"OIL SPILLS IN ALASKA"

A Study of the State of Alaska's Implementation of Oil Spill Laws and Programs

A Report for the Citizens' Oversight Council
on Oil and Other Hazardous Substances

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Table of Contents

INTRODUCTION

Oil and Alaska are inseparably intertwined and will be for the predictable future. Oil spills are an inseparable part of the oil industry and hence of our lives as Alaskans. It is a simple fact that planning for and responding to oil spills will continue to be a feature of Alaskan life in the coming decades. The only question is whether oil spills determine our responses or whether our own preparedness gives us a fair measure of control over spills.

This is a broad study of the State of Alaska's implementation of its laws and programs related to oil spills. Because of the short time frame for the study it cannot be comprehensive. Each of the topics addressed in the study could be expanded into a study of its own. In each topic we have attempted to interview key individuals and analyze key documents, but unavoidably there are aspects of each topic that deserve to be investigated further. This study should at least be a starting point for further work.

It might have been useful to the reader to set out the text of every recent oil spill statute and next to it place the regulations or the budget features that resulted from it. But the fact is that such a task cannot be done in a way that is both accurate and conveys the information necessary to evaluate whether the laws have been implemented successfully. The legislature has created statutes either mandating or permitting new or altered programs, but the executive branch's basic authority over environmental protection has been in place for years. The Department of Environmental Conservation has modified existing programs and begun a few new efforts, but its oil spill regulatory structure has been in place for years. Changes at Environmental Conservation are in part a result of the statutory changes but in part a response to other events -- such as actual spills and the learning process that accompanied them. Moreover, the program development process at ADEC is still continuing, in terms of both content and personnel. The new regulations promulgated by ADEC a month ago have still not been approved by the Lt. Governor and are not yet effective. While ADEC can legitimately point to some action taken to fulfill each new legislative mandate, the question of the adequacy of its actions, and the effectiveness of the State's program as a whole, cannot be answered by a simple table of statutes, regulations, and budgets.

In short, we believe that the only useful way to present the state of implementation of Alaska's oil spill laws is to describe the broad areas of concern in oil spill management, including the areas in which the legislature mandated action, and then set out the situation before the Exxon Valdez spill of 1989, what the legislature and the executive branch did in response, and the adequacy of the current programs and regulations.

Alaska is doing more than it ever has in the field of oil spills, as are the oil industry and the public. There are still gaps and problems with the State's program, as this report details. As the program grows and evolves, the real task for the State of Alaska is to sustain its interest and support of oil spill control work. Oil spills, like other areas of public concern, have historically ridden the ups and downs of political support. This lack of consistency has led Alaskans to be less prepared for major spills than they should be at times. The State now the beginnings of a comprehensive spill program that can become permanent, but only if support for it continues.

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I - RESPONSE PLANNING

The essence of successful defense against oil spills is advance preparation. This lesson was first learned years ago and has been relearned with each major spill. It is, unfortunately, a lesson which tends to be forgotten in the press of other needs. Alaska's current program of advance planning and preparation for spills is still in the process of being completed. It has the promise of becoming a strong effective force against spill damage, but the goal will be realized only if there is a continuing commitment to sustaining the program.

Background

Oil spill contingency plans are documents which relate precisely how an entity -- either the spiller, another private organization, or a governmental agency -- will respond in the contingency of an oil spill. Contingency plans in Alaska grew out of the requirement for spill prevention, containment, and cleanup (SPCC) plans in EPA regulations implementing the federal Clean Water Act[1]. The first true contingency plan in Alaska was prepared by Alyeska Pipeline Service Company during construction of the trans-Alaska Oil Pipeline in the mid-1970's. Contingency plans became required by statute for a variety of facilities and entities in 1980[2], and the state produced its own plan for use by state agencies responding to spills. But by the late 1980's, fewer resources were being devoted to industry contingency plan reviews by the Alaska Department of Environmental Conservation, and the state's own response plan became outdated. Immediately after the grounding of the Exxon Valdez the State required a stopgap buttressing of Alyeska's response capabilities by emergency order, since Alyeska had permitted its available personnel and equipment to fall well below that required by its own contingency plan. Finally, in HB 567 of 1990 (ch. 191 SLA 1990), the Alaska Legislature set out new and tougher contingency plan requirements, effective June 1, 1991, and required ADEC to promulgate new regulations to implement the requirements. Those regulations were signed by the commissioner on October 26, 1991 and are awaiting approval by the Lt. Governor.

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[1] 50 CFR Part 112, implementing §311(j) of the 1972 Amendments to the Clean Water Act.

[2] §2. Ch. 116, SLA 1980.

Prior to 1989 contingency plan reviews before the amendments to the statute were generally done by ADEC regional office staff, usually by field officers with response duties in connection with local spills. The field officers received some formal training in spill response and gained experience with local spills. In their capacity as first responders to local spills, the regional field officers also maintained a small supply of equipment such as booms, boats, pumps, and skimmers. No state personnel were trained or equipped to deal with catastrophic spills, although on several occasions ADEC field personnel were assigned to assist with major spills outside Alaska, so the department had some experience in large spill response.

Through the 1980's, funding for oil spill matters was slowly eroded as other priorities competed for portions of ADEC's budget. By the time of the Exxon Valdez spill the agency had significantly decreased the portion of its efforts spent on reviewing industry contingency plans and maintaining the state's own spill preparedness. That spill, however, markedly changed priorities.

The new laws

The laws on spill preparedness and contingency planning now in effect are far more detailed than what existed previously. The bulk of applicable law is at AS 46.04.030.

Contingency plans are mandatory, with a few exceptions, for oil terminal facilities, pipelines, exploration or production facilities, tank vessels and oil barges.[3] The statute authorizes ADEC to hold contingency plan holders to high standards in several regards. It permits the department to attach conditions and modifications to contingency plan approvals to ensure that the applicant "has the resources to protect environmentally sensitive areas and to contain, clean up, and mitigate potential oil discharges...The contingency plan must provide for the use by the applicant of the best technology that was available at the time the contingency plan was submitted or renewed." The department may require drills,

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[3] Contingency plan requirements do not apply to oil terminal facilities with an effective storage capacity of less than 5000 barrels of crude oil or 10,000 barrels of non-crude oil. AS 46.04.050. Note that there is no exception for federal or state facilities. However, oil transportation modes other than pipelines and vessels, such as railroads and tanker trucks, do not come within the requirement.

inventories, and periodic training. (§§(e).) The heart of the requirements is at §§(k), which sets out specific minimum planning standards for oil spill response. For example, a plan holder for an oil terminal facility must maintain "sufficient oil discharge containment, storage, transfer, and cleanup equipment, personnel, and resources" to meet the "response planning standard" of containing or controlling and cleaning up the capacity of the largest tank at the facility within 72 hours. A tank vessel or barge with a cargo volume over 500,000 barrels must plan to clean up a minimum of 300,000 barrels within 72 hours, plus other resources sufficient to contain, control, or clean up a realistic maximum discharge within the shortest possible time. The department was charged with defining, by regulation, the meaning of "realistic maximum discharge within the shortest possible time."

The statute also permits ADEC to consider prevention measures "such as double hulls or double bottoms, ...secondary containment areas, hydrostatic testing, enhanced vessel traffic systems, or enhanced crew or staffing levels" and to make exceptions to the planning requirements to reflect the reduced risk of oil spills. (§§(m)).

The new regulations promulgated on October 26, 1991, will, when they go into effect, define many of the terms used in the statute. For example, at 18 AAC 75.432 - .442, ADEC sets out "response planning standards" for each type of applicant, with both a detailed planning target and specific types of preventive measure for which reductions in planning requirements will be granted. A great deal of study and debate went into the decisions on how to define "realistic maximum oil discharge" for each type of applicant, and on how to apply prevention credits. It is beyond the scope of this report to duplicate the work and suggest alternatives. We do note, however, that ADEC is still developing internal procedures for implementing the regulations. Those procedures may themselves affect how stringently the planning standards are applied. The regulatory standards as written are far from automatic in their application, so a great deal of latitude exists for future ADEC reviewers and policy makers to make the new requirements either more or less rigorous.

The new statutes also require the state to update its own response plan, the Alaska State Master Plan, and accompanying regional plans. (AS 46.04.200 - .210. The Master Plan has been published and regional plans are being worked on. However, as noted below, existence of a statewide master plan

on paper does not mean the state could actually implement a coordinated spill response today.

Developments at the Department of Environmental Conservation

Beginning with the Exxon Valdez spill the number of personnel at ADEC performing oil spill related duties increased quickly and greatly, putting an unprecedented strain on department management. Statutory changes in the next three years added additional duties and additional strains. Early in 1991, ADEC reorganized its oil spill personnel into a separate division. The oil spill staff is working at the maximum of its productive capabilities. Three burdens -- implementation of new programs mandated by the legislature, the need to train additional staff, and transitioning to a new divisional organization --- have meant that ADEC oil spill duties are greater and more complex than ever before and are being handled by a staff that is less experienced in the issues than in the past.

ADEC staff recognize the transitional period the agency is going through. In a nutshell, the opinion voiced by staff we interviewed is that it faces enormous tasks; is performing them as well as can be expected given the restrictions on staff numbers and the inexperience of some personnel; that if "left alone," i.e., if allowed to continue to develop the mandated programs without having resources drained away or new program duties put on them, the agency will emerge in a year or so with a much improved and effective spill program; but that right now, in the midst of program development and operating at maximum capacity, the agency is not yet capable of operating the way it would like.

We believe this assessment is accurate. For the agency to pass through this transitional period and emerge with a substantially better oil spill program than exists now, however, requires three things:

1) Continued support from state policy makers. The pattern in the past, both in Alaska and in the rest of the United States, has been cyclical interest in oil spills. A series of spills in the late 1970's ignited national interest and led to the funding of state and federal programs; but through the 1980s, interest in oil spill matters and governmental commitment to maintaining the programs declined. There was a concomitant decline in the intensity of oversight over the oil industry. Then, with a series of catastrophic spills in the late 1980s, public interest in spills rebounded and governmental programs were resuscitated. The fact that there are

new laws on the books will not prevent a loss of effectiveness in Alaska's oil spill programs. Only continued interest and support from the executive and legislative branches and the public will maintain the programs' effectiveness until the next major spill reignites public indignation.

2) Continued budgetary support. A corollary of programmatic support from state decision-makers is continuing budgetary support. The presently authorized number of oil spill personnel at ADEC (not all positions are filled) appears adequate -- but only barely -- to carry out the program development with which the agency is now tasked. Deletion of positions or funds for training or other staff development could cripple the progress now being made. Adding new programmatic responsibilities without additional funding would have the same effect.

3) Effective training programs. ADEC is hampered in development of its spill response programs as much by the inexperience of available personnel as by lack of personnel positions. With the great increase in spill prevention and response activity since the Exxon Valdez, competition for experienced spill response individuals has become a factor in successful completion of the ADEC mission. ADEC has to rely on relatively inexperienced and untrained personnel, as older hands have retired or are employed by industry. In the short-term, the only effective means of overcoming this problem is through intensive training programs. Unfortunately ADEC has relatively few staff persons capable of providing quality in-house training, and the need for those persons to spend time training newer staff detracts from accomplishment of the experienced staff's jobs. It is essential that ADEC fund and implement a regular program of training in relevant areas, including general spill response, spill prevention, specialized facility familiarization, legal and evidentiary aspects of spills, and -- particularly for key agency executives -- use of the State Master Plan in spill response, including the Incident Command System adopted by that plan. This training must be recurring. Since state agencies are now at a disadvantage in hiring and retaining employees, due to the higher wage scales in major industry companies, the state will have a continuing problem with turnover and so will have a constant need to train new employees.

It is also clear that one essential tool for training spill responders is the spill drill. Whether done as a field exercise or a simulated "table top" exercise, spill drills are the only way to give staff hands-on experience in response

accompanied by the crisis atmosphere of a spill. Drills also flush out misunderstandings and conflicts in spill response. An adjunct to spill drills simulating major spills is the use of actual small spills -- so-called "spills of opportunity" -- as training for responders. Despite the difference in scale, actual hands on experience in dealing with real petroleum, real co-responders, and the real public are invaluable in seasoning spill response capability.

One final problem, arising from the language of one of the new statutes, may hamper ADEC's ability to respond to spills. AS 46.08.100 established the oil and hazardous substance spill response office (SRO) within ADEC. But AS 46.08.130 restricts use of the SRO to catastrophic spills that constitute emergencies, declared emergencies under AS 46.03.865, or AS 26.23, or where the commissioner believes that the discharge poses an "imminent and substantial threat" to public health or welfare or the environment. The result is that ADEC will have two separate response groups, the SRO for catastrophic and emergency spills, and local ADEC personnel for other spills. SRO response personnel will not have the on-hands experience that comes from dealing with numerous small spills, and local ADEC personnel will not have the specialized training and equipment available to the SRO. It would be beneficial to both response groups to have common training and experience, as well as a continuing working relationship. ADEC would benefit from finding ways to break down the barriers between the two response groups, within the present statutory language if possible, and if not, through a statutory amendment.

Developments at other State Agencies

The comprehensive spill planning that has occurred within the last two years has gone far to resolve conflicts and maximize the benefits between all state agencies with a role in spill response. Nonetheless, real problems in interagency cooperation still exist, due to a combination of confusion over assigned roles, incompatibility of perceived agency missions, and neglect of spill duties by some agencies.

Conflict between ADEC and DES. Since the Exxon Valdez spill there has been jockeying between ADEC and the Alaska Division of Emergency Services (DES) of the Department of Military and Veterans Affairs. DES is the state's primary disaster relief agency. The legislature gave DES a formal role in spill response through management of response corps and response depots (AS

46.08.110 - .120.), while keeping within ADEC the primary duty of responding to spills. DES's capabilities in the area of disaster management, including its access to National Guard support, are necessary and invaluable in the event of major spills. Hence cooperation between the two agencies is vital. After months of wrangling the agencies are preparing a formal agreement on their roles, and ADEC has already allocated a major portion of funds in the State's Oil and Hazardous Substance Release Response Fund (the so-called "470 Fund" authorized at AS 46.08.005 - .080) to DES to fund its spill-related activities.[4] Nonetheless most observers expect continued competition between the two agencies for dominant roles in spill disasters, as well as competing demands for funding from the Oil and Hazardous Substance Release Response Fund. This lack of clear delineation between the roles of the two agencies may bring two results: First, a tension between the agencies which prevents smooth cooperation; and second, continued political jockeying for both powers and funds from the legislature. If this competition continues despite the interagency agreement, either the Governor's Office or the Legislature may need to step in to dictate the respective roles of the two.

