as and including Etolin Strait and thence by the northern shore of the North American continent as far south as latitude 60° N and thence eastward along parallel of latitude 60° N, to longitude 056°37′.1 W and thence to the latitude 58°00′.0 N, longitude 042°00′.0 W.”



Fig 1. Maximum extent of Arctic waters. (*RESOLUTION MEPC.264(68), International Code for Ships Operating in Polar Waters (Polar Code), p 9.*)

Regardless of the scope of the Polar Code definition, ports that fall outside this area may need to form part of any proposed RRFP, (see Task 6 below), thus it is understood that an RRFP could conceivably cover a much wider region than just the area identified in the Polar Code.

**Task 2. Identify unique circumstances and challenges that affect the ability of port states in the area to provide adequate port reception facilities with due consideration for Polar Code Amendments to MARPOL.**

Unique circumstances and challenges commonly identified for nearly all Arctic ports were outlined in PAME (I) 15.4.5/c. Regional waste management strategies for PRF in the Arctic or near Arctic regions must consider these unique challenges. Countries bordering Arctic waters may already have considered some of the challenges and developed strategies for enhancing MARPOL compliance. Those strategies may involve factors outlined in IMO guidance in addition to local and national legislation addressing both safety and pollution prevention measures for ships and for ports/infrastructure.

Part II-A Chapters of the Polar Code amendments to MARPOL may involve additional waste management challenges for ships and PRF in Arctic regions:

- Chapter 1, Amendments to MARPOL Annex I, Prevention of Pollution by Oil. Oil or oily mixture discharges are prohibited. Challenge: All Annex I wastes must be retained onboard until an adequate PRF is available.
- Chapter 2, Amendments to MARPOL Annex II, Prevention of Pollution by Noxious Liquid Substances (NLS) in Bulk. NLS or NLS mixture discharges are prohibited. Challenge: All Annex II wastes/residues must be retained onboard until an adequate PRF is available.
- Chapter 4, Amendments to MARPOL Annex IV, Prevention of Pollution by Sewage. Restrictions for discharges near land, fast ice, or ice shelf. Challenge: Some or all Annex IV wastes may need to be retained onboard until an adequate PRF is available.
- Chapter 5, Amendments to MARPOL Annex V, Prevention of Pollution by Garbage. Restrictions for discharges of food wastes near land, ice-shelf, or fast ice. Discharge prohibited onto ice. Challenge: Some or all Annex V wastes may need to be retained onboard until an adequate PRF is available. Additional restrictions for cargo residues and cargo hold wash water.

**Task 3. A cost/benefit analysis for a regional approach to ships waste management.**

The RRF-EG agreed that it may be prohibitively expensive for every Arctic port to receive ships' waste in an environmentally sound manner, and such excessive costs would increase the cost to ship owners/operators and ultimately, to consumers. Indirect costs such as environmental risks or impacts on coastal communities have yet to be quantified but should be taken into consideration when assessing the viability of reception facilities. Additionally, environmental impacts and risks associated with collecting, storing, transporting and disposing of ship generated wastes and cargo residues discharged to a port reception facility need to be considered.

The RRF-EG, agreed, *inter alia*, that cost challenges include:

- logistics and costs to install and operate such equipment and technologies in remote Arctic areas
- too few ships calling at ports thus diminishing economic viability and/or increasing the need for public support
- potential need for ships to deviate from planned routes to make use of regional PRFs

The RRF-EG agreed that the benefits of a regional approach may include:

- minimizing risks associated with disposal facilities located in remote regions
- cross border sharing of waste management resources, infrastructure costs, maintenance costs
- promoting of viable reuse and recycling opportunities

#### **Task 4. Long range Arctic regional reception facilities plan (RRFP)**

Some countries may have already considered compliance-enhancing requirements for Arctic and near Arctic activities, for example seasonal 2015 energy exploration in the U.S. Arctic or seasonal supply ships to installations in Greenland and Svalbard.

While improvements in Arctic port infrastructure will follow as shipping increases, challenges will persist far into the future, even as the extent of sea ice diminishes. The RRF-EG agreed that collective stewardship is required to protect marine areas of the Arctic both within and beyond national jurisdictions. While multi-year ice diminishes and Arctic waters open up to non-ice-breaking ships seasonally, annual winter ice formation and unusually severe weather will persist for the foreseeable future in Arctic regions. An RRFP should focus on present needs but remain flexible to account for changes in shipping patterns in addition those challenges already associated with high latitude navigation.

