Oil spill- risk, preparedness and response in the Northwest Pacific

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KORDI
Overview

1. Oil Spill Risk in the NOWPAP region
2. What’s MERRAC ?
3. MERRAC’s activities on regional cooperation in marine pollution preparedness & response
4. NOWPAP Regional Oil Spill Contingency Plan
5. Conclusion
1. Oil Spill Risk in NOWPAP Region

- 33°N~52°N, 121°E~143°E
- Bordering 5 countries
- Complicate political issues
- Different economic status
- High population
- Rapid industrialization
- No marine environmental conservation strategy & action

Degradation of Marine Environments
Environmental Threats in NW Pacific

- Land-based pollutants from sources such as industries, municipalities, agricultures and so on, including chemicals (PCBs and DDT), tar balls, heavy metals, and marine debris.
- Eutrophication in coastal zone: red tide.
- Marine litters.
- Habitat and community modification.
- Heavy tanker traffic in coastal zone, transporting crude oil to Japan, China, Korea, and Russia - high risk of oil pollution.
The distribution map for the density of tanker traffic, 1997
(The tanker, 500Gt or more)
* An unit of division is 0.5 degree square of Latitude / Longitude
Sea Prince accident
(5,035 tons, ‘95.7)

Nakhodka accident
(6,240 tons, ‘97.1)
## Statistics on Oil Spill Accidents in NOWPAP Sea Area (’90-’02)

<table>
<thead>
<tr>
<th>Category</th>
<th>No. of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Oil Spills (&gt;1,000 tons)</td>
<td>16</td>
</tr>
<tr>
<td>Intermediate Oil Spills (50~1,000)</td>
<td>115</td>
</tr>
<tr>
<td>Small Oil Spills (&lt;50)</td>
<td>Several thousands</td>
</tr>
</tbody>
</table>

*Kill by Oil Spill, by Richard Mock (1991)*
## Comparison of Risk and Preparedness for 19 Regional Sea Areas

<table>
<thead>
<tr>
<th>Regional Sea</th>
<th>Risk Category</th>
<th>Level of Preparedness</th>
<th>Priority ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>North-east Pacific (NEP)</td>
<td>Low</td>
<td>Low</td>
<td>0</td>
</tr>
<tr>
<td>South-east Pacific (SE/PCF)</td>
<td>Low</td>
<td>Low</td>
<td>0</td>
</tr>
<tr>
<td>Upper South-west Atlantic (SWAT)</td>
<td>Medium</td>
<td>Medium</td>
<td>0</td>
</tr>
<tr>
<td>Wider Caribbean (WCR)</td>
<td>Medium</td>
<td>Low</td>
<td>+1</td>
</tr>
<tr>
<td>West &amp; Central Africa (WACAF)</td>
<td>Medium</td>
<td>Low</td>
<td>+1</td>
</tr>
<tr>
<td>Eastern Africa (EAF)</td>
<td>Medium</td>
<td>Low</td>
<td>+1</td>
</tr>
<tr>
<td>Red Sea &amp; Gulf of Aden (PERSGA)</td>
<td>Medium</td>
<td>Low</td>
<td>+1</td>
</tr>
<tr>
<td>Gulf Area (ROPME)</td>
<td>Medium</td>
<td>Low</td>
<td>+1</td>
</tr>
<tr>
<td>Mediterranean (MED)</td>
<td>High</td>
<td>Medium</td>
<td>+1</td>
</tr>
<tr>
<td>Black Sea (BLACK)</td>
<td>High</td>
<td>Low</td>
<td>+2</td>
</tr>
<tr>
<td>Caspian</td>
<td>Medium</td>
<td>Low</td>
<td>+1</td>
</tr>
<tr>
<td>Baltic (HELCOM)</td>
<td>Medium</td>
<td>High</td>
<td>-1</td>
</tr>
<tr>
<td>North-east Atlantic (OSPAR)</td>
<td>High</td>
<td>High</td>
<td>0</td>
</tr>
<tr>
<td>South Asian Seas (SAS)</td>
<td>Medium</td>
<td>Low</td>
<td>+1</td>
</tr>
<tr>
<td>East Asian Seas (EAS)</td>
<td>High</td>
<td>Medium</td>
<td>+1</td>
</tr>
<tr>
<td>South Pacific (SPREP)</td>
<td>Low</td>
<td>Low</td>
<td>0</td>
</tr>
<tr>
<td>North-west Pacific (NOWPAP)</td>
<td>High</td>
<td>Medium</td>
<td>+1</td>
</tr>
<tr>
<td>Arctic</td>
<td>Low</td>
<td>Medium</td>
<td>-1</td>
</tr>
<tr>
<td>Antarctic</td>
<td>Low</td>
<td>Low</td>
<td>0</td>
</tr>
</tbody>
</table>

- The International Tanker Owners Pollution Federation (ITOPF)
- High Risk of Oil Spill
- Low Level of Preparedness for Oil Spill

The Mission of MERRAC is.....

to develop the regional cooperative system on marine pollution preparedness and response in the NOWPAP region.
2. What’s MERRAC?