Confusion in other agencies. ADEC and DES are far from the only agencies with a role in spill response. The State Master Plan of May 1991, which is intended as a guide for all state agencies involved in spill response, addresses in general terms the roles of the Departments of Natural Resources, Fish and Game, Labor, Health and Social Services, Law, Community and Regional Affairs, and others. One of the purposes of the Master Plan is to avoid the ad hoc and confused coordination among agencies that occurred during the Exxon Valdez spill. However, the Master Plan is only a general statement of roles and not a cookbook. It is also clear that except for a few individuals, most agency personnel in departments other than ADEC have little idea of their actual role in a major spill. This is particularly so in departments which may have a large but indirect role in spill response, such as Natural Resources and Fish and Game. Other

[4] Besides using the allocation for purchase of response depot equipment, DES proposes to use a portion of the Fund monies for a satellite communications system. There is some question whether use of the Fund for a system designed for general disaster situations, and with only a partial justification in oil spill response, is a valid use of Fund monies. Approval of this expenditure is being held pending review by the Legislative Budget and Audit Committee.

departments are even farther behind in detailed response planning.[5]

The only effective way to overcome confusion and lack of knowledge about spill response is through training. We recommend both "classroom" training in the elements of the State's Master Plan and more realistic full scale spill drills, in which all state agencies are required to fulfill whatever roles they would want to or have to play in an actual spill situation. Such full-scale drills should be followed by required post-mortems in which agency performance is critiqued and plans are revised. Needless to say these drills should be repeated often enough that employee turnover does not leave key personnel untrained.

Finally, every agency with an important role in responding to a large spill should be required to have a written spill scenario, including notification lists and preassigned roles. The State Master Plan has little value for any agency which does not do such planning.

Neglected risks

Contingency planning in Alaska has historically been lopsided, and will probably continue to be so. By lopsided we mean that the major facilities are subjected to detailed contingency plan requirements and have their plans reviewed intensively; minor facilities receive far less attention. This lopsidedness is not illogical, since major facilities are, because of the quantity of oil transported, major risk areas. The greatest attention to contingency planning by far goes to the elements of the TAPS system, both the pipeline and its appurtenances and the tanker vessels. On the next level down are major oilfield facilities and non-TAPS tanker traffic. On the third level down is everything else. This category receives only cursory attention to the adequacy of contingency plans, receives a lesser level of enforcement, and is effectively held to a lower level of requirements.

Nonetheless non-TAPS and non-major oilfield areas do present

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[5] An example is the Department of Law, which during a large spill must fulfill two simultaneous roles: providing ongoing advice to the field responders on a variety of subjects involving permitting, access, jurisdictional disputes, safety regulations, and contracts; and collecting evidence and doing other initial legal steps in anticipation of litigation. However, the Department of Law lacks a spill response plan and has no preassigned roles for its personnel. In short, it is probably less prepared for its role in a major spill than it was before the Exxon Valdez, when it did have at least a basic response plan.

significant risks in the aggregate. We will explore this area in more detail in Part VII of this report, but to summarize, it appears that inadequate state attention to contingency planning is applied to small facilities and vessels (terminal facilities with less than 5000 barrels of storage capacity of crude or 10,000 barrels of refined product are exempt from contingency planning), including remote facilities or village facilities in poor condition[6]; federal facilities[7]; vessels carrying refined product outside of Southcentral Alaska; and state-owned facilities, including the Alaska Railroad.[8] We recommend that ADEC provide more attention to facilities in these categories over which it has jurisdiction, including emphasis on prevention and on eliminating structural or operational risks; and that it extend prevention assistance and contingency planning assistance over those facilities which are not required to engage in contingency planning. We also recommend legislation to bring the Alaska Railroad within the same requirements as other major transporters of petroleum products.

There appear to be significant geographical gaps in overall spill response capabilities. Southeast Alaska, which has the bulk of the state's petroleum barge traffic, has relatively little response equipment or trained personnel. There is one cooperative spill organization in southeast Alaska,

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[6] Problems with village fuel storage facilities are especially critical since they occur regularly and can easily affect an entire community's drinking water supply and otherwise present a health hazard to the whole population.

[7] The State applies its contingency plan requirements to military facilities, although there is still an open question on the extent to which Alaska can require full compliance from federal facilities as a prerequisite to operating within the state. Military facilities have a much poorer record of compliance with contingency planning requirements than does private industry. For example, of the seven military facilities within ADEC's Northern Region which should have contingency plans, only one has an approved plan. (Three of the facilities have submitted plans but have not yet received ADEC approval.) Military installations have some of the worst histories of chronic or neglected spills of any facilities in Alaska. In view of this fact, it appears that contingency planning and prevention planning on military bases are not being adequately carried out.

[8] For example, the numerous small fuel storage depots of the Alaska Department of Transportation and Public Facilities, as well as the large fueling systems at State airports. The State-owned Alaska Railroad is exempt from contingency planning requirements, despite the large quantities of petroleum products it carries and its history of oil and hazardous substance releases. (The railroad recently produced a voluntary contingency plan, but the plan will not receive the same level of review and enforcement from ADEC as plans required by law.)

SEAPRO (Southeast Alaska Petroleum Response Organization), in Ketchikan, but according to its manager it is not itself a response organization. It was created as an "information and sharing network" because of the lack of response action contractors in southeast Alaska. Southwest Alaska has the same lack of regional spill equipment and trained personnel.

Prince William Sound and Cook Inlet have the best response planning and capabilities in the state, but there is a gap in response coverage in the shipping lanes between the two, as well as in the open waters between Prince William Sound and the Lower 48. The State of Alaska can do little directly to fill planning gaps outside its territorial waters, but it should be pressing federal authorities and the industry cooperative MSRC[9] to address it. The State should also explore using the States/British Columbia Oil Spill Task Force, an ongoing organization of the West Coast states, including Alaska, and British Columbia, to engage the industry and the Coast Guard on the subject of contingency planning along the outer coastline.

Finally, there is an emerging problem regarding the willingness of industry to make its response action capabilities available for spills outside a company's own immediate area. During the Exxon Valdez spill, offers of assistance came in from all over the world, and equipment and personnel were brought in from throughout Alaska. But since then industry has become increasingly reluctant to commit itself to mutual assistance in the event of a catastrophic spill, because of the perception that lending equipment and personnel would subject them to an unjustifiable risk of liability. For example, an official at Alyeska stated that its equipment is simply not available outside of Prince William Sound. While we are not convinced that major industry companies would refuse to assist each other in a catastrophic spill -- and we are not convinced that the industry's liability concerns are realistic -- this attitude by some of the major holders of response equipment and personnel makes it unwise to simply assume that cooperation will occur and that distant equipment and personnel will be available.

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[9] MSRC is the Marine Spill Response Corporation, a joint effort of major companies in the petroleum industry created following several major spills in 1989 to improve spill response capabilities. MSRC has established several depots in the Lower 48 states but has consistently declined to institute similar capabilities in Alaska, because it believes that Alyeska has the capacity to deal with major spills here.

Conclusions.

Despite the great deal of work that has gone into the statutes and regulations on contingency planning, the question remains whether there is any substantially greater ability to deal with oil spills now than before the current statutes and regulations came into being. We believe there are some fairly clear answers:

1) The new oil spill laws of the last few years are still in the process of being implemented. The improvement in response capabilities existing today, over what existed at the time of the Exxon Valdez spill, is not solely attributable to the revised laws. Instead it results from a combination of ADEC's emergency orders and greater willingness to press the industry after that spill, and the industry's own recognition that its interests dictated improving spill response capabilities. The new regulations are not even in effect yet and state agencies have not yet developed the ability to implement them. It will require at least another year of continued funding before ADEC's contingency planning oversight function is fully functional and the statutory mandate can be fully implemented.

2) After the program becomes fully functional, the new laws will not, by themselves, sustain the post-Exxon Valdez level of improvement. Whether the improvement is sustained or not is largely dependent on state policy makers and whether they continue to provide resources to state oversight of the industry, and whether they interpret the broad language of the new regulations in a way that maintains steady pressure on the industry to maximize its spill response capabilities. Unless the policy makers do so, it is entirely possible that spill response capabilities will decline again as they did through the 1980's.

Recommendations

State policy makers should give priority to completion of the current spill prevention and response planning work being done at ADEC.

There should be a continuing training program for ADEC personnel in all aspects of spill prevention and response, preferably conducted jointly with industry and other state and federal agencies.

There should be a continuing training program for all state

personnel, including executives, in response roles in catastrophic spills. All state agencies with a potential role should be required to participate, and the training should include realistic spill simulations in cooperation with industry and federal agencies.

Legislation should be considered to bring significant types of spill risks not now covered by contingency and prevention planning requirements under those requirements. There should simultaneously be a realignment of ADEC priorities so that previously neglected risks, such as from federal facilities and village facilities, receive greater level of attention.

The language of AS 46.08.130 should be modified to permit the ADEC Spill Response Office to respond to less than catastrophic or emergency spills.

II - OIL SPILL PREVENTION

Background

The old proverb "an ounce of prevention is worth a pound of cure" was never more true than when it comes to oil spill pollution. Perhaps a more accurate statement would be an ounce of prevention is worth 10 million gallons of cure! Measures taken to prevent oil spills are a tiny fraction of the costs to combat, cleanup, dispose, and restore an area affected by an oil spill. And this does not even take into account the added costs of litigation and liability settlements.

The threat of oil spills is not likely to go away. As long as our country is dependent on oil as an energy source, we will have to deal with the threat of oil spills. As our consumption of oil increases, so does the risk of oil pollution from spills increase. According to recent studies, prior to the Exxon Valdez oil spill, a majority of facilities, nationwide, were been out of compliance with basic, minimal oil prevention measures and existing requirements were not being enforced due to inadequate budgets and manpower. The U. S. Congressional Office of Technology Assessment reports in an analysis of oil spill response technologies that of 66 major oil spills, ranging in volume from 2 million gallons to 428 million gallons, recovery ranged from zero to a maximum of 10-15%.[10]

Obviously, the most logical approach to the problem is prevention of oil spill pollution. In order to minimize damage to waters, lands, and coastal areas of our state caused by oil spills, it is imperative that government, industry and environmental groups support the systematic development and evaluation of techniques and materials to decrease the frequency and impact of oil spills. This can be accomplished through a program of public awareness, training programs, oil spill drills, properly maintained equipment, adequate leak detection and alarm

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[10] Coping with an Oiled Sea, an Analysis of Oil Spill Response Technology, Office of Technology Assessment, U.S. Congress, Washington, D.C., March 1990, page 1. As typical examples, in the Argo Merchant grounding in 1976, off the coast of Massachusetts, 7.7 million gallons of #6 fuel oil (bunker C) spilled with virtually no recovery. In the case of the Exxon Valdez, where the 10.8 million gallons spilled was only 20% of the vessel's actual capacity, only an estimated 3 to 4 % was actually recovered. Spill: Wreck of the Exxon Valdez, Report of the Alaska Oil Spill Commission, State of Alaska, January 1990, p.11.

systems and by enforcing strict compliance with state regulations. Each of these factors makes an essential contribution to the goal of pollution prevention.

Ten years ago, through several studies, it was determined that 75% of all spills are directly or indirectly attributable to human error, with equipment failure or malfunction contributing to a large portion of the remaining 25%.[11] More recent sources indicate that today's spills result about 50%-50% from mechanical failure/human error. As a consequence it is imperative that intensive training programs aimed at reducing the element of human error be instituted . In addition, the development of rapid and efficient means of recovery and cleanup should be made major objectives of the petroleum and transportation industries. These efforts, coordinated with the cooperation and support of the state and federal agencies as well as interested environmental groups should get us on the right track.

Pre-Exxon Valdez prevention laws

Prior to the 1989 Exxon Valdez oil spill, the best prevention tool that the State had was the contingency planning requirements of AS 46.04.030., originally passed in 1980. Although the law did not specifically require prevention measures, the Department of Environmental Conservation developed, among other contingency planning tools, recommendations for regulated facilities on proper oil handling practices and oil spill prevention measures. Another prevention tool employed by ADEC was the Environmental Protection Agency's requirement for spill prevention, control and countermeasures (SPCC) plans for facilities that the state regulations did not cover.

Post-Exxon Valdez prevention laws

In the aftermath of the Exxon Valdez oil spill, the Alaska Legislature passed significant improvements to the contingency plan requirements, including explicit provisions for prevention measures.[12] ADEC has promulgated new regulations implementing both the prevention requirements and that portion of the

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[11] M.F. Fingas, W.S. Duval, G.B. Stevenson, The Basics of Oil Spill Cleanup, Environment Canada, 1979, p. 5.

[12] Ch. 191 SLA 1990; AS 46.04.030(m).

contingency plan requirements which gives credits for specific prevention measures.[13] The new regulations require that contingency plans include a detailed description of all oil discharge prevention measures and policies employed at the facility, vessel or operation. The State also recently finished its statewide Master Plan for oil and hazardous substances discharge prevention and contingency plans. This master plan addresses prevention strategies and measures, hazardous substance pollution prevention overview, oil pollution prevention work plan, and a database for prevention measures. As with any new plan, its effectiveness remains to be seen, and largely depends on how the plan is implemented.