#### **Task 5. Types of ships and the needs of each type of ship.**

This task is deferred while the RRF-EG gathers more information. Presently, the types of ships in Arctic waters have included research vessels (icebreaking and ice strengthened), public vessels (military, search and rescue, etc.), fishing vessels, bulk shipping and community re-supply ships, mineral extraction vessels (e.g. drill rigs), offshore supply vessels and seismic vessels supporting mineral extraction and mining activities, a small number of cruise/passenger ships and a relatively small number of small private vessels, which may be exempt from some provisions of the Polar Code. An Arctic RRFP should be very specific as to the expected traffic.

#### **Task 6. An Arctic RRFP will identify the route(s) and ports of call for ships in the region.**

The RRFP should identify not only the commonly used ports of call (inside and outside the Arctic), but also the number of ships (see Task 5) calling at, or projected to call at, each port in a calendar year and the number of requests for port reception facilities. This information will be used to calculate capacities required at regional reception facilities depending on the routes and the number of ships expected to call at a port. An RRFP should identify locations of Regional Ships' Waste Reception Centers (RSWRC).

Ship routing: ships transiting the Arctic (east or west) between ports in the Atlantic and Pacific oceans, will likely use either the Northern Sea Route transiting waters on the Russian side of the Arctic Ocean or the Northwest Passage transiting offshore and archipelagic waters on the U.S., Canadian and Greenland side of the Arctic Ocean (see PAME (I) 15/4.5/c for a graphic representation). Other Arctic shipping may use specific destinational routes (e.g. cruise ships, voyages to or from one or more specific sites engaged in mineral extraction/mining operations, or cargo destined for specific ports or government facilities, etc.). An RRF may cover a specific ship with a specific route or multiple ships/routes.

Port and Infrastructure information: At least 3 databases are currently publically available that contain information that may be useful in the development of an RRF.

1. IMO's Global Integrated Shipping Information System (GISIS - subject of previous PAME submissions) includes a Port Reception Facility Database (PRFD) module. The PRFD has information on reception facilities at ports around the world and is populated by IMO member states including those bordering the Arctic regions. PAME has encouraged Arctic Council countries to regularly update GISIS with specific port reception facility information on their Arctic and near Arctic ports.
2. The World Port Index (also previously looked at by RRF-EG), which is a publically available publication of the U.S. National Geospatial Agency (NGA Pub 150) (and downloadable as a PDF file). Nearly every port in the world is listed with tabular information arraigned for use by mariners while in transit. The ports are listed by geographic location and by region and many Arctic region ports are listed. One identified gap in the data is the minimal information on reception facilities in the ports.
3. The Arctic Maritime and Aviation Transportation Infrastructure Initiative (AMATII) database which is a result of an Arctic Council Sustainable Development Working Group (SDWG) project. This on-line database, formatted as an interactive Google-maps type application, displays maritime port information when the mouse pointer clicks on a labeled port. The port/infrastructure information for each port is the same information in a similar tabular format as the information found in the World Port Index (a "Public" government publication with no copy write restrictions). Again, the information on waste reception facilities is limited.

**Task 7. Identify stakeholders (in the RRF) and include consultations with them.**

This task is deferred.

**Project Plan/Timeline**

As approved at PAME-II 2014, and per the updates above, the RRF project is on schedule to be completed by December 2016. (Final report to be delivered at PAME I 2017.)

The proposed deliverable is a draft Arctic RRF which could be used as a planning aid for developing appropriate and effective regional port reception facilities arrangements considering IMO guidance on compliance with MARPOL Annexes I through VI, and Polar Code Amendments to MARPOL Annexes. Depending on the arrangements contemplated, additional amendments to MARPOL may be required.

## **Conclusions**

With the Polar Code amendments to the MARPOL Annexes now adopted and set to enter into force starting in January 2017, it is imperative that waste management strategies be put in place that will address the needs of all stakeholders, and protect the Arctic marine and coastal environment, as well as its indigenous peoples and local communities. A regional arrangement (with associated MARPOL amendments as needed) is one potential way to achieve this objective and may be one of the only practical solutions to meet the needs of shipping in the Arctic and other areas.

There are gaps in several areas that the RRF-EG should address (ship traffic, destinations, port/infrastructure data, waste management technologies, etc.) as well as the task items that have been deferred. Gaps include issues raised herein and those identified in the work of other PAME expert groups. As the RRF and subsequent reports on the progress of the RRF-EG are submitted, gaps should be addressed and solutions offered for consideration in the final report.

## **Recommendations**

The co-sponsors of this paper recommend that PAME II-2015:

- continue the work of the RRF-EG, complete outstanding tasks, and provide a status report on its progress at PAME-I 2016;
- encourage input from all Arctic States, Permanent Participants and Observers into the work of the RRF-EG; and
- continue to encourage Arctic States to provide and update port reception facility data to IMO's GISIS port reception facility database and AIS data on ship traffic info with the RRF-EG and related PAME expert groups.

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