Its Mission--

• MERRAC is designated to coordinate regional activities relating to development of effective measures for regional cooperation in marine pollution preparedness and response in the NOWPAP region, with supports from NOWPAP RCU, UNEP and IMO.
Northwest Pacific Action Plan (NOWPAP): One of 17 Regional Seas Programme (UNEP)

Adopted by China, Japan, R. Korea and Russia in 1994
Early History ( - 2000)

- Sep. 1994 : 1st Intergovernmental Meeting on NOWPAP – Adoption of the Northwest Pacific Action Plan (NOWPAP) by four countries (China, Japan, R.Korea, Russia) as one of UNEP’s Regional Seas Programs
- 6-7 April 1999 : 4th NOWPAP IGM – Decision of establishment of MERRAC and other 3 RACs to implement the NOWPAP projects
- 22 March 2000 : Opening ceremony of MERRAC office at MOERI/KORDI in Daejeon, Korea
- 28 July 2000 : Final signature of MOU among UNEP, IMO and MOERI/KORDI regarding the establishment & operation of MERRAC
"MERRAC is operating the system of National Focal Point for MERRAC, who is nominated by each country and is responsible for the marine pollution preparedness and response in the respective NOWPAP Members"
3. MERRAC’s Activities

on regional cooperation in marine pollution preparedness and response

- MERRAC has carried out various regional activities relating to the development of effective measures for regional cooperation in marine pollution preparedness and response in the NOWPAP region
- MERRAC covers the secretariat for NOWPAP MERRAC Focal Focal Points Meeting and NOWPAP Regional Oil Spill Contingency Plan
- MERRAC cooperates with NOWPAP RCU, UNEP, IMO, and other international/regional organizations for establishment of a regional cooperation framework to prepare for and respond to marine pollution emergency.
- MERRAC carries out special activities designated under its Terms of Reference (TOR).
1) Organization of MERRAC FPM
(MERRAC, in May)

The 8th NOWPAP MERRAC Focal Points Meeting &
1st Competent National Authorities Meeting
(MERRAC, Daejeon, 24-27 May 2005, organized by RCU, IMO& MERRAC)
• Exchange relevant information
  - Focal Points
  - Information System (equipment, institutions, experts)
  - Oil pollution incidents

• Review Specific Projects
  - Regional Oil Spill Prediction Model
  - Regional mapping of Vulnerable Resources
  - Minimum Level of Preparedness
  - publication of Technical Report
    (ESI map, Shoreline Clean-up, Oil dispersants)

• Update of NOWPAP Regional Oil Spill Contingency Plan

• Coordinating workplan and budget

• Others
### 2) Organization of the Expert meeting and Training Course

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Location</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert Advisory Group Meeting on NOWPAP Regional Oil Spill Contingency Plan and Memorandum of Understanding (MOU)</td>
<td>Tokyo, Japan</td>
<td>5-9 Nov. 2001</td>
</tr>
<tr>
<td>2002 NOWPAP Regional OPRC Training Course (IMO Level 2 Course)</td>
<td>Incheon, Republic of Korea</td>
<td>28 Oct. – 1 Nov. 2002</td>
</tr>
<tr>
<td>2003 NOWPAP Regional OPRC Training Course (IMO Level 2 Course)</td>
<td>Shimonoseki, Japan</td>
<td>10 – 14 Nov. 2003</td>
</tr>
<tr>
<td>2004 NOWPAP Expert meeting regarding MERRAC specific projects and preliminary CNA meeting</td>
<td>Qingdao, China</td>
<td>15-18 Nov. 2004</td>
</tr>
</tbody>
</table>
NOWPAP Regional OPRC Training Course (IMO Level 2) (Shimonoseki, Japan, 10 - 14 Nov. 2003, hosted by Japan)
NOWPAP MERRAC
Northwest Pacific Action Plan
Marine Environmental Emergency Preparedness and Response
Regional Activity Centre
P.O. Box 23, Yuseong, Daejeon, 305-600, Republic of Korea
Tel : (+82-42) 868-7281, FAX : (+82-42) 868-7738
E-mail : nowpap@kriso.re.kr
Website : http://merrac.nowpap.org

