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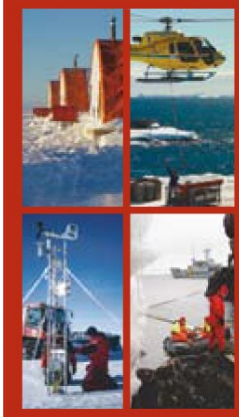

The Council of Managers of National Antarctic Programs

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COMNAP
Fuel Manual

Version 1.0 - 01-April-2008

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COMNAP
Fuel Manual

Version 1.0 (01-April-2008)
The latest version of this manual can be found online at www.comnap.aq

Foreword:

Sections 2 to 5 of this COMNAP Fuel Manual replace and supersede the set of four fuel-related COMNAP guidelines published in 1992 and 1993:

- *Guidelines for Oil Spill Contingency Planning*
  (CGN 01/1992 - approved by COMNAP June 1992);
- *Recommended Procedures for Fuel Oil Transfer at Stations and Bases*
  (CGN 02/1992 approved by COMNAP June 1992);
- *Recommendations for Spill Prevention and Containment of Fuel at Stations and Bases*
  (CGN 03/1992 approved by COMNAP June 1992);
- *Guidelines for the Reporting of Oil Spill Incidents Which Occur in Antarctica*
  (CGN 04/1993 approved by COMNAP June 1993).

This manual, like the four original guidelines, is designed to assist National Antarctic Programs with:

1. preventing oil spills;
2. responding to a spill should one occur; and
3. sharing information about spills to help determine if, and where, there was a need to modify or improve fuel handling practices.

Contents:

1. Introduction
2. Contingency Planning
3. Fuel Transfer Procedures
4. Best Practice for Fuel System Design
5. Reporting Spills

1. INTRODUCTION

Background

The need to develop and implement measures to alleviate and combat the pollution of Antarctic waters has been the subject of Recommendations, Resolutions and Decisions adopted at Antarctic Treaty Consultative Meetings over more than a decade. These include:

- Recommendation XV-4 (1989): Human impact on the Antarctic environment. Prevention, control and response to marine pollution
- Resolution XXVIII-3 (2005): Fuel Storage and Handling
- Resolution XXII-6 (1998): Emergency Response Action and Contingency Planning
- Decision XXVIII-8 (2005): Use of Heavy Fuel Oil (HFO) in Antarctica
- Resolution XXVIII-3 (2005): Fuel Storage and Handling

The need to develop contingency plans environmental incidents is a requirement of Article 15 of the Protocol on Environmental Protection to the Antarctic Treaty. More specifically, Annex IV requires Parties to develop contingency plans for marine pollution response in the Antarctic Treaty area. Annex VI (Liability Arising From Environmental Emergencies), agreed in 2005, requires operators to establish contingency plans for environmental incidents, and

COMNAP Guidelines for fuel spill prevention, contingency planning, response and reporting were first produced in 1992 and 1993. More than ten years on they are no less relevant.

Intended use of this Manual

This Manual, and the various Guidelines it incorporates, set out general standards and procedures applicable to most operations. Managers and operational staff should work together to ensure the guidelines are being implemented. It is intended that more specific documentation is developed by each operator for their own vessels or stations, appropriate for their facilities and personnel. Where possible, current examples of operator-specific documents will be provided.

2. CONTINGENCY PLANNING

(This section is based on a revised version of COMNAP Document CGN 01/1992 *Guidelines for Oil Spill Contingency Planning* first published June 1992)

1. INTRODUCTION

- ✓ Annex VI of the Protocol to the Antarctic Treaty on Environmental Protection requires operators to co-operatively establish contingency plans for responses to incidents with potential adverse impacts on the Antarctic environment or dependent and associated ecosystems. These plans must include:

(a) procedures for conducting an assessment of the nature of the incident;
(b) notification procedures;
(c) identification and mobilisation of resources;
(d) response plans;
(e) training;
(f) record keeping; and
(g) demobilisation.

- ✓ This COMNAP document defines a recommended format and specifies the information to be included in oil spill contingency plans, which are to be prepared by operators for facilities, or for larger geographic areas in Antarctica. The format is consistent with Annex VI requirements, but designed specifically for fuel spill contingency planning rather than environmental incidents in general. While the format provided should be a useful basis for any plan, it should be adapted if appropriate for the particular needs of a facility or area.

2. TIERED APPROACH TO CONTINGENCY PLANNING

1. Most oil spills in Antarctica are likely to be small and confined to a station or base and the adjoining waters. In the event that the spill is beyond the station or base capability, or is likely to affect a larger area, an enhanced response may be necessary involving support from other operators.

2. This tiered response to oil spill incidents requires the development of contingency plans for individual facilities and, where appropriate, compatible contingency plans for larger geographic areas encompassing a number of operators, as defined below:

- **Facility plans**
  These are to be developed for individual stations or bases and their local environs, where appropriate. The plans will be prepared by individual operators responsible for the management of a specific facility.

- **Multi-Operator Plans**
  These are to be developed to encompass a geographic area where a coordinated and compatible response by two or more operators is feasible. This will apply where it is effective and feasible to pool and deploy response equipment and supplies.

3. FORMAT OF PLANS

3.1 The recommended format for Facility and Multi-Operator contingency plans is given in the Appendix. The plans are to be divided into two parts plus annexes as follows:

Part I: Strategic Information

This is a descriptive policy document providing background information including a description of the facility and an evaluation of oil spill scenarios.

