Pacific Ocean Pollution Prevention Programme

Regional Marine Spill Equipment Strategy
(North Pacific Sub-Region)

Prepared by

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PART 1 – REGIONAL SYNTHESIS REPORT

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1. Project Outline

The Pacific Islands have adopted a 3-Tier approach to oil spill planning preparedness and response. Tier 1 spills are the responsibility of facility owners/operators, Tier 2 spills that of the national government and Tier 3 spills are addressed through regional co-operation as agreed in the "Pacific Islands Marine Spill Contingency Plan" (PACPLAN).

The Legal framework for PACPLAN is provided at the global level by the International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC) and at the regional level by the SPREP Emergencies Protocol.

Effective oil spill preparedness and response is only possible if oil spill equipment is available and personnel are trained in its use. There is a uniform lack of oil spill equipment throughout the region. In the majority of cases there is no expertise within the countries to determine their own oil spill equipment needs.

The formulation of a Regional Marine Spill Equipment Strategy is a project under the auspices of the Pacific Ocean Pollution Prevention Program (PACPOL) – a joint SPREP/International Maritime Organization (IMO) initiative to address shipping related marine pollution. The equipment strategy provides guidance to Pacific Island Countries (PIC) on their oil spill equipment requirements. The recent "Regional Marine Spill Risk Assessment", another PACPOL project provided essential guidance to the equipment strategy.

The Strategy makes recommendations at two levels:

- At the Tier 1 level guidance is provided to PIC on what equipment stockpiles they should require facility owners/operators to have in place.
- At the Tier 2 level guidance is provided to countries on what they need to have in their national stockpiles.

In addition at the Tier 3 level it ensures that the equipment recommended for all countries are interoperable with each other. Spill equipment is expensive and of a specialised nature. The strategy evaluates each PIC's equipment needs and develops a regionally coordinated strategy that will meet these needs in a cost effective manner. This strategy will then be used as a basis for securing financing for equipment procurements and follow up services. An important consideration is the assessment of financing mechanisms for the capital, operational and maintenance costs for marine spill equipment.

The Regional Equipment Strategy has been spit into two sub-regional components for the North and South Pacific. This is the report for the North Pacific Sub-region.

2. Introduction

Pacific Island Countries are dependent on maritime shipping for the transportation of goods and people, but are also highly vulnerable to pollution from shipping incidents such as groundings, collisions or accidents in cargo handling. The Secretariat of the Pacific Regional Environment Program (SPREP) and the International Maritime Organization (IMO), formulated and are implementing PACPOL to address shipping related marine pollution in the pacific islands region.

The strategy will provide guidance to SPREP island members on the minimum equipment requirements to ensure that oil spill response equipment is available at both the national and regional levels in case of Tier 1 and Tier 2 spills respectively. The strategy will make

recommendations on the type and quantity of equipment, where it is to be located and the logistics of access to these equipment stockpiles at both the national and regional level.

The Pacific Islands Regional Marine Spill Contingency Plan (PACPLAN) was endorsed at the 11th SPREP Meeting held in 2000. PACPLAN allocates to the four metropolitan members of SPREP primary and secondary response responsibility for island members (see Table 2.1).

Metropolitan member	Primary Responder for	Secondary Responder for
Australia	Nauru Papua New Guinea Solomon Islands Tuvalu Vanuatu Kiribati	FSM Fiji Guam New Caledonia Northern Mariana Islands Palau Tonga
New Zealand	Cook Islands Fiji Niue Pitcairn Tokelau Tonga	American Samoa Nauru Papua New Guinea Samoa Solomon Islands Wallis and Futuna
France	French Polynesia New Caledonia Wallis & Futuna	Cook Islands Marshall Islands Niue Pitcairn Vanuatu
United States of America	American Samoa FSM Guam Marshall Islands Northern Mariana Islands Palau Samoa	French Polynesia Kiribati Tokelau Tuvalu

Table 2.1

This report details recommendations for the Federated States of Micronesia, Marshall Islands and Palau. In each PIC, on site evaluations were conducted at major ports and oil transfer and storage locations.

3. Country Missions

A country missions were undertaken to all major ports in the Federated States of Micronesia, Marshall Islands and Palau. The mission followed a standardised assessment and reporting methodology to ensure consistency of assessments with other PIC assessments carried out earlier in the South Pacific Sub-region.

