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FUNDING OF ENVIRONMENTAL IMPACT STUDIES

Note by the United Kingdom delegation

Summary:	Attached to this paper is part of the United Kingdom Government's response to the Sea Empress Environmental Evaluation Committee (SEEEC) which studied the environmental impact of the <i>Sea Empress</i> oil spill, and associated clean-up operations.
Action to be taken:	Information to be noted.

1 After the *Sea Empress* oil spill in February 1996, the United Kingdom Government quickly announced the creation of the Sea Empress Environmental Evaluation Committee (SEEEC) with the following terms of reference:

- 1 To co-ordinate monitoring work carried out by government departments and other public bodies to assess the environmental impact of the *Sea Empress* oil spill and the subsequent clean-up activities.
- 2 To ensure that a comprehensive set of monitoring data on environmental distributions and impacts is obtained, taking account of studies by other organisations and the need to avoid gaps and overlaps.
- 3 Through these monitoring programmes, to assess the overall impact of the incident on environmental resources of the area affected, these resources to include fisheries, agriculture, amenity and wildlife conservation, and to assess the subsequent recovery of these resources. Information on the distribution of pollutants relevant to human health will be passed to public health authorities for assessment.

4 To publish the principal findings and conclusions of these studies with the purpose of informing the Government, the public and those specific groups directly affected by the incident. Recommendations will be made where improvements in procedures or further actions are required, which might have wider application.

2 Attached is a summary of the recommendations made by SEEEC, and the United Kingdom Government's response to them. Particularly relevant is the final recommendation of SEEEC, which concerns the IOPC Fund.

3 Copies of the Executive Summary of the SEEEC report are available from the United Kingdom delegation. Copies of the full report are available from HMSO (0171-873 9090, ISBN 0 11 70021563, £19).

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**THE GOVERNMENT RESPONSE TO THE
REPORT OF THE *SEA EMPRESS*
ENVIRONMENTAL EVALUATION
COMMITTEE**

**"THE ENVIRONMENTAL IMPACT OF
THE *SEA EMPRESS*
OIL SPILL"**

**GOVERNMENT RESPONSE TO THE REPORT OF THE *SEA EMPRESS*
ENVIRONMENTAL EVALUATION COMMITTEE "THE ENVIRONMENTAL
IMPACT OF THE *SEA EMPRESS* OIL SPILL"**

The *Sea Empress* Environmental Evaluation Committee (SEEEC) was established by the Secretary of State for Wales on 27 March 1996 following the grounding of the *Sea Empress* oil tanker on 15 February 1996. The Committee was set up to assess the overall environmental impact of the oil spill, the effectiveness of the resulting clean up operations and to report on the lessons learnt.

The Committee was given the following terms of reference:

- to co-ordinate monitoring work carried out by government departments and other public bodies to assess the environmental impact of the *Sea Empress* oil spill and the subsequent clean up activities;
- to ensure that a comprehensive set of monitoring data on environmental distributions and impacts is obtained, taking account of studies by other organisations and the need to avoid gaps and overlaps;
- through these monitoring programmes, to assess the overall impact of the incident on environmental resources of the area affected, these resources to include fisheries, agriculture, amenity and wildlife conservation and to assess the subsequent recovery of these resources. Information on the distribution of pollutants relevant to human health will be passed to public health authorities for assessment;
- to publish the principal findings and conclusions of these studies with the purpose of informing the Government, the public and those specific groups directly affected by the incident. Recommendations will be made where

improvements in procedures or further actions are required, which might have wider application.

SEEEC published an initial report in July 1996 which described the preparatory work and proposed a programme of further work. These proposals were accepted by Government and funds were provided to support the programme. The final Report entitled "The Environmental Impact of the *Sea Empress* Oil Spill" was published on 11 February 1998. The main findings were presented and discussed at an international conference in Cardiff on 11 - 13 February 1998.

