SCIENTIFIC, TECHNICAL AND OPERATIONAL GUIDANCE NOTE - STOp 1/98

This note is intended to provide general guidance to assist local authorities develop a framework for Health and Safety policy.

HEALTH, SAFETY & WELFARE DURING SHORELINE CLEAN-UP

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1. INTRODUCTION

The Department of Environment, Transport and the Regions (DETR), through the Maritime and Coastguard Agency (MCA), exercises the responsibilities accepted by Central Government for dealing with pollution at sea from ships and for assistance to local authorities in preparing for and dealing with shoreline pollution from ships.

MCA has a key role to play in responding to shoreline pollution incidents arising from spills of oil or other hazardous substances from ships into the marine environment. Whilst the response to such incidents is time-critical, there are health and safety responsibilities for all parties which must be understood and recognised as part of the co-ordinated response.

The purpose of this STOp Note is to confirm and clarify those arrangements for major spill clean-up operations, and to provide additional guidance to local authorities on information which may be included in emergency and spill response plans. It is also hoped that the guidance contained in the STOp Note will be of assistance to local authorities and other organisations dealing with minor clean-up operations.

Experience gained from the SEA EMPRESS spill has also been reviewed and incorporated as appropriate in the STOp Note. An annex to the Note includes in summary form some of the key lessons from the SEA EMPRESS spill (see annex 1). Annexes 2-7 include further general assistance for local authority emergency planning and safety officers and advisers on hazard management and risk control.

2 LEGAL BACKGROUND

The Health and Safety at Work Act 1974 is the key legislation relating to health and safety matters in the UK. The Act establishes a number of duties and responsibilities, which can be summarised as follows:

Employers have a duty to establish and maintain a safe system of work,

Employers must take all reasonably practicable steps to protect the health safety and welfare of their employees and others including the public,

Employers must prepare and maintain written safety policies,

Employees have a duty to comply with all health and safety instructions and requirements and not to put either their own or anyone else's health, safety and welfare at risk.

The 1974 Act is supported by a great many sets of Regulations and other relevant statutory provisions. In respect of shoreline operations the most relevant (but not the only ones) are listed in annex 2.

3 ROLES

Please refer to the National Contingency Plan (NCP) for Marine Pollution from Shipping and Offshore Installations January 2000, for more detailed information.

MCA

The MCA produces, and is responsible for maintaining and updating the NCP, providing policy; operational and administrative advice to those involved with marine oil spills. The NCP also includes advice to local authorities on the content of their local emergency and spill response plans. This information is supported and augmented where necessary by STOp Notes.

Throughout an oil pollution incident, MCA will liaise with the local authority to ensure proper co-ordination of operations and health and safety. The MCA is also responsible for ensuring that any equipment or material it provides in respect of shoreline clean-up, meets current safety requirements.

Local Authorities

Local authorities are responsible for the creation of emergency response plans and for ensuring that appropriate health and safety information is included. Where local authorities undertake to prepare and apply oil spill contingency plans, the plans must address health and safety considerations. Where maritime local authorities undertake shoreline clean-up operations, they will be responsible for dealing with the clean-up and as a consequence for overall management of health and safety issues. For major incidents this is likely to be the appropriate Unitary, County or Regional authority or the Environment and Heritage Service in Northern Ireland. (In areas where District Councils still exist the District authority may deal with small-scale incidents.) Under the NCP it is the local authority that would make the request for a Shoreline Response Centre (SRC) to be established, and chairs the SRC once established.

Stockpile operators

In the event of an incident the MCA may require the stockpile operator to go to the scene with appropriate material drawn from the stockpile and specialist personnel. Where required by the MCA, usually at the request of the local authority, the stockpile operator will deploy their personnel and equipment on clean-up operations. In addition to mobilising MCA equipment to be operated by their own personnel, the stockpile operator will also provide equipment and materials for use by local authority personnel, and will ensure that appropriate operational and safety instructions and training are given.

Oil spill contractors

Oil spill contractors can provide oil clean-up equipment and personnel under commercial contracts. In addition to specialist equipment to be operated by their own personnel the contractor may provide equipment and materials for use by local authority personnel under their guidance. During shoreline operations, contractors must liaise with the local authority, via the SRC, to ensure proper co-ordination of operations and health and safety.