Part II: Operational Response

This described the recommended procedures for the development of an operational response to oil spills. The format of the Operational Plan corresponds to the expected chronological order of events. The text of this document should be supplemented, to the maximum extent, with decision tree diagrams or checklists to simplify and speed interpretation. In particular the Operational Plan, Chapter 6, shall be in the form of tree diagrams or checklists.

Annexes

These include detailed reference information relating to specific aspects of the contingency plans, e.g. Communications, Health and Safety, Training, etc.

3.2 It is recommended that all operators adopt the formats specified in this document. This will enable the plans to be easily understood and assist with the integration and compatibility of the facility plans with multi-operator plans, where applicable. Plans should be complete in themselves and not involve reference to other supporting documents, which may cause delays. Plans should preferably be produced in loose-leaf form to facilitate regular update.

4. PLAN EFFECTIVENESS

4.1 The International Tanker Owners Pollution Federation consider that the adequacy of any contingency plans may be assessed against the following ten questions:

1) Has there been a realistic assessment of the nature and size of the possible threat, and of the resources most at risk, bearing in mind the probable movement of any oil spilled?
2) Have priorities for protection been agreed, taking into account the viability of the various

protection and clean-up options?

3) Has a strategy for protecting and cleaning the various areas been agreed and clearly explained?
4) Has the necessary organisation been outlined and the responsibilities of all those involved been clearly stated with no grey areas - will all who have a task to perform be aware of what is expected of them?
5) Are the levels of equipment, materials and manpower sufficient to deal with the anticipated size of spill. If not, have back-up resources been identified and, where necessary, have mechanisms for obtaining their release and entry to the country been established?
6) Have temporary storage sites and final disposal routes for collected oil and debris been identified?
7) Are the alerting and initial evaluation procedures fully explained as well as arrangements for continual review of the progress and effectiveness of the clean-up operation?
8) Have the arrangements for ensuring effective communication between shore, sea and air been described?
9) Have all aspects of the plan been tested and nothing significant found lacking?
10) Is the plan compatible with plans for adjacent areas and other activities?

FORMAT FOR CONTINGENCY PLANS

FACILITY CONTINGENCY PLAN
OR
MULTI-OPERATOR CONTINGENCY PLAN
FOR
[NAME OF FACILITY OR MULTI-OPERATOR AREA]

Date of plan

CONTENTS:

Facility Plan	Multi-Operator Plan
PART I: STRATEGIC INFORMATION	PART I: STRATEGIC INFORMATION
1. INTRODUCTION 1.1 Background 1.2 Purpose 1.3 Scope of Plan 1.4 How to Use the Plan	1. INTRODUCTION 1.1Background 1.2 Purpose 1.3 Scope of Plan 1.4 How to Use the Plan
2. SPILL RISK ENVIRONMENT 2.1 Facility Description 2.2 Oil Stored at Facility 2.3 Oil Transfer Operations	2. SPILL RISK ENVIRONMENT 2.1 Geographic Description of Area 2.2 Oil Transported in Area
3. SPILL RISK ASSESSMENT 3.1Migration Pattern of Spills 3.2 Sensitive Locations 3.3 Spill Scenarios	3. SPILL RISK ASSESSMENT 3.1Migration Pattern of Spills 3.2 Sensitive Locations 3.3 Spill Scenarios
PART II: OPERATIONAL RESPONSE	PART II: OPERATIONAL RESPONSE
4. FACILITY ORGANISATION 4.1 Response Organisation Structure 4.2 Facility Organisation	4. MULTI-OPERATOR ORGANISATION 4.1Response Organisation Structure 4.2Area Response Infrastructure
5. RESPONSE NOTIFICATION 5.1 Initial Assessment 5.2 Initial Notification	5. RESPONSE 5.1 Initial Assessment 5.2 Initial Notification
6. OPERATIONAL PLAN 6.1 Response Team Deployment 6.2 Personnel Safety 6.3 Response Strategies 6.4 Communications 6.5 Spill Surveillance 6.6 Environmental Assessment 6.7 Clean-up Methods 6.8 Restoration	6. OPERATIONAL PLAN 6.1 Request for Assistance 6.2 Joint Response Operations 6.3 Personnel Safety 6.4 Response Strategies 6.5 Communications 6.6 Spill Surveillance 6.7 Environmental Assessment 6.8 Clean-up Methods 6.9 Restoration
7. WASTE DISPOSAL 7.1 Storage of Waste 7.2 Disposal of Waste	7. WASTE DISPOSAL 7.1 Storage of Waste 7.2 Disposal of Waste
8. DEMOBILISATION 8.1 Personnel Decontamination 8.2 Equipment Decontamination / Maintenance	8. DEMOBILISATION 8.1 Personnel Decontamination 8.2 Equipment Decontamination / Maintenance
9. POST SPILL REPORTING	9. POST SPILL REPORTING
10. REPORTING	10. REPORTING

Facility Plan	Multi-Operator Plan
ANNEXES	ANNEXES
A. Facility Area Map	A. Area Map
B. Spill Risk Assessment Map	B. Spill Risk Assessment Map
C. Communication Plan	C. Communication Plan
D. Response Team Organisation	D. Response Team Organisation
E. Response Equipment and Materials	E. Response Equipment and Materials
F. Health and Safety Plan	F. Health and Safety Plan
G. Training & Human Resources	G. Training
H. Quick reference materials	H. Quick reference materials
I. Public Relations / Media Plan	I. Public Relations / Media Plan
J. Cost Accounting Plan	J. Cost Accounting Plan
K. Documentation Plan	K. Documentation Plan
L. Dispersant Use	L. Dispersant Use
M. In-Situ Burning	M. In-Situ Burning
N. Bioremediation Use	N. Bioremediation Use
O. Bird and Mammal Cleaning	O. Bird and Mammal Cleaning
P. Equipment and Personnel Cleaning	P. Equipment and Personnel Cleaning
Q. Definitions and Abbreviations	Q. Definitions and Abbreviations
R. Communications Contact Numbers	R. Communications Contact Numbers