The Country Mission Terms of reference included:

- Carry out an audit of existing equipment stockpiles;
- Assess the bulk fuel terminals and determine their equipment needs;
- Carry out an initial assessment of areas of priority protection around the priority risk areas;
- Assess the human resource (staffing and skills) status and make recommendations on the appropriate level required;
- Draft regional equipment strategy;
- Draft national equipment strategy; and
- Prepare recommendations for equipment needs at facility, national and regional levels.

4. Tier Definitions

Under an internationally adopted system oil spill incidents are categorised into 3 tiers. Each tier is defined by the scale of response that is required and whether that would come from local, regional and national/international resources, hence the tiers are not related to spill volume as different oils in different locations may require significantly different responses. For clarification, the definitions used during this project have been adopted from the International Petroleum Industry Environmental Conservation Association's (IPIECA) 'Guide to Contingency Planning for Oil Spills on Water, 2000. They are described as:

4.1. Tier 1 Definition

Under PACPLAN these are defined as:

- Small operational spills that are within the response capability and resources of an individual port or oil terminal within the SPREP island member where the spill occurs, and
- Spills that impact or threaten to impact within the jurisdiction of that SPREP island member only.

Oil terminal or port specific contingency plans should cover tier 1 spills. Individual oil companies and port administrations should develop, implement and maintain such plans. The facility owner/operator is responsible for the response including the stockpiling of Tier 1 oil spill equipment.

On an individual basis each facility must assess the potential threat of an oil spill within its area and define what resources it would need to meet its Tier 1 requirement, that is to be able to handle small 'operational' spills as defined above. This assessment may lead to criteria being set around oil type and quantity but also staffing levels and the remoteness from additional resources.

4.2. Tier 2 Definition

Under PACPLAN Tier 2 spills are defined as:

- Medium spills that are within the national capability and resources of the individual SPREP island member where the spill occurs, and
- Spills that impact or threaten to impact within the jurisdiction of that SPREP island member only.

Tier Two spills are covered by National Marine Spill Contingency Plans (NATPLANs). Each National government is obligated to develop, implement and maintain a NATPLAN. The National government is responsible for the response including the stockpiling of Tier 2 oil spill equipment.

4.3. Tier 3 Definition

Under PACPLAN Tier 3 spills are defined as:

- Large spills that are of a magnitude and/or severity that is beyond the response capability and resources of the individual SPREP island member where the spill occurs, and/or

- Spills that impact or threaten to impact within the jurisdiction of two or more SPREP island members.

No PIC has the capability of responding to a Tier 3 spill including the maintenance of Tier 3 oil spill equipment. The mutual aid response arrangements are defined in detail under PACPLAN.

5. Recommended Tier-based Equipment Packages

All of the identified areas within the scope of this project have differences in operation, risks and potential effects. Each one also has unique circumstances as to location and availability to outside support (Tier 2 and Tier 3). However there are also a large number of similarities between many of these locations such as oil types, size of operations, environment and isolation from Tier 3 response providers.

In an attempt to standardise the recommendations of this project, whilst still allowing sufficient scope for each location to fulfil its own requirements, the authors have proposed standard models for the contents of Tier 1 and Tier 2 equipment requirements. Each location was assessed individually and recommendations for each were referred back to this model.

5.1. Model Absorbent Package

In locations where a Tier 1 package has not been recommended, but small quantity non-persistent oil transfer operations occur e.g. small vessel refuelling or drum transfer, the provision of an Absorbent package should be considered. The following table outlines the contents of a model Absorbent package.

Item	Quantity	Comments
Absorbent pads	100 packages	e.g. 450mm x 450mm
Absorbent sweep	100m	
Absorbent boom	50m	
Storage container suitable for qty and size of Absorbents	1	1893 litre capacity self supporting

5.2. Model Tier 1 Package

This is used as the benchmark standard for the Tier 1 locations, namely ports and oil facilities within this report. Individual facilities should refer to their section within the country report for further recommendations specific to their operation.