ADEC does not have an entirely free hand in crafting prevention measures. Some federal and state regulations may conflict with ADEC authority. For example, the construction and operation of oil tankers must comply with U.S. Coast Guard regulations, and oil well blowout preventers are required by the Alaska Oil and Gas Conservation Commission (AOGCC), and the U.S. Department of the Interior's Minerals Management Service. Many aspects of spill prevention from pipelines are within the jurisdiction of the Office of Pipeline Safety of the U.S. Department of Transportation. Other agencies with some role in spill prevention include the Environmental Protection Agency, the Alaska Pipeline Office of the U.S. Bureau of Land Management, and the State Pipeline Coordinators Office (SPCO). For some of these agencies, like the AOGCC, spill prevention is not the only mission. (The AOGCC, for example, is the subsurface manager for the state-owned oilfields and generally oversees conservation of oil and gas.)

Failure to coordinate and even mutual antagonism have been typical of some of these overlapping agency jurisdictions in the past. Recently, there has been some improvement. For example, although the AOGCC is an independent agency, it was recently moved (for budget purposes) from the Department of Commerce to the Department of Natural Resources. This has improved coordination with DNR. Coordination between the AOGCC and ADEC and other agencies has been slow, but is now improving. Meantime, the State Pipeline Coordinator's Office, which is itself a cooperative effort of DNR, ADEC, and Fish and Game, has formed a joint office with the BLM Alaska Pipeline Office

[13] 18 AAC 75.005-75.090; 18 AAC 75.400-75.495. The new regulations are awaiting approval by the Lt. Governor.

and with the federal Office of Pipeline Safety. This group is working toward joint monitoring and inspection of all aspects of the Trans-Alaska oil pipeline, including pumpstations and the Valdez terminal, with an emphasis on maintenance and prevention.

In these instances of overlapping jurisdiction, ADEC will have to determine if it is content with other agencies' level of regulation and enforcement, duplicate those regulations so that it can enforce them itself, or (where legally possible) require a higher standard. Presently, ADEC is compiling standard baseline prevention requirements for vessels, exploration and production wells, pipelines, fuel storage tanks, and other facilities. Because its own enforcement efforts may overlap or even conflict with those of other governmental agencies, it is imperative that ADEC coordinate its prevention activities with other agencies in the same field. ADEC does not have the luxury of creating its own expertise and enforcement capacity when parts of a prevention program are already within the jurisdiction and expertise of another agency. In those cases it could better put its efforts toward promoting better enforcement by whatever agency is already in the lead.

AS 46.04.030(m) grants the Department of Environmental Conservation the discretion to make exceptions to the spill response standards in the statute to reflect the reduced risk of an oil discharge where certain kinds of prevention measures (like double hulls on tank vessels) are implemented.
For instance, the new regulations call for giving credit for prevention measures against contingency plan equipment and personnel requirements. While these new regulations are headed in the right direction, there may be some problems. For example, applying the system for giving credits in contingency planning is, under the new regulations, a vague process dependent on policy choices within ADEC. Those in charge have the power to implement a workable policy or to make it unfair in one direction or the other.

One critical weakness of the new regulations is a result of the non-specific way they were drafted. Many key sections are probably legally unenforceable. Many of the requirements are couched in language containing qualifiers such as "where appropriate..." For example, oil tankers must have electronic leak detection systems "where appropriate" (18 AAC 75.027 (d)). The owner of a facility or vessel "shall take all appropriate measures to prevent spills..." (18 AAC 75.025(a)). Provisions such as these, where there is no

definition of "appropriate", leave compliance to the discretion of the regulated entity; it is highly unlikely that a court would enforce such requirements without some better delineation of when a measure is appropriate and when it is not. In short, the regulations are written in such a way as to make many of the measures recommendations rather than mandatory practices.

Another weakness in the prevention regulations is that the standards for allowing entities extra time to comply with prevention requirements are extremely imprecise. In effect, ADEC's top management can postpone compliance indefinitely, if they want to. While some flexibility is necessary, this moves away from a mandatory prevention program to a "prevention at the discretion of ADEC" program. Flexibility must be balanced with consistency in carrying out the legislative mandate if the program is to be successful.

Underground storage tanks and similar small facilities[14]

There are millions of underground storage tank systems (USTs) containing petroleum products in the United States. Several hundred thousand of these USTs and their piping systems are known to be leaking. Estimates in Alaska range up to half of the approximately 4000 buried tanks in the state. Leaking underground storage tanks are a real threat to human safety because of the potential of fire, explosion, and the contamination to soil and groundwater by the cumulative leaks. In 1984, the U.S. Congress responded to the problem by adding Subtitle I to the Resource Conservation and Recovery Act (RCRA). In 1990 the State also passed legislation on leaking USTs, committing the State to a program of corrective action and cleanups.[15] Through financial incentives and grants, the State assists UST owners in assessing the condition of their tanks, and if needed, in cleanup and closure. Although innovative, it is too soon to tell whether this kind of partnership with small businesses will result in a reduction of pollution in the long run.

A related area that has been largely neglected is that of above ground fuel storage tanks that because of their smaller capacity (less than 10,000 barrels)

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[14] Prevention measures in the context of large operating systems, such as the Trans-Alaska oil pipeline, are covered in Part VI, on ensuring integrity of mechanical operating systems.

[15] Ch. 96 SLA 1990; AS 46.03.360-.385.

are not covered by the big state or federal programs, such as the contingency plan regulations. There are hundreds, if not thousands, of these tanks located all over the remotest areas of the state. While these facilities are theoretically covered by EPA's SPCC plans requirements, they have not been a priority with any agency. The quantities in each tank may not be large, but the potential for adverse affects on public health are particularly severe in rural villages where a spill from a fuel storage tank may contaminate the entire community's water supply or cause fire or toxic air emission problems. It is also an area in which practical advice to village residents on basic facility construction and on spill containment systems may make major improvements.

Conclusions

It makes more sense to invest millions in prevention now than to spend billions on cleanup later. The new regulations as currently written, while clearly better than no regulations at all, are lacking in enforceability and could be subject to misuse by future policymakers who disagree with the legislative mandate. It is long past time to require well defined, enforceable oil spill prevention measures. Prevention regulations should be carefully thought out, coordinated with other agencies, comprehensive, and applicable to all parts of the state. It is just as important that ADEC and other state and federal agencies charged with this task have well trained and experienced personnel for prevention work as that they have such personnel for spill response work.

Recommendations

Prevention efforts should be coordinated among all agencies so that the maximum in expertise and jurisdiction is applied to every situation, and jurisdictional conflicts are minimized.

Standard prevention checklists should be created for each category of facility, vessel or operation so that enforcement is uncomplicated and so that all parties know what prevention measures are required or recommended, and what the consequences of following the recommendations are.

Joint interagency training programs should be instituted, specifically aimed at prevention, open to government, industry, and the public. Public awareness of prevention issues should be improved through an

educational program stressing preventive practices and proper maintenance. This program should be available in all rural areas of Alaska as well as in the developed areas.

III - RESPONSE EQUIPMENT DEPOTS AND VOLUNTEER RESPONSE CORPS

Background

Even prior to the statutory changes passed in 1989 and after, ADEC had statutory authority to provide, through contracts if possible or directly if necessary, personnel, equipment and other services or supplies that might be required to carry out the pollution control statutes.

After the original legislation was passed in 1980 requiring oil discharge contingency plans, funds were appropriated to ADEC for the purpose of setting up oil spill response equipment depots. These depots were set up in each of the three regional offices (Anchorage, Fairbanks and Juneau) and several district offices. Stored at the depots were sorbents, booms, pumps, boats and motors, and other equipment and supplies that could be used in minor spills and in a first response until the responsible party or a contractor was on scene.

This equipment was used to combat minor spills, was available for loan to spillers who then returned or replaced it, and was on several occasions used for spill drill exercises and training sessions. ADEC coordinated with the U.S.Coast Guard and other appropriate entities to ensure that the different agencies' equipment was compatible, sometimes shared storage space and had agreements for using each other's equipment when needed, which was then replaced by the user. Funds from the Oil and Hazardous Substance Release Response Fund (AS 46.08.005 et seq.) were available on a limited basis to replenish the equipment and supplies.

While these depots were useful for small spill response, they were not designed for nor capable of handling a catastrophic spill. Funds were limited and the depots were not a high priority budget item as the years passed with no major oil spills.

The new laws

With the passage of legislation in 1989 in the aftermath of the Exxon Valdez spill, the Legislature explicitly directed the state to establish an enlarged network of equipment depots and volunteer response personnel around the state to increase statewide preparedness for oil and hazardous substance incidents.

ADEC's newly created Spill Response Office was designated as the agency responsible for setting up the depots and the response corps.

The statute was amended in 1990, moving responsibility for the depots and corps to the Division of Emergency Services (DES) in the Department of Military and Veterans' Affairs. The statute (AS 46.08.110-.120 requires DES to establish response depots in areas determined to be potential sites of oil and hazardous substance releases, and to establish an oil and hazardous substance response corps consisting of volunteers who register with DES and agree to be trained and to be available on short notice to assist in containment and cleanup. The statute provides for payment of per diem and expenses, including training and equipment costs.

Implementation of these statutes involves both DES and ADEC. DES is charged with establishing and maintaining the corps and depots and buying the equipment. ADEC, through its responsibility for developing the statewide master and regional oil and hazardous substance discharge prevention and contingency plans, designates the locations of the corps and depots, identifies the response equipment to be stockpiled, and has the authority to call up the corps during an incident and to authorize use of the equipment. DES funding for these activities comes from the Response Fund through a Reimbursable Services Agreement (RSA) from ADEC. ADEC funding also comes from the Response Fund.

Existing equipment depots

Presently there are two industry response cooperatives within Alaska which provide oil spill response resources, including personnel, equipment and materials for certain high-risk areas of the state, and one smaller group which provides similar coordination on a smaller scale. These include:

1) Alaska Clean Seas (ACS), located in Prudhoe Bay and covering the North Slope;

2) Cook Inlet Spill Prevention and Response, Inc. (CISPRI), located in Kenai and covering the Cook Inlet region, and

3) Southeast Alaska Petroleum Resource Organization (SEAPRO), located in Ketchikan and covering Southeast Alaska. (SEAPRO's manager states

that it does not provide full response capabilities, but serves as a coordinator and networking facilitator for its members.)

These industry cooperatives have agreed to work together to share their resources and have joint training sessions, workshops and spill drills.

Conspicuous by its absence is the largest national industry cooperative, the Marine Spill Response Corporation (MSRC). This corporation was created in the wake of the Exxon Valdez oil spill in 1989 by twenty major oil companies. It proposes to spend over $800 million in the next few years for equipment and personnel in five coastal regions in the Lower 48. Alaska is excluded in spite of the fact that 25% of the U.S. oil supply comes from Alaska and that roughly half of the nation's coastline lies in Alaska. The corporation cites Alyeska's sizeable existing resources, as well as Alaska's liability laws for spill response personnel as the reasons it is unwilling to extend its coverage to the state.

A number of companies offer oil spill response services, with both equipment and personnel, in Alaska. Most are based in Anchorage but maintain offices or equipment in other locations around the state, such as Prudhoe Bay, Fairbanks, and Cook Inlet.

The other source of response equipment is of course the equipment stockpiled at and available to each facility required to have a contingency plan. Alyeska's stockpile is the largest, and includes equipment stored at the terminal and selected locations in Prince William Sound, and also in area and community response centers in communities throughout the Sound which can provide equipment and personnel in an emergency.

Implementation Status

DES and ADEC have been working for several years to fashion a workable and mutually agreeable plan for establishing the response depots and response corps. During FY 91 there were numerous meetings and memoranda between the two agencies in an effort to agree on what was to be done, how, and by whom. It has been difficult for the two agencies to mesh their differing priorities.

There are still a number of unresolved issues and differing opinions

about both the corps and the depots. The first regional response depot is proposed for Anchorage and will contain basic oil response equipment and supplies (containment boom, sorbents, anchors, ropes, generators, hand-held radios and personal protection gear such as rubber boots and gloves, hard hats, eye and ear protectors, rain gear and cold weather gear, float suits, etc.). This equipment would be available to response corps members and other response personnel authorized by ADEC's onscene coordinator. According to DES, regional depots are likely to be established in Fairbanks and Juneau. Final agreement on the location of depots is awaiting completion of a statewide hazards assessment, which will identify local risks and needs. One study already completed for ADEC by Arthur D. Little, Inc., has identified Southeast and Southwest Alaska as the areas at greatest risk of non-crude marine spills.

The response corps is planned to be a register of qualified and trained volunteers with local knowledge and experience who are available to respond at short notice to an oil discharge incident in their area. It would provide immediate response to local incidents, and also provide longer-term assistance in the case of a catastrophic spill. The corps would not replace professionals, but would provide assistance to state personnel, or to contractors or industry responders when needed.

The corps would include a register of local vessel owners, vessels and captains who, in a marine incident, could provide not only needed vessels but local knowledge and experience which would be valuable in the response effort. The Exxon Valdez experience showed the value of having a legitimate role for local residents, particularly fishermen, in the response effort.

Response corps activities will vary depending on the incident, the location and the availability of professional responders. The kind of assistance which they could commonly provide would be an initial defensive response to contain and minimize the spill. In addition, if needed for a more extended effort, corps members would be used as general laborers, drivers, skiff operators, and equipment movers, and would assist in the deployment, monitoring and maintenance of containment booms, wildlife rescue and care, and basic cleanup activities. They would not be involved as boom operators or in operation of mechanical cleanup equipment or in activities requiring more technical knowledge or skills.

DES has not yet determined how the corps would be administered.

DES is considered having Local Emergency Planning Committees administer the corps, while some have suggested that the two regional citizens advisory councils, in Prince William Sound and Cook Inlet, should handle it in their regions.

While originally conceived by the Legislature as a volunteer corps, there appears to be a consensus that hiring these "volunteers" as nonpermanent state employees when they are called up to respond to an incident may be the easiest way to resolve issues such as liability and workers compensation. Their status would presumably be comparable to nonpermanent state firefighters employed to fight wildfires.

In June ADEC approved DES's FY 92 RSA request for $2 million for DES to implement the response corps and depots legislation. However, the two agencies are still negotiating a detailed work program.