NOWPAP Regional
OPRC Training Course
(IMO Level 2 Course)

Shimonoseki, Japan
10 – 14 November 2003

Student Manual

- Programme : IMO OPRC Level 2 Course (5 days course) aims to provide selected national staffs with the knowledge and skills required by On-Scene Commanders

- Lecturers of IMO, OSRL, EARL, ITOPF, IOPC
Estimate of Behaviour, Fate and Effect of spilled Oil
How to Respond and Clean-up jointly within the framework of NOWPAP Oil Spill Regional Contingency Plan
Table Top Exercise on how to carry out joint response operation
3) Secretariat of NOWPAP Regional Oil Spill Contingency Plan

- Development of draft Plan and its MOU (finally by the 5th FPM)
- Adoption by NOWPAP members in 2003 and Signature at Ministerial Level in 2004
- Maintenance and Update of the Plan
- Finalization and Update of the Annexes to the Plan
- Implementation of Regional Activities as Required by the Plan
4) Publication of MERRAC Newsletters

4th issue

- Published in March 2005
- Major Contents / 10 pages
  - MERRAC news
  - MERRAC activities in 2004
  - Congratulatory Address by Secretary General, IMO
  - Messages from all the NOWPAP Members & RCU
5) Maintenance of NOWPAP MERRAC Website

http://merrac.nowpap.org
6) Regional Cooperation with NOWPAP RCU, UNEP, IMO, and other Regional Seas and other RACs
4. NOWPAP Regional Oil Spill Contingency Plan
1) History - Regional Contingency Plan and Its MoU

- NOWPAP adopted by the 1st IGM (1994)
  - As one area of priority activities -- “Development of Effective Measures for Regional Co-operation in Marine Pollution Preparedness and Response”

- OPRC 1990 - accepted by NOWPAP Members after experience of major oil spill such as the Sea Prince (1995), Nakhodka (1997), etc.

- Informal meetings in 1995 & 1996 - regarding the establishment a regional forum for regional co-operation on marine pollution preparedness and response
2nd IGM (1996) approved
- NOWPAP Members establish a Forum meeting, which has the goals and objectives:
  (i) Exchange of Information on marine pollution preparedness and response
  (ii) Development of a Regional Contingency Plan (Plan)
  (iii) Development of its Memorandum of Understanding (MoU)

4th IGM (1999) approved
- MERRAC, “Marine Environmental Emergency Preparedness and Response Regional Activity Centre” was established as one of four RACs
Development of the Plan
- through 5 MERRAC Focal Points Meetings and 2 Informal Expert meeting
- Finally 5th NOWPAP MERRAC Focal Points Meeting (2002) agreed to forward the texts of the Plan and MoU to the IGM for its approval.

8th IGM (2003) finally adopted the Plan and its MoU

During intersessional period, the MoU for Plan was signed individually by each Members at ministerial level

November, 2004 “Ceremony for Presentation of Signatures for MoU for Plan
“Presentation Ceremony of Signatures for MoU for Plan” in Nov. 2004
China

The Memorandum of Understanding is signed at Beijing on October 28, 2004 by the following representatives of respective NOWPAP Members.

For the People’s Republic of China

张春贤

Name and title: Zhang Chunxian, Minister of Communications

Japan

The Memorandum of Understanding is signed at Tokyo on 19 October 2004 by the following representatives of respective NOWPAP Members.

For Japan

土肥刚一

Name and title: Kazuo Kitagawa, Minister of Ministry of Land, Infrastructure and Transport

Korea

The Memorandum of Understanding is signed at Seoul on 05 Oct. 2004 by the following representatives of respective NOWPAP Members.

For the Republic of Korea

Seung-woo, Chang

Name and title: Seung-woo Chang, Minister of Ministry of Maritime Affairs and Fisheries

Russia

The Memorandum of Understanding is signed at Moscow on 29 October 2004 by the following representative of respective NOWPAP Members.