Item	Quantity	Comments
Fence Boom	20 m	Quantities of boom may vary but a minimum total of 100m is recommended
Curtain boom (solid core) 8 x 12	100m	
Towing ends	4 sets	
Anchor connections	2sets	
Temporary storage Quick Tanks	2	10,000 litre capacity self supporting or frame and tank design
Absorbent sweep	200m	
Absorbent pads	200 packages	e.g. 450mm x 450mm
8” Absorbent boom	100m	
Boat hooks	8	Telescoping
transfer pump	1	Peristaltic (none priming)
3” pump hose	40m	
Anchor kits	10 x 20kg kits	Kit includes anchor, chain, rope, buoys and fittings

5.3. Model Tier 2 Package

In cases where a PIC only has one port/facility or such facilities are significantly remote from others it is recommended that they meet the requirements of the Tier 2 stockpile as described below. In cases where a number of facilities exist they may develop agreements whereby all of the local resources are available to assist a facility if an incident is beyond its capability. In such circumstance the combined resources of all the Tier 1 sites in that region should meet the requirements of the Tier 2 package. Where this arrangement exists, equipment must be capable of being mobilised to each site in an acceptable time frame to support the spill response.

Item	Quantity	Comments
Fence boom	100m	Quantities of these may vary but a minimum of 300m total is recommended
Curtain boom	200m	
Shore sealing boom	40m	
Air inflation and water ballast pumps	1 set	
Towing ends	6 sets	

Anchor connections	4 sets	
Temporary storage	3	10,000 litre capacity self supporting or frame and tank design
Absorbent pads	300 packages	e.g. 450mm x 450mm
Absorbent boom	200m	
Sorbant Sweep	200m	
Skimmer with suitable diesel pump	1	Passive weir skimmer
transfer pump	1	Peristaltic (none priming)
3” recovery pump hose	40m	
Anchor kits	15 x 20kg kits	Kit includes anchor, chain, rope, buoys and fittings.

5.4. Tier 3 Capability

A Tier 3 package has not been identified as Tier 3 spills are beyond the capability of PICs. Under PACPLAN the four metropolitan members of SPREP have been allocated respondent responsibilities for PICs. PACPLAN provides the framework for this to happen – what is needed are more detailed bilateral mutual aid arrangements between the metropolitan country and its respective PICs and also between neighbouring PICs. A number of these bilateral arrangements already exist between SPREP members.

Most oil companies operating in the South Pacific area are members of large international industry funded Tier 3 response co-operatives. These co-operatives can provide extensive resources both in terms of equipment and knowledge. The full capability of these organisations should also be considered when each PIC looks at their Tier 3 capability.

6. Recommended Equipment Stockpiles

Recommended model packages are outlined in Section 5. There are three types of model packages: absorbent package; Tier 1 Package and Tier 2 Package. Below is a table by recommending Tier Packages by port.

Port	Recommended Package
Federated States of Micronesia	
Chuuk	Tier 2 Package
Kosrae	Tier 2 Package
Pohnpei	Tier 2 Package
Yap	Tier 2 Package
All other islands	Absorbent Package
Marshall Islands	

Majuro	Tier 2 Package
Ebeye	Tier 2 Package
All other islands	Absorbent Package
Palau	
Malakal	Tier 2 Package
Aimeliik	Tier 1 Package
All other islands	Absorbent Package

7. Equipment Specification

This report does not provide specific performance specifications for equipment outlined in the packages above. When developing performance specifications consideration must be given to compatibility of new equipment with existing resources and those of Tier 3 support providers.

Advice and support for the development of performance specifications should be discussed with SPREP metropolitan member countries prior to any equipment being purchased.

8. Routine Maintenance Guidelines

The maintenance of oil spill equipment is essential to ensure that it is always in a state of readiness. Whilst the equipment may spend most of its life packed and stored, it must still be maintained.

Internationally, most organisations produce a maintenance schedule for their oil spill response equipment based around 3 monthly and 12 monthly intervals. Against each interval, a task list is formulated outlining the inspection and maintenance procedures are carried out. These task lists are on the type of equipment, how regularly it is used and where it is stored. As a guideline, the following procedures are carried out at the specified intervals:

<u>Three Monthly</u>

1. Visual check of the equipment for condition and serviceability.
2. Check all components are present.
3. Run all internal combustion engines.
4. Rectify any faults found.

<u>Twelve Monthly</u>

1. Visual check of the equipment for condition and serviceability.
2. Check all components are present.
3. Full deployment of equipment.
4. Change fuel, oil and all filters e.g. air, fuel, hydraulic etc
5. Rectify any faults found.