In addition to approximately $600,000 for personnel and related costs, DES has proposed to spend $800,000 to match a federal grant for a mobile satellite communications package which would be used for all state emergency situations. DES has proposed to spend $300,000 on a statewide hazards analysis to identify areas at risk of hazardous substance spills to help identify where equipment and personnel are most needed. DES also plans to develop a computerized data base of response equipment and personnel and where they are located. After DES's personnel, travel and supply costs, and the communications system, this leaves little money for response equipment. While the proposed communications system would in many cases benefit spill response, there are differing opinions on whether DES's proposal to purchase the system is an appropriate use of Response Fund money and approved, since the Fund is restricted by law to use on oil and hazardous substance spills and is not to be used for capital improvements. (Equipping the depots is a specified legitimate use of the Fund.) The communications package proposal has been held up pending consideration by the Legislative Budget and Audit Committee.

DES is requesting $5 million for FY 93 and for at least two and possibly five more years to implement the depots and corps. The FY 93 amount is proposed to fund thirteen full-time positions at DES and $3.5 million for depot equipment. It is not clear how many depots this would equip. The proposal also includes money for response corps training, although the proposal does not specify numbers or locations.

In order to improve coordination and cooperation between DES and ADEC, the Anchorage staff of ADEC's Spill Response Office (SRO) has been located at the new armory with the DES staff working on depots and the response corps. This may benefit coordination in implementing the corps and depots (although it may have drawbacks for other aspects of the SRO staff's duties by removing them from daily contact with other DEC staff). In another attempt to clarify and more effectively coordinate the respective roles and duties of DEC and DES and to improve their working relationship, the two agencies are developing a Memorandum of Understanding.

Analysis

The effort to establish the response corps and depots has made slow progress over the last year. In part this can be attributed to several factors, including a new administration coming in part way through the effort, personnel changes, departmental reorganization, shared jurisdiction, and the differing perspectives, needs and priorities of the two agencies involved. In addition, in the past three years, there have been numerous and major statutory changes at the state and federal level resulting in additional responsibilities, new programs, increased funding and new staff. This has put a strain on both management and staff. It has also caused some degree of confusion and lack of definition and/or agreement in what needs to be done, how and by whom. And, as noted above, there has been friction over funding and on what expenses Response Fund monies may be legitimately spent.

The two agencies have approached implementation from different perspectives, reflecting their different missions. DES takes a more global approach since it also has responsibility for responding to natural disasters and other emergencies. DES views the depots and response corps as major and costly projects and is reluctant to move ahead with implementation without a long-term commitment of large annual budgets. The agency is not willing to set up depots until the hazards assessment results are available to justify the locations and equipment needs.

ADEC views oil spill response capabilities as the most immediate priority. It believes that since the risks have already been identified several depots could be set up fairly quickly based on existing information. Once information is available from a new statewide hazard analysis for hazardous substances, depots

would then be equipped for appropriate responses based on local needs and risks and additional sites identified. ADEC recognizes that there is a need to address risks such as non-crude oil and other hazardous substances throughout the state.

Outside of the agencies, there is some disagreement over the overall usefulness and cost-effectiveness of response corps and depots. Some critics argue that to make them truly useful will require more money than will be available, and question whether there is resolve on the state's part to provide the necessary support over the long term. Some see them as trying to duplicate industry or federal resources that are already available.

Others believe that there is a need for both the corps and the depots, especially in areas of the state which are not covered by existing response organizations. The spotlight has focused so much on crude oil hazards, and therefore Cook Inlet and Prince William Sound, that other potential hazards from noncrude products and hazardous substances (which are stored in and move through every part of coastal and inland Alaska daily) have not received the attention they deserve, a problem recognized by ADEC. As noted above, a study recently conducted for ADEC indicates that response capabilities for refined product spills are particularly lacking in Southwest and Southeast Alaska.

Depots. It seems clear that progress has been slower than it should have been. There is a need to move forward on response depots with a practical program which provides the greatest real benefits for a reasonable and sustainable amount of money. A modest program sustained over time will be more valuable than starting out with a large program which is then abandoned or neglected. DES should move ahead with establishing regional depots and equipping them with oil spill response equipment as soon as the the risk analysis has identified local risks and need. Existing facilities such as fire stations, armories and other state, local or federal facilities which could accommodate response equipment should be used if possible to keep costs down. The program should be designed to rely on existing personnel wherever possible as well.

As important as having response equipment available at key locations around the state is the concept of a comprehensive, computerized inventory of all oil spill response equipment, materials and personnel in the state, coupled with a cooperative use policy. Included should be not only state and federal equipment, but that of industry cooperatives, response contractors and all facilities which are

required to submit a contingency plan. The state should facilitate cooperative agreements between the parties so that all the available resources could be devoted to combatting a major spill. The agreements would specify how the pool of resources would be disbursed in an emergency and provisions for replenishing them.

Volunteer corps. The purpose and benefit of a volunteer response corps should be defined and examined more closely. Of all the new spill programs mandated by the legislature, the volunteer corps is the one that has been received by the most scepticism by both agencies and industry. A large, statewide program may not be warranted. Critics argue that a volunteer corps has limited usefulness, that in areas where a catastrophic crude oil spill is most likely to occur, such as Prince William Sound or Cook Inlet, industry has already undertaken involvement of volunteers, and in any case the State will not ensure adequate long-term support for such a program.

Arguments for establishing a volunteer corps point to the benefits of a more targeted and selective volunteer program. The availability of local knowledge and expertise could be invaluable to professional responders. In coastal or inland waterway incidents, knowledgeable persons with vessels could be particularly useful. In areas of the state without large private response capabilities, trained local people who could help with first response could be valuable. And in a catastrophic event particularly, it is important that the local people who are the most affected and who want to be involved in response have a legitimate role.

Comparing the potential benefits against the costs, it might be more effective, in view of the actual risks and the resources available for quick and effective response, to spend the money on developing a small but highly trained team of professionals who could be called in for immediate response. Cross-training of existing emergency personnel such as local firefighters and police would be beneficial, especially in rural areas. There may also be merit in the suggestion that local groups such as local emergency planning committees should administer the corps.

The question of whether the state should establish a volunteer corps and if so, what its role should be needs more attention. There are valid arguments for a corps targeted to specific, identified needs. Beyond this, greater benefit may

come from improving the training of existing local professionals and concentrating available resources on a highly trained and well-equipped regional teams which can be sent out to respond.

Recommendations

If ADEC and DES do not come to a clear and workable agreement soon, responsibility for the depots and corps should be assigned to a single agency. For oil and hazardous substance spills, ADEC should be responsible; for other emergencies, DES should be. Cooperative agreements could still be developed to provide for use of each other's equipment in emergencies.

Initial regional depots should be set up in central locations. But completion of the statewide hazards assessment should be a priority, with additional depots located where local needs are greatest rather than in areas already well equipped by industry.

The depot network should be designed to be as cost-effective as possible. Where possible, existing facilities and shared facilities should be used for depots (fire stations, armories, Coast Guard facilities, etc.), and existing positions to staff them if possible.

Initial focus and use of Response Fund money should remain on oil and hazardous substance response. If the use of depots is broadened to include response emergencies other than oil and hazardous substance releases, additional funding for that should come from a source other than the Response Fund.

Depot oil response equipment and use of the response corps should be designed for a) first response where there is no immediate identification or involvement of a responsible party (RP), a response action contractor or industry cooperative, and/or b) immediate protection of sensitive environments. State equipment and volunteer corps personnel should not replace RP response, but should be an interim, stop-gap measure.

It should be recognized that the existence of these depots, with their modest amounts of equipment, will provide only a marginal improvement in the response to a catastrophic spill. The most important improvement in

response would be a comprehensive inventory of all response equipment and cooperative agreements among all the parties, allowing the entire pool to be accessed and devoted to a spill as needed.

The Marine Spill Response Corporation and its substantial resources should be encouraged to extend to Alaska. Existing and proposed response resources in Alaska leave large gaps which could be filled by MSRC.

The concept of a volunteer response corps needs more thought. The state should carefully identify where a response corps could be of benefit and how. It may be that a large, statewide program is not warranted, but that a carefully targeted program for specific purposes in selected areas could be useful.

IV - CITIZENS' ADVISORY COUNCILS

Background

In the wake of the Exxon Valdez oil spill, there was an outpouring of public support for the incorporation of some form of citizen oversight and involvement in oil transportation and environmental monitoring. The public felt that neither industry nor the regulatory agencies were doing an adequate job. The Alaska Oil Spill Commission concluded that local citizen involvement was a critical component in improving environmental safety.

Even before the Oil Spill Commission published its findings, two regional citizen's groups were coalescing for Prince William Sound and Cook Inlet. In Prince William Sound and the oil spill-affected areas, the Regional Citizens' Advisory Council (RCAC) incorporated in December, 1989 and signed a contract with Alyeska the next February. The Cook Inlet Regional Citizens' Advisory Council (CIRCAC), covering the area from Palmer to Kodiak, signed a contract with the industry response cooperative Cook Inlet Spill Prevention and Response, Inc. (CISPRI) last spring.

The passage of the federal Oil Pollution Act of 1990 (OPA) gave the councils a statutory basis and broadened their purview. The level of industry funding for each council was specified in the act (up to $2 million for RCAC and up to $1 million for CIRCAC), as was the membership and a committee structure which would include not only council members, but additional citizens and technical experts as appropriate.[16] The councils' duties under the Oil Pollution Act are to provide advice and recommendations on policies, permits and regulations, monitor environmental impacts and review contingency plans for terminal facilities and crude oil tankers operating in their respective areas.

Council membership includes representatives of communities, native groups, environmental groups, recreation users, the tourism industry and fishing and aquaculture interests. RCAC and CIRCAC are currently the only regional citizens' councils in Alaska recognized under OPA, although there is a fledgling organization in Northwest Alaska, the Arctic Marine Resources Commission, currently funded from a variety of non-industry sources, which may evolve into

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[16] §5002 of the Oil Pollution Act of 1990, 33 U.S.C. §2732.

a federally-recognized council under OPA.

Current Status

The Prince William Sound RCAC, operating for almost two years, consists of a 16-member board and four active committees through which RCAC does much of its work. The committees involve an additional 24 people, including both local citizens and experts. RCAC has a professional and clerical staff of 11, and is funded by Alyeska at $2 million per year for at least the first three years.

CIRCAC has thirteen members and two major committees consisting of three council members and six additional public members each, and operates with five professional and clerical staff. CIRCAC received $600,000 from CISPRI for nine months' operation in 1991, and is currently negotiating with CISPRI over 1992 funding. Thus far CISPRI has declined to provide the full $1 million specified as a ceiling in OPA.

Activities and Accomplishments

Both councils have taken an active role in reviewing industry and state contingency plans and in responding to proposed state and federal regulations. RCAC spent much of its early effort on Alyeska's contingency planning and participated fully in a steering committee process set up by Alyeska to bring regulatory agencies and the RCAC to the table to work with industry to resolve difficult issues. The steering committee continues to work on outstanding issues such as nearshore response.

RCAC has commissioned studies on a number of issues, including ballast water treatment and terminal air quality monitoring, tanker traffic risks and the feasibility of a spill response coop for the Sound. The council is developing a position on bioremediation and use of dispersants, and continues to push for MSRC expanding to Alaska.

CIRCAC is, through contractors, evaluating the August Cook Inlet spill drills and the risk assessments and contingency plans of selected Cook Inlet facilities, and is studying the contractual responsibility of response action contractors and contingency plan holders. 1992 activities are proposed to include the design of a comprehensive environmental monitoring program for Cook Inlet,

identification of sensitive areas, an investigation of the structural integrity of facilities, contingency plan review, and work on alternative technologies applicable to the unique and extreme conditions often experienced in Cook Inlet which can make standard procedures such as mechanical recovery virtually impossible.

Both RCAC and CIRCAC participated in a working group established by DEC to develop state regulations for recently passed oil and hazardous substance spill response legislation. In a joint effort, RCAC, CIRCAC and the Citizens' Oversight Council on Oil and Other Hazardous Substances sponsored public hearings on federal efforts to start implementation of OPA, and both regional councils will likely devote considerable effort to reviewing federal proposals for OPA implementation as they emerge from Washington, D.C. in the next year or so.

Evaluation

Any large committee representing many different interests can be a somewhat unwieldy way to do business, but in spite of its inefficiencies and sometimes slow decision-making, a cooperative group process often provides benefits hard to attain in any other way. In the case of these citizens' councils, it affords the public not only the ability to shine the light of public scrutiny on the complex business of oil transportation and industry and government decisions, but also to affect how many of those decisions are made.

Overall, the performance of both regional citizens' advisory councils has been good. They have taken on numerous and wide-ranging issues and projects. They have set up a well-organized committee structure which not only increases local participation but spreads the workload and brings in a wealth of expertise. Their long-term effectiveness will depend on whether, as a group, each can maintain its energy and dedication, sustain a high level of professionalism in its work products, and walk the delicate line of fairly representing its constituent communities and interest groups and still forge an enduring and constructive relationship with industry and regulatory agencies.

Cook Inlet. CIRCAC, although only recently formally organized and operating, has already taken on a number of issues. Although it has taken a back seat to Prince William Sound in terms of public attention and visibility, Cook Inlet may have even greater needs there which should be focused on. CIRCAC may be

particularly important as a focal point because of the many different kinds of facilities (platforms, pipelines, terminals, refineries, and tankers to mention some) and the many entities operating in Cook Inlet. CIRCAC reports good working relationships with regional federal and state staff, particularly with ADEC and the Coast Guard.

One of the major issues for CIRCAC has been funding. It has submitted several proposed 1992 budgets including the full $1 million to which CISPRI would not agree. The Council's latest request was for $1.048 million (continued full funding plus inflation adjustment), and it was also rejected by CISPRI. CISPRI is offering CIRCAC only $650,000 for 1992. The law creating CIRCAC is so new that procedures for resolving funding disagreements have not been worked out. The council is considering what actions to take next.

