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Bureau of Land Management's Marine Environmental Studies Program for the North Atlantic / Georges Bank Outer Continental Shelf

GC852.G46R47 1977

Northeast River Basins Commission. Regional OCS Technical Service

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NEW ENGLAND RIVER BASINS COMMISSION

55 COURT STREET • BOSTON, MASSACHUSETTS 02108
PHONE (617) 223-6244

April 12, 1977

MEMORANDUM

COASTAL ZONE
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To: State Coastal Zone Officials

From: Russell J. Wilder, Regional OCS Technical Service

Subject: Report on the Bureau of Land Management's Marine Environmental Studies Program for the North Atlantic/Georges Bank Outer Continental Shelf

JUN 14 1977

The purpose of this report is to summarize the form and content of the Bureau of Land Management's (BLM) Marine Environmental Studies Program, and to discuss the usefulness of the results of the studies in making crucial decisions concerning the development of OCS resources. This report represents at least partial fulfillment of the work element on this subject delineated in the Regional OCS Technical Service workplan completed in February 1977.

Background

Under "Project Independence", developed by the Nixon Administration in 1974, the Bureau of Land Management was instructed to initiate an accelerated leasing program to vastly increase the amount of submerged lands leased for oil and gas development. This meant that many coastal areas of the United States never subjected to oil and gas exploration before would have tracts leased offshore and at a faster rate than had as yet been experienced anywhere in the United States.

In undertaking this accelarated leasing program BLM had to comply with the requirements of the National Environmental Policy Act (NEPA) of 1969. As part of the effort to comply with NEPA, BLM initiated the Marine Environmental Studies Program (funded by Congressional appropriations bills). In New England, the first major involvement of the states in the design of the Marine Environmental Studies program was the Bentley College Conference held in May of 1975 to help lay the foundation for a Marine Environmental Studies Plan.

After the conference, the OCS Task Force for the region, co-chaired by the Department of the Interior and the Connecticut Department of Environmental Protection and supported with staff from NERBC, held numerous meetings throughout the summer and fall of 1975 to assist in the design of the Marine Environmental Studies Plan. In December of 1975, the Marine Environmental Study Plan was released by BLM and the resulting comments on the plan by states (which were considerable) were reportedly included in the RFP's for the studies. This is where communication seems to have broken down and states could not tell what the final form and content of the studies were to be.

Contracts for the major studies were let during 1976 and data gathering for the biological and physical oceanographic studies will begin in earnest during the summer of this year. Much of the Geology Program field work has been completed with the exception of more cruises scheduled to deploy tripods (used to determine sediment transport) and to study seston flux (the movement of total suspended particulates in the water column). A final report on the biological studies is due in July of 1978. The final report on the geology studies is due in June 1978 and in November of 1978 the final report on the physical oceanography studies is due. Tables, that were provided by BLM to attendees of the URI workshop on the studies on April 4, outlining the status of all the studies and contractors are attached. A short descriptive summary of each of the major studies follows:

Biology and Chemistry Program

The first year program of the biology and chemistry program under contract to Energy Resources Company, Inc., of Cambridge, Massachusetts is designed to gather benchmark data on hydrocarbon chemistry, trace metal chemistry and marine microbiology of the water column and the sediments, the structure of sediments and other relative physical parameters and selective biology of the water column and sediments. The selective biology does not include baseline information on primary productivity. The reason given by BLM for not including primary productivity as a baseline study was that too much money would have to be spent to get enough data to be of any value. Primary productivity may be considered in the design of the second year program.

Three things should be pointed out here that severely weaken the usefulness of the biological and chemical program for those concerned with OCS resource decisions. First, BLM has stated they expect that the final EIS for the North Atlantic will be released in June of this year and Lease Sale #42 may be held in August. This means that any data from the biological studies will be incomplete (the same is true for all the other studies) and, of course, not integrated with other studies and existing data and will not be available for use in either the Environmental Impact Statement or the lease

sale. Frank Monastero of BLM said this was true and that he could do little about it because decisions to go ahead with the leasing process are made at a higher level in Interior and did not hinge on the studies' results. This point has been and still is, therefore, a source of great irritation to states, other federal agencies, and the scientific community who are trying to see that decisions about OCS development are made responsibly. Secondly, there has been very little effort to aim the studies at problem solving. The biological and chemical baseline work is being conducted on a day-to-day basis with no communication with the other studies. BLM has set up quarterly meetings between the principal investigators for coordination, but they mainly cover administrative problems. Coordination of daily or weekly activities with the problems of OCS development that need to have answers, held firmly in the minds of all investigators, would greatly facilitate the production of meaningful results. Finally, if biological baseline work is not started on the plants and animals that make up the primary productivity of Georges Bank until next year, it will be impossible to get a "pure" sample. This is because if the lease sale is held this summer as BLM says it will, exploratory drilling can begin by late fall or next winter and discharges from drilling operations will have already begun to affect the Bank. Other criticisms of the biology program include no useful coordination with the National Marine Fisheries Service and no mechanism to open the quality control of the program to scrutiny by states or other interested parties.

Geology Program

The main purpose of the geology studies being conducted by USGS is to assess geologic hazards and collect baseline data prior to and during active drilling. Work on the geological studies has been going on since 1975. The work done is of particular importance to the location of structures offshore and is heavily weighted towards determining the location of geologic hazards. Studies that make up the Geology Program include: sediment mobility analysis; movement of seston; texture, composition, and age of sediment; seismic work to find tectonic activity and water mass transport. This type of information is very important to oil companies and restrictions on drilling activities, found in OCS operating orders, are based, in part, on this information. The Geology Program has the most direct application to the regulation of activities on the OCS. Integration with the other first year studies, however, is lacking at this time.

Physical Oceanography Program

Physical Oceanography studies field work is being carried out by Ratheon Co. and data analysis has been contracted to EG&G. The study is planned to be carried out over three years and collection of the first year's data is scheduled to begin in August of 1977. Data to be collected consists

of surface current, sub-surface currents pressures and temperatures and support hydrography measuring the seasonal temperature-salinity-density structure of the Georges Bank Area. Raytheon has spent the time since the award of the contract in September of 1976 developing hardware representing some new advances in state-of-the-art technology.

EG&G is to provide scientific services as its part of the physical Oceanography Program. They will assemble and interpret data collected and provide direction for the design of the study after the first year. From now through July 1978, EG&G will work on archiving and developing displays of Raytheon gathered field data. Program continuations will be recommended to BLM when about half the first-year field program is complete.

According to EG&G spokesman, Richard Scarlet, one of the most important considerations of the program is to: "provide results of physical oceanography studies in the manner needed to assess primary concerns." He further recognizes that: "the transport processes of physical oceanography have a significant effect on biological, chemical and sediment systems.." However, the first year study design does not allow for interaction between physical oceanography, biology, geology and chemistry. Again, it must be pointed out that synthesized data from this and the other studies will not be available for use in (1) preparing the final Environmental Impact Statement, (2) evaluating the lease sale, (3) preparing lease stipulations, (4) tailoring operating orders to the region, and (5) evaluating exploration plans if the leasing process proceeds as planned by the Department of the Interior. The Task Force recommended, in its March 28, 1977 letter to Robert Knecht, that the Secretary of the Interior prepare a development phase EIS. This recommendation was also made by the OCS Advisory Board last fall. By the time a development phase EIS would be prepared, much of the information derived from the Marine Environmental Studies would be ready, but with the drawbacks of poor timing, non-integration and non-correlation built into the data.

Other studies and their timing that are ancillary to the main marine environmental studies are listed in the copy of the table provided by BLM on the status of the program.

Summary

In summary, a common problem with the studies as viewed by the states, various commentors from other federal agencies and the scientific community is that the studies are not designed to help give answers to problems perceived to be associated with OCS development. The subject area of the studies does approximate the recommendations for the first year study design as a result of the Bentley College Conference held to advise BLM on what

the studies should cover. However, the management and subsequent direction of the studies does not follow the Bentley Conference. It has been emphasized by many groups over and over, including the OCS Environmental Studies Advisory Committee, that problems associated with OCS development must be identified and information to give answers to the problems must be developed before major decisions are made. However, BLM maintains that studies are begun as far in advance of any scheduled leasing activity as possible so that the maximum amount of information is available at any given decision point. Also, BLM has said that studies in any given area are slightly different in regard to emphasis or timing because of (among other things) the stage in the leasing process at which the program of study is initiated. In our case, it would appear that, since this is a frontier area, all pertinent studies could, therefore, be completed prior to leasing. But, as pointed out at the URI workshop, this will not be the case in New England. The funding of the studies will take place over a period of 8 years with the first three years intensively funded, the next two years at a reduced level, and the final three years at a sustained level. Since the primary contracts have just begun, the studies will not be complete for at least 8 more years.

The leasing process will proceed at a pre-determined rate utilizing what information is available at the time each decision point is reached. BLM has said that the process can be stopped if, at a particular point, it is determined that there are insufficient data upon which to make a decision. Measures then can be taken to fill in the data gaps before proceeding. This would mean that the flow diagram outline given out by BLM at the URI workshop is followed (see attachment).

It appears that, at a technical level, states should determine at this time whether or not the EIS for the lease sale is adequate to protect their interests without inclusion of significant data from the Marine Environmental Studies Program. Further, if it is decided that states can wait for the develop ment phase EIS to include Marine Environmental Studies results, they must evaluate whether or not the data from the studies will be useful in light of some of the problems discussed in this report.

Attachments.

4/4/77

Figure 2

Relationship of BLM Environmental Studies Program to OCS Minerals Development

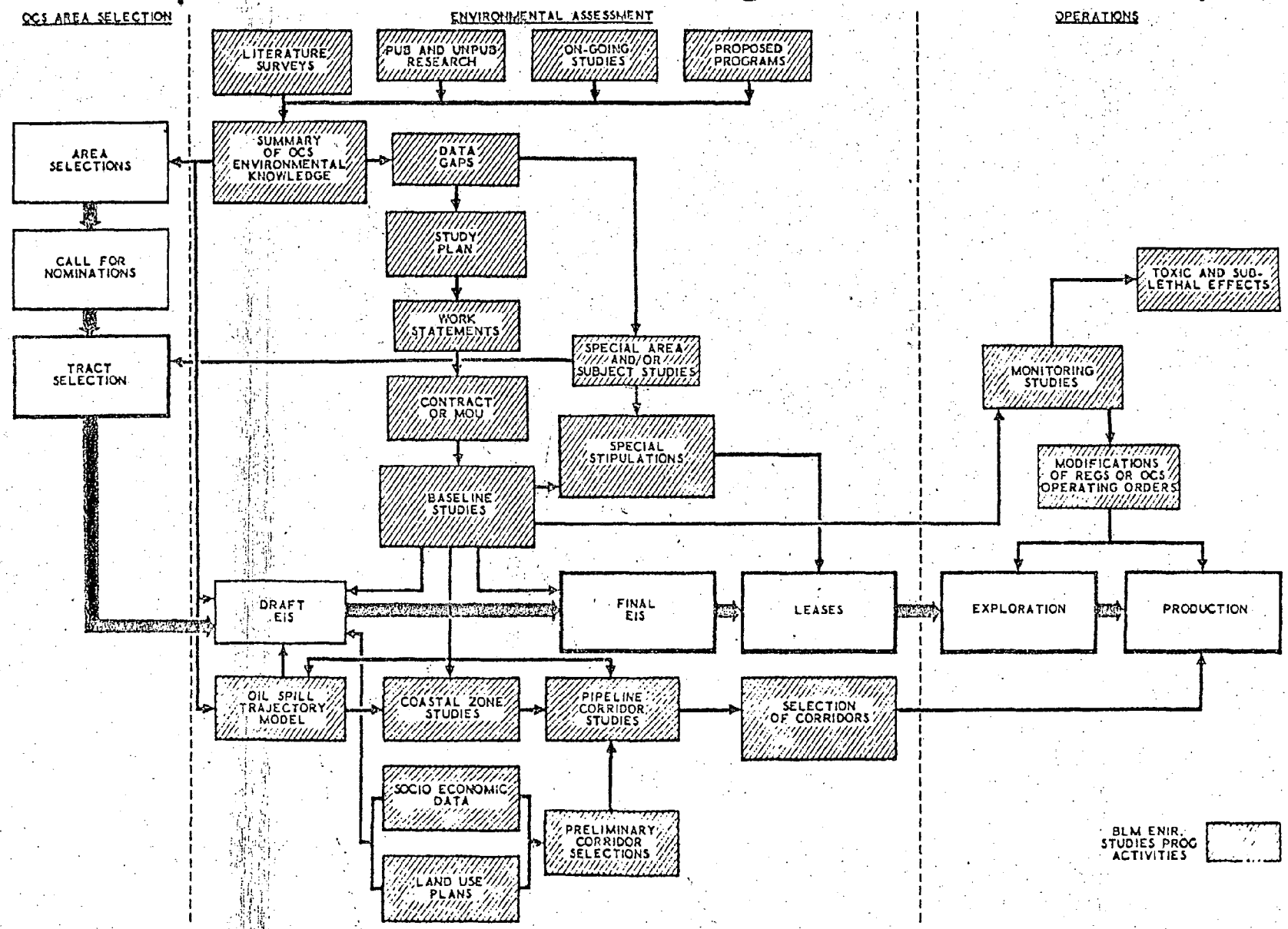

Table 2

BLM Studies

4/4/77

Study Element(s)	Contractor	Starting Date	Funding	Status	Final Report
Biological and Chemical Benchmarks	Energy Res. Co. Inc.	9/01/76	2,950,000	Active	July 1978
Physical Oceanography	Raytheon EG&G	9/21/76 9/30/76	3,330,000 658,064	Active Active	November 1978 November 1978
Geological Studies	USGS	1/01/76	946,475	Active	June 1978
Wind and Wave Info.	NDBO	8/31/76	25,200	Active	Information supplied to BLM users.
Argo Merchant Study	NOAA	12/20/76	270,000	Draft Rept. in Review	First Report - April 1977 Second Report - Oct. 1977
Lobster Toxicity Study	Westinghouse -JOE FORNS	9/24/76	317,400	Active	First Report - Oct. 1977
Seismic Risk Study	USGS	2/16/77	* 150,000	Active	September 1978
Hydrocarbon Fate Study	WHOI	4/76	* 100,000	Requires ERDA Signature	Tentatively - April 1977
OCS Information Summary	TRIGOM	1/15/76	47,000	Active	March 1977
OCS Information Summary	CNA	9/29/76	155,904	Active	November 1977
Effects of Hydrocarbon Spill (Searsport, Me.)	State of Maine Bowdoin College	7/01/74	28,000	Active	April 1977

* Partial funding only; remainder of funds from another source.