DESCRIPTION OF CONTENT

Facility Plan	Multi-Operator Plan
PART I: STRATEGIC INFORMATION	**PART I: STRATEGIC INFORMATION**
1. INTRODUCTION **1.1 Background** • Define the requirement, authority and applicability of plan in relation to the operator, national program or industry organisation, relevant national agencies and other countries. • Describe relevant Antarctic Treaty obligations and related national legislation or requirements. **1.2 Purpose** • Describe the objectives of the plan, such as to reduce loss and damage resulting from oil spills by: – identifying the potential risks, – describing response actions, – outlining available resources and – defining functions and responsibilities, etc. **1.3 Scope of Plan** • Define the facility/area covered by the plan and the boundaries. • Describe the involvement of other countries participating in the plan, where applicable. **1.4 How to use the Plan** • Explain how the plan is structured and how it is designed to be used. **1.5 Review and update of Plan** • Set out when the plan will next be reviewed and what process will be used.	**1. INTRODUCTION** **1.1 Background** • Define the requirement, authority and applicability of plan in relation to the operators, national program(s), relevant national agencies and other countries. • Describe relevant Antarctic Treaty obligations and related national legislation or requirements. **1.2 Purpose** • Describe the objectives of the plan, such as to reduce loss and damage resulting from oil spills by: – identifying the potential risks, – describing response actions, – outlining available resources and – defining functions and responsibilities, etc. **1.3 Scope of Plan** • Define the geographic area covered by the plan. • Nominate the operators participating in the plan. **1.4 How to use the Plan** Explain how the plan is structured and how it is designed to be used. **1.5 Review and update of Plan** • Set out when the plan will next be reviewed and what process will be used.
2. SPILL RISK ENVIRONMENT **2.1 Facility Description** • Describe in detail the physical layout of facility including buildings, access ways, storage facilities, reticulation systems, etc. • Describe oil storage facilities and capacities including piping/pumping systems, mobile oil transfer equipment and safety control devises,	**2. SPILL RISK ENVIRONMENT** **2.1 Geographic Description of Area** • Describe main geographic features of the area including the location of stations. • Describe natural hazards in area based on hydrographic, sea ice and weather data.

Facility Plan	Multi-Operator Plan
e.g. relief valves, emergency shutdown systems, alarms etc. • Describe existing containment measures, fuel system maintenance programme, fire-fighting systems, site electrical supplies, mobile/portable generator capacity and waste disposal systems. **2.2 Oil Stored at Facility** • Describe typical quantities and location of oil stored on site giving seasonal variations. • Provide specifications of products and define characteristics, e.g. toxicity, persistence, flammability. **2.3 Oil Transfer Operations** • Describe the normal methods and frequency of receiving and transferring oil on site. • Describe how oil products are used.	**2.2 Oil Transported in Region** • Identify vessels transiting or visiting the area and the quantity of oils carried onboard. • Determine and plot shipping routes and transit frequency. • Note any ship position reporting systems in place, and how the information can be accessed. • Define specifications of oil products carried on vessels and define characteristics, e.g. toxicity, persistence, flammability.
4. SPILL RISK ASSESSMENT **3.1 Migration Patterns of Spills** • Describe potential migration paths of spilled oil during transfer operations or from storage facilities. **3.2 Sensitive Locations** • Identify environmentally sensitive locations within the geographic boundaries of the plan with reference to seasonal variations. • Define priorities for protection. **3.3 Spill Scenarios** • Describe the most probable and worst case spill scenarios, taking into account oil storage, transfer operations, refuelling points, vehicle suitability, etc. • Describe possible seasonal and local climatic impacts. • Describe terrain and accessibility to potentially threatened areas.	**4. SPILL RISK ASSESSMENT** **3.1 Migration Patterns of Spills** • Describe potential migration paths of spills as a result of marine accidents at high risk locations. **3.2 Sensitive Locations** • Identify environmentally sensitive locations within the geographic boundaries of the plan with reference to seasonal variations. • Define priorities for protection. **3.3 Spill Scenarios** • Describe the most probable and worst case spill scenarios. • Describe possible seasonal and local climatic impacts. • Describe terrain and accessibility to potentially threatened areas.
PART II: OPERATIONAL RESPONSE	**PART II: OPERATIONAL RESPONSE**
4. FACILITY ORGANISATION **4.1 Response Organisation Structure** • Describe the management structure of the	**4. FACILITY ORGANISATION** **4.1 Response Organisation Structure** • Describe arrangements for the assumption of

