Oil and Hazardous Materials Program of the United States Environmental Protection Agency

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The Environmental Protection Agency came into being on December 2, 1970, through implementation of Presidential Reorganization Plan No. 3. This action was a direct result of the growing concern throughout the nation for the problems of pollution.

EPA brings under one administrative structure the major environmental protection programs of the Federal Government which were previously scattered among some 15 separate agencies. These programs involve broad responsibilities for research, standard-setting, monitoring and enforcement for six areas of the environment: air and water pollution, solid waste, radiation, pesticides and noise. Thus, we mark the end of the old way of curbing pollution in bits and pieces, where some solutions resulted in pollution of a different kind, and begin a new, unified effort toward achieving our one and only mission—to protect and enhance the environment. A significant fact is that EPA is an independent agency with no commitment to any other agency.

The organization of an agency the scope and size of EPA is not accomplished overnight. There are still a number of unanswered questions about the final shape and form the structure of EPA will take; but from the very outset, the goal of a strong regional organization has been set by Administrator Ruckelshaus. He put it this way:

> "Thoughtful Americans of both major political parties now agree that we cannot plan and regulate social problems from the national level—our nation and our government are too complex. National guidelines would necessarily have to be broad and non-specific, and therefore inadequate. We cannot completely determine from Washington the proper shape of programs for New York, Kansas and Oregon."

At the same time, many of the programs of EPA cannot even be seen nor conceptualized at the local level. Here, a program would be specific, but not broad enough. Therefore, we face the difficult task of finding a governmental framework within which we can work most effectively to solve environmental problems.

Spills of oil and hazardous substances are one of the primary concerns of EPA. Presently, an estimated 15,000 spills of oil and hazardous substances occur annually in the navigable waters of the United States. These spills are expected to significantly increase over the next 30 years, if left unchecked, as a result of greater production, transport, storage and transfer. It is estimated, based on existing reporting functions, that of the 15,000 total spills, approximately 75 percent involve petroleum products. These include the large and devastating-type spills such as the Santa Barbara offshore oil well blowout, the Louisiana offshore oil well platform blowouts and fires, and the large tanker and barge collisions and groundings. Added to these large incidents, there are numerous lesser events affecting practically every body of water where oil transport, transfer, pipeline crossing, onshore storage or related activities take place.

In addition to spills or accidental discharges of oil and hazardous substances, large quantities of these pollutants enter the water environment every day as a result of continuous effluent discharges from refineries, chemical and petrochemical plants, factories, etc. These continuous discharges may have a more detrimental long-term effect than the large, one-time accidental spills. The short-term damages attributed to spills, and some continous discharges, include such things as fish kills, water quality degradation, and damage to beaches and man-made facilities. The long-range effects are not fully understood; however, research is being conducted in this field.

EPA's Region VI, with headquarters in Dallas, is composed of the following five states: Arkansas, Louisiana, New Mexico, Oklahoma and Texas. Four of the Nation's five largest oil-producing states are located in Region VI as well as the

largest offshore productive area off the coast of Louisiana and Texas. Also, there are five port areas in Texas and three in Louisiana which handle in excess of one million tons of hazardous substances annually. All of these are potential sources of spills. Added to these sources are the refinery, chemical and petrochemical complexes along the Louisiana and Texas coastal areas. These have both spill potential and continuous discharges of oil and hazardous substances.

The Federal program for dealing with spills of oil and hazardous substances is carried out jointly by the Environmental Protection Agency and the United States Coast Guard. Among other things, EPA is responsible for establishing and enforcing regulations on prevention of spills from nontransportation-related onshore and offshore facilities. The Coast Guard has similar responsibilities for transportation-related facilities. EPA supplies the On-Scene Coordinator for spill cleanup activities on inland waters and serves as advisor to the Coast Guard On-Scene Coordinator for spills in coastal waters.

Federal response to major oil and hazardous substance spills is accomplished through a Regional Response Team. The primary agencies represented on this Team are EPA and the Departments of Transportation, Defense and Interior. Other supporting agencies that may be invited to participate in directing cleanup operations, establishing primary areas to be protected, and initiating enforcement proceedings include the Office of Emergency Preparedness, Departments of Justice, Commerce, State, and Department of Health, Education and Welfare, as well as various State and local agencies located in the area where the spill occurred.

The 91st Congress enacted Public Law 91-224, known as "The Water Quality Improvement Act of 1970," an amendment to the Federal Water Pollution Control Act. Section 11 of this Act is titled "Control of Pollution by Oil," while Section 12 is titled "Control of Hazardous Polluting Substances". The Act requires that all discharges of oil in harmful quantities from vessels, onshore facilities or offshore facilities be reported immediately to the appropriate agency of the United States Government. Failure to notify the Federal Agency in a reasonable time shall subject that person (or company) to a fine of not more than $10,000, or imprisonment for not more than one year, or both.