Much of the Report is concerned with describing the scientific assessment of the fate of the oil and the impacts. The work of the Committee in this area has provided valuable scientific evidence that has taken forward understanding and will help inform future decisions. In keeping with its terms of reference the Committee also assessed the effectiveness of the clean up operation. While the overall conclusion was that this was well done there were inevitably a number of lessons to be learnt leading to recommendations on future arrangements to be included in contingency planning.

A broad conclusion of the Report was that the long-term effects of the spill will not be as serious or widespread as initially feared. This is due in part to the robustness of the natural environment and the effectiveness of the clean-up operation which the Committee judged to be well-managed, planned and executed. It is clear that the environmental impact was also mitigated by a fortunate combination of events. The spill took place at a time of the year when many fish species were not in the affected area and before most of the migratory seabirds had returned to breed. In addition, the type of oil, and the pattern of winds and tides, which in the early stages carried much of the oil away from sensitive parts of the Pembrokeshire coast and islands, helped to lessen the effects.

Inevitably dealing with such a large scale and infrequent incident will provide lessons for the future. These are included in SEEEC's recommendations which fall into two broad categories:

- those which are more specifically related to the *Sea Empress* spill and the area of South West Wales where environmental impacts occurred. These mostly involve continued monitoring in circumstances where the effects of the spill cannot yet be assessed or where the environmental effects remain significant.
- those of national significance derived from the *Sea Empress* experience, which propose research and actions to improve response and assessment procedures wherever another major spill should occur in the UK.

The Committee's recommendations, providing operational advice and making suggestions for future research, were set out in Chapter 11 of the Report and reproduced in full in the separate Summary. Each SEEEC recommendation, with the Government's response, is reproduced below.

The Government is grateful to the Committee for the thorough and professional way in which it conducted its work under its Chairman, Professor Ron Edwards CBE. The Report is one of a series commissioned by Government into the *Sea Empress* oil spill, with the Marine Accident Investigation Branch having reported on the cause of the initial grounding and subsequent salvage operation. Lord Donaldson is considering that Report and its findings in a more general review of salvage and intervention practice and responsibilities. In some cases responses to the SEEEC recommendations will be considered alongside Lord Donaldson's recommendations and in the review of the National Contingency Plan which is drawing on lessons from the *Sea Empress* oil spill.

ENVIRONMENTAL IMPACTS

Whilst recognising that the environmental impact was not as great as it might have been due to fortunate circumstances, the Committee has made a number of recommendations which in the main call for further monitoring and research in a number of areas.

There is a need for saltmarsh vegetation to be monitored

Of all the maritime vegetation types it is the saltmarsh in Milford Haven waterway that has been most directly impacted by the oil. The Government agrees with SEEEC that continued monitoring is a matter for the Countryside Council for Wales (CCW) to consider and a project to monitor the saltmarsh up to the end of 1998 is in CCW's work programme. In addition to assessing the damage to the saltmarsh habitat and associated scarce species, and monitoring the recovery, the project will establish a base-line against which future changes can be kept under surveillance. The level of continued monitoring that is required will be reviewed in the light of the further evidence obtained.

There is a need for salmon and sea trout stocks to be monitored

The SEEEC report concluded that although evidence of impacts on salmon and sea trout was inconclusive there was a small chance of delayed effects through impacts in breeding years after 1997. The Government agrees with the Committee that this is a recommendation for the Environment Agency. The Agency has already started, or is in the process of commissioning, programmes in South West Wales rivers to monitor stocks in the area.

Several commercial species of fish and shellfish should continue to be monitored - particularly the herring population within the Milford Haven waterway, and edible crabs, lobsters, whelks and sea bass over a wider area

The Committee recommended that there was a need to establish whether there have been any effects on the herring stock in the Milford Haven waterway, though it is known that the fish spawned normally in 1997 and so the fish are unlikely to have been affected severely. Since 1996 the Ministry of Agriculture, Fisheries and Food has been funding a study into the impact of the spill on herring stocks in Milford Haven and has commissioned additional work this year.