Facility Plan	Multi-Operator Plan
facility and the reporting/authority hierarchy for spill response. • Describe the roles and responsibilities of response team members. • Describe the management linkages and command structure between the facility and the responsible national authority for spill response. • Describe linkages with other countries participating in plan, where applicable. • Make reference to Annex S as a source of relevant telephone numbers and other contact details. **4.2 Facility Organisation** • Describe the typical seasonal staffing levels of the facility including scientific, trades, administrative, etc. • Describe the availability of specialist support personnel including medical, fire-fighting, SAR. Identify specialist scientific expertise at facility or in the organisation in such fields as marine biology, chemistry, environmental monitoring.	the lead role by one of the participating operators in the event of a spill. • Describe the command structure and liaison arrangements for joint response. (It is essential that all participating operators share a common understanding of the command structure). • Make reference to Annex S as a source of relevant telephone numbers and other contact details. **4.2 Area Response Infrastructure** • Describe the availability of specialist support personnel including medical, SAR, aircraft, shipping and specialist scientific expertise in such fields as marine biology, chemistry, environmental monitoring.
5. RESPONSE NOTIFICATION **5.1 Initial Assessment** • Facility manager, or responsible officer, to assess initial report of spill and take immediate action to protect safety of life and property, and halt or minimise further spill where possible. **5.2 Initial Notification** • As soon as practicable, and not necessarily before mobilising response team, advise appropriate authorities of incident, stating: – Time of spill – Source of spill – Identity of material spilled – Cause of spill, if known – Estimate of amount spilled – Likelihood of further spillage and amount – Resources under threat, if any. • Advise details of spill to other operators, where applicable and necessary.	**5. RESPONSE NOTIFICATION** **5.1 Initial Assessment** On receipt of spill information, the responsible officer or authority is to assess the initial report and determine whether joint response action is necessary or possible. **5.2 Initial Notification** • As soon as practicable, and not necessarily before mobilising response team, advise appropriate authorities of incident, stating: – Time of spill – Source of spill – Identity of material spilled – Cause of spill, if known – Estimate of amount spilled – Likelihood of further spillage and amount – Resources under threat, if any – Source of information. • Advise details of spill to other operators, where applicable and necessary.
6. OPERATIONAL PLAN	**6. OPERATIONAL PLAN**

Facility Plan	Multi-Operator Plan
6.1 Response Team Deployment • Subject to weather and safety considerations, mobilise response team and appropriate equipment. • Adopt appropriate response strategy to halt or minimise further spill, contain existing spill and protect threatened resources to the extent possible.	**6.1 Response Team Deployment** • Define the procedures to be followed to activate response assistance from other operators participating in the plan. • Identify national and commercial resources that may be available to supplement available area resources and possible logistics support. **6.2 Joint Response Operations** • Describe command structure and liaison/coordination arrangements for joint response operations.
6.2 Personnel Safety • Ensure that safety equipment is issued and used in accordance with Health and Safety Plan. • Alert medical personnel of operation so that appropriate preparations can be made.	**6.3 Personnel Safety** • Ensure that safety equipment is issued and used in accordance with Health and Safety Plan. • Alert medical personnel of operation so that appropriate preparations can be made.
6.3 Response Strategies • Outline response actions for the most probably and worst spill scenarios. • Describe seasonal effects on oil spill response actions. • Identify the available equipment options, e.g. booms, skimmers, absorbents etc, to contain spill and/or protect resources.	**6.4 Response Strategies** • Outline response actions for the most probably and worst spill scenarios. • Describe seasonal effects on oil spill response actions. • Identify the available equipment options, e.g. booms, skimmers, absorbents etc, to contain spill and/or protect resources.
6.4 Communications • Establish a communications/command post to ensure that contact can be maintained with response team and other support personnel. Provide regular update on spill response progress to relevant authorities.	**6.5 Communications** • Describe procedure for setting up a central communications/command post to facilitate coordination with response team and the operators participating in the response action. • Define the frequency and content of reports between command post and participating operators and relevant authorities.
6.5 Spill Surveillance • Use aircraft, where available, or other safe means to determine extent of offshore spills and trajectory. • Estimate track of spill and identify threatened resources. • Advise relevant authorities and other countries, where appropriate, of spill trajectory.	**6.6 Spill Surveillance** • Use aircraft, where available, or other safe means to determine extent of offshore spills and trajectory. • Estimate track of spill and identify threatened resources. • Advise operators participating in the plan, and other countries where their operations may be affected, or spill trajectory. **6.7 Environmental Assessment**

Facility Plan	Multi-Operator Plan
6.6 Environmental Assessment • Undertake ongoing assessment of environmental impacts. **6.7 Clean-up methods** • Liaise with relevant authorities and on-site experts, if available, to determine appropriate clean-up techniques for contaminated shorelines, snow, ice, etc. **6.8 Restoration** • Liaise with relevant authority and on-site experts if available, to determine appropriate restoration measures.	Undertake ongoing assessment of environmental impacts. **6.8 Clean-up methods** Liaise with relevant authorities and on-site experts, if available, to determine appropriate clean-up techniques for contaminated shorelines, snow, ice, etc. **6.9 Restoration** Liaise with relevant authorities and on-site experts if available, to determine appropriate restoration measures.
7. WASTE DISPOSAL **7.1 Storage of Waste** • Identify storage facilities or temporary arrangements suitable for storing recovered oil and oily wastes. **7.2 Disposal of Waste** • Outline arrangements for disposal or transport of oil or oily wastes. • Ensure that transport arrangements comply with relevant national and international regulations.	**7. WASTE DISPOSAL** **7.1 Storage of Waste** • Identify storage facilities or temporary arrangements suitable for storing recovered oil and oily wastes. **7.2 Disposal of Waste** • Outline arrangements for disposal or transport of oil or oily wastes. • Ensure that transport arrangements comply with relevant national and international regulations.
8. DEMOBILISATION **8.1 Personnel Decontamination** • Provide facilities and materials for personnel decontamination. • Arrange for screening of personnel by facility medical staff. **8.2 Equipment Decontamination/Maintenance** • Arrange cleaning of equipment and identify maintenance needs. • Arrange for equipment maintenance or replacement as appropriate.	**8. DEMOBILISATION** **8.1 Personnel Decontamination** • Provide facilities and materials for personnel decontamination. • Arrange for screening of personnel by facility medical staff. **8.2 Equipment Decontamination/Maintenance** • Arrange cleaning of equipment and identify maintenance needs. • Arrange for equipment maintenance or replacement as appropriate.
9. POST SPILL MONITORING • Liaise with national authority to determine need for post spill monitoring programme. • Arrange for comprehensive post-spill photographic record of affected areas.	**9. POST SPILL MONITORING** • Liaise with other participating operators and relevant authorities to determine need for, and implementation of, post spill monitoring programme.