Each organisation should develop a maintenance schedule for the equipment they hold. This should include a task list for each piece of equipment to be completed at the suggested intervals. Equipment manuals and maintenance intervals should be sought from suppliers at the time of purchase to assist in the development of a maintenance schedule.

To guarantee that the equipment maintenance is being carried out to the correct standard, it is recommended that an external organisation or department be tasked with auditing the condition of equipment on a regular basis. Such an audit should include inspection of maintenance records, visual inspection of equipment, stock-take and the random selection of items for detailed inspection, operation and deployment.

9. Rehabilitation

All equipment should be thoroughly cleaned after every use. All traces of oil must be removed, the equipment washed with fresh water and allowed to dry. All equipment used should be serviced in accordance with the three monthly maintenance procedures, as described in Section 7, and then returned to storage.

It is essential that this procedure be followed for all deployments, including training and exercises, to prevent deterioration of equipment from exposure to oil and salt water.

10. Equipment Storage Guidelines

The storage of oil spill equipment is especially important in the Pacific Islands due to the environmental conditions of the region. The storage location should be in close proximity to likely spill sites and take into consideration the following points:

- Secure against unauthorised entry;
- Clean, dry and well ventilated;
- Pest free;
- Protected from direct sun light;
- Readily accessible, and
- Separated from flammable, explosive or dangerous goods.

In the majority of cases, the equipment will need to be transported from storage location to spill site. Therefore storage should also take into account the available transportation infrastructure.

11. Training Guidelines

Training in the use of oil spill response equipment is an essential part of preparedness. A program should be developed, both locally and nationally, to ensure that training takes place at regular intervals. This should include industry, port authority and government personnel to ensure continued familiarity with equipment and to foster strong working relationships. This training program must cover both existing and new equipment.

It is recommended that the minimum level of training be an initial equipment familiarisation session. This should involve all personnel who are responsible for the deployment, operation and maintenance of the equipment. This must include equipment operating principals and techniques

and equipment deployment. The training program should also include more advanced training to ensure that operators' levels of knowledge are maintained and enhanced.

The International Maritime Organization (IMO) has developed a model-training course addressing equipment operation and deployment. (Provide detail on different level of courses eg. Operator, spill commander etc.)

Suggested avenues for assistance in developing and running training courses consistent with the IMO model are:

- Local training providers;
- Equipment manufacturers and suppliers;
- Oil spill training companies;
- International Tier 3 response contractors; and
- Metropolitan countries, for example the Maritime Safety Authorities in both Australia and New Zealand have oil spill training programs.

12. Occupational Health and Safety

The health and safety of personnel must be given the highest priority in any oil spill response. The risk associated with any oil spill response will be determined by the following parameters:

- Type and volume of oil spilled;
- Location of spill;
- Weather conditions;
- Training/experience of personnel; and
- Equipment to be deployed.

Persons in charge of an oil spill response should ensure that an equipment supervisor is appointed who is aware of the safe operating procedures for all equipment being used. A formal risk assessment must be performed for each response and from this assessment, a formal safety plan must be developed. This plan should include the operations being performed by personnel and the associated risks. The plan must also include appropriate risk control strategies to ensure that no personnel are exposed to any hazardous situations. The appropriate priority for risk control strategies is:

1. Elimination of the hazard from the work environment
2. Substitution of the hazard for one with a lower hazard value
3. Isolation of the hazard from personnel
4. Engineering modifications to the hazardous equipment
5. Procedures and training for safe working with the hazard
6. Personal protective equipment (PPE) issued to personnel

Pacific Ocean Pollution Prevention Programme

Regional Marine Spill Equipment Strategy
(South Pacific Sub-Region)

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The Legal framework for PACPLAN is provided at the global level by the International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC) and at the regional level by the SPREP Emergencies Protocol.

Effective oil spill preparedness and response is only possible if oil spill equipment is available and personnel are trained in its use. There is a uniform lack of oil spill equipment throughout the region. In the majority of cases there is no expertise within the countries to determine their own oil spill equipment needs.