4 GENERAL COMMENTS ON HEALTH AND SAFETY MANAGEMENT ARRANGEMENTS

There should be clear and documented arrangements for health and safety management during shoreline incidents. During small-scale incidents, where local resources are adequate to deal with the incident, it is assumed that existing local authority management arrangements and systems will provide suitable health and safety management and control.

In operations which involve a number of organisations, and in particular where a SRC is established, each organisation involved has a statutory duty to safeguard the health, safety and welfare of its employees and others. However, the overall co-ordination of health and safety management rests with the local authority via the SRC.

Key to these arrangements will be two documents. First, the emergency spill response plan which should contain information on proposed health and safety management arrangements in the event of a spill. And second, the health and safety file, which should provide a record of actual health and safety arrangements, provisions and decisions in the event of the plan, being activated.

5 MANAGEMENT APPROACH FOR MAJOR INCIDENTS

The management approach recommended is based on that established by the Construction (Design and Management) Regulations 1994 (CDM Regs) for construction sites. These regulations implement the objectives of the EC Directive dealing with safety on temporary or mobile construction sites.

The reasons behind the adoption of the CDM Regs as a model are the many similarities between the organisational and operational issues encountered on both major shoreline clean-up and construction projects. The main similarities are:

Both involve temporary work sites,

Both involve multiple organisations on-site,

Both can involve significant numbers of personnel,

Both involve similar plant and equipment.

However it must be borne in mind that whilst the CDM Regs are considered to represent a recommended management model, the regulations may not legally apply to any or all aspects of a clean-up operation. Also there will be detailed requirements and terminology within the regulations, which may have no parallel or equivalent in general shoreline clean-up operations.

It should also be noted that under most organisations 'health and safety policy statements it is incumbent on those responsible for managing the clean-up operation to inform any trade union safety representative of their health and safety arrangements and proposed operations.
In protracted operations, the SRC should be aware that safety representatives have the legal right to undertake safety inspections. Consideration should be given to liaison with the Area Health Authority and the Health and Safety Executive and to the keeping of proper records.

6 SCALES AND PHASES OF OPERATIONS

Scales of operation

For the purposes of this STOp Note clean-up operations will be considered to be one of the following:

Minimal - Can be dealt with by the shoreline authority and requires no additional assets. Operationally, unlikely to require more than a few days to complete.

Minor - Does not require the mobilisation of an SRC, but may require the deployment of additional assets with the assistance of the MCA. Operations likely to extent from a few days to a few weeks could arise from a shipping casualty or an operational discharge.
Major - Requires the mobilisation of an SRC and multi-organisation clean-up operations. The overall operation is likely to be of many weeks duration, requiring the long-term presence on-site of equipment and personnel. Usually resulting from a major loss of cargo associated with a shipping casualty.

Phases of operation

For the purposes of this STOp Note major operations will be considered to consist of 5 phases.

Phase 1: Pre-incident planning and training. This includes the preparation of the oil spill and emergency response plan; training of personnel, and exercises. (the bulk of the advice in this STOp Note relates to this phase).

Phase 2: Mobilisation. This is the first operational phase and covers the action required to mobilise the emergency response plan, including establishing the SRC and mobilising initial assets for deployment. Typically this will be of 24-48 hours duration.

Phase 3: Emergency operations. This, the second operational phase, includes all operations to collect status data, i.e. determining the extent of the incident and priorities, and to minimise further damage, or risk of damage. Typically this phase may last 5 to 7 days.

Phase 4: Clean-up and recovery phase. Once the emergency phase is over the operation will move into the final operational phase, which may last days, weeks or even months. This phase will constitute the major phase of any operation and will include the majority of clean-up and recovery activity.

Phase 5: Post incident review. - Lessons learnt from the incident must be collated and fed back to inform future planning and training.

7 Pre-incident planning and training (Phase 1)

Emergency and spill response plans

Details describing the proposed arrangements for health and safety management and co-ordination should be included in contingency and emergency response plans with particular reference to the resourcing and organisation of the SRC. The management of health and safety clean-up operations issues rests with the Technical Team of the SRC.

All emergency and spill response plans should contain relevant information on health and safety responsibilities and management arrangements in the event of the plan being activated. Information should be provided on the following key areas:

General health & safety responsibilities during incidents

The plan must contain a statement that the local authority has overall responsibility for health and safety management and co-ordination during an incident. However the plan should also make it clear that this does not affect other organisations statutory responsibilities under health and safety legislation. In any situation, which is not specifically covered by the plan, it should be assumed that the organisation or body having the overall management control for that situation also has health and safety management responsibility.