Facility Plan	Multi-Operator Plan
10. REPORTING • Prepare report on oil spill incident outlining the cause, extent of spill, response actions, effectiveness of action, known environmental impact, damage or loss of assets or resources, debrief outcome, costs, further action.	**10. REPORTING** • Prepare report on oil spill incident in conjunction with national participants outlining the cause, extent of spill, response action, effectiveness of action, known environmental impact, damage or loss of assets or resources, debrief outcome, costs, further action.
ANNEXES	**ANNEXES**
A. FACILITY AREA MAP • Map illustrating the extent of facility covered by plan.	**A. FACILITY AREA MAP** • Map illustrating area covered by plan.
B. SPILL RISK ASSESSMENT MAP • Map identifying potential spill risk sources, spill migration paths and sensitive locations.	**B. SPILL RISK ASSESSMENT MAP** • Map identifying potential spill risk sources, spill migration paths and sensitive locations.
C. COMMUNICATION PLAN • Identify staff positions responsible for execution of the Communication Plan. • Identify communication systems and frequencies available for local communication with response teams in remote locations and with reconnaissance aircraft and surface units. • Identify which agencies need to be notified of which types of incidents. • Describe external communication assets, including telefax, computer modem and other satellite and relay station telephone capabilities. • Describe reporting requirements and procedures, including sample message formats.	**C. COMMUNICATION PLAN** • Identify communication systems and frequencies available for local communication with response teams in remote locations and with reconnaissance aircraft and surface units. • Identify which agencies need to be notified of which types of incidents. • Describe external communication assets, including telefax, computer modem and other satellite and relay station telephone capabilities. • Describe reporting requirements and procedures, including sample message formats.
D. RESPONSE TEAM ORGANISATION • Identify members of the response team by position description. • Define each member s role and responsibilities.	**D. RESPONSE TEAM ORGANISATION** • Identify the position and responsibilities of the response coordinator for each of the stations participating in the plan. • Describe the response team organisation and command structure for each of the stations participating in the plan.
E. RESPONSE EQUIPMENT AND MATERIALS • Identify staff positions responsible for equipment storage and readiness.	**E. RESPONSE EQUIPMENT AND MATERIALS** • Identify regional assets of containment, cleanup, waste storage and disposal equipment

Facility Plan	Multi-Operator Plan
• Identify all local assets of containment, cleanup, waste storage and disposal equipment and their location on site. • Describe when and hot to use the various types of equipment and materials. • Describe how to clean and maintain the equipment. • Identify other response resources/capabilities available from other sources, national Government agencies, contractors and other countries. • Describe how to request additional equipment and predicted time to receive.	and their location.
F. HEALTH AND SAFETY PLAN • Identify local medical support resources. • Describe how to request additional medical assistance. • Identify potential personnel hazards relating to materials which could be spilled in the area, operating the response equipment and weather/elements exposure. • Describe health and safety training requirements for personnel handling oil products. • Describe use of the Material Safety Data Sheet (MSDS) by response team personnel. • Identify local assets of protective clothing and equipment and describe when and how to use. • Describe medical evacuation procedures.	**F. HEALTH AND SAFETY PLAN** • Identify medical and evacuation support assets in the area. • Describe how to request additional medical assistance. • Identify potential personnel hazards relating to materials which could be spilled in the region.
G. TRAINING & HUMAN RESOURCES • Define training requirements for all members of the response team. • Define training requirements for response administrators and advisors at organisation headquarters. • Describe plan for field messing. • Describe plan for response team personnel rotation.	**G. TRAINING** • Define training requirements for response coordinators with regard to area response activities.
H. QUICK REFERENCE MATERIALS • Prepare simplified instructions targeted at personnel with key responsibility for spill response, to allow them to quickly find the points most relevant to them in the event of an incident. • The instructions may take the form of job	**H. QUICK REFERENCE MATERIALS** • Prepare simplified instructions targeted at personnel with key responsibility for spill response, to allow them to quickly find the points most relevant to them in the event of an incident. • The instructions may take the form of job