The formulation of a Regional Marine Spill Equipment Strategy is a project under the auspices of the Pacific Ocean Pollution Prevention Program (PACPOL) – a joint SPREP/International Maritime Organization initiative to address shipping related marine pollution. The equipment strategy provides guidance to Pacific Island Countries (PIC) on their oil spill equipment requirements. The recent "Regional Marine Spill Risk Assessment", another PACPOL project provided essential guidance to the equipment strategy.

The Strategy makes recommendations at two levels:

- At the Tier 1 level guidance is provided to PIC on what equipment stockpiles they should require facility owners/operators to have in place.
- At the Tier 2 level guidance is provided to countries on what they need to have in their national stockpiles.

In addition at the Tier 3 level it ensures that the equipment recommended for all countries are interoperable with each other. Spill equipment is expensive and of a specialised nature. The strategy evaluates each PIC's equipment needs and develops a regionally coordinated strategy that will meet these needs in a cost effective manner. This strategy will then be used as a basis for securing financing for equipment procurements and follow up services. An important consideration is the assessment of financing mechanisms for the capital, operational and maintenance costs for marine spill equipment.

The Regional Equipment Strategy has been spit into two sub-regional components for the North and South Pacific. This is the report for the South Pacific Sub-region.

2. Introduction

Pacific Island Countries are dependent on maritime shipping for the transportation of goods and people, but are also highly vulnerable to pollution from shipping incidents such as groundings, collisions or accidents in cargo handling. The South Pacific Regional Environment Program (SPREP) and the International Maritime Organization (IMO), formulated and are implementing PACPOL to address shipping related marine pollution in the pacific islands region. The Regional Oil Spill Equipment Strategy is Project MS 4 of PACPOL.

The strategy will provide guidance to SPREP island members on the minimum equipment requirements to ensure that oil spill response equipment is available at both the national and regional levels in case of Tier 1 and Tier 2 spills respectively. The strategy will make recommendations on the type and quantity of equipment, where it is to be located and the logistics of access to these equipment stockpiles at both the national and regional level.

The Pacific Islands Regional Marine Spill Contingency Plan (PACPLAN) was endorsed at the 11th meeting of SPREP in 2000. PACPLAN identifies the four metropolitan members of SPREP and assigns them primary and secondary response responsibility for island members (see Table 2.1).

Metropolitan member	Primary Responder for	Secondary Responder for
Australia	Nauru Papua New Guinea Solomon Islands Tuvalu Vanuatu Kiribati	FSM Fiji Guam New Caledonia Northern Mariana Islands Palau Tonga
New Zealand	Cook Islands Fiji Niue Pitcairn Tokelau Tonga	American Samoa Nauru Papua New Guinea Samoa Solomon Islands Wallis and Futuna
France	French Polynesia New Caledonia Wallis & Futuna	Cook Islands Marshall Islands Niue Pitcairn Vanuatu
United States of America	American Samoa FSM Guam Marshall Islands Northern Mariana Islands Palau Samoa	French Polynesia Kiribati Tokelau Tuvalu

Table 2.1

This report only details recommendations for the following PICs evaluated by the Maritime Safety Authority of New Zealand (MSANZ) and the Australian Maritime Safety Authority (AMSA). Some PICs were not visited because of financial and logistical considerations. However the team is confident that the PICs visited were a representative cross-section to provide good guidance for making recommendations for all PICs. On site evaluation status is outlined in Table 2.2 below:

Organisation	PIC	On site evaluation
AMSA	Nauru Papua New Guinea Solomon Islands Tuvalu Vanuatu Kiribati	No Yes No No Yes Yes
MSANZ	Cook Islands Fiji Niue Tonga Samoa	Yes Yes Yes Yes Yes

Table 2.2

In each PIC, on site evaluations were conducted at major ports and oil transfer and storage locations in accordance with advice from the SPREP's Marine Pollution Advisor. The recommendations arising from these evaluations were used as a model for other locations within each PIC where an onsite evaluation was not undertaken.

3. Pilot Mission

A joint pilot mission was undertaken in Fiji between 6 – 15 January 2003 to formulate an oil spill equipment strategy protocol and complete Fiji's national oil spill equipment strategy. The mission also developed a standardised assessment and reporting methodology to ensure consistency of assessments in other PICs.

The SPREP Marine Pollution Adviser (MPA) coordinated the pilot mission with assistance from two technical specialists from AMSA and MSANZ. The team developed the assessment and reporting methodology and carried out the initial assessment for Fiji.