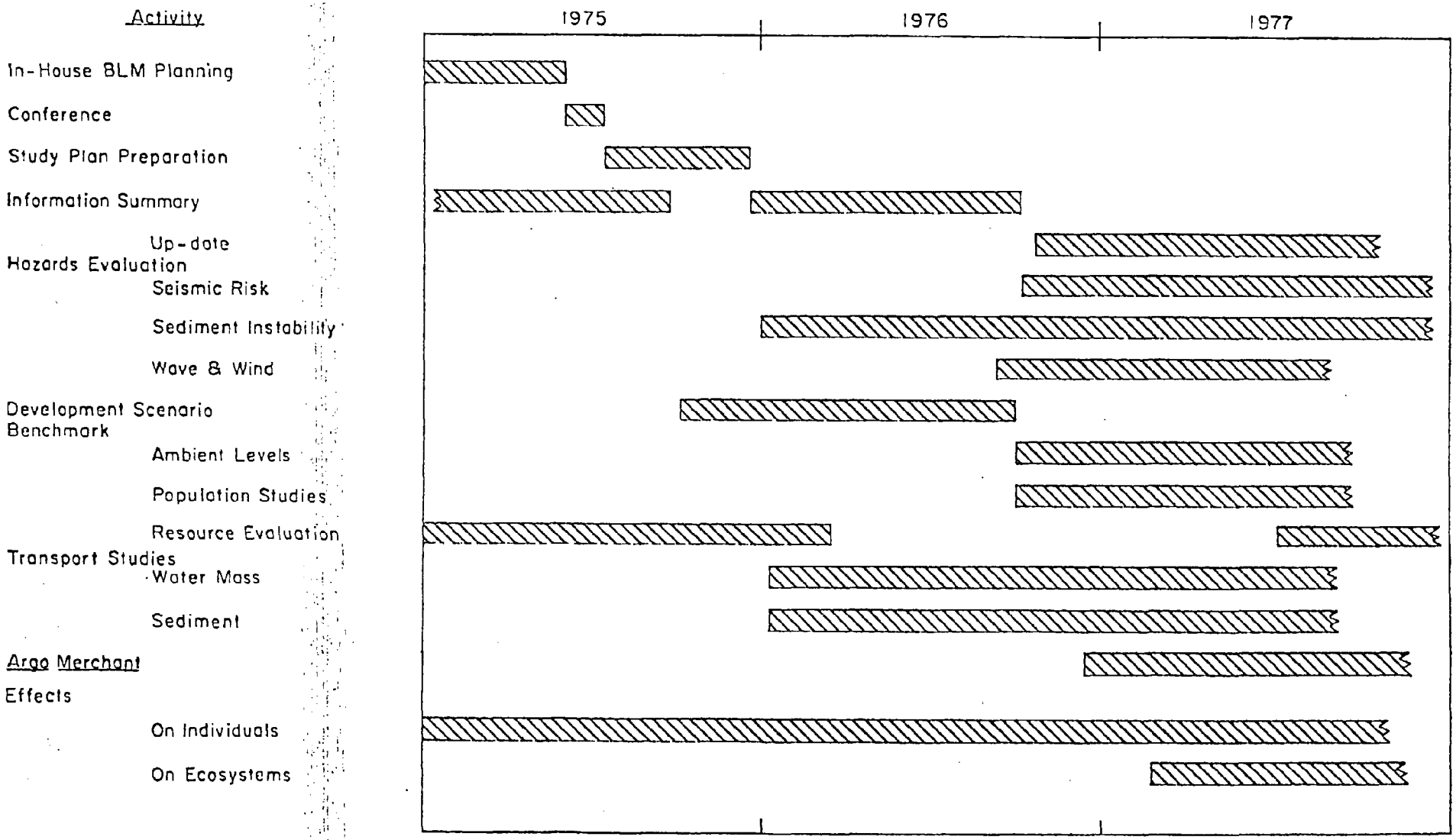

Figure 3. Study Sequence for the North Atlantic Area

NEW ENGLAND RIVER BASINS COMMISSION

55 COURT STREET • BOSTON, MASSACHUSETTS 02108
PHONE (617) 223-6244

March 29, 1977

MEMORANDUM

To: Priscilla Newbury, OCS Coordinator Mass. CZM Program

From: Russell J. Wilder, Regional OCS Technical Service

Subject: Review of current Continental Shelf Operations Notices as administered by the Department of Energy in the United Kingdom

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In response to your request of the Technical Service to review "operating orders" from other countries and compare them to USGS operating orders and lease stipulations, copies of Continental Shelf Operations Notices requested by the Technical Service from the United Kingdom have been received and reviewed.

The bulk of the notices are concerned with personnel safety in offshore operations. Special emphasis is given to safety measures to be taken during operations for crane operators and for the transfer of cargo from supply boats to platforms. The April issue of National Geographic has an interesting article on North Sea operations and describes some of the hazards.

Pollution control does not seem to be a serious concern of the notices. Routine discharges are not covered and clean-up equipment is not required. The United Kingdom allows liberal use of dispersants -- a practice prohibited in Massachusetts (see Technical Service's report on the 1977 Oil Spill Conference). Two pieces of legislation that have not been reviewed yet that may give more positive control over pollution are the "Oil Pollution Act of 1971" and the "Dumping at Sea Act of 1974". With regard to dumping of refuse at sea, the emphasis is on avoidance of nuisance to fishing operations.

Heavy emphasis is placed on proper rig design for extreme weather conditions. General criteria for design in the North Sea are 90 foot waves, 125 mph wind and 2-2 1/2 knot current. This is equivalent to a "100 year storm". By comparison, in the Gulf of Mexico, design criteria is for 65 foot waves, 125 mph wind and 1-1 1/2 knot current. (Source: page 8 of "The Technology of Offshore Drilling, Completion and Production, compiled by ETA Offshore Seminars, Inc. 1976, the Petroleum Publishing Co., Tulsa, Oklahoma.)

The notices were compared to USGS operating orders and lease stipulations and where they are similiar it is so noted in the following summary:

Notice 1 - Registration of rigs and platforms and appointment of managers in charge of the operation.

Notice 2 - Requires reporting of accidents and emergencies - inferred to be aimed at personnel safety.

Notice 3 - Safety measures for personnel during drilling operations.

Notice 4 - Safety precautions for personnel to be followed during welding operations.

Notice 5 - Emphasizes the need for operators to notify appropriate rescue services promptly.

Notice 6 - Requires notifying Coast Guard of any proposed well-testing operations involving the flaring of gas.

Notices 7 and 8 correspond somewhat to OCS operating order No. 7.

a) Notice 7 emphasizes transmitting the report of an oil spill to the Coast Guard in such a way as to minimize "unwarrented third party speculation" about the spill. It does not require operations to have access to oil spill control equipment or to develop an oil spill contingency plan.

b) Notice 8 calls to the attention of operators an "Admirality Notice to Mariners" that requests that mariners refrain from dumping synthetic materials at sea. The notice to mariners points out that "a wide variety of ropes, seismic and other cables and fishing nets which, if lost or discarded at sea, can foul propellers of vessels." It also points out that discarded plastic sheets, bags and bottles can obstruct vessel cooling systems and the dumping of heavy objects can foul fishing nets. It requests that in the event of loss of such materials, every reasonable effort should be made to recover them.

Two pieces of legislation that deal with (a) and (b) above are the "Oil Pollution Act of 1971" and the "Dumping at Sea Act of 1974". Copies of these acts were not supplied by the Dept. of Energy to the Technical Service but have been ordered and upon receipt will be reviewed and compared to the Federal Water Pollution Control Act.

Notice 9 - Requires close cooperation with agencies overseeing Post Office and other cables so as to avoid damage. Prefers that all drilling be at least one nautical mile from all cables.

Notice 10 - Liaison with bodies.

a) The police of the port in which an installation is based are responsible for enforcing laws of the United Kingdom against offenses occuring on the rig or within 500 meters.

b) Emphasize that close relations should be kept with fishing interests.

c) Seismic work has to be coordinated with Flag Officer of submarines.

Notice 11 - Similar to OCS orders 1, 2, 3, and 4, it does not specify casing and cementing requirements but requires submittal of proposed programs. Notice of intention to drill must be submitted 28 days in advance of spudding-in. On some blocks, licensees have been notified that 6 months notice is required. The notice places a 2 meter limitation on allowable protrusion of well heads above the sea floor in water less than 45 meters deep.

The notice specifies data to be supplied to the Dep t. of Energy during drilling operations and upon completion of a well. The intent of this requirement is to supply the department with resource data. Wells to be abandoned must be brought to the attention of the department and when abandonment is approved, a certificate that all strings and casings have been cut 3 meters or more beneath the sea bed must be submitted. When a well is suspended a report indicating the porous formations encountered must be submitted along with details of the well-head projection. They emphasize marking the site with a bouy. Finally, a well numbering and coordinate system required to be used is specified.

Notice 12 - Sets out specifications with regards to life rafts and survival equipment.

Notice 13 - Certified lifeboatmen examinations - personnel on offshore installations.

Notice 14 - Further specifies acceptable types of survival craft.

Notice 15 - Requires the keeping of log books and registration of personnel on board installations and making a report of any deaths on an installations.

Notice 16 - Requires that the Coast Guard for the region in question be notified of rig movement immediately when they take place.

Notice 17 - Reminds operators that mud circulation systems must be of sound design so as to avoid pipe breakage.

Notice 18 - Defines "clearways" that are areas of heavy shipping use. To drill in high density shipping lanes requires a notice lead time of 6 months. To drill in "medium density" shipping lanes requires a notice lead time of 4 mohths. This notice corresponds to lease stipulation No. 3.

Notice 19 - Provides for the inspection by appointed inspectors, of offshore installations including operational equipment and the proper reporting of accidents.

Notice 20 - Specifies safety measures to be taken by the Master of a cargo ship when transferring supplies between his ship and an offshore installation. In regards to oil pollution, special attention is required to insure that "non return valves should be fitted to the end of oil hoses from the rig to minimize (sic) spillage of oil into the sea."

Notice 21 - Action required in the event of a diving accident or fatality so that an investigation into the cause of the mishap can be conducted.

Notice 22 - Notifies operators of the "Offshore Installations Construction and Survey Regulations" that apply to the fitness of offshore installations to operate in waters around the United Kingdom. This notice informs operators that copies of the regulations and a publication "Guidance on the Design and Construction of Offshore Installations" are available from Her Majesty's Stationary Office. It also provides for the issuance of "certificates of fitness." This notice corresponds to OCS order No. 2, part 1. It also calls for the updating of design as technology improves Massachusetts has requested USGS to incorporate similiar procedures into operating order No. 2.

Notice 23 - Offshore installations are required to obtain certificates of fitness from a "Certifying Authority". This notice lists five Ship Classification Societies appointed as Certifying Authorities by the Secretary of State.

Notice 24 - Summarizes authorized statutory control of diving operations which provides for diving safety.

Notice 25 - Calls attention to the need to ensure that the correct breathing mixture is provided.

Notice 26 - This notice calls attention to certain petroleum production regulations that require the licensee to measure all petroleum produced from the area using approved metering methods.

Notice 27 - This notice calls attention to the regulation that requires employers of persons who work on or from an offshore installation to obtain insurance against claims for personal injury by his employees.

Notice 28 - Sets out safety procedures that should be followed in the use of cranes.

Notice 29 - This notice advises operators of offshore installations that in order to keep a valid Certificate of Fitness, Certifying Authorities must be advised of any modifications, damage and/or repairs to an installation.

Notice 30 - References Notice 26 which requires metering of production and specifies that production be reported monthly to the Department of Energy. It further specifies the format of the reporting.

Notice 31 - This notice calls attention to regulations that provide for the day-to-day safety of operations and the safety health and welfare of personnel on and near offshore installations.

Notice 32 - Calls attention to regulations which require each offshore facility to have an emergency procedure manual, muster lists and drills and a stand-by vessel within 5 nautical miles of every manned installation.

Notice 33 - Reguests operators to notify the department 28 days prior to any proposed geophysical surveys. It requires certain seismic data gathered to be submitted to the Institute of Geological Sciences and certain data to be submitted to the Department of Energy.

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cc: Coastal Zone Task Force Members

TABLE OF CONTENTS

I—LEGAL ASPECTS

IMCO and the Evolving International Scheme for Controlling Marine Pollution 3
Capt. Frederick P. Schubert, United States Coast Guard

International Regulation of the Tanker Industry 7
W. O. Gray, C. J. Carven, and G. L. Becker, Exxon Corporation

Recovering for Marine Life Damage: Legal Aspects of Allocating Social Costs and Protecting Public Interests 11
John P. Meck, Deputy Attorney General, State of California, and Robert E. Lutz, McGeorge School of Law

Oil Spill Liability and Compensation ("Superfund") 15
James J. Reynolds, American Institute of Merchant Shipping

II—FINANCIAL ASPECTS

Estimating the Potential for Future Oil Spills from Tankers, Offshore Development, and Onshore Pipelines 21
A. H. Beyer, Chevron Oil Field Research Company, and L. J. Painter, Chevron Research Company

Controlling Pollution of the Marine Environment: An Economic Analysis 31
Dennis Epple and Michael Visscher, Carnegie-Mellon University; William A. Wallace and John W. Wilkinson, Rensselaer Polytechnic Institute

Problems and Perspectives in the Recovery of Oil Pollution Removal Costs 35
Lt. Cdr. William H. Norris, Lt. Hugh N. Johnston, Jr., US Coast Guard

A Model for the Costing of Oil Spill Clearance Operations at Sea 39
P. D. Holmes, British Petroleum, Ltd.