Facility Plan	Multi-Operator Plan
cards, checklists or action plans. Examples are given in section 6 of these guidelines.	cards, checklists or action plans. Examples are given in section 6 of these guidelines.
I. PUBLIC RELATIONS/MEDIA PLAN • Identify staff positions responsible for executing the Public Relations/Media Plan. • Provide format for initial and follow-on written press releases. • Identify all media personnel who may be in the local area and their location.	**I. PUBLIC RELATIONS/MEDIA PLAN** • Identify methods by which media advice will be coordinated between countries participating in response action.
J. COST ACCOUNTING PLAN • Identify staff positions responsible for execution of the Cost Accounting and Documentation Plans. • Identify costs which should be tracked and how they should be recorded. • Identify sources of funding and how to request.	**J. COST ACCOUNTING PLAN** • Provide format for recording actions taken during spill incident and cleanup. • Identify costs which should be tracked and how they should be recorded.
K. DOCUMENTATION PLAN • Provide format for recording actions taken during spill incident and cleanup to facilitate after action reporting requirements and the consideration of lessons learned.	**K. DOCUMENTATION PLAN** • Provide format for recording actions taken during spill incident and cleanup to facilitate after action reporting requirements and the consideration of lessons learned.
L. DISPERSANT USE • Describe policy on use of dispersants and decision making process, if applicable.	**L. DISPERSANT USE** • Describe policy on use of dispersants and decision making process, if applicable.
M. IN-SITU BURNING • Describe policy on in-situ burning and decision making process, if applicable.	**M. IN-SITU BURNING** • Describe policy on in-situ burning and decision making process, if applicable.
N. BIOREMEDIATION USE • Describe policy on bioremediation use and decision making process, if applicable.	**N. BIOREMEDIATION USE** • Describe policy on bioremediation use and decision making process, if applicable.
O. BIRD AND MAMMAL CLEANING • Describe the effects of oil on birds and mammals. • Define the methods of cleaning, including cleaning materials and equipment. • Identify experts who can be called upon to advise.	**O. BIRD AND MAMMAL CLEANING** • Describe the effects of oil on birds and mammals. • Define the methods of cleaning, including cleaning materials and equipment. • Identify experts who can be called upon to advise.
P. EQUIPMENT AND PERSONNEL CLEANING • Describe materials available and procedures	**P. EQUIPMENT AND PERSONNEL CLEANING** • Describe materials available and procedures

Facility Plan	Multi-Operator Plan
for cleaning personnel of oil contamination. • Describe procedures for cleaning and checking serviceability of response equipment.	for cleaning personnel of oil contamination. • Describe procedures for cleaning and checking serviceability of response equipment.
Q. DEFINITION AND ABBREVIATIONS • Define acronyms, technical terms and abbreviations which are used in the plan.	**Q. DEFINITION AND ABBREVIATIONS** • Define acronyms, technical terms and abbreviations which are used in the plan.
R. COMMUNICATIONS CONTACT NUMBERS • List telephone/fax/telex numbers, email addresses and names of personnel involved in response action within the facility, the organisation s headquarters, and national agencies which may need to be notified or can provide assistance. • List contact details, where applicable, of other national operators participating in the plan or which may be able to provide assistance.	**R. COMMUNICATIONS CONTACT NUMBERS** • List telephone/fax/telex numbers, email addresses and names of personnel involved in response action within each station and in the key organisations and respective national authorities of operators participating in the plan.

3. FUEL TRANSFER PROCEDURES

(This section is based on a revised version of COMNAP Document CGN 02/1992 *Recommended Procedures for Fuel Oil Transfer at Stations and Bases* first published June 1992)

1. INTRODUCTION

1.1. The transfer of fuel oils from resupply vessels to shore based storage facilities, and between individual storage facilities on stations or bases, are potentially hazardous operations. It is incumbent on operators to ensure that the procedures are in place, and are implemented, to minimise the risk of oil spillage and environmental pollution during such fuel transfer operations.

1.2. The procedures outlined in this document cover the documentation, operation, inspection and maintenance of fuel transfer facilities and the training requirements for operational staff. Individual operators may deem it necessary to supplement these minimum requirements to satisfy national standards, or to meet specific operational needs.

2. PROCEDURES

Planning

2.1 Plan all fuel resupply operations in order to minimise the handling of fuel before its use, as each transfer carries a risk of spillage.

2.2 Identify the main point of contact at both the source (e.g. resupply vessel) and destination (e.g. station). The identified personnel should exchange information to ensure a common understanding of operations before fuel transfer commences and maintain communications throughout the operation.

Documentation

2.3 Personnel who are responsible for, or are required to undertake, fuel oil transfer operations are to be provided with clear and comprehensive documentation prescribing the procedures to be followed, and precautions to be observed, in conducting fuel transfer operations.

2.4 The documentation is to clearly identify the specific responsibilities of all personnel involved, including the individual in overall charge of the transfer operation and the points of contact noted above.

2.5 The documentation is to include up-to-date layout drawings or diagrams indicating storage tanks, reticulation systems, pumps, valves and safety devices.

2.6 All tanks, valves and pumps are to be allocated unique identity numbers which are to appear on the layout drawing and in a prominent place on installed equipment. The written procedures are to make reference to the identity numbers.

Training

2.7 All personnel who are responsible for, or required to undertake, fuel oil transfer operations are to receive instruction or training in the operation of the equipment, spillage prevention and other measures.

2.8 The above personnel will also receive training on oil spill contingency planning procedures and duties.

Operations

2.9 Fuel transfer equipment must be inspected for serviceability prior to the commencement of pumping operations.

2.10 Except during fuel transfer operations, all isolation valves on storage tanks are to be closed.

2.11 When transferring fuel oil between ships and shore facilities or fuel farms and remote holding tanks (e.g. at power houses), personnel must be stationed at both locations to monitor the transfer operation and must also maintain regular contact via VHF radio or similar. The fuel transfer pipes must be monitored for leaks during transfer operations.

2.12 During fuel transfer operations only one tank shall be active (i.e. valve open) except at the overlap period when switching from the access tank to the next tank. Such operations must be continuously monitored.

2.13 All personnel responsible for, and associated with, fuel transfer operations are to take whatever action is deemed appropriate to minimise and avoid the risk of fuel spills.