CIRCAC has had difficulties securing funding from the start, possibily because there are more "owners" to deal with than in Prince William Sound, and they are smaller and less able and willing to provide substantial monies to fund the council than Alyeska has been for RCAC. Tesoro would like to see some state or federal funds contributed to CIRCAC's operation, noting that 25% of Alyeska's funding of RCAC in effect comes from the state treasury through royalty oil tariffs but that Cook Inlet companies get no similar break.

It has also been pointed out that the independence and objectivity of citizens' councils might be strengthened if they were not entirely dependent on industry funding. To avoid yearly funding battles and to allow for multi-year budgeting and planning, a multi-year funding agreement should be worked out.

CIRCAC is operating with less money and fewer staff than RCAC and plans to maintain its current staffing level. In its short life it has taken an active role and has ambitious plans to go forward on issues which affect the Cook Inlet area. It is too early to tell how effective the organization will be in the long-term in improving the safety of oil-related operations in Cook Inlet. If the council can provide a forum for constructive dialogue between the disparate interests that operate in Cook Inlet and the communities affected by them, it will provide a valuable service.

Prince William Sound. RCAC's activities over the last two years show the remarkable effort of volunteers who have managed to sustain a high level of

dedication and enthusiasm over that time. Generally, RCAC is perceived as being an effective and important player in making sure that public and community interests are heard. The group has been effective in reviewing policy and planning issues, although not always successful in influencing plans, policy and regulations to their satisfaction.

RCAC's relationship with Alyeska has had its ups and downs, but has in good part been a constructive working relationship. Alyeska's steering committee process used in developing the terminal contingency plan is considered an example of effective cooperation between RCAC, Alyeska and the regulatory agencies. Similarly, RCAC has a basically sound relationship with state agency staffs, but has not been reluctant to criticize agency policy or performance when they felt it was warranted. Long-term effectiveness will depend on maintaining professional working relationships which can weather constructive criticism and even the occasional storm of controversy, and which can continue to look for common ground and solutions to problems.

RCAC has been criticized at times by both industry and environmentalists and fishing interests as being too favorable to the "other side", however it may be that this very criticism speaks to the independence of the council and its ability to function as a critical but generally constructive partner in its advisory and oversight role.

RCAC has taken on a wide range of projects and issues; the list of tasks is impressive, especially for such a small group, newly organized and primarily volunteers. The size of the paid staff has increased considerably since its inception to handle the workload. There is some concern that the council may be dealing with too broad a range of issues and a greater workload than it can sustain over time, and that the result could be volunteer burnout and lower quality work products. In the long run, it is critical for RCAC to focus its efforts and energies, to set priorities, and to make decisions on what it can and will do well and what it will not do.

Like CIRCAC, RCAC needs reliability in its funding. The first three-year contract with Alyeska provides for $2 million for each of the three years. The other side of the funding equation is that the councils must show themselves to be fiscally responsible and accountable for spending the funds judiciously to achieve identifiable benefits. A focused spending plan based on identified

priorities with useful results, even with limited funds, is likely to gain more in the long-run than a scattered approach with higher expenditures. It is important that the councils continue to manage their spending in a manner that is perceived to be responsible by all parties, because there is probably no quicker way to kill the councils than if they are perceived to be wasting money. It is likely that as the Exxon Valdez disaster recedes in memory, it may be more difficult to obtain adequate funding agreements unless the councils can demonstrate continuing good management, useful results and mutual benefits.

In summary, the short-term performance of these councils is on the whole impressive; their long-term role remains to be defined and their long-term effectiveness to be proven. They are advisory bodies with a federally-defined role but with no statutory basis under Alaska law. Credibility is and will be their most important asset--credibility with industry, with regulatory agencies, with communities, with interest groups and with the public at large. If they enhance and protect this credibility, they will likely accomplish much of what they were set up to do, and oil industry operations in Cook Inlet and Prince William Sound will be safer for their presence.

Recommendations

Funding. Citizens' councils should be funded on a multi-year cycle to allow multi-year planning and budgeting and to avoid wasting time and energy on fighting budget battles every year. A three-year cycle such as Alyeska and RCAC negotiated would provide the certainty and independence needed by the councils and still allow industry some measure of budget control.

Consideration should be given to whether all council funding should come from industry or whether there should also be some state or federal contribution to provide a balance and ensure the councils' independence. The question of equity should also be considered regarding how industry funding is apportioned.

Focus on Priorities and Quality. The citizens' councils should focus their efforts on identifying priorities, ensuring that their workload does not exceed a level sustainable over time, and ensuring that the quality and credibility of their work is maintained at the highest possible level.

Time for Stability. The citizens' councils have existed for only a short time in which they have been required to respond to a myriad of new and changing programs, policies and laws directed at oil spill prevention and response. These changes need time to be fully implemented before more major changes are made. This is not true just for the councils, but for industry and regulatory agencies as well. The next two years should be a time to put programs in place, give them time to work, and then step back and evaluate what works and what needs to be changed.

V - FINANCIAL RESPONSIBILITY STANDARDS

Background. A financial responsibility requirement is simply a legal requirement that a party show that it has enough financial resources to respond to any oil spill for which it is responsible and to pay any damages that may result from the spill. The Alaska Legislature first enacted an oil spill financial responsibility requirement in 1980. The federal government has a similar requirement, as do several states.[17]

Financial responsibility requirements are a natural outgrowth of stronger liability standards for oil spills. When the legislature chose to place legal responsibility for spill damage on certain parties, [18] it made sense to require that the potentially liable parties have the ability to pay judgment against themselves. It is not at all certain that corporations regularly engaging in the production or transportation of petroleum products always have sufficient funds to pay judgments arising from spills. For example, some corporations transporting oil by tanker vessels are set up as "one ship" corporations, i.e., the vessel itself is the corporation's sole asset, so if judgments against the company exceed the value of the vessel, there may be no assets against which a judgment may be executed.[19] Other vessels may be owned by foreign corporations whose assets may not be subject to execution to satisfy judgments in the United States. Sometimes ownership of vessels may be so byzantine and convoluted that an injured party cannot discover the true owner or the owner's assets in order to bring a timely claim. And finally, with a catastrophic spill, the assets of a small corporation may not be enough to cover both spill response costs and damage caused by the spill.

For these reasons the Legislature passed requirements that the larger

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[17] See 33 U.S.C. §1321(p) [§311(p) of the Clean Water Act]; 33 U.S.C. §2716 [§1016 of the Oil Pollution Act of 1990].

[18] See AS 46.03.822, which places liability for spill damage on the owner of a vessel or facility from which a spill occurs, the operator of the spill or vessel, any other person having control of the oil at the time of the spill, and potentially other parties as well.

[19] Before passage of the Oil Pollution Act of 1990, 33 U.S.C. §2701 et seq., vessels transporting oil in Alaskan waters except those carrying Trans-Alaska Pipeline Oil could legally limit their liability as to most damages to the value of the vessel and cargo, under the Limitation of Liability Act of 1858, 46 U.S.C. §181-189.

players, i.e., those most likely to cause sizeable amounts of damage through oil spills, demonstrate at least some ability to pay damage judgments against them, before they would be allowed to conduct their activities in Alaska. The companies subject to the financial responsibility requirement are basically the same as those required to have approved contingency plans: operators of terminal facilities, exploration or production facilities, pipelines, tank vessels and oil barges.[20]

The statute, AS 46.04.040-.050, sets the minimum amounts that must be shown.[21] Available methods of demonstrating financial responsibility are by insurance, self-insurance,[22] surety bond, guarantee, letter of credit, and (added in 1990) "other proof...approved by the department." Typically, very large U.S. corporations provide most or all of their required showing through self-insurance, i.e., by showing the existence of unencumbered assets in the United States. Insurance is the main method used by almost all others, although a few use hybrid methods, such as a surety bond backed by insurance.

Statutory and regulation changes. In its current form, AS 46.04.040 includes changes made by the legislature in 1990 and 1991. The changes were basically to increase the amounts required for each category; to require adjustments of those amounts each third year to reflect changes in the consumer price index[23]; and to provide more flexibility in the types of proofs of financial status acceptable to the department. The most important of the new proofs is

> other proof of financial responsibility approved by the department, including proof of financial responsibility provided by a group of insured who have agreed to cover pollution risks of members of the group under terms the

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[20] Small terminal facilities ((with a storage capacity of less than 5000 barrels of crude oil or 10,000 barrels of noncrude oil) are exempt from the requirements, as are vessels used solely for spill response. AS 46.04.050, .040(m). As with contingency planning, the Alaska Railroad is not subject to the financial responsibility requirements.

[21] The minimum amounts are set out at the end of this section.

[22] Self-insurance is basically a demonstration that the company has sufficient unencumbered assets in the United States which could be used to pay response costs and to pay damage awards. See 18 AAC 75.245 for detailed requirements on how such assets may be demonstrated.

[23] See AS 46.04.045.

department may prescribe.

This provision was intended to permit applicants to use Protection and Indemnity club ["P&I"] insurance as part of their proof. Protection and Indemnity clubs are groups of vessel owners who join together to cover each others' risks, i.e., to provide mutual insurance. P&I's are one of the oldest and most established forms of maritime insurance and cover approximately 95% of the world's ocean cargo traffic. But vessel owners who had P&I insurance could not use it as proof of financial responsibility under the pre-1990 state law, because the P&I clubs were not registered as insurers under Alaskan law, as required by the statute. The amendment allowed P&I coverage to be used, as long as other requirements of AS 46.04.040 were met.

However, other problems remained with P&I club coverage, because the clubs refused to include in their policies certain features required by Alaskan law. The feature most adamantly opposed by the clubs is the requirement, at AS 46.04.040(e), that a person damaged by an oil spill may sue the insurer directly, without suing the insured, in the courts of Alaska (the so-called "direct action" requirement). Direct action is important to the financial responsibility scheme because it permits injured parties to sue the source of funds directly, in an Alaskan court, without the expense and difficulty of suing the insured party first and then trying to enforce the judgment against a foreign insurer.

In order to salvage some part of the value of the direct action provision, and yet permit some use of P&I coverage by applicants who cannot otherwise show financial responsibility, the Legislature crafted AS 46.04.040(l). That subsection permits an applicant to use P&I non-direct action coverage as part of its proof, as long as another part of the applicant's proof -- at least covering the first $50 million in liability -- does contain the direct action feature (and all other required features) and the applicant shows that other coverage meeting the full requirements is not available.

The new regulations promulgated by the Department on October 26, 1991, will, if they go into effect as written, not greatly change existing regulations. Two new provisions are noteworthy, however. At 18 AAC 75.720, the regulations elaborate on the amendment to the statute, noted above, of "other proof of financial responsibility approved by the department." The regulation describes the minimum requirements for use of P&I club coverage for financial

responsibility purposes. Although the regulation does not require P&I insurers to agree to direct actions against themselves, it does require the insurer's policy to state explicitly that the insurance covers judgments under Alaska's oil spill laws, and it requires the club to appoint an agent for service of process in the state. An Alaskan endorsement and appointment of an agent for service of process in Alaska are requirements that the clubs have refused to comply with in the past, despite the fact that -- unlike subjecting themselves to direct action -- they would probably not work to the detriment of the club. The clubs' motivation may be its longstanding campaign for a uniform federal set of standards for both liability and financial responsibility. But Congress rejected imposition of uniform federal standards on the states in the Oil Pollution Act of 1990. So for the moment, there is a stalemate, with the clubs refusing to include in their policies certain features that the State requires before the insurance can be used as proof of financial responsibility. Ultimately some adjustments, either by the clubs or the State, must occur before P&I coverage is actually usable to meet Alaska's financial responsibility requirements.

The new regulations also reflect some State accommodation regarding self-insurance requirements. A number of applicants who had sizeable assets, enough to permit self-insurance but for the fact that they were located outside the U.S., asked to have foreign assets count toward the totals needed for self-insurance. The new regulations, at 18 AAC 75.245(l), permit use of foreign assets if no other means of showing financial responsibility is available, and if the Department of Law determines that the foreign nation will permit recovery of those assets on a claim under Alaska law. There is no doubt that this regulation change weakens the ability of an injured Alaskan to secure recovery for oil spill claims, since recovering on an Alaskan judgment in a foreign nation is inevitably several orders of magnitude more difficult than collecting within the United States. On the other hand, it also appears that the change will allow some responsible companies a less expensive way to satisfy Alaska's requirements with their own assets.

Current problems

Qualifying insurance is largely unavailable due to the insurance industry's boycott of the market. The international maritime insurance industry has, on several occasions, attempted to influence domestic legislation by refusing to write

policies to meet statutory obligations. In the early 1980's, for example, maritime insurance became unavailable except in small amounts for barges carrying oil in Alaska. This withdrawal of insurance from the market was widely seen as an insurance industry attempt to bring pressure for a change in Alaska's oil spill liability scheme. The boycott ended when a few individual insurance carriers wrote policies, whereupon most of the rest of the insurers followed. Recently, the insurance industry again attempted to use a threat of a boycott to influence federal legislation, namely the provision in OPA that permitted states to impose strict and unlimited liability on parties causing spills. The attempt to block stronger state liability laws was unsuccessful, but industry threats of a boycott have caused several states to back away from direct action requirements in their own financial responsibility statutes.[24] Now, the industry is again boycotting Alaska by refusing to write policies for oil-carrying vessels in Alaskan waters, unless the policies do not contain the "direct action" feature required by AS 46.03.040. The State is powerless to require insurers to write the policies, and in many instances insurance is the only form of financial responsibility a vessel or facility is able to obtain. Hence it appears that Alaska is once again facing the dilemma of having either to give in to the insurance industry demands, by deleting the "direct action" requirement from the statute, or permitting some parties to operate without being in full compliance with the statute. The Alaska Department of Environmental Conservation has attempted, as it did in the boycott a decade ago, to find individual insurers who would write the required policies, but so far it has been unsuccessful.

However, the situation is markedly different from a decade ago, because the U.S. Coast Guard recently issued a Notice of Proposed Rulemaking in which it indicated that the federal government would also soon require financial responsibility with a direct action feature.[25] In short, the insurance industry must soon either extend its boycott threat to the entire U.S. maritime oil transportation fleet or start issuing such policies.