For the Russian Federation (signature)

Name and title: Levitin Igor,

Minister of Transport of the Russian Federation
MoU is ....

the confirmation of political will of the countries
- to develop regional co-operation;
- to formally adopt the regional contingency plan,
- to agree to implement the operational procedure set-up in the Plan in case of joint operation
2) Overall and Specific Objectives of the Plan

- To provide an operational mechanism for mutual assistance through which NOWPAP Members will co-operate in order to co-ordinate and integrate their response to major marine oil spill incidents in the region which exceeds the response capability of a NOWPAP members
  - to determine the means of co-operation for the implementation of the Plan;
  - to specify the type of assistance which might be provided;
  - to identify the operational responsibilities;
  - to establish the principles of coordination and liaison, and;
  - to specify the considerations necessary for co-operative action.
Basis for the Plan

- NOWPAP Members should have
  - their own National Contingency Plan (NCP)
  - resources to respond to marine oil spills
- Response to a pollution incident within the Action Area of a NOWPAP Member should be
  - with the provisions of Member’s NCP
  - with their own laws and regulations
Relationship among OPRC, Plan & NCP

OPRC 90

- Umbrella for the Plan

NOWPAP Regional Oil Spill Contingency Plan

National Contingency Plans
(China, Japan, Korea, Russia)

- Base for the Plan
<table>
<thead>
<tr>
<th>Designation of National Authorities and contact points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each NOWPAP Members should designate the following</td>
</tr>
<tr>
<td>- <strong>Competent National Authority</strong> or Authorities with responsibility for oil pollution preparedness and response</td>
</tr>
<tr>
<td>- <strong>National Operational Contact Point</strong> or Points, which shall be responsible for the receipt and transmission of oil pollution reports</td>
</tr>
<tr>
<td>- <strong>Assistance Decision authority</strong> entitled to act on behalf of the Member to request assistance or to decide to render the assistance requested.</td>
</tr>
</tbody>
</table>
NOWPAP Members should exchange information
- Competent National Authorities, Operational Contact Points and Assistance Decision Authority
- Sources of oil spills and vulnerable resources
- Inventory of pollution response equipment and products
- Directory of experts, trained personnel and Strike Teams
- Rules concerning the use of dispersants
- Logistic support available within the Member
- NCPs of the NOWPAP Members
- Maps showing the main environmentally sensitive areas

This information is maintained by MERRAC and is provided to the Members
Pre-arrangements Relating to Administration, Logistics and Funding

- Logistic support (personnel, equipment)
- Financial Procedures
- Customs and Immigration Procedures
- Overflight and Navigation Procedure
- Health and Safety
- Medical Insurance and Medical Assistance
- Documentation of Response Operations and related Costs
Response Operations during the Activation of the Plan

Response Phase
- For the purpose of the Plan, co-operation in pollution response operations has been divided into four distinct phases:
  . Phase I – Notification
  . Phase II – Evaluation and activation of the Plan
  . Phase III – Joint Response Operation at sea
  . Phase IV – Joint Response Operation on shoreline

Phase I. Notification
- in accordance with the provisions of the NCP of each Member
- in the form of a NOWPAP POLREP (Annex 4), if a NOWPAP Member become aware of a major pollution incident regardless of the need for the activation of the Plan
- National Operational Contact Points make further notification within the Member
# POLREP (Initial Information Format)

<table>
<thead>
<tr>
<th>AA. Date and Time of Incident</th>
</tr>
</thead>
<tbody>
<tr>
<td>BB. Position(Latitude, Longitude) (True Bearing, Distance From a Landmark)</td>
</tr>
<tr>
<td>CC. Brief Description of Incident</td>
</tr>
<tr>
<td>DD. Ship’s Particulars</td>
</tr>
<tr>
<td>(1) (Ship’s Name /Port of Registry /Owner /Agent)</td>
</tr>
<tr>
<td>(2) (Ship's Type /G.T/Draft)</td>
</tr>
<tr>
<td>(3) (Number of Crew /Nationality)</td>
</tr>
<tr>
<td>(4) (Type of Cargo /Amount /Owner)</td>
</tr>
<tr>
<td>(5) (Type and Quantity of Cargo /Fuel Oil)</td>
</tr>
<tr>
<td>(6) (P&amp;I /Other Insurance)</td>
</tr>
<tr>
<td>EE. Brief Description of Pollution</td>
</tr>
<tr>
<td>(1) (Type of Spilled Oil) :</td>
</tr>
<tr>
<td>(2) (Estimate of the Quantity) :</td>
</tr>
<tr>
<td>FF. Brief Details of Weather and Sea Conditions (time, date, month)</td>
</tr>
<tr>
<td>(1) (Weather) : windy and cloudy</td>
</tr>
<tr>
<td>(2) (Wind Direction /Velocity) :</td>
</tr>
<tr>
<td>(3) (Current /Wave Height /Swell) :</td>
</tr>
<tr>
<td>(4) Atmospheric /Water Temperature) :</td>
</tr>
<tr>
<td>(5) (Visibility) :</td>
</tr>
<tr>
<td>GG. Others</td>
</tr>
</tbody>
</table>
### POLREP (Midterm Information Format)