There is evidence that there were fewer young bass on the South Wales coast in 1996, but natural factors have not been ruled out as a cause. The Government is already funding the monitoring of sea bass to establish whether overall stocks had been affected by the spill, and although the initial study in 1996-97 did not demonstrate any significant impact on the stock, it was felt that additional work was merited. This is now being undertaken.

It is not yet certain whether the 1996 year classes of edible crabs, lobsters and whelks survived. There is, however, clear evidence that the adult populations remained healthy and appeared to breed normally in 1997. Data on landings and fishing effort will continue to be available from crab and lobster fishermen since this is a requirement of operating with a South Wales Sea Fisheries Committee permit. However, as none of the scientific data obtained on commercial shellfisheries has demonstrated a significant impact on edible crabs, lobsters and whelks, the Government does not at this time see a need for continued monitoring of these species in relation to the spill.

The benthic populations of invertebrates in heavily impacted areas where mortalities of amphipods occurred should continue to be surveyed

There was a reduction in small crustacean species such as amphipods in some localities but this effect is likely to be of relatively short duration as they will eventually spread from unaffected areas. To establish when the small crustacean species become re-established the Welsh Office, together with the Environment Agency, is supporting further analysis of samples collected in Milford Haven in October 1997. Depending on the results, further sampling and analysis is planned for October 1998, and further work will be considered as necessary.

There is a need for the cushion star *Asterina phylactica* to continue to be monitored

Several shoreline impacts were identified in the Report, but in general the pattern of recovery seems to be well under way. Nevertheless, some species - notably cushion star *Asterina phylactica* - are of particular conservation importance and are still vulnerable. The *Asterina phylactica* population in West Angle Bay went from a pre-spill population of over 150 individuals to a post-spill of total of only 13 individuals widely spaced over the area. The Committee noted encouraging signs of recovery in the *Asterina phylactica* population in West Angle Bay. Work on this species will continue to be carried out by the Field Studies Council, with support from CCW if required.

There is a need for further studies of the effects on the common scoter *Melanitta nigra*

The area is important for both over-wintering and breeding birds. In particular, the over-wintering population of the common scoter in Carmarthen Bay is of international importance. The impact on the common scoter was

again one of the main environmental effects of the spill, with the Committee estimating some 3,500 were killed by the oil, representing up to 30 per cent of the area's population. The Governments agrees that this recommendation is properly a matter for CCW to consider and a major 3 year project commenced in May 1998 to study the relationship between the scoter and their food in Carmarthen Bay. The study will include the continued monitoring of the size and movement of scoter flocks through Carmarthen Bay and surveys of the invertebrate fauna, which are important in the diet of the scoter, in the sediments. This work will contribute to the implementation of the common Scoter Biodiversity Action Plan which was published in the UK Biodiversity Group's second tranche of action plans. Indeed, some of the action items identified in the plan will be partly accomplished by the studies arising from the Sea Empress incident.

It would be of interest to gain a better understanding of the exact cause of the observed effects and the reasons for the apparent sensitivity of certain marine species to low levels of oil

The vulnerability of amphipods to oil pollution and the behaviour of several bivalve species, such as razor shells, in moving out of the sediments was observed but remains unexplained. As these animals are important in marine food chains and are of ecological significance, the Committee has recommended studies to gain a better understanding of the cause of the effects and the apparent sensitivity these species. The Committee has recognised the challenging nature of devising appropriate methodologies. The Natural Environment Research Council (NERC) has addressed this issue within its research programme to investigate the sub-lethal cellular effects and tissue hydrocarbon contamination in mussel populations. Initial results show that mussels from two contaminated sites have impaired blood cell function which may reduce the effectiveness of the immune system. Further research on amphipods and bivalve species is under consideration by the NERC.