Health & safety management arrangements during incidents

The plan must show the arrangements for health and safety management during an incident. In the event of a major incident the local authority should ensure that competent personnel are present at, or accessible to, the SRC to advise on health and safety issues. In practice all local authorities have appointed safety officers. It is considered appropriate that the local authority safety officer(s) should be the competent person in respect of health and safety management during incidents.

In addition on-site supervisory staff (i.e. Beach Masters) must be competent in both the use of clean-up equipment and relevant health and safety procedures and precautions. Beach Masters will be responsible for ensuring that all personnel under their supervision have been provided with relevant safety equipment, information and guidance.

There should be a meeting of Beach Masters at the SRC at least once a week to review operational and safety management experiences over the preceding week and review plans for the forthcoming week. In a given operation the SRC will determine the actual frequency of meetings and briefings.

Where a Beach Master takes over a specific site or existing operation there should be a formal hand over process. This process should be recorded and logged.

Nature of hazards likely to be encountered

The plan should contain information on hazards likely to be encountered, relevant safety information including information for staff, and copies of any safety check lists or schedules of safety equipment. In addition details of sources of information and specialist advice should also be included. Copies of this information should be placed on the health and safety file if an operation is commenced.

The hazards can be broadly divided into four categories. Annexes 4-7 include further general assistance for local authority safety officers on hazard management and risk control for these categories.

Hazards associated with normal work practices (see annex 4)

Hazards associated with difficult access arrangements (see annex 5)

Hazards associated with clean-up equipment and materials (see annex 6)

Hazards associated with the spill material (see annex 7)

Health and safety file

The spill response plan should detail responsibilities for the maintenance of a health and safety file, and may also describe typical contents, e.g. hazard information, health and safety contacts and telephone numbers, risk assessments, etc. At the commencement of operations a health and safety file for the operation should be established and held for the duration of the operation at the SRC. The file will be the responsibility of the local authority. The maintenance of the health and safety file is the responsibility of the competent person. The competent person should ensure that copies of all health and safety relevant information is maintained on the file and that at the end of the operation the file is kept with the operation archive.

It is a duty to record all accidents and incidents. Copies of all accidents and incidents during a clean-up operation should be provided to the SRC.

In the event of an accident, dangerous occurrence, or other incident requiring notification under Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) the information should be recorded and reported by the employing organisation to the appropriate enforcing authority.

Risk assessments

Most clean-up operations use standard techniques, equipment, and material as detailed in Oil spill clean-up of the coastline. A technical manual 'MCA 1994. Health and safety risk assessments, as required by statute, of standard clean-up operations and techniques should have been carried out by the various organisations holding or deploying equipment during an incident. These risk assessments will identify safety requirements and provisions to be adopted during operations.

Local authorities may wish to include copies of appropriate risk assessments in their contingency plan.

Health & safety policies and related documentation

Local authorities are advised to review their written safety policies and related documentation to ensure that appropriate information is included regarding health and safety issues arising from spill clean-up.

Where local authorities intend to use spill contractors they should, as part of the specification of contract, request copies of the contractors 'written health and safety policy and relevant safety information including details of safety procedures and precautions, staff training, and arrangements for supervision and management. Careful consideration should be exercised with contractors using casual labour.

Training events and exercises

Training events and exercises are designed to build individual skill and competencies and to test the organisational arrangements for spill and clean-up management. In all cases the opportunity

should be taken to incorporate health and safety considerations.

Beach Masters should have attended at least one accredited training course on clean-up techniques and operations, or have gained sufficient and similar experience during the course of an oil spill incident. For protracted operations it is likely that some personnel will gain sufficient experience during the earlier stages of the operation to be considered for the Beach Master role during a later stage of the same operation.

8 THE OPERATIONAL AND POST OPERATION PHASES

Mobilisation (Phase 2)

This covers the actions required to mobilise the emergency response plan, including establishing the SRC and mobilising initial assets for deployment. The key health and safety task for this phase will be to establish the initial management arrangements at the SRC and collate safety relevant information. Annex 3 contains a suggestion for the main actions that should be considered.