<table>
<thead>
<tr>
<th><strong>AA. Date and Time of Information</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BB. Situation of Spill</strong></td>
</tr>
<tr>
<td>(1) (Type /Quantity of Spilled Oil)</td>
</tr>
<tr>
<td>(2) (Continuity of Sill)</td>
</tr>
<tr>
<td>(3) (Spreading /Drifting of spilled Oil)</td>
</tr>
<tr>
<td><strong>CC. Brief Description of Weather and Sea Condition</strong></td>
</tr>
<tr>
<td>(1) (Weather)</td>
</tr>
<tr>
<td>(2) (Wind Direction /Velocity)</td>
</tr>
<tr>
<td>(3) (Current /Wave Height)</td>
</tr>
<tr>
<td>(4) (Atmospheric /Wave Temperature)</td>
</tr>
<tr>
<td>(5) (Visibility)</td>
</tr>
<tr>
<td><strong>DD. Brief Description of Cleanup Operation</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>EE. Others</strong></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
◆ Phase II. Evaluation and activation of the Plan

- NOWPAP Member should **assess the pollution** by the spill and decide whether or not to activate its NCP and the Plan
- Lead Member should not activate the Plan without **first activation its NCP**
- **Surveillance of spill movement and behaviour** by aircraft or vessels (Annex 5)
- **Forecasting Oil Movement:**
  . Gather information about wind, tides, current, type of oil
  . Using a suitable computer program
- **Requests for assistance** within the framework of the Plan
  . Following the activation of the Plan
  . Through Assistance Decision Authorities
  . Using the standard form in the NOWPAP POLREP (Annex 4)
  . Immediately acknowledge receipt
Phase III. Joint Response Operation at Sea
- should be conducted in accordance with the procedures described in the NCP of the NOWPAP Member whose Action Area is affected

Phase IV. Joint Response Operation on shoreline
- oil dispersants, in-situ burning or bioremediation should be used in accordance with the provisions of the NCP of the NOWPAP Member concerned
- Request for assistance from outside the Region
  - The Plan does not hinder requesting assistance from outside the Region or from the private sectors

- Termination of Joint Response Operation and deactivation of the Plan
  - The lead member will authorize the LOSC to terminate the JROs when:
    . to a point where the benefits of further counter pollution measures would not be justified by their cost
    . The response capabilities and resources of the Lead Member are sufficient for finalizing them
    . The pollutant does not further threaten their interests
  - Following the deactivation of the Plan
    . All equipment which took part in the JROs be returned to its owners clean and in working order
    . Each assisting Member should prepare a report of the part they played in the JROs.
3) Competent National Authorities (CNA) Meeting for NOWPAP Regional Oil Spill Contingency Plan

◆ To discuss questions related to (as agreed at 7th FPM)
  - the implementation of the plan
  - response to actual incidents
  - organization of training courses and exercises
  - other relevant matters
1st CNA Meeting for NOWPAP Regional Oil Spill Contingency Plan (MERRAC, 26 - 27 May 2005)

- Case study of other regional experience
- Presentation and Analysis of National Contingency Plans
- Pollution warnings and Requests for assistance
- Case Studies and lessons learned
- Specific topics of the Plan: financial matter, Customs etc.

2nd CNA Meeting will be held in Sakhalin in May 2006 in conjunction with the NOWPAP Japan-Russia Joint Oil Spill Combating Exercise 2006 (NOWPAP Delta 2006)
5. Conclusion

- MERRAC has been building a strong partnership among NOWPAP Members and carried out the designated activities in the field of oil spill preparedness and response in the NOWPAP region, with professional supports from IMO, NOWPAP RCU and UNEP.

- Especially, adoption of the Plan and its MoU are meaningful this is the first agreement actually signed under NOWPAP, and it clearly demonstrates a spirit of co-operation for the protection of the precious and delicate marine and coastal environments in the NOWPAP region.

- As this, the four countries of the NOWPAP region are in a better state of preparedness to respond to oil spills, as each of them may request assistance from the other three NOWPAP members in cases of large oil spill emergencies.
The Plan will provide
- an official framework and technical guidelines for regional co-operation and
- an operational mechanism for mutual assistance to coordinate and organize a prompt and effective response to major oil spill incidents in the NOWPAP region

In the event of an oil spill incident, prompt and effective action within the framework of the Plan will minimize the damage which may result from major oil spill

MERRAC, as a secretariat of the Plan, will keep the Plan up-to-date and also implement the Plan through the Joint Oil Spill Combating Exercise
Save Our Sea against Marine Pollution
- Thank you -