Further consideration should be given to how useful certain intertidal and subtidal communities can be for monitoring the effects of oil

The Committee reported that certain intertidal and subtidal communities - in particular animal species in seaweed (laminaria) holdfasts and algal turfs in rockpools - might prove useful for monitoring the effects of oil. It is well known from other pollution incidents that certain species such as amphipods are very sensitive to oil pollution, and in principle these species could be used as indicators. The CCW is reviewing the use of a number of communities as indicator species and the Environment Agency will consider funding such research.

The factors related to successful bird cleaning and rehabilitation need to be investigated further to optimise prognosis and cleaning arrangements

There is a need for a wide-ranging national review of arrangements for bird cleaning and rehabilitation currently in place with particular respect to: planning and management; cleaning procedures; and availability and training of staff and volunteers

The Committee recognised and endorsed the valuable role the Royal Society for the Prevention of Cruelty to Animals (RSPCA) played in the clean-up operation following the oil spill. The Government shares the judgement of SEEEC. Inevitably a spill of this magnitude will provide a severe test of response arrangements and raise questions with regard to procedures/organisation. While it is for the RSPCA to consider how it wishes to respond to SEEEC's observations, the Government is aware that it has reviewed its procedures, and concluded that it should continue its oiled bird cleaning and rehabilitation programme. The RSPCA has now set out in writing its procedures for response to any future major oil spill. It has also concluded that further research is needed to determine causes of high post-

release mortality in certain species, particularly guillemots (although it must be noted that less than 20% of the birds released by the RSPCA following the *Sea Empress* spill were guillemots: almost 80% were scoters, whose physiology is very different). With the British Trust for Ornithology, the RSPCA has established a range of measures that they hope will both develop a better range of prognostic and diagnostic tools through which a better early judgement as to the future prospect of survival of an oiled casualty can be made, and also allow the identification of improvements to management protocols, to maximise long-term survival.

The reason(s) for closure orders should be made clearer both when they are issued and when they are lifted

Immediately following the oil spill there was a voluntary ban on fishing by those fishermen working in potentially affected areas. The Government commends the responsible approach of those involved. Following the introduction of statutory restrictions on fishing, under the Food and Environmental Protection Act 1985 to prohibit fishing for named species in defined areas, there was close liaison between the Welsh Office Agriculture Department, fishery scientists and the fishing industry, including processors, as well as wider fishery interests. This liaison remained throughout the period of restrictions. However, the Government has noted the Committee's conclusion on interpretation. It shares the Committee's view that the reason for closure orders needs properly to be understood, not just by the industry but also by the general public. It will ensure that the fullest information available is provided and communicated to explain the rationale for any closure orders that might be necessary in the future.

CLEAN-UP ASSESSMENT

While noting the considerable success of the clean-up procedures, both at sea and on shore, the Committee have made a number of recommendations which should lead to improvements. Many of the recommendations are being addressed in the Government's review of the National Contingency Plan for marine pollution incidents from ships and offshore installations and by Lord Donaldson's review.

There is a need to rename the Joint Response Centre (JRC) to make clear its role is solely in shoreline clean-up

The Committee concluded that there was confusion over the role of the Joint Response Centre (JRC), which played no part in the operation at sea. The Government had recognised and acted on this issue. To clarify its role the JRC has been re-named the Shoreline Response Centre (SRC).

It is preferable that a Local Authority Chief Officer is appointed to chair the JRC and improve administrative support and staffing levels

The Government accepts the importance of effective co-ordination arrangements, and the need for adequate administrative support. The National Contingency Plan will continue to recommend that the Chair of the Shoreline Response Centre (SRC) is taken by a local authority Chief Executive or suitable Chief Officer.

There should be clearer definitions of tasks allocated to specific managers within the response organisation

The Government accepts this recommendation and a definition of the tasks allocated to those managing the at-sea clean-up operation, within the Marine Response Centre, will form part of the revised National Contingency Plan.

The definition of tasks for those managing the onshore clean-up exists, but the Government sees a need to clarify that the Joint Response Centre (now the Shoreline Response Centre) deals solely with shoreline clean-up. A revised scientific, technical and operational advice note on the "Establishment, Management Structure and Layout of a Shoreline Response Centre" has been drafted and will be included in the revised National Contingency Plan.