Emergency operations (Phase 3)

This includes all operations to collect status data, i.e. surveys to determining the extent of the incident and priorities, and to minimise further damage, or risk of damage. Key health and safety tasks for this stage will be to carry out risk assessments for the proposed activities, or to review existing risk assessments where these were prepared for the emergency plan, and to ensure appropriate safety induction of personnel and organisations as they are introduced to the operation.

Clean-up and recovery (Phase 4)

Once the emergency phase is over the operation will move into the final operational phase, which may last days, weeks or even months. This phase will constitute the major phase of any operation and will include the majority of clean-up and recovery activity. What distinguishes this phase from the previous one is the opportunity and ability to forward plan operations.
In this phase the operation can be considered (in health and safety terms) as a conventional project. Key health and safety tasks will be to ensure that appropriate health and safety requirements are being adhered to, reviewing health and safety performance and risk assessments as appropriate, and providing specialist advice when changes to work practices are required or are proposed.

It is unlikely that additional specific risk assessment would be carried out for every beach or section of shoreline. Health and safety measures therefore rely on generic risk assessments of standard operational techniques. However, supervisory staff on operations must be competent to decide in a given situation when it is unsafe to proceed or when safety considerations dictate that specific additional safety measures are required. In such circumstances the competent person, with assistance as required, may require a particular additional assessment and monitoring of a specific hazard or situation.

Post operations review (Phase 5)

It is essential that there should be a post operation review so that the lessons learned from the operation can be incorporated in the inevitable revision of the emergency plan. It is requested that a summary of such lessons and experience be produced and provided to MCA. The MCA will then incorporate specific experience in both training events and guidance issued.

9 SOURCES OF SPECIALIST ASSISTANCE AND ADVICE

During incidents specialist advice will be available as required from the MCA and specialist stockpile operators. As well as the emergency services, the County (or Council) Waste Disposal Officer, the Environment Agency, SEPA in Scotland, EHS in Northern Ireland, the Health and Safety Executive (HSE), oil companies - via United Kingdom Petroleum Industry Association – (UKPIA) and safety advisors from the owners of the cargo or vessel. In addition general health and safety information on dispersants, demulsifiers, and detergents is available from the Ministry of Agriculture Fisheries and Food (MAFF) and details are included in the current review of testing,

approval and use.

Names and addresses for specialist advice should be included in the emergency response plan with copies in the health and safety file during operations. Details of any specific requests for assistance or advice, and relevant responses, should be held in the health and safety file.

10 USEFUL CONTACTS

HSE - HSE Information Centre, Broad Lane, Sheffield, S3 7HQ

United Kingdom Petroleum Industry Association (UKPIA) - 9 Kingsway, London, WC2B 6XH

MAFF - Marine Environmental Protection Division, Room 629, Nobel House, 17 Smith Square, London, SW1P 3JR

SOAEFD - Scottish Office Agriculture Environment and Fisheries Department, Pentland House, 47 Robbs Loan, Edinburgh, EH14 1TY

11 SELECTED BIBLIOGRAPHY

There are many sources of further information and advice. The publications listed below should be considered as typical, and not exhaustive.

Information on specific hazards and risks associated with materials and substances, including legal requirements and exposure limits.

Croner's Substances Hazardous to Health.

Numerous papers providing general information of clean-up hazards and risks, and occupational exposures and control.

Proceedings of the Bi-annual Oil Spill Conference. American Petroleum Institute.

Guidance and advice on clean-up and disposal techniques, including related health and safety information.

Oil spill clean-up of the coastline - a technical manual MCA 1994.

Guidelines on the use of oil spill dispersants. Institute of Petroleum.

CONCAWE Report No 9/80 Disposal Techniques for Spilt Oil.

Occupational Health Implications of Crude Oil Exposure: Literature Review and Research Needs. Marine Spill Response Corporation, Washington, DC MRSC Technical Report Series 93-007.

In addition the HSE publish a wide range of documents which may be of assistance. Any HSE publication (and the HSE publication catalogue) can be obtained from:

HSE Books, PO Box 1999, Sudbury, Suffolk, CO10 6FS, Tel 01787 881165

ANNEX 1

Selected Health, Safety & Welfare lessons arising from the SEA EMPRESS spill

Management

1 SRC

A member of the SRC should be the nominated safety officer for the incident. This role will include the responsibility to ensure that health, safety and welfare issues are considered at appropriate stages of the incident and to identify when additional advice and assistance might be required.