SLIKTRAK—A Computer Simulation of Offshore Oil Spills Cleanup, Effects and Associated Costs 45
Dr. R. Blaikley, Amoco Europe Inc., G. F. L. Dietzel and A. W. Glass, Shell Internationale Petroleum Maatschappij, B. V., P. J. van Kleef, Shell Nederland Informatieverwerking B. V.

III—SPILL PREVENTION AND COOPERATIVES

SPCC Planning: Good Management Practice 55
David A. Clark, Clark Associates

Preventing Oil Spills in the West Coast Forest Industry 57
L. Melville and P. Hamm, MacMillan Bloedel Limited

U.S. Navy R&D Efforts in Support of Oil Pollution Abatement Strategies 61
Lt.Cdr. M. Hura and S. Finger, United States Navy

The Story of A Successful Oil Spill Cooperative—The Corpus Christi Area Oil Spill Control Association 65
Harry L. Franklin, Oil Spill Control Association

What Constitutes Good Telecommunications Systems for an Oil Spill Cleanup 69
R. B. Pearce, Standard Oil Company of California

IV—CONTINGENCY PLANNING

A Dynamic International Contingency Plan 79
Cdr. C. R. Corbett, United States Coast Guard and Capt. C. J. Beckett, Canadian Coast Guard

The St. Lawrence River Oil Spill of June 23, 1976—Are You Ever Truly Ready? 81
Cdr. Jerome P. Foley and Lt.(jg) Stephen J. Tresidder, United States Coast Guard

Oil Spill Contingency Planning for the BP Forties Oilfield Production, Pipeline and Terminal Systems 87
R. J. Fulleylove and T. E. Lester, The British Petroleum Company, Ltd.

Oil Spill Control in Alberta 91
V. E. Bohme and E. R. Brushett, Energy Resources Conservation Board

The Tanker/Pipeline Controversy 95
Robert J. Stewart, Martingale, Inc.

Technical Support of Spill Control Operations 101
James P. Marum and Walter R. Quanstrom, Standard Oil Company; Robert G. Will, Amoco Oil Company

The Development and Use of Resource Sensitivity Maps for Oil Spill Countermeasures 105
Suling Hum, Environment Canada

Oil Spill Response Planning for Biologically Sensitive Areas 111
June Lindstedt-Siva, Atlantic Richfield Company

Contingency Planning for the Impact of Oil Spills in Different Coastal Environments of Canada 115
Edward H. Owens, Louisiana State University

V—TRAINING

A Workshop for Defining the Role of Local Governments in Oil Spill Response 125
W. H. Putman, State of California Resources Agency

Oil Spill Control Training: Texas A&M University's Approach 129
J. Larry Payne, The Texas A&M University System

The Spill Training and Education Program at Texas A&I—Corpus Christi 135
Ralph E. Gilchrist, Texas A&I University

Canadian Approach to Oil Spill Training 137
Garnet H. Kay, Ontario Ministry of the Environment

A Bad Day at Bunker Point 139
Capt. E. Marcus, Gulf Trading and Transportation Company

Hiatusport—An On-Scene Coordinator Role Playing Exercise 141
Lt. Edward B. Kangeter, III, United States Coast Guard

VI—MONITORING AND ENFORCEMENT

Development of an Oil in Water Content Monitor 147
A. W. Hornig, J. T. Brownrigg, B. R. Chisholm, and L. P. Giering, Baird-Atomic, Inc.; and Lt.(jg) R. L. Skewes, United States Coast Guard

Light Scattering Techniques for Discriminating Between Oil and Particulates in Contaminated Water 153
Bruce Friedman, David W. Taylor Naval Ship Research and Development Center

Development and Test of a Shipboard, Continuous, On-Line Oil-In-Water Content Monitor Using Forward (Laser) Light Scattering Techniques 157
Edward P. Batutis, General Electric Company and Lt.(jg) Robert L. Skewes, United States Coast Guard

Monitoring Oil Content in Shipboard Waste Water Discharges by Use of a Multi-phased Dye Transfer Process 161
Roy J. Ricci and Anne M. Kelley, INTEX, Inc.

Experience in Monitoring the Oil Content of Ballast Water Being Discharged by Tankers 165
K. Fleming, Shell International Marine Ltd., and J. P. P. Dick, B.P. Tanker Company Ltd.

Quantification of Navy Oils in Detergent Laden Waters 169
Tsi Shan Yu, David W. Taylor Naval Ship Research and Development Center

Biogenic Hydrocarbons in Intertidal Communities 173
Adam Zsolnay, Duke University; Nancy G. Maynard, Alaska Outer Continental Shelf Office, and Conrad D. Gebelein, University of California

A Liquid Chromatographic Fluorescence Technique for Estimating Crude Oil in Water, Sediment and Biological Material 179
D. Howard Miles, Mary Jane Coign, and Lewis R. Brown, Mississippi State University

Petroleum and Anthropogenic Influence on the Composition of Sediments from the Southern California Bight 183
W. E. Reed, I. R. Kaplan, and M. Sandstrom, University of California and P. Mankiewicz, Science Applications, Inc.

The Coast Guard's Forensic Oil Identification System 189
Lt. James C. Clow, United States Coast Guard

Feasibility of Continuous Monitoring for Oil Pollution Across Channels and Rivers . 193
Guy S. Rambie, Jr., and Richard H. Morgan, Rambie, Inc., and Donald R. Jones, Environmental Protection Agency

The Detection and Mapping of Oil on a Marshy Area by a Remote Luminescent Sensor 197
Craig McFarlane, Environmental Monitoring and Support Laboratory, and Robert Watson, U.S. Geological Survey

Comparative Evaluation of Real and Synthetic Aperture Radars for the Detection of Oil Pollution in the Santa Barbara Channel 203
Steven P. Kraus and John E. Estes, University of California, and Russell R. Vollmers, United States Coast Guard

Current Applications of Remote Oil Monitoring Equipment 209
Judith A. Wright, Wright & Wright, Inc.

Satellite Sentinel for Oil Spills in 1978? 211
Warren A. Hovis, National Oceanic and Atmospheric Administration, and Donald R. Jones, Environmental Protection Agency

U. S. Coast Guard Airborne Oil Surveillance System Status Report 215
Lt. A. T. Mauer, United States Coast Guard, and A. T. Edgerton and D. C. Meeks, Aerojet ElectroSystems Company

Aerial Photographic Applications in Support of Oil Spill Cleanup, Control, and Prevention 221
Donald R. Jones, R. Landers, and A. Pressman, Environmental Protection Agency

Prevention of Pollution During Oil Transfer Operations: An Evaluation of USCG Preventive Actions 223
Lt.Cdr. John R. Harrald and Lt. Christopher M. Stone, United States Coast Guard; and Kirk R. Karwan, Carnegie-Mellon University

VII—CLEANUP TECHNIQUES

Biological Criteria for the Selection of Clean-Up Techniques in Salt Marshes 231
Barbara Westree, URS Research Company

Evaluation of Selected Surface Treatment Agents for the Protection of Shorelines from Oil Spills 237
Carl R. Foget, Woodward-Clyde Consultants; Scott Thornton, Texas Research Institute; and Robert Castle, URS Research Company

Hackensack Estuary Oil Spill: Cutting Oil-Soaked Marsh Grass as an Innovative Damage Control Technique 243
Chester P. Mattson, Nicholas C. Valario, Donald J. Smith, and Susan Anisfield, Hackensack Meadowlands Development Commission; George Potera, New Jersey Wetlands Institute

A Distributed Reuseable-Sorbent Oil Recovery System 247
Sidney H. Shaw, Seaward International, Inc., and J. Stephen Dorrler, Environmental Protection Agency

An Offshore Mechanized Sorbent Oil Recovery System Using Vessels of Opportunity 251
Donald E. Brunner, Naval Civil Engineering Laboratory; James J. Der, Rockwell International Corporation; Donald Hall, Ocean Design Engineering Corporation

Effectively Recovering Oil Spills to Groundwater 255
David M. Dennis, Michigan Department of Natural Resources

Discovery, Containment and Recovery of a Jet Fuel Storage Tank Leak—A Case History 259
Andres Talts and John Bauer, U.S. Army Environmental Hygiene Agency; Calvin Martin and Douglas Reeves, Defense Fuel Supply Agency, U.S. Army

Practical Recommendations for Oil Spill Debris Disposal 265
J. S. Farlow and R. Landreth, Environmental Protection Agency; D. E. Ross, SCS Engineers, Inc.

Debris Handling System for Navy Harbor Oil Spill Cleanup Operations 271
Paul F. Nadeau, Naval Facilities Engineering Command

Black Oil Disposal Techniques 277
Neil Wise, Environmental Protection Agency, and CWO Peter A. Brunk, United States Coast Guard

Some Studies of an Oil Spillage Due to the Jacob Maersk Accident 281
L. D. Canelas and J. D. Calejo Monteiro, Gabinete da Area de Sines, Lisbon, Portugal

Sinking of Tanker St. Peter Off Colombia 289
T. M. Hayes, Canadian Coast Guard

Underwater Blowout Oil Collection 293
Rich. H. Westergaard, Sentralinstitutt for industriell forskning (Central Institute for Industrial Research), Norway

Oil Slick Spreading Beneath a Uniform Ice Cover in the Presence of a Current 297
F. B. Weiskopf and M. S. Uzuner, Arctec, Inc.

Development of an Arctic Oil Spill Recovery System for Arctic Operations 301
Charles F. Scharfenstein and Michael G. Hoard, Lockheed Missiles and Space Company, Inc.

A Field Evaluation of Oil Spill Recovery Devices 303
L. B. Solsberg, Environment Canada

The Application of Existing Oil Spill Abatement to Cold Regions 309
L. A. Schultz and P. C. Deslauriers, Arctec, Inc.

Arctic Offshore Oil Spill Countermeasures with Emphasis on an Oil and Gas Blowout in the Southern Beaufort Sea 313
D. E. Thornton, S. L. Ross, W. J. Logan, and C. W. Ross, Environment Canada

VIII—CLEANUP EQUIPMENT

Development of a High Current Streamlined Oil Boom/Skimmer for Inland Waterways 323
Blair A. Folsom and Clyde Johnson, Ultrasystems, Inc.

Hydrodynamics of a Diversionary Boom 329
W. E. McCracken, Mason & Hanger-Silas Mason Co., Inc., and F. J. Freestone, Environmental Protection Agency

Use of Floating Deflectors for Oil Spill Control in Fast Flowing Waters 335
N. E. Eryuzlu, Canadian Coast Guard and R. Hausser, Lasalle Hydraulics Laboratory, Ltd.

Performance Tests of Three Fast Current Oil Recovery Devices 341
Lt. James H. Getman, United States Coast Guard

Surface Enhancement—Bringing It All Together 347
Jack E. Wilson, Naval Facilities Engineering Command

French Oil Spill Policy—The Recovery Phase 355
Philippe Guerin, Secretariat General de la Marine Marchande and Jacques Pichon, Alsthom Techniques des Fluides

SOCK—An Oil Skimming Kit for Vessels of Convenience 361
R. R. Ayers, Shell Development Company and A. V. Barnett, Gulf of Alaska Clean-up Organization

Development of Oil Spill Recovery Ship 367
Shoji Uchida and Hiroshi Takeshita, Mitsubishi Heavy Industries, Ltd. and Yajuro Saike, Nagasaki Technical Institute

Combined Skimmer-Barrier High Seas Oil Recovery System 375
Jerome H. Milgram, Massachusetts Institute of Technology and Richard A. Griffiths, United States Coast Guard

The Concentrations of Oil in Sea Water Resulting from Natural and Chemically Induced Dispersion of Oil Slicks 381
D. Cormack and J. A. Nichols, Warren Spring Laboratory

Some Recent Observations Regarding the Unique Characteristics and Effectiveness of Self-Mix Chemical Dispersants 387
Gerard P. Canevari, Exxon Research and Engineering Company

Dispersant Field Trials in Canadian Waters 391
Shawn Gill, Canadian Coast Guard

Utilization of Dispersants in Offshore Areas 395
Daniel E. Fitzgerald, Atlantic Richfield Company

Considerations for Field Use of Dispersants 399
Leo T. McCarthy, Jr., Environmental Protection Agency

Techniques for Mixing Dispersant Treated Oil Slicks into the Water 403
Gary F. Smith and W. E. McCracken, Mason & Hanger-Silas Mason Company, Inc.

New Concept of Oil Dispersion in View of Clean-Up by Degradation 407
C. Bocard, B. Durif-Varambon, C. Gatellier and Ph. Renault, Institut Francais du Petrole; and P. Labourcur and L. Person, P.C.U.K. Centre d'Application

Cleaning Agents for Oiled Wildlife 411
Alice B. Berkner, David C. Smith, and Anne Stairs Williams, International Bird Rescue Research Center

Fast Surface Delivery System for Pollution Response Equipment 417
Lt. Richard M. Larrabee, United States Coast Guard, and Russell Ward, Naval Coastal Systems Laboratory

Navy Development of Suitable Shipboard Bilge Oil/Water Separators 423
A. L. Smookler, J. W. Harden, Jr., and P. D. Conroy, David W. Taylor Naval Ship Research and Development Center

New Test Facilities for the Prevention of Oil Pollution in Japan 429
Atsuo Yazaki, The Shipbuilding Research Centre of Japan

IX—SPILL BEHAVIOR AND EFFECTS

A Computer Simulation Technique for Oil Spills off the New Jersey-Delaware Coastline 437
Lt.Cdr. I. M. Lissauer, Lt.Cdr. J. C. Bacon, and M. C. Miller, United States Coast Guard

New York Harbor Oil Drift Prediction Model 441
Capt. R. C. Kollmeyer and Cadet M. E. Thompson, United States Coast Guard

The Use of a Diagnostic Circulation Model for Oil Trajectory Analysis 447
J. A. Galt and Carol H. Pease, National Oceanic and Atmospheric Administration

Storm Related Oil Spill Movement on the Beaufort Sea Shelf 455
G. L. Hufford, Lt.Cdr. I. M. Lissauer, and MST-2 B. D. Thompson, United States Coast Guard

Fate of Crude Oil Spilled in a Simulated Arctic Environment 461
C. MacGregor and A. Y. McLean, Canplan Oceanology Ltd.