There is a need for the overall commander to be at the scene of a major incident to act as an authoritative spokesman for the Marine Pollution Control Unit and Coastguard Agency

The Government recognises the need for this issue to be considered. As part of his independent review, Lord Donaldson is considering how to improve the command and control of salvage operations in future major marine pollution incidents. He is expected to complete his report during the Summer. His report will be published.

Documentation and record keeping should be improved to assist the prompt preparation and payment of claims for compensation

The Government accepts the need for documentation and record keeping. The Marine Pollution Control Unit (MPCU), in collaboration with its contractors and local authorities, is funding work to develop a computerised data collection system which will improve dissemination of information during an incident and assist in the preparation of subsequent claims. Details of how to recover costs are given in the National Contingency Plan.

There is a need to establish clear criteria for terminating shoreline clean-up at individual sites, recognising that natural clean-up processes also occur

The Government agrees that clean-up objectives and criteria for success need to be clearly defined at the outset of the response. The decision to terminate clean-up will be influenced by a number of factors including environmental and amenity priorities, economic concerns and diminishing returns.

The MPCU will stress this point in its training and exercise programmes and include it in its advice notes to local authorities. It will also continue its research into a better understanding of natural clean-up processes.

It is important to adhere to health and safety requirements for the clean-up workforce and to pay close attention to planning duty rosters to ensure that staff are not unduly stressed through working excessive hours

The Government agrees. As SEEEC acknowledges, the MPCU has already issued a scientific, technical and operational advice note providing guidance to local authorities. The MPCU will also be commissioning a short video to be used for induction briefing of all new clean-up workers. It is important that there is adequate liaison between the Public Health Authorities and Environmental Authorities.

The Welsh Collaboration for Health and Environment has also produced a Chemical Incident Framework Document for dealing with acute chemical incidents. The document highlights the need for health and safety requirements to be considered in the event of an incident, ensuring that all organisations are aware of each others responsibilities.

There should be better provision of actual and predictive information on oil distributions, particularly where there are extensive shoreline impacts. Greater use should be made of IT facilities for preparing and archiving aerial surveillance maps with validation using standard reporting procedures

The Government agrees that it should continue to seek to improve the information on oil distributions available. The MPCU is funding work to develop a computerised data collection system. This will include a modelling capability and the creation of an 'Information Dissemination Team' based in both the Marine Response Centre and the Shoreline Response Centre with networked computers. This will greatly enhance the information flow between the two response centres. The Environment Agency has expertise and resources in the field of aerial remote sensing and has agreed to make its resources available in the event of a major oil spill. In addition the Agency has developed or has access to a range of tidal movement models for specific coastal areas.

There is a need to respond to the media in a more positive and co-ordinated manner

This is being examined in the Government's review of the National Contingency Plan, taking into account relevant recommendations made by the Marine Accident Investigation Branch Report, recommendations by SEEEC, and any recommendations that may be made in this area by Lord Donaldson's review of salvage and intervention. The results of this review will be made public.

It is important to develop emergency response procedures and arrangements for the disposal of oily wastes at both national and local level. The current licensing arrangements applying to emergencies are unsatisfactory and need to be resolved urgently (within one year)

Initially through discussions with between EA, MPCU and local authority associations

The Government agrees with the view of the Committee on the need for emergency response procedures for the disposal of oily wastes. Although the EU Framework Directive on waste and the Hazardous Waste Directive limit the discretion of the Government to provide exemptions from waste management licensing, the provisions of the Environmental Protection Act 1990 and the Special Waste Regulations 1996 enable those responsible for securing the storage of waste oil in an emergency to take all reasonable steps to minimise the risk of pollution or harm to human health. In such circumstances, the government would expect the Environment Agency - responsible for the enforcement of waste management licensing - to respond in proportionate manner in cases of emergency or grave danger. A guidance note clarifying the licensing arrangements for disposing of oiled beach waste has been produced by DETR. As part of the review of the National Contingency Plan, the MPCU, together with the Environment Agency, Scottish Environment Protection Agency (SEPA) and the Environment and Heritage Service (EHS) of the Department of the Environment for Northern Ireland have commissioned a project to look at the current availability of temporary and permanent sites for this waste. When this further information is available, the Environment Agency, SEPA and EHS will make a recommendation to the Government on the provision of an exemption from waste management licensing for the temporary storage of oiled beach waste pending its consignment to a recovery operation.