The appropriate Federal agency to notify for spills occurring in inland waters is the EPA Regional Office. In Region VI, the telephone number is 214-749-3840. This number is monitored on a 24-hour basis. For spills occurring gulfward from the Intracoastal Waterway, the nearest office of the U.S. Coast Guard should be notified. The Region VI Oil and Hazardous Substances Pollution Contingency Plan sets out the boundary between EPA and Coast Guard areas of On-Scene Coordination.*

The Act also provides regulations, penalties, liabilities and enforcement actions which place the responsibility for containment and cleanup of an oil spill on the party causing the spill. When the party responsible for the spill fails to take appropriate cleanup action, or if the source is unknown, the Federal On-Scene Coordinator is authorized to take appropriate action to contain and clean up the oil. A revolving fund has been appropriated for this purpose; however, this does not relieve the responsible party of his liability for the cleanup cost.

Another important provision of the Act calls for Federal Regulations to: (1) establish methods and procedures for removal of discharged oil, (2) establish criteria for developing and implementing local and regional contingency plans, and (3) establish procedures, methods, and requirements for equipment to prevent discharges of oil from vessels, onshore facilities and offshore facilities. It further provides that any owner or operator of a vessel or facility who fails or refuses to comply with the provisions of any such regulation shall be liable to a civil penalty of not more than $5000 for each violation, and each violation shall be a separate offense.

EPA is not, by any means, an environmental czar. For one thing, it shares many of its enforcement authorities with the states, in accordance with principles and procedures established by Congress in the legislation governing its activities. Neither should it be considered a paper tiger. This Nation has resolved to maintain conditions under which man and nature can exist in productive harmony. EPA has a key role to play in carrying out that National Policy. The Agency is determined to be an advocate for the environment wherever

*This plan is available by writing to the EPA Region VI Office, 1600 Patterson Street, Dallas, Texas 75201. Address your request to the attention of the Oil and Hazardous Materials Branch.

it can, whenever it can, as decisions about our Nation's future are being made—whether it be in the councils of government, in the boardrooms of industry, or in the living rooms of our citizens.

Spill prevention planning is one area in which EPA is highly concerned. EPA is seeking out some of the more common causes of spills, taking corrective measures to prevent spills from recurring, and planning to conduct aerial surveillance operations using infrared and color photography to locate spills, potential spill sources and continuous discharge points. Other remote sensing devices may also be employed.

A team of National Aeronautics and Space Administration experts has completed a preliminary investigation concerning safety and pollution control on offshore platforms. This team has made several significant recommendations based on their preliminary study. These recommendations concerning the use of NASA-type procedures for inspection, quality control, failure analysis, safety, etc., are under study and a more detailed analysis is contemplated. With NASA's track record for safety and accomplishment, who could deny that their recommendations are worthy of consideration.

Through the industrial discharge permit program, EPA is requesting a Spill Prevention, Containment and Countermeasure (SPCC) Plan from all dischargers that use, process or store oil or hazardous substances. These SPCC Plans are being reviewed in terms of adequate spill prevention techniques, and a listing of oil and hazardous substances will be available in the event of a natural disaster. Guidelines for preparing the SPCC Plan have been developed by EPA. These guidelines request detailed information concerning the following:

1. Spill History and Notification Procedures
2. Spill Control
3. Plant Drainage
4. Marine Loading/Unloading Facilities
5. Tank Car and Tank Truck Loading/Unloading Facilities
6. Bulk Storage Tanks
7. Solid Material Storage Pile and Drum Lots
8. Pump and In-Plant Process and Transfer Pipelines
9. Plant Security

Federal installations are also a source of oil and hazardous substance spills. EPA has developed a framework whereby each Federal installation that uses, processes or stores oil or hazardous substances will appoint its own On-Scene Coordinator for spills and develop a contingency plan for that installation. The contingency plans are to include a listing of available spill control equipment and points of entry into the installation. Also, each installation will be required to file a SPCC Plan with the Environmental Protection Agency.

The causes of spills in the oil industry are numerous and varied, as the sources range from wells, gathering lines, tanks and pipe lines to refineries, tank cars, tank trucks and loading/unloading facilities. Equipment failure is one significant cause. Observed conditions for most oil operations is a policy of replacement upon failure with no more than visual observation of failed items, and without any type of record being made for failure. Failure-reporting involves tabulating the occurrence of incidents, problems, failures, and out-of-specification conditions. Without a tool of this type to focus management attention on problem areas, it is doubtful that any real progress can be made toward improvement of equipment or procedures.

Poor operating procedure is another significant cause of spills. The hazards associated with oil and gas operations are well recognized. The basic ingredients of fire (fuel, oxidizer and ignition source) are continually present. The majority of equipment and procedures to protect against the hazards, however, have been developed on a reaction basis. A more effective method is an analytical effort to recognize problems in advance. Corrective action for the more serious problems may include design changes, warning systems, back-up systems or a plan for alternate operations.