Fate of Oil from the Supertanker Metula 465
Roy W. Hann, Jr., Texas A&M University

Persistence of Non-Alkane Components of Bunker C Oil in Beach Sediments of Chedabucto Bay, and Lack of Their Metabolism by Molluscs 469
J. H. Vandermeulen and P. D. Keizer, Bedford Institute of Oceanography; and W. R. Penrose, Fisheries and Marine Service

Subsurface Persistence of Crude Oil Spilled on Land and Its Transport in Groundwater 475
J. J. Duffy, Hudson's Bay Oil and Gas Company, Ltd.; E. Peake and M. F. Mohtadi, University of Calgary

The Fate of Petroleum in a Soil Environment 479
L. W. Cresswell, Continental Oil Company

Priorities in Fate of Oil Spill Research 483
Ronald L. Kolpack, University of Southern California

A Review of Some Commonly Used Parameters for the Determination of Oil Pollution 487
Michael Gruenfeld and Uwe Frank, Environmental Protection Agency

Responses of the Clam Macoma Balthica to Prudhoe Bay Crude Oil 493
D. G. Shaw, A. J. Paul, and E. R. Smith, Institute of Marine Science, University of Alaska

Effects of Drill Mud on Sediment Clearing Rates of Certain Hermatypic Corals 495
Jack H. Thompson and Thomas J. Bright, Texas A&M University

The Effects of Pelagic Hydrocarbons on the Rocky Intertidal Flora and Fauna of Bermuda 499
Nancy G. Maynard, Bureau of Land Management, Conrad D. Gebelein, University of California, and Adam Zsolnay, Duke University Marine Laboratory

Ecological Effects of Experimental Oil Spills on Eastern Coastal Plain Estuarine Ecosystems 505
M. E. Bender, E. A. Shearls, R. P. Ayres, C. H. Hershner, and R. J. Huggett, Virginia Institute of Marine Science

Chemical Investigations of Two Experimental Oil Spills in an Estuarine Ecosystem 511
Rudolph H. Bieri, Vassilios C. Stamoudis, and M. Kent Cueman, Virginia Institute of Marine Science

Microbial Responses After Two Experimental Oil Spills in an Eastern Coastal Plain Estuarine Ecosystem 517
Howard Kator and Russell Herwig, Virginia Institute of Marine Science

The Chesapeake Bay Oil Spill—February 2, 1976: A Case History 523
John V. Roland, Glenn E. Moore and Michael A. Bellanca, Virginia State Water Control Board

Effects of the Chesapeake Bay Oil Spill of February 2, 1976 on Salt Marshes of the Lower Bay 529
Carl Hershner and Kenneth Moore, Virginia Institute of Marine Science

Effects of the March 18, 1973 Oil Spill Near Cabo Rojo, Puerto Rico on Tropical Marine Communities 535
Royal J. Nadeau, Environmental Protection Agency: and Eugene T. Bergquist, Environmental Quality Board

Oil Pollution and Tropical Littoral Communities: Biological Effects of the 1975 Florida Keys Oil Spill 539
Elaine I. Chan, National Oceanic and Atmospheric Administration

The Five-Year Recruitment of Marine Life After the 1971 San Francisco Oil Spill 543
Gordon L. Chan, College of Marin

A Continuous Flow Bioassay System for the Exposure of Marine Organisms to Oil 547
Jeffrey L. Hyland, Peter F. Rogerson, and George R. Gardner, Environmental Protection Agency

Flow-Through System for Chronic Exposure of Aquatic Organisms to Seawater-Soluble Hydrocarbons from Crude Oil: Construction and Applications 551
William T. Roubal, Donald H. Bovee, Tracy K. Collier, and Susan I. Stranahan, National Oceanic and Atmospheric Administration

Effects of a Continuous Low-Level No. 2 Fuel Dispersion on Laboratory-Held Intertidal Colonies 557
J. R. Vanderhorst, R. M. Bean, L. J. Moore, P. Wilkinson, C. I. Gibson, and J. W. Blaylock, Battelle-Northwest Marine Research Laboratory

The Sublethal Effects of Natural Chronic Exposure to Petroleum on Marine Invertebrates 563
Dale Straughan, University of Southern California

The Effects of Crude Oil on Larvae of Lobster Homarus Americanus 569
Joseph M. Forns, Westinghouse Ocean Research Laboratory

Sensitivity of Larval and Adult Alaskan Shrimp and Crabs to Acute Exposures of the Water-Soluble Fraction of Cook Inlet Crude Oil 575
C. C. Brodersen, S. D. Rice, J. W. Short, T. A. Mecklenburg, and J. F. Karinen, National Marine Fisheries Service, NOAA

Water Soluble Components of Crude Oils, Fuel Oils, and Used Crankcase Oils 579
Kenneth Winters and Patrick L. Parker, University of Texas Marine Science Institute

Extractable Organics and Nonvolatile Hydrocarbons in New York Harbor Waters 583
Thomas D. Searl and Hugh L. Huffman, Jr., Exxon Research and Engineering Co.; and James P. Thomas, National Oceanic and Atmospheric Administration

Distribution of Volatile Hydrocarbons in Some Pacific Ocean Waters 589
Charles Bruce Koons, Exxon Production Research Company

Micro-organisms and Hydrocarbons in the North Sea During July–August, 1975 593
Carl H. Oppenheimer, The University of Texas Marine Science Institute; Wilfried Gunkel and Guenter Gassmann, Biological Laboratory Helgoland, West Germany

Fate of Petroleum Components in Estuarine Waters of the Southeastern United States 611
Richard F. Lee, Skidaway Institute of Oceanography

Photo-oxidation of Crude Oils 617
Shinichi Nagata and Goro Kondo, Kobe University of Mercantile Marine, Kobe, Japan

Bioavailability of Petroleum Hydrocarbons from Water, Sediments, and Detritus to the Marine Annelid, Neanthes Arenaceodentata 621
Steven S. Rossi, Scripps Institution of Oceanography

Petroleum Sulfur-Containing Compounds and Aromatic Hydrocarbons in the Marine Mollusks Modiolus Demissus and Crassostrea Virginica 627
James L. Lake and Carl Hershner, Virginia Institute of Marine Science

Distribution of Naphthalenes within Exposed Fundulus Similus and Correlations with Stress Behavior 633
D. Dixit, Northern Virginia Community College, and J. W. Anderson, Battelle, Pacific Northwest Division

The Uptake of Naphthalenes by the Clam, Rangia Cuneata, in the Vicinity of an Oil Separator Platform in Trinity Bay, Texas 637
K. W. Fucik, H. W. Armstrong, and J. M. Neff, Texas A&M University

NEW ENGLAND RIVER BASINS COMMISSION

55 COURT STREET • BOSTON, MASSACHUSETTS 02108
PHONE (617) 223-0244

March 22, 1977

MEMORANDUM

To: State Coastal Zone Officials

From: Russell J. Wilder, Regional OCS Technical Service

Subject: Report on 1977 Oil Spill Conference

The 1977 Oil Spill Conference sponsored by EPA, the American Petroleum Institute and the U.S. Coast Guard was held in New Orleans, Louisiana on March 8-10, 1977. During the three days of the conference 125 papers were presented representing the work of over 250 authors. The papers were presented in eight sessions each day with four sessions running concurrently in the morning and afternoon. Over 1,000 persons participated in the conference representing state and local governments, EPA, the Coast Guard, regional planning councils, equipment manufacturers, the oil industry and others.

The Regional OCS Technical Service represented the Coastal Zone Task Force and attended sessions in the following subject areas: (1) effects of oil spilled in coastal estuarine systems (Chesapeake Bay), (2) spill prevention and cooperatives, (3) debris disposal, (4) training for oil spill control, (5) contingency planning, and (6) techniques for clean-up of spills in marshes. In addition, literature on clean-up equipment and their capabilities were gathered. This literature, along with the proceedings of the conference, will be retained by the Technical Service for reference and copies of these materials will be available to states upon request.

Members of the Coastal Zone Task Force have expressed concerns about ultimate disposal technology for waste oil and debris cleaned up after an oil spill. Also, there are questions about the availability of clean-up materials in coastal areas that are cheap, effective and relatively easy to dispose of after use. Although responsibility for clean-up of an oil spill may lie with the spiller, the state, EPA, or the Coast Guard, depending on size, location and the resources available for spill clean-up, coastal zone officials have a particular concern with the damage to managed coastal resources caused by an oil spill. The sessions attended at the Oil Spill Conference examined problems that should be addressed by coastal zone officials. A summary of these subject areas follows and more material on specific areas can be given to states if they indicate an interest.

1. Effects of Oil Spilled in Coastal Estuarine Systems

On February 2, 1976, the oil transport barge STC-101 sank in a storm in Chesapeake Bay near the mouth of the Potomac River and spilled approximately 250,000 gallons of No. 6 oil. Oil from the barge washed up on beaches and marshes on both sides of the bay. The clean-up effort, directed by the Coast Guard, took over a month, cost nearly $400,000 and recovered an estimated 67 percent of the oil spilled. Most of the oil recovered by the clean-up crews was placed in 55-gallon drums and trucked to a nearby landfill site in a relatively unpopulated area and burned. In the process of clean-up, soiled beach grass was cut and removed to the disposal site. Care was taken by the crews not to trample the grass and recovery of the grasses, mainly Spartina alterniflora was nearly complete by summer. Although an estimated 20 to 50,000 birds were killed by the spill, preliminary reports indicate that damages to the environment may not be as severe as originally expected. One of the major problems encountered during clean-up was getting the necessary approvals from state agencies to transport the waste over state roads and to find a suitable site where burning of the debris would be allowed. It was felt that prior approval for transportation, burning or other disposal that could be enacted in the case of a spill would greatly enhance a spill contingency plan for the area.

After the spill and clean-up operations were over, a study by the Virginia Institute of Marine Science was conducted to determine biological impact on the affected fringe marshes. It was concluded that marsh grass, mussel and oysters studied had returned to a healthy condition shortly after the spill was cleaned up. A small snail showed a significant reduction but had returned to normal by October. It was felt that the minor biological impact of this spill was due to the relative non-toxic nature of No. 6 oil, the fact that it was winter and biota was relatively inactive and that the fringe marshes are in a comparatively high energy area that reduced the oils' residence time.

As a result of the experience with this spill and others along the U.S. East Coast here are some considerations for clean-up in marsh areas:

1. Care has to be taken not to cause more damage from clean-up operations than from the oil itself. Excess trampling can incorporate oil into sediments where it will remain in an anaerobic condition. This trampling will also damage roots of plants. The "do-nothing" approach might be considered the most desireable alternative to prevent further damage and should always be evaluated.

2. If marsh grass is destroyed, erosion of the mud flats will take place.

3. Clean-up techniques have included cutting or burning of Spartina alterniflora and then removing the crusty residue or oil soaked grass.

4. Care has to be exercised according to the season of the year and the condition of the grass.

5. If roots are not damaged and alot of the oil is removed, much of the marsh will recover.

6. Biologists favor low pressure water flushing of light oils to remove them from marshes.

7. Recent research has shown that selected surface treatment agents can be used to protect marsh areas and beaches before oil reaches them.

The Virginia Institute of Marine Science also reported on experimental oil spills conducted in the York River estuary. It found that weathered crude oil had as great an ecological impact on the biota of the marsh as fresh crude oil.

2. Spill Prevention and Cooperatives

Papers were presented on industry's efforts at developing an effective spill prevention, control and countermeasure (SPCC) plan as required by Section 311 of the Federal Water Pollution Control Act. The papers were aimed at industry but did offer some practical advice on how an SPCC plan can be developed and how a plan can save industry money; from reduced damage resulting in less damage payments and fines and from prevention of product loss.

In Corpus Christi, Texas, industry and government have formed a successful spill cooperative that has been in operation for the last five years. The annual operating cost of the cooperative is spiit 50-50 between industry and federal, state and local government. The cooperative cleans up spills from industry members and assesses the cost to the member who is the spiller. In the case of "mystery" spills, the Coast Guard pays the cost. The operation of the cooperative has resulted in an economical way for industry to clean-up spills; an average of 40 cents per gallon. The cooperative was developed out of necessity because of the concentration of petroleum related industries in the Corpus Christi area. Among the equipment the association maintains for use by its members, (and non-members who are charged double for use of the equipment) is EPA's beach sand cleaner; a piece of equipment that can seperate oil from sand fed into it.

The association is also the sponsor of the "Area Waterfowl Preservation Committee". The committee, consisting of fish and wildlife experts from universities, state and federal agencies, and the Audubon Society, has the equipment and capability to protect and rescue waterfowl from oil spills.

Two papers presented (one unscheduled) emphasized the need for good telecommunication during oil spill clean-up work, including the enormous burden on the on-scene-coordinator to get correct, up to date information to the media as his part in the all-important public relations aspect of spill clean-up. The importance of good telecommunications during oil spill clean-up has been recognized by the FCC and it has designated channel 81 for use between the USCG and civilians working on oil spills.

3. Debris Disposal

Four methods for disposal of oil-soaked debris were examined in papers presented by EPA and the Coast Guard. EPA has produced a film entitled Oil Spills: Decisions for Debris Disposal and a detailed, practical manual of practice on the subject. The film is available now and will be shown at the Coastal Zone Task Force meeting on April 13. The handbook, being printed at this time, will be available by summer.

Reclamation of spilled oil is, of course, the most desirable way to dispose of oily debris. This should always be the first consideration when faced with debris disposal. Sometimes the debris can be used as is for some purpose such as incorporating oiled sand and gravel directly into highway construction. But no matter how much of the material can be used or reclaimed there will remain oil solids not worth cleaning and needing ultimate disposal.