It may be that Alaska will ultimately be forced to rewrite AS

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[24] E.g., Washington, California, and Florida have recently agreed to accept P&I club coverage -- without requiring a direct action provision -- as proof of financial responsibility.

[25] 56 Fed. Reg. 49006 et seq., September 26, 1991. According to the Coast Guard, direct action insurance is required by §1016(f) of the Oil Pollution Act and the proposed regulations merely repeat the requirement.

46.03.040 to delete the direct action insurance requirement, since the maritime insurance industry appears united on the matter.[26] But in the meantime the likelihood is that the federal government will be the weathervane for state direct action requirements. If the federal requirement is sustained, i.e., if the insurance industry ultimately agrees to resume writing direct action insurance to satisfy federal requirements, the probability is that state requirements will also be met. But if the industry succeeds in convincing Congress to change federal law, it is likely that Alaska could not, by itself, break the boycott.

ADEC administration of the program is failing to keep pace with its increasing complexity. For years the financial responsibility requirements of AS 46.03.040 have been administered by a single person, who, with informal assistance from the Division of Insurance (in the Department of Commerce) and the Department of Law has maintained financial responsibility records, explained requirements to the industry, and taken action against persons not in compliance. Administration of the program has been competent and adequate. But during the same period the requirements and the policies and other legal means by which financial responsibility has been shown have become increasingly complex. The person is charge of the program at ADEC does not have specialized training in insurance, accounting, or law.

It has become clear that, despite ADEC's competent administration of the program thus far, it has become too complex and too important to leave to a single person without specialized expertise. Financial responsibility requirements are the backstop without which liability laws are of no help to small parties. In order to ensure that liable parties actually pay amounts owed, particularly to injured Alaskans without the means to pursue extensive litigation, the program needs access to specialists in insurance, accountancy, banking, and legal aspects of all these fields. The stakes have become too high -- with worldwide boycotts and attempts to manipulate domestic law by foreign insurance cartels -- for the State of Alaska to remain inexpert in the subject.

Other considerations. Insurance plays two roles regarding oil spills, beyond the

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[26] It also appears that the major industry players -- who largely self-insure and hence avoid any need for direct action insurance -- will bring no pressure on the insurance industry, since the threatened boycott could result in statutory changes removing some of their own risk of liability.

obvious one of compensating for the insured's losses. First, it provides a source of funds for cleanup and payments to damaged parties. And second, it may itself be a force for safer handling of oil. Thus far it is too early to tell whether the insurance market will affect the speed with which the industry moves toward double hulls, vessel traffic improvements, or other spill prevention measures. It appears that the insurance industry is focusing more on pressuring legislatures to lessen liability laws than on reducing risks through safer practices by the insureds. It is not clear what means can be used to urge the insurance industry in the latter direction, but it is entirely appropriate to search for such means.

Recommendations

The State of Alaska should carefully monitor events in the worldwide maritime insurance market, and should regularly confer with colleagues in other states and in the federal government in order to maintain the strongest possible joint defense against attempts to manipulate domestic policy through insurance markets.

ADEC should develop more expertise in its administration of financial responsibility requirements, including in the areas of insurance, accountancy, banking, and legal aspects of those fields. This expertise should be obtained either through upgrading staff positions, RSA's with other departments, or professional services contracts with outside experts.

PROOF OF FINANCIAL RESPONSIBILITY

Type of Facility	Before June 1, 1991	After June 1, 1991
OIL TERMINALS		
Oil Terminals/Crude (5,000 barrel (bbl.) and up)	$10 per bbl. of storage capacity or $1,000,000., whichever is greater, $50,000,000 maximum	$50,000,000 per incident
Oil Terminals/Non-Crude (10,000 bbl. and up)	Same as above	$25 per bbl. of storage capacity or $1,000,000., whichever is greater, $50,000,000 maximum
Oil Terminals/Crude and Non-Crude combined	Same as above	If mostly crude - $50,000,000 per incident. If mostly non-crude - $25 per bbl. of total capacity
PIPELINES & EXPLORATION FACILITIES		
Pipelines and Offshore Exploration or Production	$35,000,000 per incident	$50,000,000 per incident
Onshore Production	EXEMPT	$20,000,000 per incident
Onshore Exploration	EXEMPT	$5,000,000 per incident
VESSELS & BARGES		
Tank Vessel & Oil Barge/Crude	Trans-Alaska Pipeline related: $14,000,000. Other tankers: per Clean Water Act or $20,000,000, whichever is greater. Other barges: per or CWA or $1,000,000.	$300 per bbl. per incident storage capacity or $100,000,000, whichever is greater
Tank Vessel & Barge/ Non-Crude	Same as above	$100 per bbl. storage capacity per incident or $1,000,000., whichever is greater, $35,000,000 maximum

VI - ENSURING INTEGRITY OF MECHANICAL OPERATING SYSTEMS

Background

In seeking to prevent oil spills the State of Alaska has a clear need to ensure the mechanical integrity of the systems which contain and transport petroleum. While other factors, particularly human error, contribute to oil spills, reducing the frequency of mechanical failures will lower the risk of spills. Examination of petroleum related mechanical systems in Alaska shows that there is considerable variation in the quantity of oil which these systems contain and in their engineering sophistication. Quite properly the largest system which handles the greatest quantity of oil, TAPS, receives the greatest scrutiny from the State, since it has the potential for the largest spills. However, it needs to be recognized that some smaller systems are older and engineered with less sophistication than TAPS. So, while these systems do not pose the threat of large spills, some may have a higher likelihood of small or chronic spills.

The new statute

AS 46.04.060, as amended in 1990, authorizes ADEC to participate in inspections of pipelines, vessels, barges and facilities with other state and federal agencies which also have jurisdiction over such facilities. The statute also provides for independent inspections by ADEC when other agencies are not performing adequate or timely inspections. These provisions give ADEC authority over approximately 350 oil related facilities in Alaska. This inspection authority is a powerful tool for ensuring the integrity of oil related mechanical systems. However, ADEC does not have enough personnel with the expertise necessary to conduct all these inspections and, at least in some situations other agencies already have significant, perhaps adequate inspection programs. An example is tanker inspection which has traditionally been handled by the Coast Guard. Continued careful coordination among State and Federal agencies is needed to ensure that there is an adequate frequency of competent inspections for all kinds of oil related systems.

The Trans Alaska Pipeline System - TAPS - is the major petroleum related engineering system in Alaska consisting of 800 miles of 48 inch diameter pipe, crossing more than 800 rivers and streams, and including 10 pump stations and

151 mainline valves. The filled volume of the line is 9 million barrels; at the current flow rate of 2 million barrels per day oil requires 4.5 days to travel from Prudhoe Bay to Valdez. Overall, it appears that State oversight of TAPS, including assurance of its mechanical integrity, was at a relatively high level during construction and in the first years of operation. However, during the decade of the 80's the generally safe operation of TAPS combined with the press of other regulatory issues and declining state budgets lead to a shift of priorities away from TAPS. Increased scrutiny since the Exxon Valdez spill has revealed several significant areas in which the mechanical integrity of TAPS is either uncertain or known to be in need of repair.

Corrosion

The greatest spill-related long-term risk in existing major operating systems is the danger of corrosion in pipelines and storage facilities. Although Alyeska and other major companies are aware of the problem and are taking steps to fight corrosion, it remains among the problems most needing continued monitoring.

All steel fixtures exposed to water corrode. The designers of the Trans-Alaska oil pipeline were well aware of the problem and of the need to design a means to prevent, or at least significantly retard, corrosion. The system they designed for use on the exterior of buried portions of the pipeline was basically a combination of pipe coatings and wrappings to prevent water from reaching the steel surface of the pipe, and cathodic protection to render the underground environment less conducive to the electrochemical reactions involved in corrosion. The intent of the designers was that this system would prevent significant corrosion for the useful design life of the pipeline, thirty years.

However, beginning around 1989, Alyeska became aware that significant corrosion was occurring on buried exterior portions of the pipeline. During excavations for unrelated purposes, it was discovered that the protective coatings were becoming disbonded, allowing water to migrate underneath and cause corrosion. The cathodic protection system also did not seem to be providing enough protection to prevent large areas of corrosion, including formation of deep pits in the pipe wall. Alyeska immediately embarked on a major program to determine the extent of corrosion and repairing damage, including several emergency repairs where the loss of wall thickness was enough to cause concern

about ruptures. At the same time Alyeska took steps to avoid operating at pipeline pressures that would endanger the pipeline at areas of severe corrosion. It also stepped up work on an improved "pig", an electronic device run through the pipeline which can, with some limitations, detect areas of deformities or loss of wall thickness.

When state and federal regulators became aware of the problem they took action. A joint effort to determinine the causes of the corrosion and requiring adequate remedies was undertaken by the State Office of the Pipeline Coordinator, the Alaska Office of the Bureau of Land Management, and the Office of Pipeline Safety of the U.S. Department of Transportation. The joint effort succeeded in making the problem a public issue and had some success in forcing Alyeska into doing more investigation than it would have otherwise; however the effort has been handicapped by lack of independent resources in all three agencies. In fact the joint effort has relied largely on experts hired by the Alaska Department of Law in connection with a parallel challenge to Alyeska's inclusion of corrosion-related costs in its tariff. Although the joint effort has slowly gained additional staff positions, it does not have sufficient in-house expertise to deal with a problem of this magnitude, and it lacks discretionary funding to hire sufficient outside experts. Moreover, the State Pipeline Coordinator's Office is dependent on annual negotiations with Alyeska for a significant part of its budget, a fact which not only drains time but puts the office in a conflict regarding vigorous environmental enforcement.

The situation now is as follows: Alyeska is continuing its program to determine sites needing repairs, although it is not doing enough excavations to satisfy the SPCO or federal agencies. Alyeska is continuing to improve the capabilities of its pigs, although it admits that the pigs have not detected all the serious corrosion and have limitations at critical areas such as along welds and pipe bends. Alyeska is upgrading the cathodic protection system, although not as aggressively as the State's corrosion experts want. Throughout the controversy the State and Federal agencies have opted for a cooperative approach with Alyeska rather than formal enforcement procedures. In fact it is possible that more aggressive policies by Alyeska toward corrosion prevention will result from the tariff litigation between the State and the owner companies than from enforcement action by the state and federal regulatory agencies.

The corrosion problem on TAPS is indeed serious. Alyeska has

already installed hundreds of full circumference steel sleeves over the pipeline at corroded places, and it plans on still more as more corrosion is discovered. Extensive corrosion has been found in internal piping at pump stations and on storage tank bottoms. Alyeska plans on spending hundreds of millions of dollars on the problem. Two main conclusions are evident: Alyeska is aware of the magnitude of the problem and is addressing it in as forceful a way as it (though not all regulators) think appropriate; but the problem itself is so great, and the engineering problems in preventing, detecting, and repairing corrosion are so complex, that even with Alyeska's recognition of the problem, there is no assurance that spills will not occur as a result.

Alyeska points out that no spills due to corrosion have occurred from the mainline pipe. But oil has spilled, in small quantities so far, from other components due to corrosion. And another pipeline, the Kuparuk, has suffered a corrosion-caused leak. In short, there is every reason to be concerned and to insist that state and federal regulatory agencies maintain maximum pressure on Alyeska and on the owners of other pipelines to detect and repair corrosion damage, but especially to institute stronger programs for preventing corrosion in the first place.

The ability and the willingness of state regulatory agencies to deal strongly with corrosion has increased dramatically since 1989.[27] The same is true of most of the federal agencies. But the State agencies still lack in-house expertise and independent access to outside experts, and are still dependent in large part on Alyeska for funding. These factors will continue to weaken the agencies' regulatory and oversight abilities until corrected.

Leak detection

TAPS has an automated leak detection system. As originally designed this system was to trigger alarms for leaks exceeding 750 barrels per day. However, because of a large number of false alarms, the system was desensitized.

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[27] The U.S. General Accounting Office issued a study on regulatory oversight of the TAPS system in July, 1991, which concluded that before 1989 the state and federal agencies did a poor job of overseeing TAPS. In their responses, most of the agencies basically agreed on past neglect, but insisted that they were now performing their jobs with proper vigor.

Of the seven pipeline leaks which exceeded the threshold[28], none were automatically detected; rather all were detected by direct human observation. For instance, the 1978 Steele Creek spill, around 658,000 gallons, the largest pipeline leak to date, was detected by a non-Alyeska aircraft pilot. Several other spills were detected by passing drivers who smelled oil. Currently Alyeska is in the process of redesigning and improving the automated leak detection system. While this effort is encouraging, experience indicates that developing a reliable system to detect a leak of less than 1000 barrels per day in a line with a flow rate of 2 million barrels per day is a major engineering challenge. Until the reliability of an automated system is demonstrated in operation, it will be prudent for the State to rely on direct observation as the principal means of pipeline leak detection.

Other areas of concern regarding TAPS

Geologic hazards including unstable slopes, earthquakes, permafrost thawing, and stream erosion, are threats to the physical integrity of the TAPS pipeline. The TAPS right-of-way agreement which allowed construction of the pipeline on Federal lands required design and construction features to protect the line and allows inspections to determine that these features are effective. In spite of these measures, pipeline settlement related to permafrost melting has been a continuing problem and has been identified as the cause of two major leaks. Increased and better coordinated inspection by State and Federal agencies appears to be needed in order to ensure that geologic hazards do not pose an unreasonable risk to the physical integrity of the pipeline.