2.14 If personnel have any doubts about the adequacy of existing procedures and systems, these must be brought to the immediate attention of the responsible authority.

2.15 Records of all fuel transfers and spillages shall be maintained by personnel on site and the national operating authority.

Inspection

2.16 All fuel storage tanks are to be visibly inspected on a weekly basis, and as soon as possible following adverse weather, to check the integrity of the storage systems and associate plumbing.

2.17 All storage tanks are to be checked monthly to verify contents.

2.18 Bulk storage tanks shall be thoroughly inspected on an annual basis.

2.19 A record of these inspections, including the internal cleaning of tanks, shall be maintained at the station. A logbook should be established for this purpose with the date, name of personnel and results for all maintenance and inspections of fuel handling and response equipment undertaken.

Maintenance

2.20 All pumps, valves and associated equipment are to be maintained in good working order.

2.21 Any defective fixtures or fittings shall be replaced or repaired as soon as is practicable.

4. BEST PRACTICE FOR FUEL SYSTEM DESIGN

(This section is based on a revised version of COMNAP Document CGN 03/1992 *Recommendations for Spill Prevention and Containment of Fuel at Stations and Bases* first published June 1992)

INTRODUCTION

Fuel oils are used at Antarctic stations and bases for a variety of operational needs including power generation and the fuelling of vehicles and aircraft. The spillage of fuel oils as a result of equipment failure, accidental damage or human error poses a potential environmental threat. It is therefore incumbent on national Antarctic operators to design, install and operate fuel oil storage facilities to minimise such risks.

The design recommendations outlined in this document are intended to minimise the possibilities of fuel spillage to the environment. The recommendations apply to new and, where practicable, existing installations. The design philosophy incorporates:

- spillage prevention;
- spillage containment;
- spillage detection;
- spillage alert; and
- spillage recovery.

DESIGN RECCOMMENDATIONS

Spillage Prevention

Installations shall be sited and designed to minimise the harmful effects of the environment, such as from ice build-up on valves and fittings.

Installations shall be sited to minimise damage from operational activities such as heavy vehicular traffic and where this is not practicable the installation shall be protected by means such as bollards, guards and signs.

Tanks, valves and fittings shall be of first grade materials, suitable for petroleum products and site specific climatic conditions.

Lever operated ball valves shall preferably be used which give clear visual indication of the open and shut positions.

Manufacture, fabrication and site construction of facilities shall be inspected, tested beyond application conditions if possible, and approved for use by a competent authority.

The installation shall avoid undue complexity so as to reduce the risk of human error through confusion or misunderstanding.

Tanks shall be piped for top fill and top draw off.

All tanks shall be numbered and have the maximum capacity clearly marked.

All valves shall be tagged or numbered to facilitate clear and unambiguous description in operating procedures.

Adjacent tanks shall be fitted with overflow equalising connections between them, where practicable.

Tanks shall have calibrated dipsticks, continuous level monitoring gauges, or other means of assessing the quantity of fuel stored.

Fuel pumps for bulk handling shall have a lockable switch or other appropriate mechanism to prevent accidental pumping.

The delivery pump shall have an emergency stop switch or other appropriate mechanism located in a prominent, accessible position. Alternatively, a master valve shall be fitted immediately downstream of the pump to facilitate emergency shutdown.

Spillage containment

The containment facility shall have the capacity to contain the contents of at least the largest tank, should a spill occur, plus an allowance of at least 10% for snow, ice or water accumulation.

- Containment may take various forms including, for example:
- Bunding around the installation or around individual tanks;
- Remote bunding with interconnecting drainage from tank installation
- Double skin tanks, horizontal or vertical, with the outer skin being the containment; or
- Flexible bladders within containment structure.

Spillage alert

- Audible and/or visual alarms shall be installed in locations which are frequented regularly, or are obvious during fuel transfer operations.

- All bulk fuel storage shall, where practicable, have a high level alarm which is audible and/or visible to an operator. Such alarms shall signify a potential overflow before the tank reaches capacity.

Spillage Recovery

- Installations shall have the capacity to store any recovered fuel up to quantities at least matching the capacity of the largest tank. This provision may be met by additional storage capacity such as a spare tank, or by under-filling tanks to provide the reserve storage by transfer pumping.

- See section *Contingency Planning* for further information.

5. REPORTING SPILLS

(This section is based on a revised version of COMNAP Document CGN 04/1993 *Guidelines for the Reporting of Oil Spill Incidents which Occur in Antarctica* first published June 1993)

1. INTRODUCTION

1.1 The intention for reporting of spills to COMNAP is to provide an archival record of oil spill incidents which occur in the Antarctic Treaty area, in order to assist operators to determine whether there is a need to modify or improve oil handling practices. Spill reporting is part of a wider incident reporting system operated through COMNAP.

2. OIL SPILL REPORTING PROCEDURE

2.1 In the event of an oil spill incident in excess of 200 litres (and for spills less than 200 litres, if considered significant or of use to other operators), operators are to lodge a COMNAP Oil Spill Report with the COMNAP Secretariat. (IAATO members submit should submit their reports to IAATO, which will provide coordinated reporting to COMNAP).

2.2 The report is to be provided in English.

2.3 The report is to be lodged with the COMNAP Secretariat within 30 days of the incident occurring.

2.4 Any further information regarding investigation of the incident and any follow up actions should be lodged with the COMNAP Secretariat within 90 days of the incident occurring. There is no set format for this, instead copies of appropriate spill investigation reports or other documentation should be provided to the COMNAP secretariat. This will allow the sharing of key lessons with other operators.