Because oil in an aerobic environment will break down by microbial action, the recommended method for disposal of oily debris is the landspreading process where debris size, access to suitable land and climate permits. Generally the oily waste will no longer pose a water contamination problem after three growing seasons of aerobic decomposition. Landspreading involves preparing a suitable site by scarifying the soil and rototilling the debris into the ground with repeated tillings over the next two years. This method has been used by industry for years to dispose of oily sludges from oil/water separators. It should be noted that landspreading releases unoxidized hydrocarbons into the air and may be subject to air pollution regulations. This problem should be worked out with appropriate regulatory agencies before a disposal problem occurs.

Anaerobic burial either in a designated sanitary landfill or other site is not an ultimate disposal solution. Oil has remained trapped in an anaerobic condition in geologic structures for millions of years before being brought to the surface by man. Therefore, anaerobic burial only stores the oil in the condition in which it was buried for an indefinite amount of time until erosion or activities of man allow it to escape from its near-surface environment and pollute another body of water.

Whether oily debris is spread on the land or buried, there may be a definite problem with the uptake of heavy metals by plants. Data on this possible problem is scanty at this time.

One of the quickest and cheapest ways of debris disposal is burning. During the Chesapeake Bay oil spill of February 1976, debris was burned at a remote sanitary landfill site with the use of auxillary fuel and a forced draft air supply. This method is recommended where more desirable methods are impossible, impractical or cost prohibitive.

4. Training for Oil Spill Control

Another aspect of dealing with oil spills, and a very important one, is having enough adequately trained people available to carry out an effective oil spill clean-up operation. In this regard, six papers were presented by various levels of government on oil spill control training.

In California, workshops have been conducted for local governments to fully explain how they are supposed to participate in the National Oil and Hazardous Substance Pollution Contingency Plan of 1970. The workshops clarified the role of local government in the plan and encouraged their support.

Texas A&M and Texas A&I Universities offer courses in oil spill control training. Texas A&I's proposed curricular emphasizes, in a week-long course, training for non-industry personnel in the preparation of a workable contingency plan and a vehicle to carry out the plan. Texas A&M emphasizes a hands-on approach actually using clean-up equipment and was originally designed for industry but can be used by others needing "how to do it" instruction.

Other methods of training were presented by the Ontario Ministry of the Environment which utilizes videotape cassettes and a documentary film of a simulated oil spill exercise, and by Gulf Trading and Transportation Company who employs a combination of seminars, multimedia presentations and role playing to sensitize ship personnel and terminal managers to their oil spill responsibilities.

Finally, the Coast Guard operates a successful on-scene coordinator (OSC) role-playing exercise called "Hiatusport" for training OSC and staff. The exercise is designed to introduce, in addition to the primary task of spill clean-up, significant public relations problems that arise during a major spill.

5. Contingency Planning

Eight papers were presented on the subject of oil spill contingency planning. One contingency plan that may be of interest to the New England area is the plan developed by the British Petroleum Company, Limited for its Forties oil field in the U.K. sector of the North Sea. The plan is divided into a marine and terrestrial plan. The marine plan relies heavily on the use of dispersants and the terrestrial plan is designed to protect river crossings where pipelines are most vulnerable to breakage. It should be noted that the use of dispersants

in oil spill control is prohibited in Massachusetts. The important thing is that this plan was formulated by the developer of the oil field with coordination and approval by government agencies.

Of particular interest to coastal zone officials is the recommended use of resource biological sensitivity maps for oil spill contingency planning. The state of Maine contracted Arthur D. Little to conduct a study that analyzes areas of sensitivity in Portland Harbor and Casco Bay. A copy of this report has been provided to the Technical Service for use by other states. Massachusetts is evaluating its coastal zone for resource sensitivity to oil spills and designating priority areas for protection. However, in addition to identifying those areas in most need of protection, the methods of protection and clean-up most suited to the biologic and morphologic conditions of the area should be identified.

Many other papers were presented on clean-up equipment for special conditions, legal aspects of oil spills, monitoring equipment and fate and effects of spilled oil. One paper, presented by the Westinghouse Ocean Research Laboratory, outlined research conducted at the Massachusetts State Lobster Hatchery on the effects of API reference South Louisiana crude oil upon four land stages of American Lobster. Results of the research showed a threshold sensitivity for planktonic larval lobsters between .1 and 1.0 ppm. It should be noted here that current EPA discharge permits and OCS operating orders contain prohibitations of "no discharge of free oil" i.e. not a visible sheen. Oil will be noticed as a sheen on a water surface at a concentration of anywhere between 15 and 100 ppm depending on type of oil, temperature and character of the water surface, including the presence of surfactants and dispersants. Another result of the research showed that the normally light-blue larvae became discolored to a reddish-brown color and would be more likely to be victims of foraging predators.

Some final notes on the conference follow: (1) The upper limit for wave height in "high seas" for which current oil spill clean-up technology is effective is three meters. (2) There is a heated controversy between industry and biologists over the use of dispersants. In general, industry claims that dispersants dilute oil and render it less toxic while biologists want some definitive data on the effects of its use before its use is expanded. (3) Equipment for clean-up is mainly designed for use in inland waters, harbors, beaches, bays and estuaries where dynamic wave action is diminished. A catalog of some of the latest equipment is available in the OCS Technical Service office. (4) Straw remains as the cheapest available sorbent material and although it is not as effective as more costly mops and pads, it does have the advantage of being biodegradable and will not give off toxic fumes when burned as the synthetic materials will.

Enclosure: Table of contents from conference proceedings

NEW ENGLAND RIVER BASINS COMMISSION

55 COURT STREET • BOSTON, MASSACHUSETTS 02108
PHONE (617) 223-6244

March 2, 1977

MEMORANDUM

To: S. Russell Sylva, Chairman, Coastal Zone Task Force

From: Russell J. Wilder, Regional OCS Technical Service

Subject: Summary of work during February 1977

During the first two weeks of February, most of the Technical Service's time was occupied in the preparation of the report sent out on February 18 summarizing the major actions taken in New England by federal agencies and states since the wreck of the Argo Merchant. Interviews were conducted in person with the New England Regional Commission, Federal Regional Council, and EPA. Telephone interviews were held with Oil & Hazardous Materials section and the Office of International Activities of EPA, the U.S. Coast Guard, the Spilled Oil Research Team of NOAA, the National Marine Fisheries Services and all the member states of the Coastal Zone Task Force. The result of this effort was a report that outlined, with regard to oil spill liability and cleanup, all the major reports, studies, panels and task forces, known to be ongoing at present among state and federal agencies. Subsequent to this report, it has been learned that the Woods Hole Oceanographic Institute is making an assessment of oil cargoes transported by sea in New England with damage risk analyzed by type and volume of oil and type of vessel. The report may not include the area within Long Island Sound due to the difficulty in identifying cargo routes there. The report is being done for NOAA's MESA program and is expected to be complete by early May.

The original purpose of conducting this inventory was to lay the basis for a plan to produce an oil spill "handbook" by the technical service. Maine has their own version of a "handbook" in use for Portland Harbor and is developing another one for Penobscot Bay. EPA is in the process of granting a contract to develop a national manual of practice for oil spill clean-up and should produce a report by the end of the year. Both of these documents will be drawn upon to produce a useable handbook for all the member states of the Task Force.

In conducting research for the February 18 report on studies and task forces, etc. being conducted by federal and state agencies on oil spill prevention and cleanup, a report by the federal Regional Council on the Federal Response to Coastal Oil Pollution, was discovered. This report provided a concise summary of federal laws and regulations that apply to coastal oil spills in New England. Copies of the report were sent along to members of the Task Force on February 25.

During February, information has been gathered on the technical content of BLM's Marine Environmental Studies. Briefly, in the Mid-Atlantic and New England, the status of the main environmental studies contracts for FY 1976 are presented in the following table:

Area	Contractor	Amount	Date
Mid-Atlantic	U. of Maryland	2,500	8/1/75
	Multi industry forcasting model to evaluate regional economic effects of offshore oil and gas production in the Mid-Atlantic OCS region.		
	BLM & NOAA	17,000	1/29/76
	Establishment and operation of an east coast Continental Shelf Meteorological Buoy Monitoring Network.		
	EPA	4,000	2/10/76
	Preparation of an environmental impact statement for the proposed leasing of the Baltimore Canyon OCS in the Atlantic Ocean.		
	BLM & NOAA	60,000	12/16/75
	Summarization & Interpretation of historical physical oceanographic and metrological information for the Mid-Atlantic Region.		
	VIMS	2,772,683	9/30/76
	Second year Benchmark studies in the Mid-Atlantic OCS Region.		
	Non-Profit Organization Center for Natural Areas	155,904	9/29/76
	A summary and analysis of environmental information on the Continental Shelf from the Bay of Fundy to Cape Hatteras.		
TOTAL		$3,012,087	

Area	Contractor	Amount	Date
N. Atlantic	USGS	710,011	9/24/76
Geological Oceanographic Studies of Georges Bank.			
	Dean Bumpus-Consultant	584.55	7/8/76
Evaluate addendum to proposals submitted for a program of physical oceanography in the New England OCS area.			
	Dr. C. Crawford-Consultant	300.00	7/22/76
Review two proposals for micro-biological studies for N. Atlantic Georges Bank and provide detailed analysis for the suitability of proposals for the BLM microbiology program.			
	Dean Bumpus-Consultant	757.20	8/6/76
Evaluate best and final proposal submitted for a program of physical oceanography in the New England OCS area.			
	EG&G	685,000	9/30/76
Physical Oceanographic Studies of the New England/Georges Bank OCS Area.			
	Energy Resources Co., Inc.	2,950,000	9/1, 9/27/76
Chemical and Biological Benchmark Study for the New England OCS.			
	Raytheon Co.	3,330,000	9/21, 9/30/76
Physical Oceanographic Studies of the New England/Georges Bank OCS Area.			
TOTAL		$7,676,652.75	

The Alaskan OCS has the most contracts awarded for marine environmental studies. There are nearly 150 contracts for research in the Gulf of Alaska, Beaufort, Bering and Chukchi Seas, and most of the contracts are for baseline studies. A list of Alaskan OCS studies is attached.

During March, the technical aspects of these contracts will be studied. The studies will be examined to see how they fulfill the needs of the region and reports will be published by the Technical Service on the form and content of the studies.

Many people have expressed concern over the environmental impact of drilling muds and cuttings on the Georges Bank fishery. There have been several studies by the oil industry in the Gulf of Mexico that show no toxic effects due to metals or long term physical damage to sessile

benthic organisms due to burial by drill cuttings. A report done by the State University System of Florida, Institute of Oceanography in a 1975 contract for BLM showed that there were negligible biologic effects due to the discharge of drilling muds and cuttings. The only report of a similar nature known to have been completed in the Georges Bank area was one required by EPA on the first COST well drilled during the summer of 1976. It, however, only evaluated quantitative chemistry and turbidity in the vicinity of the rig - no bioassay work was done. Region 2, EPA is requiring bioassay work on common zooplankton and diatoms using a representative drilling mud mixture. There may be further room for research on the toxicity and physical effects of drill muds and cuttings specific to Georges Bank fish resources. Ideally this research should be done prior to and during the exploratory phase. More detail on this and other studies will be provided in subsequent reports from the Technical Service.

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cc: F. Gregg, B. Brown, I. Waitsman, V. Ciampa, C. Ferber

ALASKAN OCS STUDIES

Area	Contractor	Amount	Date of Award
Bering Sea	U. of Alaska	$156,278	4/1/75
The distribution, abundance, diversity, and productivity of benthic organisms			
Beaufort Sea	Oregon State U.	137,537	6/1/75
The distribution, abundance, diversity, and productivity of benthos			
Beaufort Sea	Oregons State U.	59,530	6/1/75
Summarization of existing literature and unpublished data on the distribution, abundance, and life histories of benthic organisms			
Bering Sea	Alaska Dep't of Fish and Game	141,500	5/1/75
Herring Spawning Survey			
Gulf of Alaska	Alaska Dep't of Fish and Game	127,000	7/1/75
Benthos of Yakutat Bay			
Gulf of Alaska	Alaska Dep't of Fish and Game	53,500	7/1/75
Razor clam density and distribution			
Gulf of Alaska	Alaska Dep't of Fish and Game	40,200	7/1/75
Study of the littoral zone of the Kenai Peninsula			
Gulf of Alaska	U. of Washington	63,818	7/1/75
A description and numerical analysis of the factors affecting the processes of production			
Gulf of Alaska	National Marine Fisheries	36,300	7/1/75
Review and evaluation of historical data base on non-salmonid pelagic resources of the shelf and slope			
Gulf of Alaska	National Marine Fisheries	370,000	7/1/75
baseline characterization of the littoral biota			
Bering Sea	National Marine Fisheries	370,000	7/1/75
Baseline characterization of the littoral biota			
Gulf of Alaska	U. of Washington	150,000	7/1/75
Ichthyoplankton of the Gulf			
Gulf of Alaska	Pacific Marine Environmental Laboratory	150,000	7/1/75
Initial zooplankton investigations			
Gulf of Alaska	Pacific Marine Environmental Laboratory	155,000	7/1/75
Phytoplankton survey			

Bering, Chukchi, and Beaufort Seas	U. of Alaska	$213,925	4/1/75
	Zooplankton and micronekton survey		
Bering Sea	U. of Alaska	252,715	4/1/75
	Phytoplankton studies		
Gulf of Alaska	National Marine Fisheries	35,000	7/1/75
	Baseline studies of demersal resources of the northern shelf and slope		
Bering Sea	National Marine Fisheries	375,000	4/1/75
	Baseline studies of demersal resources of the eastern shelf and slope		
Beaufort Sea	Alaska Dep't of Fish and Game	163,100	7/1/75
	Estuarine fishery study		
Gulf of Alaska	U. of Alaska	224,428	7/1/75
	The distribution, abundance, diversity, and productivity of benthic organisms		
Gulf of Alaska and Bering Sea	U. of Alaska	97,819	4/1/75
	A summarization of existing literature and unpublished data on the distribution, abundance, and productivitiy of benthic organisms		
Gulf of Alaska and Bering Sea	U. of Alaska	75,163	7/1/75
	food and feeding relationships in the benthic and demersal fishes		
Gulf of Alaska and Bering Sea	U. of Alaska	43,962	7/1/75
	preparation of illustrated keys to skeletal remains and otoliths of forage fishes		
Beaufort Sea	U. of Alaska	28,226	4/1/75
	Preparation of illistrated keys to skeletal remains and otoliths of forage fishes		
Beaufort Sea	U. of Alaska	20,002	7/1/75
	Literature search and data conversion on density distribution of fishes		
Gulf of Alaska and Bering Sea	U. of Washington	60,000	7/1/75
	ichthyoplankton survey		