The Pilot Mission Terms of reference included:

- Carry out an audit of existing equipment stockpiles;
- Assess the bulk fuel terminals and determine their equipment needs;
- Carry out an initial assessment of areas of priority protection around the priority risk areas;
- Assess the human resource (staffing and skills) status and make recommendations on the appropriate level required;
- Draft format for regional equipment strategy;
- Draft national equipment strategy for Fiji as template for other national strategies; and
- Prepare recommendations for equipment needs at facility, national and regional levels.

4. Tier Definitions

Under an internationally adopted system oil spill incidents are categorised into 3 tiers. Each tier is defined by the scale of response that is required and whether that would come from local, regional and national/international resources, hence the tiers are not related to spill volume as different oils in different locations may require significantly different responses. For clarification, the definitions used during this project have been adopted from the International Petroleum Industry Environmental Conservation Association's (IPIECA) 'Guide to Contingency Planning for Oil Spills on Water, 2000. They are described as:

4.1. Tier 1 Definition

Under PACPLAN these are defined as:

- Small operational spills that are within the response capability and resources of an individual port or oil terminal within the SPREP island member where the spill occurs, and

- Spills that impact or threaten to impact within the jurisdiction of that SPREP island member only.

Oil terminal or port specific contingency plans should cover tier 1 spills. Individual oil companies and port administrations should develop, implement and maintain such plans. The facility owner/operator is responsible for the response including the stockpiling of Tier 1 oil spill equipment.

On an individual basis each facility must assess the potential threat of an oil spill within its area and define what resources it would need to meet its Tier 1 requirement, that is to be able to handle small 'operational' spills as defined above. This assessment may lead to criteria being set around oil type and quantity but also staffing levels and the remoteness from additional resources.

4.2. Tier 2 Definition

Under PACPLAN Tier 2 spills are defined as:

- Medium spills that are within the national capability and resources of the individual SPREP island member where the spill occurs, and

- Spills that impact or threaten to impact within the jurisdiction of that SPREP island member only.

Tier Two spills are covered by National Marine Spill Contingency Plans (NATPLANs). Each National government is obligated to develop, implement and maintain a NATPLAN. The National government is responsible for the response including the stockpiling of Tier 2 oil spill equipment.

4.3. Tier 3 Definition

Under PACPLAN Tier 3 spills are defined as:

- Large spills that are of a magnitude and/or severity that is beyond the response capability and resources of the individual SPREP island member where the spill occurs, and/or

- Spills that impact or threaten to impact within the jurisdiction of two or more SPREP island members.

No PIC has the capability of responding to a Tier 3 spill including the maintenance of Tier 3 oil spill equipment. The mutual aid response arrangements are defined in detail under PACPLAN.

5. Recommended Tier-based Equipment Packages

All of the identified areas within the scope of this project have differences in operation, risks and potential effects. Each one also has unique circumstances as to location and availability to outside support (Tier 2 and Tier 3). However there are also a large number of similarities between many of these locations such as oil types, size of operations, environment and isolation from Tier 3 response providers.

In an attempt to standardise the recommendations of this project, whilst still allowing sufficient scope for each location to fulfil its own requirements, the authors have proposed standard models for the contents of Tier 1 and Tier 2 equipment requirements. Each location was assessed individually and recommendations for each were referred back to this model. However, variations from the standard model are based on individual assessments and are detailed in each country report.

5.1. Model Tier 1 Package

This is used as the benchmark standard for the Tier 1 locations, namely ports and oil facilities within this report. Individual facilities should refer to their section within the country report for further recommendations specific to their operation.

Item	Quantity	Comments
Fence boom	100m	Quantities of boom may vary but a minimum total of 200m is recommended
Curtain boom	100m	
Shore sealing boom	100m	
Air inflation and water ballast pumps	1 set	
Towing ends	4 sets	
Anchor connections	2sets	
Temporary storage	2	10,000 litre capacity self supporting or frame and tank design
Absorbent pads	200	e.g. 450mm x 450mm
Absorbent boom	100m	
Skimmer	1	Passive weir skimmer
Recovery pump	1	
Anchor kits	10 x 20kg kits	Kit includes anchor, chain, rope, buoys and fittings

Model Absorbent Package

In locations where a Tier 1 package has not been recommended, but small quantity non-persistent oil transfer operations occur e.g. small vessel refuelling or drum transfer, the provision of an Absorbent package should be considered. The following table outlines the contents of a model Absorbent package.