2.5 In the event of a major spill, a copy of any press release or publicly released statement on the incident should be provided to COMNAP members through the COMNAP Secretariat.

2.6 In addition to reporting of spills, Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty requires annual reporting on contingency plans. This reporting is part of the annual exchange of information which should be lodged with the Antarctic Treaty Secretariat before 1 October each year.

3. REPORTING FORMAT

- The format and content of the COMNAP Oil Spill Report, which is to be lodged with the COMNAP Secretariat, is given at the end of this section. A description of the

information to be provided is described against each heading.

- Reports should be lodged electronically by email to <sec@comnap.aq>.

4. OIL SPILL SITREP

4.1 To facilitate the collection of information in a format which will assist in the compilation of the COMNAP Oil Spill Report, a suggested situation report (SITREP) format is given in Annex B. It should be noted that the SITREP is intended for the internal use of operators only, and is not to be lodged with the COMNAP Secretariat.

4.2 Operators are encouraged to use some form of root cause analysis in the course of their internal reporting and follow up. This involves identifying the range of influences and events which led to the spill, in order to put measures in place to avoid a recurrence. Relevant questions are included in the SITREP form.

FORMAT OF OIL SPILL REPORT

OIL SPILL REPORT
TO: COMNAP Secretariat (for National Operators) FROM: (Name, address, fax or E-mail of contact person) OPERATOR: (operator lodging the report)
1. STATION/VESSEL: (General location of spill) 2. TIME AND DATE SPILL OCCURRED: 3. SPILL LOCATION: (Specific location of spill, e.g. name of building and/or area, latitude/longitude of vessel) 4. WEATHER CONDITIONS: (Weather conditions at time of spill and impact of weather conditions on subsequent response action) 5. OPERATION UNDERWAY WHEN SPILL OCCURRED: (Fuelling, defueling, transfer, transport, other) 6. TYPE OF FUEL SPILLED: (Diesel, lubricating oil, hydraulic oil, etc) 7. AMOUNT SPILLED IN LITRES: (Best estimate of spill in litres) 8. AMOUNT RECOVERED: (State in litres the estimated amount recovered and per cent recovered of total litres spilled) 9. SPILL CAUSE: (Describe cause of incident, if known, e.g. structural failure, hose failure or leak, tank rupture, operator error, etc) 10. SLICK DESCRIPTION AND MOVEMENT: (Describe extent of slick if spill occurred or reached open water and the extent of movement) 11. AREAS DAMAGED: (Describe or name areas damaged, e.g. nature and extent of land damage, bodies of water affected, damage to wildlife or other natural resources, any threats still existing) 12. FUEL/WATER SAMPLES WERE/WERE NOT TAKEN: (State number of samples taken, if any, and what is being done with them) 13. CONTAINMENT METHOD USED: (Describe containment action taken, e.g. repaired damaged container, using another container, dyking, damming, diverting, boom deployment, other) 14. SPILL REMOVAL METHOD USED: (Describe clean-up measures taken - i.e. absorbent, skimming, pumping, excavating, type of container used, etc. Also describe: disposal or retrograde plans) 15. PERSONNEL INVOLVED IN SPILL REMOVAL: (Describe typical number of personnel involved at each stage of the response activity) 16. ADDITIONAL COMMENTS: (Use this space to report what measures have been taken to prevent recurrence of a spill, i.e. repairs made, removal of faulty equipment, changes in procedure, etc)

SUGGESTED FORMAT FOR OIL SPILL SITREP

(For internal use only. Not to be sent to the COMNAP Secretariat)

OIL SPILL SITREP
TO: (Name of responsible person in operator organisation) FROM: (Originator of report and name of station/base/vessel) TIME/DATE: (Time and date of initial and subsequent SITREPS)
1. STATION/VESSEL: (General location of spill) 2. TIME AND DATE SPILL OCCURRED: 3. SPILL LOCATION: (Specific location of spill, e.g. name of building and/or area, latitude/longitude of vessel, etc) 4. WEATHER CONDITIONS: (Weather conditions at time of spill in initial SITREP and current weather conditions in subsequent SITREPS) 5. OPERATION UNDERWAY WHEN SPILL OCCURRED: (Fuelling, defueling, transfer, transport, other) 6. TYPE OF FUEL SPILLED: (Diesel, lubricating oil, hydraulic oil, etc) 7. AMOUNT SPILLED IN LITRES: (Best estimate of spill in initial SITREP and revised estimate in subsequent SITREPS in litres) 8. AMOUNT RECOVERED TO DATE: (State in litres the estimated amount recovered to date and per cent recovered of total litres spilled) 9. SLICK DESCRIPTION AND MOVEMENT: (If spill occurred or reached open water describe: size:- length and width; colour:- barely, visible, silvery, faint colour or sheen, bright colour, dull brown, etc; wind conditions:- direction, speed, sea state, slick; movement:- direction, speed) 10. AREAS DAMAGED OR THREATENED: (Describe or name areas damaged or threatened in initial SITREP and indicate any change in subsequent SITREPS, e.g. if slick is approaching any SPAs or SSIS, indicate distance from and best estimate of arrival. If birds or mammals affected, indicate numbers, mortality count and cleaning treatment status) 11. CONTAINMENT METHOD: (Describe equipment or techniques being used) 12. SPILL REMOVAL AND EFFECTIVENESS: (Provide assessment of spill response effectiveness) 13. ADDITIONAL COMMENTS: (Include any additional comments such as preventative measures, repairs, request for any outside area assistance, etc)