Bering Sea	National Marine Fisheries	$ 45,900	7/1/75
	Review of literature and archive data for non-salmonid pelagic fishes		
Beaufort Sea	Western Washington State	231,750	7/1/75
	littoral survey		
Beaufort Sea	U. of Washington	300,000	5/16/75
	Plankton studies		
Gulf of Alaska, Bering, Beaufort Sea	Alaska Dep't of Fish and Game	163,692	9/1/75
	Identification, documentation and delineation of coastal migratory bird habitats		
Bering Sea	U. of Wisconsin	32,000	6/1/75
	A census of seabirds in the Pribilof Islands		
Bering Sea	National Marine Fisheries	100,000	7/1/75
	Bird and marine mammal ecosystem dynamics		
Bering Sea	U. of California-Irvine	63,666	4/1/75
	Baseline studies of Pribilof Island seabirds		
Gulf of Alaska	John Hopkins U.	20,000	6/1/75
	Evolution and pathobiology of the herring gull group		
Gulf of Alaska	Oregon State U.	38,722	8/1/75
	Community structure, distribution, and interrelationships of marine birds		
Beaufort Sea	U. of California-Bodega Lab	51,473	5/15/75
	Dependence of shorebirds on Arctic littoral habitats		
Beaufort Sea	U. of Alaska	3,944	4/1/75
	Avifaunal utilization of the offshore island near Prudhoe Bay		
Bering Sea	Massachusetts Audubon Society	74,535	5/20/75
	Survey of coastal habitats on the south shore of Seward Peninsula		
Gulf of Alaska and Bering Sea	U. of Calgary	12,000	6/1/75
	Ecology and behavior of southern hemisphere shearwaters and other seabirds when over the outer continental shelf during the northern Summer.		

Bering and Beaufort Seas	Fish and Wildlife Service	$ 51,583	5/10/75
The distribution, abundance and feeding ecology of birds associated with pack ice			
Gulf of Alaska, Bering, Beaufort Seas	Fish and Wildlife Service	421,000	5/1/75
Seasonal distribution and abundance of marine birds			
Gulf of Alaska, Bering Sea	Fish and Wildlife Service	33,700	6/1/75
Photographic mapping of seabird colonies			
Gulf of Alaska, Bering, Chukchi, Beaufort Seas	Fish and Wild life Service	43,300	7/1/75
Review and analysis of literature and unpublished data on marine birds			
Gulf of Alaska, Bering, Beaufort Seas	Fish and Wildlife Service	21,700	7/1/75
Migration of birds in Alaskan marine waters subject to influence by OCS development			
Gulf of Alaska, Bering, Beaufort Seas	Fish and Wildlife Service	268,860	5/1/75
Feeding ecology and trophic relationships of alaskan marine birds			
Gulf of Alaska, Bering, Beaufort Seas	Fish and Wildlife Service	313,860	5/1/75
Population dynamics of marine birds			
Gulf of Alaska, Bering, Chukchi, Beaufort Seas	Fish and Wildlife Service	25,300	7/1/75
Preliminary catalog of seabird colonies			
Bering Sea	Fish and Wildlife Service	$ 24,000	1/1/76
Distribution of the Pacific walrus			
Bering, Chukchi, and Beaufort Seas	Johns Hopkins U.	10,000	7/1/75
Analysis of marine mammal remote sensing data			
Bering Sea	National Marine Fisheries	166,000	6/10/75
Marine mammal baseline characterization			
Gulf of Alaska	National Marine Fisheries	55,000	7/1/75
Abundance and seasonal distribution of marine mammals			

Bering Sea	National Marine Fisheries	$ 61,200	3/15/76
	Abundance and seasonal distribution of Bowhead and Belukha Whales		
Beaufort and Chukchi Seas	National Marine Fisheries	85,000	9/1/75
	Abundance and seasonal distribution of Bowhead and Belukha Whales		
Bering and Chukchi Seas	U. of Alaska	180,386	6/1/75
	Morbidity and mortality of marine mammals		
Gulf of Alaska	Alaska Dep't of Fish and Game	65,000	7/1/75
	Biology of the Harbor Seal		
Bering and Beaufort Seas	Alaska Dep't of Fish and Game	127,041	7/1/75
	The natural history and ecology of the bearded seal and ringed seal		
Bering Sea	Alaska Dep't of Fish and Game	65,997	4/1/75
	An aerial census of spotted seals		
Bering and Beaufort Seas	Alaska Dep't of Fish and Game	60,041	7/1/75
	Trophic relationships among ice inhabiting Phocid seals		
Gulf of Alaska	Alaska Dep't of Fish and Game	11,075	7/1/75
	Distribution and abundance of sea otters along Kenai Peninsula, Kamishak Bay and the Kodiak Archipelago		
Bering Sea	Alaska Dep't of Fish and Game	9,980	7/1/75
	Distribution and abundance of sea otters in southwestern Bristol Bay		
Gulf of Alaska	Alaska Dep't of Fish and Game	157,100	7/1/75
	Population assessment, ecology, and trophic relationships of Stellar Sea Lions		
Bering and Beaufort Seas	U. of Alaska	136,045	5/1/75
	The relationships of marine mammal distributions, densities, and activities to sea ice conditions.		
Bering Sea	Scripps Institute	47,671	6/1/75
	The physiological effect of acute and chronic exposure to hydrocarbons and of petroleum on the near-shore fishes		

Bering Sea	National Marine Fisheries	$ 75,000	5/1/75
	Physiological impact of oil on pinnipeds		
Gulf of Alaska, Bering, Chukchi, Beaufort Seas	National Marine Fisheries	227,800	4/1/75
	Acute and chronic toxicity uptake and depuration, and sublethal metabolic response of alaskan marine organisms to petroleum hydrocarbons		
Gulf of Alaska, Bering, Beaufort Seas	National Marine Fisheries	150,000	7/1/75
	Sublethal effects as reflected by morphologyical, chemical, physiological and behavioral indices		
Gulf of Alaska, Bering, Beaufort Seas	National Marine Fisheries	61,000	7/1/75
	Identification of the major processes in biotransformation of petroleum hydrocarbons and trace metals		
Gulf of Alaska, Bering, Chukchi, Beaufort Seas	National Marine Fisheries	32,300	7/1/75
	Assessment of available literature on the effects of oil pollution on biota in Arctic and subarctic waters		
Gulf of Alaska	U. of Alaska	62,005	7/1/75
	Acute effects of hydrocarbons on pacific herring roe		
Gulf of Alaska	Oregon State U.	38,687	7/1/75
	Acute and chronic toxicity of seawater extracts of Alaskan Crude oil to zoeae of the Dungeness crab		
Bering Sea	U. of Alaska	77,677	7/1/75
	Sublethal effects of hydrocarbons on seagrass photosynthesis		
Beaufort Sea	U. of Louisville	105,183	4/1/75
	Potential interactions of microorganisms and pollutants		
Gulf of Alaska	U. of Louisville	105,183	4/1/75
	potential interactions of microorganisms and pollutants		
Gulf of Alaska, Bering and Beaufort Seas	National Bureau of Standards	365,000	7/1/75
	Trace hydrocarbon analysis in sea ice and at the sea Ice-water interface; analysis of individual high molecualr weight aromatic hydrocarbons		
Bering and Beaufort Seas	National Bureau of Standards	76,000	7/1/75
	Trace element assessment of Alaskan waters--inorganic elements		

Gulf of Alaska, Bering Sea	Pacific Marine Environmental Laboratory	$122,000	7/1/75
Distribution of light hydrocarbons (c_1-C_4) in the shelf water			
Gulf of Alaska, Bering, Beaufort Seas	U. of Alaska	486,102	7/1/75
Natural distribution of trace heavy metals and environmental background			
Gulf of Alaska, Beaufort Sea	Oregon State U.	125,600	5/1/75
Microbial activity and analysis of crude oil degradation by psychrophilic microorganisms			
Gulf of Alaska, Bering, Beaufort Seas	U. of Alaska	523,129	4/1/75
Natural distribution and dynamics of hydrocarbons on Alaskan OCS			
Bering Sea	U. of Alaska	21,425	4/1/75
Microbial release of soluble trace metals from an oil impacted sediment			
Gulf of Alaska, Bering, Beaufort Seas	National Marine Fisheries	111,068	7/1/75
Incidence of pathologic tissue			
Gulf of Alaska, Bering, Chukchi, Beaufort Seas	Battelle-Northwest Labs	149,530	5/1/76
Gulf of Alaska, Beaufrot Sea	NOAA- Wave propagation Lab	280,000	5/1/75
Development and operation of coastal HF Current mapping radar			
Beaufort Sea	U.S. Coast Guard	37,200	8/1/75
Shelf surface currents			
Beaufort Sea	U. of Washington	175,000	4/1/75
Current measurements in permanently ice-covered areas using acoustic data retrieval			
Gulf of Alaska, Bering, Beaufort Seas	U. of Alaska	50,372	6/1/75
Seasonability and variability of streamflow in nearshore coastal areas			

Gulf of Alaska	Pacific Marine Environmental Laboratory	$400,000	5/1/75
	Study of mesoscale oceanographic processes		
Gulf of Alaska, Bering, Beaufort Seas	Pacific Marine Environmental Laboratory	162,800	7/1/75
	Numerical modelling of Alaskan OCS currents		
Bering Sea	Pacific Marine Environmental Laboratory	780,000	7/1/75
	Oceanographic processes in Bristol Bay		
Beaufort Sea	U. of Washington	51,726	4/1/75
	Salinity/temperature/depth profiling		
Gulf of Alaska	Atlantic Oceanographic and Meteorological Laboratories	98,000	7/1/75
	Lagrangian surface current measurements		
Gulf of Alaska	Naval Postgraduate School	40,000	5/1/75
	Preparation of hydrodynamical-numerical and 3-parameter small-mesh atmospheric models for coastal waters		
Gulf of Alaska	U. of Alaska	292,386	7/1/75
	Definition of mesoscale currents and water masses		
Bering Sea	U. of Alaska	91,815	4/1/75
	Historical and statistical oceanographic data analysis		
Beaufort Sea	Environmental Protection Agency	48,395	7/30/75
	Pollution transport model in vicinity of Prudhoe Bay		
Gulf of Alaska, Bering, Beaufort Seas	U. of Alaska	220,700	7/1/75
	Assessment of historical marine climatology records		
Gulf of Alaska	National Marine Fisheries	45,000	4/1/75
	Physical oceanography resume		
Chukchi and Beaufort Seas	U. of Washington	31,000	5/1/76
	Meteorology of the arctic coast		
Bering Sea	Lamont-Doherty Geological Observatory	124,142	5/15/75
	Seismotectonic analysis of the seismic and volcanic hazards in the Pribilof Islands		

Gulf of Alaska	U. of Southern California	$ 74,529	4/1/75
	Coastal morphology and sedimentation processes		
Gulf of Alaska	U. Of Alaska	30,067	4/1/75
	Environmental Geology and geomorphology of the coastal plain		
Beaufort Sea	Cold Regions Research and Engineering Laboratory	330,000	4/1/75
	Delineation of subsea permafrost and its engineering characteristics		
Gulf of Alaska, Bering Sea	Pacific Marine Environmental Laboratory	300,000	4/1/75
	Distribution, composition and transport of suspended particulate matter		
Beaufort Sea	U.S. Geological Survey	100,000	5/1/75
	Characterization of offshore permafrost		
Beaufort Sea	U.S. Geological Survey	200,694	5/1/75
	Marine environmental problems in ice covered regions		
Bering Sea	U.S. Geological Survey	115,000	6/1/75
	Faulting and slope instability in the St. George Basin and adjacent continental shelf and upper slope		
Bering Sea	U.S. Geological Survey	15,000	7/1/75
	Study of Yukon delta coastal processes		
Bering Sea	U.S. Geological Survey	50,000	5/1/75
	Fault history of pribilof Islands and its relevance to bottom stability in St. George Basin		
Gulf of Alaska	U.S. Geological Survey	145,000	7/1/75
	Earthquake activity assessment		
Gulf of Alaska	U.S. Geological Survey	140,093	7/1/75
	Erosion and deposition of shelf sediments		
Gulf of Alaska	US. Geological Survey	163,649	7/1/75
	Faulting and instability of shelf sediments		
Gulf of Alaska	U. of Alaska	262,590	7/1/75
	Seismic and volcanic risk studies in Cook Inlet-Kodiak-Semidi Island regions		
Beaufort Sea	U. of Alaska	102,000	4/1/75
	Offshore permafrost-drilling, boundary conditions, properties, processes and models		