2 WELFARE

For protracted incidents there needs to be careful consideration of welfare provision for personnel, e.g. feeding, transport, water, sanitation, washing facilities, waste management etc. It is suggested that the voluntary sector can be rapidly mobilised to provide certain welfare services for the first week of an incident. After which alternative arrangements should come into force utilising local authority or contractors. i.e. there is a 1-week period at the beginning of the incident within which to mobilise the preferred medium to long term arrangements.

3 BEACH MASTERS

Health, safety and welfare on individual beaches should be the responsibility of the Beach Master. Beach Masters should have the authority within their area of beach or shoreline to stop any unsafe practices or activity. All Beach Masters, regardless of alternative provision, should also be able to provide first aid cover. There should be a weekly meeting of Beach Masters to review operations and health, safety and welfare issues. On sustained incidents personnel can gain Beach Master status through operational experience.

Technical Information

4 COSHH DATA FOR CRUDES, REFINED PRODUCTS, AND CLEAN-UP MATERIAL.

This information should be held, or accessible, centrally by the MCA so relevant information can be faxed to the SRC once it is known from the manifest what materials are being dealt with. It will also be necessary to obtain amended advice for weathered material where inhalation hazards are greatly reduced after 24 hours from spill release.

5 ADDITIONAL RISK ASSESSMENTS

Additional health and safety risk assessments may be required where there are particular difficulties or constraints, which necessitate unorthodox working arrangements. For instance there may be no conventional landside access to some sections of shoreline. In such situations it may be necessary to mechanically lift in and out equipment and personnel or gain access from the sea. The SRC has to come to a decision, balancing the imperative for clean-up against potential increased risk to personnel and increased costs, on when such clean-up goes ahead and what techniques will be used.

6 ADJOINING SITES

Working on beaches and shorelines adjacent to ports, harbours, docks and other industrial usage may pose additional hazards, which are not immediately apparent. Risks may arise where access to the particular beach or shoreline is via such premises. Even when the current usage presents little or no additional risk there may have been historical usage, which should be considered. In

such situations advice should be sought from the current occupier of the site as to any additional precautions that might be advisable, or in the case of vacant sites the local Environmental Health Department or local Environment Agency Office may be able to provide relevant advice.

Specific Hazards & Risks

7 TRENCHING

When trench and backfill techniques are used on sand beaches the trenched area requires time to stabilise before it can safely take traffic. Depending on the nature of the beach, and vehicle, at least 4 days is typically required for the beach to stabilise after backfilling to allow further vehicular traffic. A backfilled area may also take up to 4 days to stabilise sufficiently to allow pedestrian traffic. Caution should always be exercised on backfilled areas until it is known that there has been sufficient stabilisation, and there should be appropriate signs displayed on the main entrance points to the beach. Physical barriers may need to be considered.

8 BURIED OIL

Where oil has been intentionally buried, or otherwise covered up by beach material, it is possible for the oil to be liberated sometime after the incident. This will normally be as a result of beach stripping of dynamic beaches by energetic sea conditions. If the beach is an amenity beach there could be risk to the public or the oil could be re-mobilised by tides to contaminate other nearby beaches. Whilst this may be unavoidable, appropriate information for beach users should be displayed. Sites and approximate quantities of buried oil should be recorded.

9 HEAVY SEAS

Working on beaches in heavy seas, i.e. big rollers, requires special care. During heavy seas personnel should be deployed on tasks higher up the beach so as to maintain a safe distance from the waters 'edge.

10 LARGE BOULDER FIELDS

During the SEA EMPRESS incident slips and falls on boulders were the second most frequent cause of injuries. Contaminated boulder beaches, or beaches with extensive boulder fields require additional care. Boulders, which may already be worn smooth by tidal action, become very slippery when covered in oil and can become almost impossible for pedestrian traffic. When planning an in-situ clean-up the first stages of the clean-up should concentrate on creating safe access for the personnel involved with the clean-up-operation.

11 ROCK PLATFORMS

In the event that personnel have to work from rock platforms, which may themselves be contaminated with oil material, it is essential that suitable provision must be made to reduce the likelihood of, and protect against the consequences of, falls. Additional risk assessments are necessary and consideration must be given prior to the commencement of activity to the provision and use of appropriate harnesses and other safety equipment.