There is a need to charge local authorities with the statutory obligation to prepare local contingency plans and to carry out shoreline clean-up

The Government has considered this recommendation carefully. We will take a decision on it once the current review of the national Contingency Plan has been completed and progress made implementing the proposals contained in

the Government's proposals for modernising local government published in White Papers in July. Both may have an impact on local authorities' responsibilities and powers.

The White Papers announced our intention, in principle, to give local authorities a statutory duty to promote the economic, social and environmental well-being of their areas. However, the granting of such duty will depend on primary legislation being agreed. In the meantime, the Government hopes that local authorities will continue with their voluntary contingency planning responsibilities for shoreline clean-up.

FUTURE ARRANGEMENTS FOR ENVIRONMENTAL ASSESSMENT

Although there are contingency plans at a national and local level for responding to oil spills there are no comparable response plans for assessing environmental impacts. In consequence, during the early days after a spill, when the collection of environmental information is crucially important, reliance is placed on ad hoc arrangements rather than defined procedures and sampling and analytical protocols.

Emergency response plans should be prepared at national level so that whenever a serious spill occurs, an Impact Assessment Group (IAG) is established to carry out the necessary monitoring and environmental measurements

Consideration should be given to the membership of the Impact Assessment Group

The Government agrees that an Impact Assessment Group is required whenever a serious spill occurs. The revised National Contingency Plan will recognise the need for the establishment of such a group after a major pollution incident and the Government will put in hand arrangements to ensure that appropriate procedures and protocols are established. To avoid confusion with other potential effects the Government believes it would be more appropriate to call the body the Environmental Impact Assessment Group (EIAG).

The Government also agrees with the Committee that the EIAG should include representation from a wide range of organisations who have practical knowledge, experience and expertise in the relevant scientific and geographical areas, including the statutory nature conservation agencies, the local authorities, government departments and relevant non governmental organisations. As the Committee recognised the issue of who should lead the

EIAG is finely balanced, and will be addressed in the revision of the National Contingency Plan. The Government will, however, continue to keep under review the need to appoint an eminent Chairperson to oversee and guide such work, particularly following major spills, as happened after the *Sea Empress* and *Braer* incidents.

Further consideration should be given by the International Oil Pollution Compensation Fund to the possibility of funding properly designed and co-ordinated environmental impact assessments following major tanker spills that are in proportion to the severity of the pollution and predictable effects, and that take into account existing scientific knowledge

The Committee's view was that the costs of environmental impact assessments of the type undertaken by SEEEC should be met by those responsible for the spill, or by those bodies which are required to pay compensation. Costs are currently only considered by the International Oil Pollution Compensation (IOPC) Fund for studies relating to damage that would fall within the definition of "pollution damage" in the relevant international conventions. The Committee had no desire to see this primary objective impaired but it believed that further consideration should be given by the IOPC Fund to the possibility of funding environmental impact studies. The Government agrees with SEEEC that the first priority for compensation should be those that have suffered actual economic loss, including those involved in the clean-up operation. At meetings of the IOPC Fund, the UK representatives have previously argued that environmental impact studies over a reasonable timescale can be useful in assessing the effectiveness of the clean-up operation and should therefore be eligible for funding. This would give effect to the polluter pays principle. The Government will bring SEEEC's recommendation to the attention of the Assembly of the IOPC Fund and press for funding to be made available for such studies.