Beaufort Sea	U. of Alaska	$120,713	4/30/75
	Permafrost studies along the coast		
Bering Sea	U. of Alaska	45,626	4/1/75
	Benthos-sedimentary substrate interactions		
Gulf of Alaska	U.S. Geological Survey	243,000	6/1/75
	Faulting and instability of shelf sediments		
Gulf of Alaska, Bering, Beaufort Seas	Environmental Data Service	25,000	4/1/75
	Assessment of historical seismicity records		
Beaufort Sea	Arctic Research Laboratory	18,000	7/1/75
	Study of coastal erosion		
Beaufort Sea	L G L,Ltd	39,976	5/1/76
	analysis of potential effects of OCS development of barrier Island of Prudhoe Bay		
Beaufort Sea	U. of Washington	42,590	7/1/75
	Interaction of oil with sea ice		
Beaufort Sea	Cold regions Research and Engineering Laboratory	352,200	4/1/75
	Dynamics of near shore ice movement		
Bering, Beaufort Seas	Cold Regions Research and engineering Laboratory	288,500	4/1/75
	Remote sensing program for Arctic offshore ice		
Chukchi, Beaufort Seas	U. of Washington	72,431	5/1/75
	Dynamics of near-shore sea ice in the shear zone		
Beaufort Sea	U. of Alaska	79,960	4/15/75
	Study of climatic effects on fast ice extent and its seasonal decay		
Beaufort Sea	U. of Alaska	74,300	4/1/75
	Mechanics of origin of pressure ridges, shear ridges, and hummock fields in landfast ice		
Beaufort Sea	U. of Alaska	78,645	5/1/75
	Morphology of near-shore ice conditions by means of satellite and aerial remote sensing		

Bering Sea	U. of Alaska	$ 41,700	5/1/75
	Morphology of near-shore ice conditions by means of satellite and aerial remote sensing		
Beaufort Sea	U. of Alaska	64,200	5/1/75
	Experimental measurements of sea ice failure stresses near grounded structures		
Beaufort Sea	U. of Alaska	70,000	6/2/75
	Develop historical baseline of ice distribution and extent		
Beaufort Sea	U. of Alaska	116,200	4/1/75
	Develop hardware and procedures for in situ measurement of creep in sea ice		
Gulf of Alaska, Bering, Chukchi, Beaufort Seas	U. of Alaska	119,561	5/1/75
	Operation of an Alaskan facility for applications of remote sensing data to OCS studies		
Gulf of Alaska, Bering, Chukchi Seas	U. Washington	350,000	5/1/76
	seasonal density distribution of ichthyoplankton		
Bering, Chukchi, Beaufort Seas	U. Alaska	52,096	5/1/76
	density distribution of zooplankton and micronekton		
Gulf of Alaska	U. of Alaska	23,301	5/1/76
	Distribution, abundance, and diversity of the epifaunal benthic organisms in Alitak and Ugak Bays, Kodiak Island		
Gulf of Alaska	U. of Alaska	8,799	5/1/76
	Distribution, abundance, diversity, and productivity of benthic organisms		
Gulf of Alaska	Renewable Resources Consulting Service	20,002	2/1/76
	sea cliff bird survey		
Bering Sea	L G L, Ltd.	69,098	4/10/76
	Population, community structure, and ecology of marine birds on St. Lawrence Island		
Gulf of Alaska	Renewable Resources Consulting Service	75,190	5/1/76
	Seacliff bird inventory		

Bering Sea	U. of Alaska	$ 82,000	4/1/76
	Avian community ecology of the Akulik-Inglutalik River delta		
Bering Sea	College of the Atlantic	79,200	2/10/76
	Populations, community structure, and ecology of marine birds, on King Island		
Chukchi Sea	U. of Alaska	143,309	5/1/76
	Avian community ecology at two sites on Kotzebue Sound		
	U. of Alaska	434,434	4/1/75
	Coordination of the Alaska OCS program		
	U. of Alaska	190,754	7/1/75
	R/V ACONA and marine logistics support for the Alaska OCS program		
	Science Applications, Inc.	473,966	5/1/76
	Program integration for Alaska OCS program		
	Environmental Data Service	2,125	6/15/75
	Preparation of coastal strip maps for working base		
	Environmental Data Service	17,000	7/1/75
	Establish data file index for the Alaskan MEA program		
	Environmental Data Service	110,000	7/1/75
	Establish and service a project marine baseline data base for the Alaska MEA Program		
	Environmental Data Service	8,000	7/1/75
	Provide bibliographic support to Alaskan OCS Energy Program Principal Investigators.		

Herber

NEW ENGLAND RIVER BASINS COMMISSION

55 COURT STREET • BOSTON, MASSACHUSETTS 02108
PHONE (617) 223-6244

February 18, 1977

MEMORANDUM

To: State Coastal Zone Officials

From: Russell J. Wilder, Regional OCS Technical Service RJW

Subject: Oil Spill Update: A report on major actions taken in New England by federal agencies and states since the wreck of the Argo Merchant

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At the January 18th Coastal Zone Task Force meeting, considerable attention was given by members to the events surrounding the wreck of the Argo Merchant. It was noted several times by Task Force members that an inventory of actions taken by federal and state agencies as a result of the disaster would be helpful to states in reassessing state policies in regard to spills and also would be helpful in evaluating the need for any legislative action that arises.

The Technical Service, as a first step in the ground work for preparing an oil spill handbook and evaluation of state-of-the-art oilspill control and cleanup technology, has reviewed all the major reports and studies known to be taking place within the New England coastal zone and New York plus the federal agencies having responsibility for oil spill control. This review does not address itself to pending legislation at either the state or federal level. It is an inventory of reports on government policy and regulatory functions, scientific research and specially designated panels and task forces. If Task Force members know of other ongoing studies or reports, the Technical Service would appreciate being informed of them.

Federal

In the federal sector, the Coast Guard has been in the process of redrafting the original Regional Contingency Plan (RCP) for over a year. The original plan as called for in Section 311 of the FWPCA Amendments of 1972 was drafted in 1973 and as policy shifts and regulatory changes evolved, it was planned to continually update the RCP. It should be noted that the RCP is based on the National Contingency Plan with additions that make it specific to the region such as designation of On Scene Coordinators and other members. It is also important to note that in New England there are two contingency plans: one for coastal spills prepared by the Coast Guard and one for inland spills prepared by EPA.

Updating the RCP by the Coast Guard has proved to be a major task that has resulted in a complete redraft on which a first in-house review had just been completed by the Coast Guard when the Argo Merchant incident occurred. With more spills taking place since late December, including the Buzzard's Bay accident, the staff member of the Coast Guard responsible for the RCP redraft had to turn to dealing with the spill itself. In addition, he has been assigned to perform the review of the Massachusett's CZM program "Preview" for the Coast Guard. It is not expected that a final draft of the RCP will be completed sooner than next October. The Coast Guard feels that the fact that the RCP is in draft form has not inhibited their ability to respond to spills nor will there be any major changes in the RCP as a result of recent spills.

On January 31, the Coast Guard adopted regulations to require long-range navigation equipment on all tankers of 1600 or more gross tons; regular reporting of a ship's position; testing of ship maneuvering systems before entering or getting underway in U.S. waters and notification of the Coast Guard when navigational equipment is out of order. These regulations can only be enforced in U.S. waters.

For coastal spills, EPA takes on an environmental advisory role to the Coast Guard and the On Scene Coordinator. During the Argo Merchant spill and more recent incidents, EPA's team from the Surveillance and Analysis Division performed this function as their part of the Regional Response Team. EPA itself is not initiating any specific studies or reports in the region as a result of the spills except for an assessment of present models for spill trajectories and will be producing a report on April 1 on alternative impacts from spills on Georges' Bank based on winds, currents, season, etc. However, ongoing programs will impose additional regulations on dischargers of oil and hazardous substances. Specifically, regulations concerning designation of substances and their removability, rate of penalties and definition of harmful quantities of hazardous substances have been drafted and are being reviewed by the assistant administrator. There is Congressional opposition to the regulations because it is felt by some members of Congress that the proposed penalties are not stiff enough and that it was not Congressional intent to make companies liable for cleanup of non-removable hazardous substances (those that cannot be cleaned up). These regulations may also be affected by potential oil spill liability legislation* and probably will not be acted on until after a new EPA Administrator is named. In addition, proposed regulations for oil removal are being developed for publication in early 1978. These regulations will

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* The Congress is considering several pieces of legislation concerning oil spills, key among them is the Kennedy-Studds oil spill liability bill. Also, several bills are under consideration to amend the Outer Continental Shelf Lands Act. It should be noted that among the states, Massachusetts, Rhode Island and Connecticut have been considering state oil spill liability legislation.

establish recommended methods and procedures for the removal of discharged oil and will broaden the scope of the National Contingency Plan which applies only to the actions of federal agencies. It is obvious that coastal states especially will want to comment on these draft regulations.

EPA publishes a quarterly bibliography on "Oil Spill and Oil Pollution Reports" that reviews current scientific and technical publications and research projects in the field of oil pollution. This compendium of reports is the most up to date document known on oil spill technical information and may be subscribed to from U.S. E.P.A., Office of Research and Development, Technical Information Staff, Cincinatti, Ohio 45268. Current copies of the report are available at the EPA and NERBC libraries in Boston.

On the day that the Argo Merchant went aground, members of NOAA's Spilled Oil Research Team from the Environmental Research Lab in Boulder, Colorado, were flown to the scene. This team, which is part of the Marine Ecosystems Analysis Program (MESA), was particularly interested in oil spill tragectories and performed aerial surveillance of the spill in aircraft provided by the Coast Guard. They have since been deployed to another spill on the Hudson River but continue to maintain a temporary office in Falmouth. The other part of NOAA's response to the spill has been through the National Marine Fisheries Service in Woods Hole. From the beginning they have initiated, with cooperation from U.R.I., several cruises for biological and sediment research. They have completed, among others, 2 cruises on the Delaware 2, 1 cruise on the Mount Mitchell (to study larval herring) and are participating in an 18-day fishing cruise on a Polish ship. They have completed several cruise reports including one on ichthyoplankton and have sent fish flesh to Seattle for hydrocarbon analysis. As a preliminary phase of a program to assess the short and long-term effects of the spill, NOAA will be issuing a preliminary report based on information gathered in these initial cruises. The report will be available from Dr. Robert M. White's office (NOAA, Washington, D.C.) by March 1st. The MESA program has also been busy with the more recent Buzzard's Bay spill and has contracted Environmental Devices Co. of Marion, Mass. to do sampling in the Bay. In addition, the Woods Hole Oceanographic Institute is conducting sampling in the Bourne area. No deadline for publication of the results of these efforts has been established. MESA has also noted that, as a result of the Argo Merchant spill, it has become evident that a handbook is needed on the characteristics of oil types, how to handle them and what impact they have on the environment. How or when this document would be prepared has not been elaborated on.

Regional

At the request of Massachusetts Lt. Governor Thomas O'Neil, the Federal Regional Commission (FRC) prepared a short report on the federal response to oil spills. This document, which outlines the existing

federal laws, regulations and programs that apply to oil spills is being drafted in final form at this time and will be available for distribution soon. The Technical Service has reviewed the draft report and considers it to be a valuable and accurate reference on the subject, and will send copies to the Task Force as soon as the report is available. At this time FRC is not undertaking any further projects in this regard.

The New England Regional Commission recently prepared a report for the New England Governor's Conference held on Feb. 4 in Hartford, Connecticut, on improvement of management of oil tanker movements and an analysis of the federal and state response to the Argo Merchant incident. Among its findings was a recommendation that the Regional Contingency Plan should be reexamined. Emphasis should be placed on risk reduction through the use of more extensive navigational aids and traffic monitoring and tanker construction standards should be reviewed. An expanded report is expected for the next Governors' meeting on March 4th.

States

Among the New England states and New York, three have taken significant action as a result of the Argo Merchant incident.

Maine's Governor Longley stated in late December that his state would reassess its position in regard to oil spills. He said he would propose legislation to take the ceiling off Maine's oil-company-supported fund to pay for oil spill cleanups in the state. Mike McMillen, Economic Development Planning Coordinator for the state, informed the Technical Service that Maine has developed an "oil spill handbook" of their own for Portland harbor and is in the process of developing one for Penobscot Bay. The Technical Service will evaluate this document in hopes of adding to a handbook for all the New England coastal states.

As noted before, the University of Rhode Island has been participating in the data gathering cruises being conducted by the National Marine Fisheries Service and the Woods Hole Oceanographic Institute. They also are a part of the suggested "blue ribbon panel" with Woods Hole that will investigate oil spill research needs and make recommendations to the Governors of Massachusetts and Rhode Island. The members of the panel have not been chosen yet, but approval is expected by the end of February. The panel is expected to have a four month life. These identified needs could be used as input to BLM's Environmental Baseline Studies being conducted in conjunction with leasing of tracts for oil and gas development, as well as providing guidance to other funding agencies.

Finally, the State of Massachusetts, being the most directly involved state, has undertaken a number of activities as a result of the spill. First of all, Secretary Murphy has called for the establishment of a federal level cabinet of ocean affairs to be made up of representatives from all agencies that deal with ocean resources. On January 18 the Secretary presented to Governor Dukakis a chronology of events prepared by the Coastal Review Center of the Massachusetts Coastal Zone Management Program from when the Argo Merchant went aground to January 18, integrating federal, state and local action. The Executive Office of Environmental Affairs also encouraged the formation of a panel of experts from URI and Woods Hole on research needs concerning oil spills. Currently, the state has created an interagency Task Force to make recommendations on prevention and response to oil spills to the Massachusetts state legislature, the Governor, and the federal government through various agencies and the Massachusetts Congressional delegation. It is unknown at this time what form these recommendations will take.

The Coastal Zone Task Force has also made recommendations with regard to the Argo Merchant incident. In its comments on BLM's draft Environmental Impact Statement on OCS Lease Sale #42 made to BLM on December 21, 1976, the Task Force reinforced state recommendations that an analysis of the oil spill be included in the final statement. The Task Force also placed heavy emphasis on the need to present data on the short and long-term dollar loss to the fishery (by species) due to oil spills. Emphasis was also placed on navigational safety.

Herber

NEW ENGLAND RIVER BASINS COMMISSION

NERBC

55 COURT STREET • BOSTON, MASSACHUSETTS 02108
PHONE (617) 223-6244

January 21, 1977

MEMORANDUM

TO: State Coastal Zone Officials

FROM: Russell J. Wilder, Regional Technical Service

SUBJECT: Surplus Refining Capacity in Eastern Canada

Knowing of your interest in the refinery siting question in New England, I am transmitting to you information concerning surplus refining capacity in Eastern Canada recently published in Oil and Gas Journal (copies attached).