Item	Quantity	Comments
Absorbent pads	200	e.g. 450mm x 450mm
Absorbent boom	100m	
Storage container suitable for qty and size of Absorbents		Portable, secure and weather proof

5.2. Model Tier 2 Package

In cases where a PIC only has one port/facility or such facilities are significantly remote from others it is recommended that they meet the requirements of the Tier 2 stockpile as described below. In cases where a number of facilities exist they may develop agreements whereby all of the local resources are available to assist a facility if an incident is beyond its capability. In such circumstance the combined resources of all the Tier 1 sites in that region should meet the requirements of the Tier 2 package. Where this arrangement exists, equipment must be capable of being mobilised to each site in an acceptable time frame to support the spill response.

Item	Quantity	Comments
Fence boom	150m	Quantities of these may vary but a minimum of 300m total is recommended
Curtain boom	150m	
Shore sealing boom	150m	
Air inflation and water ballast pumps	1 set	
Towing ends	6 sets	
Anchor connections	4 sets	
Temporary storage	2	10,000 litre capacity self supporting or frame and tank design
Absorbent pads	300	e.g. 450mm x 450mm
Absorbent boom	200m	
Skimmer	1	Passive weir skimmer
Recovery pump	1	
Anchor kits	15 x 20kg kits	Kit includes anchor, chain, rope, buoys and fittings.

5.3. Tier 3 Capability

A Tier 3 package has not been identified as Tier 3 spills are beyond the capability of PICs. Under PACPLAN the four metropolitan members of SPREP have been allocated respondent responsibilities for PICs. PACPLAN provides the framework for this to happen – what is needed are more detailed bilateral mutual aid arrangements between the metropolitan country and its respective PICs and also between neighbouring PICs. A number of these bilateral arrangements already exist between SPREP members.

Most oil companies operating in the South Pacific area are members of large international industry funded Tier 3 response co-operatives. These co-operatives can provide extensive resources both in terms of equipment and knowledge. The full capability of these organisations should also be considered when each PIC looks at their Tier 3 capability.

6. Recommended Equipment Stockpiles

Recommended model packages are outlined in Section 5. There are three types of model packages: absorbent Package; Tier 1 Package and Tier 2 Package. Below is a table outlining recommended stockpiles by port.

Port	Recommended Package
Cook Islands	
Avatiu	Tier 2 Package
All other islands	Absorbent Package
Fiji	
Suva	Tier 2 Package
Lautoka	Tier 2 Package
Vuda	Tier 2 Package
Malau	Tier 2 Package
Any other port	Tier 1 Package
All other islands	Absorbent Package
Kiribati	
Betio	Tier 2 Package
All other islands	Absorbent Package
Nauru	
Aiwo	Tier 2 Package
Niue	
Alofi	Tier 2 Package
Papua New Guinea	
Port Moresby	Tier 2 Package
Lae	Tier 2 Package
Madang	Tier 2 Package
Napa Napa Refinery	Tier 1 Package
All other Ports	Tier 1 Package

All other islands	Absorbent Package
Samoa	
Apia	Tier 2 Package
Salelologa	Absorbent Package
Mulifanua	Absorbent Package
Asau	Absorbent Package
Solomon Islands	
Honiara	Tier 2 Package
Gizo	Tier 1 Package
Noro	Tier 1 Package
All other islands	Absorbent Package
Tonga	
Nukualofa	Tier 2 Package
Neiafu	Tier 1 Package
Haapai	Tier 1 Package
Tuvalu	
Funafuti	Tier 2 Package
Vanuatu	
Port Vila	Tier 2 Package
Luganville	Tier 2 Package
All other islands	Absorbent Package

7. Equipment Specification

This report does not provide specific performance specifications for equipment outlined in the packages above. When developing performance specifications consideration must be given to compatibility of new equipment with existing resources and those of Tier 3 support providers.

Advice and support for the development of performance specifications should be discussed with SPREP metropolitan member countries prior to any equipment being purchased.

8. Routine Maintenance Guidelines

The maintenance of oil spill equipment is essential to ensure that it is always in a state of readiness. Whilst the equipment may spend most of its life packed and stored, it must still be maintained.