12 PERSONAL PROTECTIVE EQUIPMENT (PPE)

All personnel should be issued with an agreed standard kit of PPE which will include clothing to prevent skin or soft tissue contact, safety footwear and headgear etc. and which should be worn at all times. In addition there should be additional PPE available, which would be called upon by the Beach Master and issued in accordance with any specific activities or risks that are encountered. (NB see note about PPE in hot weather -heat exhaustion).

13 HEAT EXHAUSTION AND HYPOTHERMIA

In extreme weather conditions personnel may be subject to the risk of either heat exhaustion or hypothermia. Beach Masters must be vigilant in adverse or extreme weather conditions for evidence of either effect. In the case of extreme weather conditions the SRC should ensure that routine reminders are issued to Beach Masters regarding this issue, and to consider when a suspension of certain activities might be a sensible precaution. In hot conditions Beach Masters should also be vigilant that personnel do not remove PPE, that an effective sunscreen is used where necessary and there are adequate rest breaks and availability of drink to prevent dehydration.

14 WATER QUALITY FOR BATHERS

During oil spills there will inevitable be hydrocarbons in the water column for sometime after the spill. At present whilst there are arrangements to formally prevent fish stocks from contaminated waters finding their way into the food chain, there does not appear to be similar formal arrangements to prevent the recreational use of affected waters. The local environmental health department is responsible under their statutory responsibilities to provide any clearance testing of waters for recreational use.

15 MONITORING OF AIRBORNE VOLATILE ORGANIC COMPOUNDS (VOCS)

Occupational monitoring of VOCs may be required under certain circumstances, particularly in the first hours after a spill when volatile components and particularly benzene may be released. However, given that activities take place in an open environment, it could be difficult to obtain representative exposure levels for staff without personal dose monitoring. As a consequence there may be a need to differentiate between monitoring required for occupational exposure and any general monitoring of environmental levels which may be relevant for assessing any increase in potential risk to the local population.

16 MARINE OPERATIONS

Information regarding any marine operations, which may impact on personnel on the shoreline, must be provided to the SRC. This could include, for example, a schedule of flights and locations for aerial application of dispersant.

ANNEX 2

Health and safety regulations, which are likely to apply to major, clean-up operations

First Aid at Work Regulations 1981

Noise at Work Regulations 1989

Management of Health and Safety at Work Regulations 1992

Manual Handling Operations Regulations 1992

Personal Protective Equipment at Work Regulations 1992

The Provision and Use of Work Equipment Regulations 1992

Personal Protective Equipment (Amendment) Regulations 1994

The Control of Substances Hazardous to Health Regulations 1994

Construction (Design and Management) Regulations 1994

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995

Construction (Health, Safety and Welfare) Regulations 1996

(NB each set of Regulations listed has a companion Approved Code of Practice or Guidance on Regulations.)

ANNEX 3

Initial actions in the event of mobilising the SRC for the Health and Safety Officer

1 HEALTH AND SAFETY FILE - set up the health and safety file for the operation and establish arrangements for its maintenance.

2 CARGO DETAILS - Secure information on type of material(s), total tonnage etc., estimate of tonnage spill to date. Copies of relevant hazard sheets from owner/consignee via the MCA. File in H&S file.

3 TIME OF INCIDENT - Time of first release, duration of material at sea and exposed to elements and wave action etc. Review likely impact on risk. File in H&S file.

4 WEATHER REPORTS - Weather forecast for the next 24 hours including sea conditions, obtain regular updates via the SRC. Review likely impact on risk. File in H&S file.

5 MARINE OPERATIONS - Summary of action to date, details of any material used to break up or disperse spill. Quantity used, where and when applied. Relevant hazard sheets via the MCA. Establish communications via the SRC to ensure up-dates on material usage during marine operations.

6 BEACH MASTERS - Identify Beach Masters, prepare and provide an initial safety briefing. Plan for attendance at weekly Beach Master briefings.

7 INDUCTION ARRANGEMENTS - Establish arrangements for safety induction of staff and personnel. Induction arrangements to cover the management and supervisory arrangements on-site, and principal hazards and issues.

ANNEX 4

Hazards associated with normal work practices

Local authorities should review their safety policies, related documentation, and instructions to ensure that the following hazards and issues are adequately dealt with in both their emergency plans and normal working instructions:

Lifting and manual handling,

Working with and around vehicles,

Working with and around chemicals,

Working with and around noisy equipment,

Personal Protective Equipment and clothing,

Welfare provision for site, or remote, working,

Working in extremes of temperature and weather,

Supervision for site and remote working,

First aid arrangements,

Reporting procedures.