Surplus refining capacity in Eastern Canada could significantly affect the decision on the part of industry for locating refineries in New England. By the end of 1978 there could be some 200,000 b/d of surplus refined-products capacity in Ontario and nearly 300,000 b/d in the Atlantic Provinces. The bulk of this surplus is in the Heavy Fuel Oil and Heating Oil categories -- products that are in high demand here in the Northeast. It has been pointed out in the NERBC/RALI "Estimates for New England", the ADL/NERCOM study, and others that refinery siting in New England by industry will be contingent upon the long-term market demand for refined products.

Recently, Canada's National Energy Board granted long-term export licenses to ship heavy fuel oil to customers in Michigan. The approvals run until January 1, 1982 and are open to annual surplus determinations after 1978. (See Oil & Gas Journal, January 17, 1977.) Another way to relieve the excess capacity is being considered at this time. Crude from the U. S. would be shipped to Canada under bond and refined products would be shipped back to the U. S. also under bond.

It is interesting to note that in spite of Canadian opposition to supertanker traffic in the area, the Pittston Co. is going ahead with its plans to construct a 250,000 b/d plant at East port, Maine. Should work on all EIS matters be completed and permits granted as planned by this Fall, construction on the facility will begin in the Spring of 1978 with the plant coming on line in 1981. The planned production mix will be: 41% #5 oil, 34% #2 Heating oil, 22% Motor Gasoline, and 3% Liquified Petroleum gas. These products are intended for the New York/Northeast area.

Attachments (2)

Canada refining-capacity surplus swells

Slow economic growth, conservation, and new capacity seen intensifying competition in East Canada. Some 200,000 b/d of surplus capacity seen probable in Ontario by year-end 1978, 300,000 b/d in Atlantic provinces.

TED WETT
Petrochemical Editor

REFINERS in eastern Canada can look forward to stiff marketing competition in the next few years.

Slow economic growth and conservation programs will intensify the highly competitive environment that already exists in refined products. And extensive new capacity is on the way.

By the end of 1978, nearly 200,000 b/d of new refining capacity will be on stream, added to 125,000 b/d of capacity recently completed. There could be some 200,000 b/d of surplus refined-products capacity in Ontario and nearly 300,000 b/d in the Atlantic provinces.

Nationwide, Canadian refining capacity is about 2.2 million b/d. Estimated 1976 refined product demand is 1.75 million b/d (Figs. 1 and 2).

The four western provinces, taken as a market unit, are relatively well-balanced. Surplus capacity in Alberta is taken up by demand in British Columbia, Saskatchewan, and Manitoba. Gulf and Imperial are Alberta's largest refiners.

Imperial recently completed a major expansion of its capacity with a 140,000-b/d unit at Strathcona, Alta. However, this refinery replaces old units in Calgary (20,000 b/d), Regina (32,000 b/d), and Winnipeg (22,000 b/d).

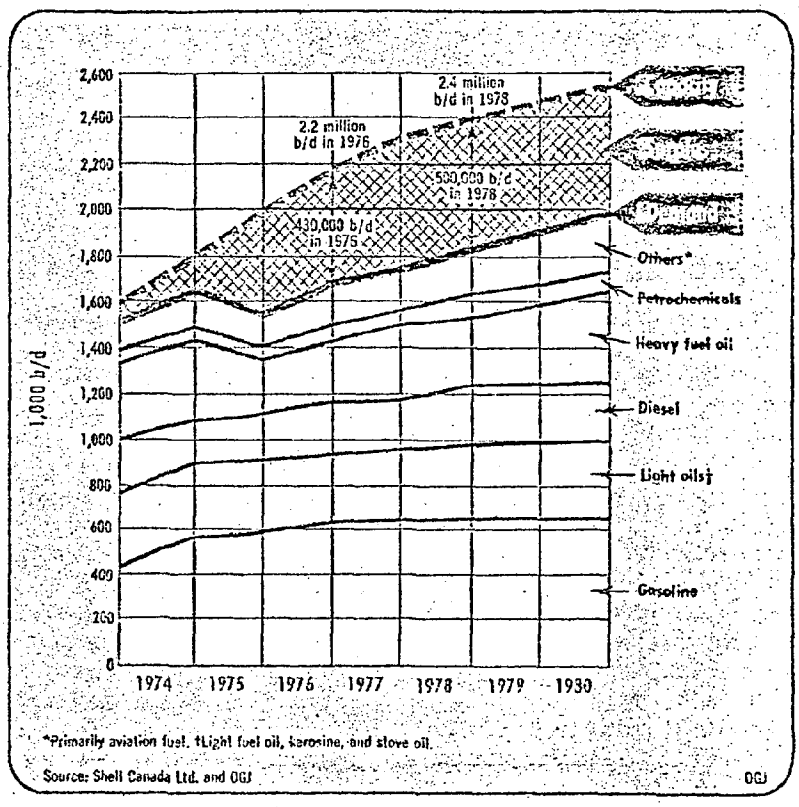
A pipeline-supply system will provide refined products for the prairie provinces.

Deferred construction. Much of the additional capacity at one time scheduled for this region has been deferred. Husky Oil Ltd. planned a 30,000-b/d unit at Lloydminster, Alta. Market conditions, construction-cost increases, and a possible revamp of the proposed product slate were cited for the action.

These plans could still change. Major processing units for the project would come from Mobil Oil Corp.'s shutdown East St. Louis, Ill., refinery. The plant was to be designed for expansion to 55,000 b/d at a later date.

Fig. 1

Canada's growing refining-capacity surplus



British Columbia's proposed government-owned 100,000-b/d refinery has had anything but smooth sailing. It was to be completed in 1980.

To date, British Columbia has failed to receive assurance of a long-term crude supply from Alberta. Proposed location, in Surrey, near Vancouver, was turned down by the Surrey council.

Consumers' Cooperative Refineries Ltd. is expanding its refinery at Regina, Sask., by 21,000 b/d. Completion of the project is scheduled for late 1977, bringing total capacity to 50,000 b/d.

Biggest surplus. But it's in the eastern region where the big surplus will exist when two major new projects are completed.

Texaco is building a 95,000-b/d refinery at Nanticoke, Ont. It will be on stream in mid-1978.

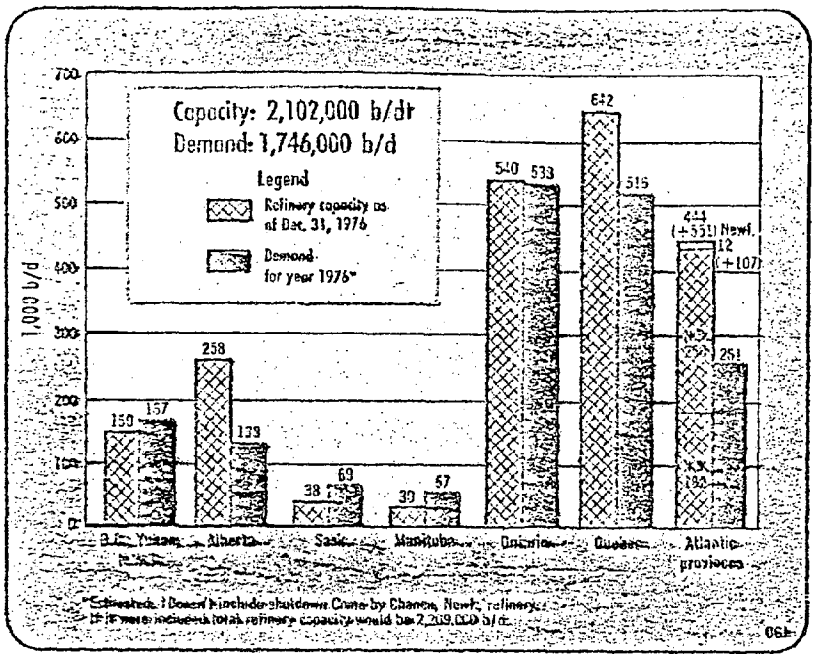
In Sarnia, Ont., Petrosar's giant petrochemical complex is nearing completion. By the end of 1977, this plant will be contributing an estimated 100,000 b/d to the refined-products market, mostly 600° F.-plus heavy fuel oil.

Texaco has adopted a wait-and-see attitude for its refining plans. The company now has a 48,000-b/d unit at Port Credit, Ont. It formerly was owned by Regent Refining Canada Ltd. and absorbed into the Texaco system last year.

Much could depend on existing export conditions at the time the refinery is ready, a Texaco Canada spokesman says. "We will adjust to the situation as it exists at that time." One possibility that has been suggested, though not by Texaco, is that the

Fig. 2

'76 refining capacity by provinces vs. product demand



Port Credit refinery will be shut down once the new Nanticoke plant is fully operational.

Much of the surplus product in Ontario could be exported to the U.S., particularly heavy fuel oil. Indications that this is beginning to take place are evident in recent licensing activity.

Heavy-fuel exports. As part of its participation in the Petrosar complex, Union Carbide Canada was committed to take 30,000 b/d of heavy oil for a coking complex in Sarnia. These plans have been shelved for the present.

Carbide has arranged to sell its share to Consumers' Power, Marysville, Mich.

Export licenses have been issued recently to Sun Oil and Imperial, both for heavy fuel oil. Sun has a 6-year license to export an average of about 20,000 b/d to Detroit Edison. Imperial can export 14,000 b/d into Michigan under two 5-year licenses.

These licenses will be subject to determinations of Canadian surplus starting in 1979.

Need for heavy fuel oil in the U.S. area across the lakes from Ontario has prompted speculation on another way to use potential Canadian surplus refining capacity. Consideration is being given to bringing U.S. crude into Canada under bond for processing. Refined products would be returned to the U.S., also under bond.

Feeling the pinch. Canadian refiners already are feeling the pinch of surplus capacity and government pricing and export policies.

Newfoundland Refining Co.'s 100,000-b/d Come by Chance refinery is shutdown. Actual cause of the shutdown was a suit brought by Ataka & Co., a major crude supplier through its American subsidiary, Atlantic Trading Corp. The suit charged default on a debt to Ataka. However, depressed prices on domestic markets and lack of export markets contributed significantly to the refinery's troubles.

Gulf Canada has been operating its 81,000-b/d Point Tupper, N.S., refinery at half capacity for about a year. Company president, J. L. Stoik, says Gulf is keeping the refinery running "in hope that some improvement in the price situation or change in import regulations or compensation will enable us to earn a reasonable return on capital employed."

Golden Eagle Canada is operating its 100,000-b/d St. Romauld, Que., refinery at about 75% of capacity. This refinery is designed to produce up to 50% heavy fuel oil and was intended for brisk export activity. No export license for heavy fuels had been available since the fourth quarter of 1973.

Slow growth predicted. Barring additional reductions in operating rates for existing refineries or more shutdowns, even the sharp surge in demand that would accompany strong economic recovery could not absorb expected capacity increases. And such a surge isn't expected.

Demand for refined products will rise approximately 5% in 1977 over 1976's 1.75 million b/d, Gulf Canada predicts. Slower-than-expected economic growth that was evident in the last half of 1976 is expected to continue into 1977. Together with more effective conservation programs, this will suppress demand for energy products.

Most of the increase in demand is expected to be for heavy fuels—as it was in 1976 when overall demand was up 5.5% over 1975.

This increase brought demand only fractionally above the 1974 level, however.

Carrying the projection further, Shell Canada Ltd. looks for a products-demand increase averaging 3.5%/year from 1974 to 1980. But it expects a sharp increase in demand for heavy fuel oil, particularly in the major eastern markets as new thermal generating plants come on stream.

Surplus capacity will act as a constraint on price levels and allow for effective competition with gas, Shell feels.

Even so, Canada should have spare refining capacity for some time to come.

Buy-sell rules allow for OPEC increases

THE Federal Energy Administration has issued an emergency ruling in the buy-sell rules for crude oil to take into account OPEC price increases effective this month.

From January through March 1977, each refiner-seller's sales of allocated crude will be priced at the weighted average cost of imported crude delivered to that refiner-seller in the month of delivery to the buyer, plus the handling fee.

Then, in April 1977, all sales will be made under the regular rules, so that the sale price for allocated crude will be based on the weighted average landed cost of imported crude in the month of delivery and in the two preceding months.

Canada approves long-term exports of heavy fuel oil

CANADA'S National Energy Board (NEB) has granted long-term export licenses to several firms for shipment of heavy fuel oil to customers in Michigan.

A 6-year license was granted to Sun Oil Ltd. to export 7,117,500 bbl/year to Detroit Edison Co., Detroit.

Imperial Oil Ltd. was granted two licenses to export 7.6 million bbl to Cliff Fuel Service Corp., Rapid River, and 18,250,000 bbl to Consumers' Power Co., Essexville. Both approvals are for 5 years from Jan. 1, 1977, and both are subject to annual surplus determinations after 1978 and to determination of just and reasonable export prices after 1979.

Herber

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January 17, 1977

MEMORANDUM

TO: State Coastal Zone Officials

FROM: Russell J. Wilder, Regional OCS Technical Service

SUBJECT: USGS Oil Spill Risk Analysis

The "Oil Spill Risk Analysis for OCS Lease Sales" that was in preparation at the time the draft environmental statement for OCS Sale #42 was released is now available from:

U. S. Dept. of the Interior
Geological Survey
410 National Center
Reston, Virginia 22092
(Ask for Open File Report 76-620)

"An Oilspill Risk Analysis for the North Atlantic Outer Continental Shelf Lease Area" by R. A. Smith and James R. Slack, U. S. Geological Survey, and R. K. Davis, Office of Policy Analysis.

The report summarizes results of an oilspill risk analysis conducted for use in the draft EIS. The analysis was conducted in 3 independent parts. The first part deals with the probability of spill occurrence, the second with likely spill trajectories for the times and places spills might occur, and the third part with the spatial and temporal location of specific biological and recreational resources thought to be vulnerable to oilspills. Results of the individual parts are combined to give estimates of overall oilspill risk associated with OCS oil and gas development in the North Atlantic.

The data used in the analysis were compiled by BLM specifically for use in preparing the draft environmental statement. The results represent a synthesis and analysis of existing information, not a presentation of new material.

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