Internationally, most organisations produce a maintenance schedule for their oil spill response equipment based around 3 monthly and 12 monthly intervals. Against each interval, a task list is formulated outlining the inspection and maintenance procedures are carried out. These task lists are on the type of equipment, how regularly it is used and where it is stored. As a guideline, the following procedures are carried out at the specified intervals:

<u>Three Monthly</u>

1. Visual check of the equipment for condition and serviceability.

2. Check all components are present.
3. Run all internal combustion engines.
4. Rectify any faults found.

Twelve Monthly

1. Visual check of the equipment for condition and serviceability.
2. Check all components are present.
3. Full deployment of equipment.
4. Change fuel, oil and all filters e.g. air, fuel, hydraulic etc
5. Rectify any faults found.

Each organisation should develop a maintenance schedule for the equipment they hold. This should include a task list for each piece of equipment to be completed at the suggested intervals. Equipment manuals and maintenance intervals should be sought from suppliers at the time of purchase to assist in the development of a maintenance schedule.

To guarantee that the equipment maintenance is being carried out to the correct standard, it is recommended that an external organisation or department be tasked with auditing the condition of equipment on a regular basis. Such an audit should include inspection of maintenance records, visual inspection of equipment, stock-take and the random selection of items for detailed inspection, operation and deployment.

9. Rehabilitation

All equipment should be thoroughly cleaned after every use. All traces of oil must be removed, the equipment washed with fresh water and allowed to dry. All equipment used should be serviced in accordance with the three monthly maintenance procedures, as described in Section 7, and then returned to storage.

It is essential that this procedure be followed for all deployments, including training and exercises, to prevent deterioration of equipment from exposure to oil and salt water.

10. Equipment Storage Guidelines

The storage of oil spill equipment is especially important in the Pacific Islands due to the environmental conditions of the region. The storage location should be in close proximity to likely spill sites and take into consideration the following points:

- Secure against unauthorised entry;
- Clean, dry and well ventilated;
- Pest free;
- Protected from direct sun light;

- Readily accessible, and
- Separated from flammable, explosive or dangerous goods.

In the majority of cases, the equipment will need to be transported from storage location to spill site. Therefore storage should also take into account the available transportation infrastructure.

11. Training Guidelines

Training in the use of oil spill response equipment is an essential part of preparedness. A program should be developed, both locally and nationally, to ensure that training takes place at regular intervals. This should include industry, port authority and government personnel to ensure continued familiarity with equipment and to foster strong working relationships. This training program must cover both existing and new equipment.

It is recommended that the minimum level of training be an initial equipment familiarisation session. This should involve all personnel who are responsible for the deployment, operation and maintenance of the equipment. This must include equipment operating principals and techniques and equipment deployment. The training program should also include more advanced training to ensure that operators' levels of knowledge are maintained and enhanced.

The International Maritime Organization (IMO) has developed a model-training course addressing equipment operation and deployment. (Provide detail on different level of courses eg. Operator, spill commander etc.)

Suggested avenues for assistance in developing and running training courses consistent with the IMO model are:

- Local training providers;
- Equipment manufacturers and suppliers;
- Oil spill training companies;
- International Tier 3 response contractors; and
- Metropolitan countries, for example the Maritime Safety Authorities in both Australia and New Zealand have oil spill training programs.

12. Occupational Health and Safety

The health and safety of personnel must be given the highest priority in any oil spill response. The risk associated with any oil spill response will be determined by the following parameters:

- Type and volume of oil spilled;
- Location of spill;
- Weather conditions;
- Training/experience of personnel; and
- Equipment to be deployed.

Persons in charge of an oil spill response should ensure that an equipment supervisor is appointed who is aware of the safe operating procedures for all equipment being used. A formal risk assessment must be performed for each response and from this assessment, a formal safety plan must be developed. This plan should include the operations being performed by personnel and the associated risks. The plan must also include appropriate risk control strategies to ensure that no personnel are exposed to any hazardous situations. The appropriate priority for risk control strategies is:

1. Elimination of the hazard from the work environment
2. Substitution of the hazard for one with a lower hazard value
3. Isolation of the hazard from personnel
4. Engineering modifications to the hazardous equipment
5. Procedures and training for safe working with the hazard
6. Personal protective equipment (PPE) issued to personnel