(NB this should not be taken as an exhaustive list).

All the above are hazards or issues which may be encountered on most working days by local authority staff and should therefore already be dealt with in appropriate safety training, documentation, and instruction. In addition local authority supervisory staff should also be familiar with these issues and their management.

ANNEX 5

Hazards associated with difficult access arrangements

In some situations it may be necessary to work on sections of the shoreline where there is no conventional vehicular or pedestrian access. In these situations it is likely that landside access may be effected by cranes and cradles, whilst marine side access may be possible using suitable shallow draft boats and other craft. In any event an operation which necessitates special access arrangements must introduce additional risks and hazards. Therefore it is appropriate that all proposed arrangements be reviewed from a safety management point of view before activities are commenced.

In some situations a review may result in an operational decision to abort any plans to clean-up an individual beach or section of shoreline where risks to staff were considered to be unacceptable. Whilst this may give rise to recurrent problems elsewhere, if oil becomes re-mobilised, it may be justified for operational and safety reasons. It is also considered essential to liaise with, and take advice from, the local Coastguard organisation in any situation where special access arrangements are proposed.

Where an operation proceeds then the SRC and Beach master should ensure that as a minimum the following issues and arrangements should be adequately provided for and documented in addition to the general guidance on health and safety described elsewhere in this STOp Note.

PPE: This will include items such as appropriate safety harnesses and rigs for cliff top access and personal flotation devices for marine-side access. Staff must be fully conversant with the use of such equipment.

Rescue: In the event of a safety incident it is likely that specialist assistance will be required from HM Coastguard. Experience to date indicates that it is appropriate to have the cliff rescue team in attendance for any situations where cliff top access is required. Likewise, in the event of marine side access a safety vessel should be in attendance.

Supervision: Operational supervision on difficult access sites is critical to the safe and timely completion of the work. Beach masters in such situations must be able to assess both the operational needs of the clean-up on a day to day basis and the particular safety precautions and requirements. On extended operations the SRC may decide to nominate a specific person who will act as safety advisor/officer for all difficult access sites.

Notification: The SRC must be kept informed of the commencement and progress of clean-up activities at any difficult access site.

ANNEX 6

Hazards associated with specialist clean-up equipment and materials

Dispersants: Dispersant is most likely to be applied on shoreline operations from knapsack sprayers, the beachguard super, or the WSL beach sprayer. Dispersants represent a range of hazards during use, these can be addressed by adequate training, supervision and PPE provision. The Institute of Petroleum recommends the following PPE for those involved with spraying operations:

Full cover plastic overalls,

PVC gloves,

Close fitting face visor fitted to a safety helmet,

Chemical resistant safety footwear.

If a safety helmet is not provided then protective eye-goggles should be worn along with a suitably close fitting mouth and nose mask. The PPE is designed to eliminate the contact of dispersant material with unprotected skin or eyes and to prevent inhalation of vapours or droplets. This should form the basis of standard PPE provision for all staff working on shoreline clean-up. In addition the simple precaution of ensuring that personnel always work up-wind of spraying operations should be adopted as a matter of routine.

All manufacturers and suppliers of dispersants and related material provide comprehensive hazard information with their products, and stockpile operators have carried out COSHH assessments.

Heat: A number of pieces of specialist equipment use heat, usually via steam, to raise the temperature of recovered oils in order to reduce the effective viscosity. Any equipment running at steam temperature must be adequately supervised and steps must be taken to ensure that workers are kept away from any equipment, which might represent a risk of burns or scalds.

Mechanical clean-up devices (mops): Mechanical mops present a number of hazards including machinery, oils, and heat. In addition to adequate operator training, there are two simple precautions, which will eliminate most risks. The first is to ensure that all moving parts are properly guarded or shrouded, and second ensure that all non-essential personnel are kept a safe distance from the mops. Where mechanical mops are in use then areas should be cordoned-off to prevent other personnel approaching the machinery out of curiosity or ignorance.

Argocats: these are specialist multi-wheeled vehicles for moving personnel and equipment across beaches and other similar surfaces with poor or uncertain load bearing characteristics. Particular care must be taken to ensure that all drivers of beach cats are familiar with the limitations of the vehicle, particularly in respect of suitable ground conditions and slope negotiation.