The Valdez Marine Terminal, which is also part of TAPS, includes 18 crude oil storage tanks, each with a capacity of 500,000 barrels. In the past no one agency has asserted ongoing oversight over the terminal. Among federal agencies, EPA apparently agreed to assume oversight for the integrity of the

[28] The nine largest pipeline leaks during the period 1977 -1991 were: 1) July 1977 explosion at pump station #8, 50,000-200,000 gallons and one fatality; 2) July 1977 damage to check valve #7 by heavy equipment operator, 75,000-100,000 gallons; 3) August 1977 bypass failure at pump station #9, 4000 gallons; 4) October 1977 leak at check valve 68A 4000 gallons; 5) February 1978 sabotage at Steele Creek 658,000 gallons; 6) June 1979 pipeline settlement and cracking at Atigun Pass 200,000-350,000 gallons; 7) June 1979 pipeline settlement and cracking at mile 734 50,000-100,000 gallons; 8) May 1980 storage tank failure at pump station 10 40,000 gallons; 9) January 1981 loose fitting on check valve #23 75,000-100,000 gallons.

storage tanks prior to construction, but never did actively fulfill the responsibility.[29] The Office of Pipeline Safety has legal jurisdiction, but has done little until recently. Among state agencies, DNR had authority when the land was owned by the State, but during the 1970's the State sold the site to Alyeska without maintaining the right of entry for environmental oversight purposes. ADEC retains authority over potential pollution at the terminal, but its aggressiveness has varied over the years depending largely on budget and competing priorities. It appears that today the joint office of the federal pipeline agencies and the State Pipeline Coordinator is taking a more aggressive oversight posture, but all three are hampered by lack of personnel with expertise in the area.

Meantime, it has become clear that corrosion is a serious problem at the terminal. Corrosion in the bottoms of the large storage tanks has progressed to the point that Alyeska has embarked on a multi-year repair program. Other piping at the terminal, particularly in the ballast water treatment plant system, has been identified as having major corrosion problems. Again, improved coordination among State and Federal agencies is imperative if oversight of repairs by Alyeska is going to be exercised in a timely manner.

The final link in the large and highly engineered TAPS system is the fleet of supertankers (VLCC's or very large crude carriers) which transport oil from Valdez to U.S. markets. Much of the authority for assuring the mechanical integrity, as well as adequate manning and safe operation, of these vessels rests with the Federal government through Coast Guard inspection and regulation and through the Oil Pollution Act of 1990 which requires the gradual conversion to double hulls of all petroleum carriers calling at U. S. ports. Although the State's role in ensuring the mechanical integrity of VLCC's is limited, Alaska clearly has a significant interest in this issue. It is probably neither necessary nor practical for the State to authorize and implement a tanker inspection and regulation program in parallel with the existing Federal effort. Rather, Alaska will be better served by monitoring the Federal program to ensure that standards are appropriate and enforcement is adequate.

Non-TAPS systems

Compared to TAPS, all other oil related mechanical systems in Alaska

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[29] Trans-Alaska Pipeline, Report of the General Accounting Office, July 1991, p. 36.

are minor. Nevertheless, other systems and facilities handle substantial quantities of petroleum at many locations around the State and present and array of current and potential mechanical integrity problems. Most of the elements of TAPS are present in Cook Inlet on a smaller scale. Since much development of the Cook Inlet oil fields pre-dates TAPS, age related problems can be expected to be greater in Cook Inlet. A substantial infrastructure exists around the State for the distribution of refined petroleum products. Some of these facilities are modern, well engineered and carefully operated and maintained. However, others are antiquated, of doubtful engineering and have histories of neglect. In addition, many small facilities are owned and operated by State and Federal agencies and are not fully covered by the statutes and regulations which ensure mechanical integrity. Together, these small systems present integrity problems which probably directly affect more Alaskans than any TAPS problem, including the Exxon Valdez.

Distribution systems include village fuel systems throughout the state many of which are old, maintained in a haphazard fashion, uninspected and consequently are of unknown integrity. Most military facilities constructed in Alaska since the 1940's, including all the major active facilities and many smaller and inactive sites, have fuel distribution facilities. These are largely unregulated and uninspected and in numerous cases known to be leaking and contaminating ground water. For instance, the Haines - Fairbanks military pipeline experienced at least 40 leaks while in operation from 1956 to 1972 and was permanently closed following a 100,000 gallon spill of jet fuel caused by corrosion. Since 1980 the Department of Defense has conducted a program to cleanup oil and hazardous material contaminated sites at its installations around the country. However, this program is seriously limited by its budget and, in any case, directed at cleanup rather than prevention. Other Federal agencies, especially those which operate at remote sites in Alaska, such as the Federal Aviation Agency, the Bureau of Land Management, the Public Health Service and the Bureau of Indian Affairs, operate petroleum facilities with little or no oversight and often of questionable mechanical integrity. Some of these facilities are more than 40 years old. Age, combined with the use of older technologies, obsolete engineering strategies, and exemption from inspections increases the likelihood of integrity problems.

The State of Alaska also operates petroleum facilities which are largely exempt from inspection of mechanical integrity and other regulation. These include fuel storage and transfer facilities at Department of Transportation

sites around the state. Probably of greater importance based on the volume of petroleum involved is the Alaska Railroad which stores and dispenses fuel for its own operations and transports substantial quantities of petroleum products as freight. However, the railroad does not come within the definition of systems required to obtain approval of contingency plans. In addition state operated airports, especially the commercial hubs in Anchorage and Fairbanks dispense aviation fuels through underground systems. All of these State facilities are almost totally neglected by the inspection and regulatory programs which are considered essential for non-governmental facilities.

Since state and federally operated facilities constitute an important segment of all oil related mechanical systems in Alaska, ensuring that those facilities meet the mechanical integrity standards required on non-governmental operations would have an important effect in improving the overall level of mechanical integrity in Alaska.

Recommendations

Federal and state agencies with overlapping jurisdictions should allocate responsibility to maximize efficient use of their resources and ensure that no major potential problem areas are neglected.

Funding for regulatory oversight should be sufficient to permit building agency expertise in the complex systems used by the petroleum industry today. At a minimum, priority should be given to training personnel so that regulatory personnel have as much knowledge of specific facilities as the regulated industry.

More attention should be paid to the less well designed and maintained systems, such as remote federal and state facilities and village petroleum systems. Other systems which cumulatively handle large quantities of oil but escape most state regulation -- such as the Alaska Railroad -- should be brought within the same authorities as other systems.

VII - ALLOCATION OF STATE EFFORT AMONG MAJOR RISK AREAS

Risk is an unavoidable part of life; each of us faces risk on a daily basis. Many risks are minor or at least familiar enough so that they can be quickly dealt with while others are great enough or unusual enough to attract attention. Every risk consists of two elements: the severity of the possible negative consequence and the probability the negative consequence will occur. Whether a particular risk is considered major or minor, acceptable or unacceptable depends on both factors, severity and probability. Numerous quantitative methods have been developed for estimating risk. While use of these techniques can be valuable, risk is largely a matter of social and personal value, not strictly a physical quantity and therefore cannot be precisely measured.

Estimating the risks associated with oil spills is further complicated by the fact that our present knowledge of ecology, toxicology and other relevant sciences is far from complete. Consequently, all estimates of risk contain some, often considerable, uncertainty. Even when risks can be estimated with precision (such as the risk of air travel or being struck by lightening), people perceive risk subjectively. Kinds of risk frequently perceived as higher include: manmade, rather than natural risks; involuntary, rather than voluntary risks; risks with immediate rather than delayed consequences; and uncontrollable rather than controllable risks. Furthermore, in a social setting risks are often not equally distributed across the population and sometimes a particular course of action subjects some people to risks while providing benefits to others.

Despite these difficulties, we must manage the risks which we face. We can, if we chose and are willing to pay the cost, reduce risk. However, we cannot eliminate risk.

Risk of oil spillage exists wherever oil is produced, transported, refined or stored. In Alaska major sites are oil fields, pipelines, railway tank cars, tank trucks, tank ships, barges, above ground storage tanks, and below ground storage tanks. Because each of these sites has distinct attributes which influence the probability and severity of oil spill risk, they will be considered individually.

This discussion considers oil spills resulting from natural events,

human operational error, or engineering error at each of the eight kinds of sites listed above. There are some spill situations in which the cause might be attributed to either natural events or engineering error. To avoid confusion, we will consider a natural event to a situation in which a system fails because of an environmental stress which produces a load beyond the maximum design load. Situations in which a system fails below its maximum design load are considered to be engineering error. This report does not consider spills resulting from intentional acts of vandalism, sabotage, or terrorism although sabotage has been responsible for at least one spill of 16,000 barrels from TAPS.

Spills occurring in any of these ways present risks to environmental quality, public health, and the economy. In general all oil spills damage environmental quality, roughly in proportion to their size and frequency. Public health risks are more variable depending on the human population density near the spill site and on whether spilled oil is ingested by humans, for example through contaminated drinking water or subsistence food resources. Economic risks are also variable and largely depend on whether spilled oil damages living resources such as fisheries stocks. In the following paragraphs we evaluate the risks of oil spills for each of the sites and causes outlined above. While each activity has other associated risks and benefits, only oil spill risks are considered here.

Oil Fields

Oilfield facilities, which include exploration and production wells as well as gathering systems which deliver crude oil to either storage tanks or pipelines, are subject to a range of extreme natural events. In Cook Inlet and the Kenai Peninsula these include earthquakes and vulcanism, while on the North Slope severe weather is a factor. Oil fields are extremely complex engineering systems, providing the possibility for engineering and operational errors. While such errors could lead to large spills, the likelihood appears low based on operating histories. In oil fields as at all the sites considered here, the potential for operational errors cannot be completely eliminated. However, the likelihood of these errors can be reduced by proper training, scheduling to avoid fatigue and burnout, and developing operator cultures that value and reward spill avoidance. North Slope oil fields probably present greater environmental quality risks because the larger quantities of oil produced provide the potential for larger spills and because of the presence of sea ice which complicates response to marine spills. On the North Slope there is a range of risk levels with lower risk the established

fields (such as Prudhoe Bay and Kuparak) with strong infrastructures of gravel roads and large air fields and higher risk at remote and offshore sites where access is always more difficult and temporary inaccessibility is more common. However, Cook Inlet and the Kenai Peninsula may present greater public health risks since gathering lines in a moderately populated area with unfrozen ground present the possibility of ground water contamination and greater economic risks since living natural resources, especially salmon, are important. Exploratory wells, especially in frontier areas distant from other petroleum operations, carry extra risk because of the logistical difficulties in responding to potential spills.

Pipelines

In addition to the Trans Alaska Pipeline System (TAPS) there is an extensive system of gathering lines which transport oil from production wells to TAPS. One of them, the Kuparak pipeline has suffered at least one corrosion caused leak. Other pipelines in the state include crude oil lines associated with the Cook Inlet-Kenai fields, product lines between the Kenai and Anchorage and several product lines of the military. Most of these lines run through seismically active areas and all are subject to damage by flooding. Like oil fields these pipelines are complex engineering systems with the potential for spills due to operational and engineering errors such as the recently recognized corrosion problems in some sections of TAPS. Pipelines are subject both to minor leaks which, especially if underground, are difficult to detect and consequently may continue for extended periods and to massive leaks which can be quickly detected but nevertheless release considerable oil. The environmental quality and economic risks associated with these lines vary widely. Public health risks are highest for underground lines in populated areas where contamination of ground water used for drinking is possible.

Railway Tank Cars

Currently, considerable volumes of petroleum products move over the Alaska Railroad. Derailment of tank cars with leakage can result from natural events such as floods which damage roadbed and track, as well as from operational and engineering errors. Operational errors in filling and securing cars can also lead to spills. Several such spills have occurred on the Alaska Railroad. The relative importance of environmental, public health and economic risks for any particular spill scenario is site specific. However, the maximum potential single

spill volume is lower for the railroad than for other systems discussed here except tank trucks and underground storage tanks.

Tank Trucks

Petroleum products move by tank truck over virtually every road in Alaska. This includes both inter-city transport and local delivery of motor fuels and heating oils. Traffic accidents caused by adverse weather conditions, operator error and equipment failures and resulting in petroleum spills are not uncommon. In recent years about 6-10 truck spills ranging from 100-10,000 gallons have be reported annually by ADEC's Northern Region Office. However, the risks associated with these spills are relatively low for three reasons: 1) spill volumes are usually small, 2) repetitive spills seldom occur at a single site so that few areas receive chronic impacts, and 3) the distillate products which are spilled are generally volatile so that little material persists at the spill site.

Tank Ships

Tankers carrying crude oil transit inshore Alaskan waters of Prince William Sound and Cook Inlet. Often these tankers proceed offshore through the North Pacific off Alaska's southeastern coast. Oil spills from the Glacier Bay in Cook Inlet in 1987 and the Exxon Valdez in Prince William Sound in 1989 show that the risks of oil spills from tank ships in Alaska are real. In the Exxon Valdez spill operational error in navigation was the primary cause of the grounding while the presence of ice, a natural event, also contributed. However, both adverse weather and engineering failures have contributed to other tanker accidents resulting in oil spills. It is characteristic of oil spills as large as the Exxon Valdez that there were public health and economic impacts as well as environmental quality impacts. While the likelihood of disastrous oil spills from tank ships is much lower than of oil spills from tank trucks or rail cars, the maximum amount of petroleum that can be spilled in a single event is far greater for tank ships. An estimate prepared for the Alaska Oil Spill Commission puts the likely time between spills the size of the Exxon Valdez (11 million gallons) at 13.5 years for Prince William Sound and 24.5 years for Cook Inlet and proposes modifications to the marine transportation system which might reduce the probability of such spills by as much as 77%.

Barges

Fuel barges are an important link in the petroleum distribution system for communities in coastal Alaska and along the Tanana and Yukon Rivers. Barges and the ships which tow or push them are subject to the same natural events (such as adverse weather), operational errors (such as inaccurate navigation), and engineering errors (such as propulsion or steering failure) as tank ships. However, because barges carry small volumes of refined petroleum compared with the large amounts of crude carried by most tankers in the Alaskan trade, the maximum possible spill from barges is much smaller. According to a report to the Alaska Department of Environmental Conservation by Arthur D. Little (Study of Noncrude Tank Vessels and Barges, Task 5, 2 June 1991), the average number of noncrude spills in Alaska of over 1000 gallons from both barges and ships is low, about 1.3 per year and the total volume lost since 1973 is 3.3 million gallons. According to the same report, the risk of oil spills from barges is greatest in Southeast and Southwest Alaska, areas which have relatively undeveloped spill response infrastructures.