Information: All personnel on the beach should be appraised of hazards associated with clean-up equipment and materials and therefore why they should only operate with such material, or near such material, after appropriate training and with adequate supervision.

NB this is not an exhaustive list of hazards, but covers the most likely hazards to be encountered on beach clean-up from specialist equipment. Further advice and information on the equipment and techniques that may be deployed will be found in the MCA technical manual Oil spill clean-up of the coastline 'MCA 1994.

ANNEX 7

Hazards associated with the spill material

General overview

Hazards for crude and refined products include both acute and chronic effects. Whilst the major concern continues to be exposure to benzene there are a number of other components such as napthas which may also be present. Principle risks exist through the inhalation of vapours or skin and soft tissue contact. Conditions, which may result, include respiratory and dermatological reactions. (See Croner's Substances Hazardous to Health).

Weathering effects

Existing information indicates that most volatiles are driven off from refined products within the first few hours of the spill, and from crude products within 8 hours or so. This period may be extended where there are particularly calm cool conditions and the spill is contained such that it is unable to spread to a thin film. Even so evidence is available that most if not all benzene has been volatilised and lost within a 24-hour period. As a consequence inhalation risks are usually considered to be negligible after the first 24 hours or so, leaving skin and soft tissue contact as the major hazard of concern.

NB Exposure to petroleum components such as benzene may also be as a direct result of equipment used, and it may be impracticable to isolate the cause of any exposure.

This information should be taken as a general guide because of the wide formulation of both refined products and transported crudes - useful references include papers presented at the 1989 and 1993 Oil Spill Conferences and subsequently published in the proceedings[1 & 2], and ASTMS Standards[3], available via MCA. Local authority safety officers wishing to understand more fully the technical arguments involved are advised to obtain copies.

PPE

When dealing with material in the early stages of a spill, e.g. the first day, it will be necessary to provide PPE as described elsewhere and appropriate respiratory protective equipment. In addition there should be effective segregation of any affected areas so that only those staff with an operational reason to do so, e.g. beach assessment, are exposed to any potential risk.

Adequate staff information and PPE will provide appropriate controls for skin and soft tissue contact route, provided Beach Masters are vigilant regarding both the behaviour of personnel on the beach and the use of PPE.

1, Eley, Morris, Hereth and Lewis 1989. Is overexposure to benzene likely during crude oil spill responses? *Proceedings of the 1989 Oil Spill Conference,* API, Washington DC, pp 127 –129.

2, Whipple, Glenn, Ocken and Ott. 1993. A program approach for site safety at oil spills. *Proceedings of the 1993 oil spill conference, API, Washington DC, pp 99 –104.*

3, Standard guide for health and safety training of oil responders. F 1644 –95, November 1995, American Society for Testing and Materials (ASTMS) Sub-committee F20.21.

Monitoring issues

As discussed elsewhere in the STOp Note there may arise situations where monitoring of Benzene or VOC levels in air may be required. Where this is specifically required for occupational reasons then a personal monitoring device such as a portable photo-ionisation detector (PID) monitor should be employed to give both the Short Term Exposure Level and the Time Weighted Average Exposure. Most types will provide up to 10 hours monitoring time and the ability to record period maxima and averages, and are intrinsically safe. The more sophisticated equipment also has the ability to store information for subsequent downloading to a PC running a spreadsheet such as Excel, and both visual and audible alarms.

PIDs would be particularly applicable in the earliest stages of spill response, or where elevated levels may be suspected. The change in the nature of any risk after 24 hours elapsed time from the spill indicates that the wider routine use of PIDs in subsequent stages of a clean-up operation is not required.

If required, a more cost-effective option for routine monitoring would be to use 8-hour Draeger tubes and personal monitors. This could be backed up by spot readings taken with more sensitive and accurate equipment.

Health surveillance

Chronic exposure to many components of crude and refined products results in known or assumed carcinogenic effects. However given the likely exposure levels during most clean-up operations, where exposure would be negligible, health surveillance is not warranted. The exception to this would be where exposures are non-negligible which may include the first 24 hours after the spill, or where the oil has been confined and volatilisation has been delayed. In these circumstances, depending on exposure levels, health surveillance of staff may be warranted. In any event it is a sensible precaution to exclude any staff with a history of skin or respiratory disorders, including asthma, from working on contaminated beaches or directly with recovered oil, oiled beach material, or other contaminated material.