Above Ground Storage Tanks

Above ground petroleum storage is typical of larger operations (the TAPS marine terminal in Valdez, refineries, military installations, regional distribution centers and trans-shipment points) and is becoming more common for small to medium operations because of increased hazard and liability associated with underground storage. Above ground storage is subject to a variety of natural events including earthquakes, vulcanism, flooding and snowloads. Transfer of petroleum in and out of the tanks can result in overfilling and spillage. Leakage through tank bottoms and from underground piping can be difficult to detect. Small leaks of these types can, if allowed to continue over periods of months or years lead to severe local ground water contamination possibly resulting in public health risks. Remediation of groundwater contamination can be extremely expensive, especially when viewed in the context of the financial resources of owners and operators of many smaller and older facilities. Above ground petroleum storage facilities show a considerable range of engineering sophistication. Large modern facilities (such as the Valdez TAPS terminal) can readily document how spill prevention and containment features were incorporated at the design stage. However, for many smaller and older facilities the design history is not so clear. Also many of these facilities are operated by State and

Federal agencies which are largely exempt from regulatory oversight. These factors increase the difficulty of estimating risks associated with such facilities.

Below Ground Storage Tanks

Below ground petroleum storage is generally limited to refined products in smaller amounts than above ground tank farms. The high potential for chronic undetected leaks in underground storage systems leading to ground water contamination has been recognized in recent years. It has been estimated that as many as 90% of below ground storage tanks and their associated piping have leaks. This has resulted in programs to test existing systems and correct those which are found to be leaking.[30] However, these programs cannot make significant improvements in the risk quickly, since underground leaks are, by their nature, difficult to discover and to remediate. Although the extent of leakage from storage tanks (both above and below ground) is not fully known, there have been a number of instances in Alaska where drinking water was contaminated by such leaks. From a risk standpoint the potential effect on the public health is a major factor.

Recommendations

As noted earlier, evaluations of risk embody policy decisions on what consequences are of importance. Beyond that obvious point, we recommend that broad consideration be given to improving State oversight -- and implicitly State assistance -- to remote or poorly engineered facilities which are chronic oil spill risks, but now largely escape either regulation or assistance in improving risk factors. Priority should be given to facilities whose failure would jeopardize public drinking water supplies or to those which could harm valuable resources.

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[30] Both the United States and the State of Alaska have programs to discover and remove contamination from leaking underground storage tanks. Authority for the State program is at AS 46.03.360-.450.

VIII - PUBLIC EDUCATION PROGRAMS

There is widespread agreement that greater knowledge and awareness of oil spill risks would contribute to prevention and improve response. It follows that education programs which increase that knowledge would be beneficial. Educational programs can be useful when specific goals are carefully defined and the population segments at which the programs are directed are identified.

Before describing potential new or expanded educational programs, present activities, both governmental and non-governmental, will be considered. Currently there is no single coordinated program in this area; rather several organizations operate independently, providing various kinds of information to separate but overlapping audiences.

Present Programs

The Prince William Sound Regional Citizens' Advisory Council (RCAC) maintains a public information program intended to promote knowledge and awareness of petroleum transportation related issues within the Prince William Sound - Gulf of Alaska region. The RCAC also conducts in depth training for those involved in the policy making process. For instance in October 1991 the RCAC sponsored a one week oil spill prevention and response training course in Anchorage. This course was provided by instructors from Texas A&M University and covered a broad range of technical and policy issues. The RCAC has also contracted with Texas A&M to study the feasibility of a Prince William Sound Spill Response Training School. Groups like the RCAC also educate the public in indirect ways; by increasing media coverage (either intentionally or by becoming involved in controversies which result in coverage), by functioning as a link between technical experts and the public, and by providing a forum through which the public can be involved without having to know all the technical issues. The RCAC is broadly committed to education and is presently in the process of formulating its long range public education plans for this area.

The University of Alaska Marine Advisory Program (MAP) has produced written materials directed toward a general audience describing causes, prevention and consequences of marine oil spills. Advisory agents act as sources of information on these topics in coastal communities. MAP's efforts are largely

driven by external events (such as the Exxon Valdez spill) and interest levels shown in coastal communities. MAP does not have a specific mandate to deliver oil spill prevention and response information.

The print and broadcast media of Alaska have, especially since the Exxon Valdez spill, given considerable attention to oil spill prevention and response issues. Thus the news media play a major role in both collecting and delivering information to the general public.

State and Federal agencies with responsibilities in oil spill prevention and response provide continuing education opportunities for personnel including participation in training schools and workshops and attending professional meetings such as the biennial international Oil Spill Conference sponsored by the Coast Guard, the Environmental Protection Agency and the American Petroleum Institute. While these training activities are well established as a whole, some appear to be informally organized. Formal evaluation procedures for determining the extent of needed training and for determining whether individuals are adequately trained are sometimes added as an afterthought, if at all, and not as part of the main program compoents. Recently a program has been established to provide personnel in the State Pipeline Coordinator's Office with training in the Incident Command System, hazardous material handling and emergency medical care (more than 200 hours of training). This will help that agency's staff, but additional training to increase knowledge of applicable regulations and legal requirements as well as environmental science would also be beneficial. A joint training program with participation from multiple state and federal agencies would have the added value of promoting contact and understanding among agencies. Such a joint training program was led by ADEC in the late 70's and early 80's; revival of this program could be a significant step toward training and interagency coordination.

Spill Drills (rehearsals of response to simulated spills, either on paper or in the field) are a valuable educational and training tool for responders and response managers, since these drills provide opportunities to test skills, procedures and equipment and to interact with agencies and organizations. Drills, which have become more frequent since the Exxon Valdez spill, often uncover response problems which can then be rectified. For instance a drill was recently held in Cook Inlet in which Cook Inlet Spill Prevention and Response, Inc. (CISPRI), Tesoro and Unocal responded to simulated spills. The Cook Inlet

Regional Citizens' Advisory Council (CIRCAC) engaged a consultant, Townsend Environmental, to evaluate this drill. Among the areas identified as needing improvement was ADEC's level of planning, training and communication. ADEC has responded by pointing out that its role in this drill was as facilitator rather than responder or participant. However, it is in the best interest of the State and of ADEC to have state agencies participate fully and realistically in every available spill drill in order to develop and maintain a high level of response readiness.

Options for Education Program

In considering options for new or expanded programs it is important to recognize that there are at least three general group to whom programs can be addressed. These are the general public, responders and decision makers. Each of these groups needs different kinds of information and consequently separately delivery programs are necessary.

The General Public Providing information about the causes and consequences of oil spills should help the public at large reach appropriate decisions about how costs, benefits and risks should be balanced. This group contains individuals with a range of levels of concern - from persons sufficiently interested to actively participate in policy development to those whose interest may not extend beyond a desire not to personally harm the environment.

Prior to determining whether an educational program should be directed to the general public, two questions about current programs need to be considered. The first question is whether the present information reaching the public is sufficient and whether the public will be receptive to additional information. While judgements about sufficiency are difficult and probably at best subjective, it can be said that a large amount of information is available to the public through a variety of channels. The second question is whether the information which the public receives is accurate and unbiased. Clearly many of the facts concerning oil spills are controversial, so much so that what one person considers a logical conclusion, another may regard as distortion. Within this setting several information providers already function. Some, such as industry, have a clear stake in the outcome and some, such as the Marine Advisory Program, have a tradition of neutral presentation of the facts.

That conclusion that present programs are not sufficient and that

consequently that additional public education is appropriate, also brings up the question whether that program should strive for a balanced presentation of factual material or should adopt a position advocating a particular policy and, if so, what policy. These are difficult questions. In principle, balanced neutrality is attractive, but in practice is extremely hard to find and agree upon. Unless a clear program content and set of objectives can be widely agreed upon, an expanded public education program may not be justified. Even in the absence of an expanded state program, existing organizations, such as the RCAC's and the Volunteer Response Corps will in all likelihood increase the amount of oil related information available to the public.

Responders Individuals who respond to oil spills require technical training in cleanup methods appropriate to Alaskan conditions.

Responder training is much less problematic than public education since training is less value laden and has a clearer content. At present there is no established training center or school in Alaska offering courses for oil spill responders; training is largely accomplished through courses arranged on site by employers (either using trainers brought in to present the material and/or a combination of written and video material) or by sending trainees to centers outside Alaska such as the centers operated by Texas A&M University, Crowley Marine, and the Norwegian government at Horten, near Oslo. Given the importance of oil in Alaska's economy and the large quantities of oil transported here, serious consideration should be given to establishing a permanent training center on cold climate spill response.

Decision Makers Individuals who have responsibility for oil spill prevention and who may be called on to take charge of response efforts need a high level of training in order to understand the technical, legal and social factors which must be considered in oil spill prevention and response. This group also contains a range of individuals with varying information needs - from agency field staff who need information on which to base specific technical decisions to high level appointed and elected executives who need information to contribute to broad policy decisions. At the present time the level of knowledge about catastrophic marine oil spills is probably relatively high compared to knowledge of other petroleum related risks.

Agency personnel working in oil spill prevention and response need

a array of training in the general areas of Incident Command System, hazardous material handling, emergency medical care, regulatory and legal issues, and environmental science. Implementation of the State Master Plan will require an extensive training program which reaches all individuals who might be involved in spill response. As discussed above ADEC is making an effort to provide training in some of these areas to some of its oil spill personnel. The same effort should be extended to all other agencies with a role in spill response.

Recommendations

- **The State of Alaska should consider establishing a Center for Oil Spill Response Training to provide accessible training appropriate to the physical, social, legal, regulatory and climatic conditions of Alaska.**

State agencies should further strengthen training of personnel engaged in tasks related to oil spill prevention and response in order to increase effectiveness. Two key elements in a program to provide such training should be 1) identifying the skills and knowledge appropriate for various positions and tasks, and 2) providing opportunities for personnel to receive training in those areas.

IX - RECOMMENDATIONS

State policy makers should give priority to completion of the current spill prevention and response planning work being done at ADEC.

There should be a continuing training program for ADEC personnel in all aspects of spill prevention and response, preferably conducted jointly with industry and other state and federal agencies.

There should be a continuing training program for all state personnel, including executives, in response roles in catastrophic spills. All state agencies with a potential role should be required to participate, and the training should include realistic spill simulations in cooperation with industry and federal agencies.

Legislation should be considered to bring significant types of spill risks not now covered by contingency and prevention planning requirements under those requirements. There should simultaneously be a realignment of ADEC priorities so that previously neglected risks, such as from federal facilities and village facilities, receive a greater level of attention.

The language of AS 46.08.130 should be modified to permit the ADEC Spill Response Office to respond to less than catastrophic or emergency spills.

Prevention efforts should be coordinated among all agencies so that the maximum in expertise and jurisdiction is applied to every situation, and jurisdictional conflicts are minimized.

Standard specific prevention checklists should be created for each category of facility, vessel or operation so that enforcement is uncomplicated and so that all parties know what prevention measures are required or recommended, and what the consequences of following the recommendations are. ADEC regulations should be redrafted so that those specific measures can be made mandatory and the requirement enforced.

Joint interagency training programs specifically aimed at prevention, open to government, industry, and the public should be instituted.

Improved public awareness of prevention issues should be stressed through an educational program emphasizing preventive practices and proper maintenance. This program should be available in all rural areas of Alaska as well as in the developed areas.

If ADEC and DES do not come to a clear and workable agreement soon, responsibility for the depots and corps should be assigned to a single agency. For oil and hazardous substance spills, ADEC should be responsible; for other emergencies, DES should be. Cooperative agreements could still be developed to provide for use of each other's equipment in emergencies.

Initial regional depots should be set up in central locations. But completion of the statewide hazards assessment should be a priority, with additional depots located where local needs are greatest rather than in areas already well equipped by industry.

The depot network should be designed to be as cost-effective as possible. Where possible, existing facilities and shared facilities should be used for depots (fire stations, armories, Coast Guard facilities, etc.), and existing positions to staff them if possible.

Initial focus and use of Response Fund money should remain on oil and hazardous substance response. If the use of depots is broadened to include response emergencies other than oil and hazardous substance releases, additional funding for that should come from a source other than the Response Fund.

Depot oil response equipment and use of the response corps should be designed for a) first response where there's not immediate identification or involvement of a responsible party (RP), a response action contractor or industry cooperative, and/or b) immediate protection of sensitive environments. They are not meant to replace RP response, but should be an interim, stop-gap measure.

It should be recognized that the existence of these depots, with their modest amounts of equipment, will only provide a marginal improvement in the response to a catastrophic spill. The most important improvement in response would be a comprehensive inventory of all response equipment and

cooperative agreements among all the parties involved which allowed the entire pool to be accessed and devoted to a spill as needed.

It is important that the Marine Spill Response Corporation and its substantial resources be extended to Alaska. Existing and proposed response resources in Alaska leave large gaps which could be filled by MSRC.

The concept of a volunteer response corps needs more thought. The state should carefully identify where a response corps could be of benefit and how. It may be that a large, statewide program is not warranted, but that a carefully targeted program for specific purposes in selected areas could be useful.

Citizens' councils should be funded on a multi-year cycle to allow multi-year planning and budgeting and to avoid wasting time and energy on fighting budget battles every year. A three-year cycle such as Alyeska and RCAC negotiated would provide the certainty and independence needed by the councils but still allow industry enough budget control to ensure that councils are responsive to their needs as well.

Consideration should be given to whether all council funding should come from industry or whether there should also be some state or federal contribution to provide a balance and ensure the councils' independence. The question of equity should also be considered regarding how industry funding is apportioned.

The citizens' councils should focus their efforts on identifying priorities, ensuring that their workload does not exceed a level sustainable over time, and ensuring that the quality and credibility of their work is maintained at the highest possible level.

The citizens' councils have existed for only a short time, in which they have been required to respond to a myriad of new and changing programs, policies and laws directed at oil spill prevention and response. These changes need time to be fully implemented before more major changes are made.

The State of Alaska should carefully monitor events in the