In almost all types of spills the human error has been recognized, and it ranks at the top of the list for many types of spills. Human error has caused blowouts, fires, tank overflows, ship and barge collisions and groundings, explosions, pipeline breaks, etc. To combat this cause, it is necessary to train each individual in his phase of operations and to assure that he understands each operation with which he is associated. Periodic reviews of safety and pollution records should be made, with appropriate awards for top performance.

Management's philosophy of "production first" is understandable. A reasonable margin of profit is essential; however, a considerable reevaluation of safety and antipollution needs is necessary to effect positive controls. The "production

first" philosophy as applied in the past, without adequate regard for other matters, probably contributes significantly to one of the petroleum industry's chief problems, its public image.

When there is a pollution incident involving oil, the entire industry bears the blow of unfavorable publicity. Whether the cause be a well blowout, pipeline break, refinery discharge, barge overflow or tanker collision makes no difference to the general public; the entire petroleum industry is branded as a polluter. Therefore, it is essential that all elements of the industry continue meaningful pollution abatement and prevention programs if the polluter image is to be eradicated.

The petroleum industry as a whole is to be commended for its efforts in the field of pollution abatement. Large sums of money have been channeled into pollution research projects. The industry has recognized the current environmental problems and through efforts of individual companies, professional organizations and industry-organized groups, it is showing significant progress in cleaning up polluted areas. Many companies have organized their own environmental affairs departments to deal with problems and to inspect all phases of the company's operations to assure compliance with prudent operating procedures. The Environmental Protection Agency and other governmental agencies are pleased with the genuine cooperative attitude exhibited by the petroleum industry toward pollution abatement; however, no one should be willing to rest on the accomplishments to date; much more remains to be done.

Our Nation is faced with dwindling oil and gas reserves and a possible energy crisis; yet leasing, exploration and development activities in some of the more lucrative new oil provinces are being delayed or prohibited. Congressmen and laymen from nonproducing areas, and some from producing areas as well, object to the environmental hazards associated with oil and gas production. Battle lines have been drawn between ecological groups and the petroleum industry, with the ecological groups having a convincing argument supported by evidence of catastrophies and generally poor housekeeping practices that have occurred in productive areas. It is not enough for the petroleum industry to stand on the fact that we may be facing an energy crisis and therefore say the producers should be allowed to pursue their course as they have in the past. As long as some elements of society sponsor the feeling that petroleum energy needs can be satisfied with imports, the domestic petroleum producers are facing a tough battle if they plan to conduct their operations as they have in the past. The public demands more than that.

The petroleum industry is recognized for its tremendous progress in technology and conservation. The challenge of drilling to depths greater than 25,000 feet has been met, solving the problems of hard formation penetration, lost circulation, hole deviation and high temperatures along the way, and successful completion of high pressure wells in ultra deep formations is almost a common, everyday occurrence. These achievements are lauded throughout the technical and professional elements of society, yet the layman wonders why, with all this technical expertise, the industry continues to have so many pollution incidents and hangs on to rather poor housekeeping procedures.

This image can be changed. It must be changed if domestic producers expect to operate in productive harmony with other elements of our society.

Many oil company executives have become keenly aware of the needs for pollution abatement and are cooperating with government agencies in policy making and program development. This is commendable, but all too often this attitude is not conveyed to the men in field operations where the pollution incidents occur. A better system must be developed to make the men in the field fully aware of the company's intentions.

An oil man's evaluation of the current situation was published as an editorial in the Oil and Gas Journal. The article was titled "Good Intentions Alone Won't End Pollution". The entire article is quoted as follows:

> "The oil industry often is plagued by a curious "environmental gap" that must be bridged. There's still too much disparity between intentions and practice in pollution control."
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> "Industry leaders and individual company management are committed to a stringent and all-out policy of conservation. Vast sums are approved in the executive suite for equipment and processes intended to keep operations from fouling the air, water, and land. Yet, in too many instances, thoughtless or careless actions at the operating level upset the best-planned precautions and result in pollution."

"Some examples:

"A tanker navigator ignores radar or traffic rules in a tight harbor. A collision results, and there's a spill that arouses a public outcry."

"A deck hand overseeing transfer of cargo from ship to terminal goes to sleep on the job. The tank overflows, and before he can shut off the valve, the harbor is a mess."

"A process operator turns the wrong valve and a slug of toxic effluent is dumped into a stream."

"Workers on an offshore platform remove a downhole choke and later the well goes wild."

"Crews sent to the Far North take some pot shots at game near a rig or on a seismic party. Some go hunting by helicopter. Others neglect good housekeeping and litter the area or begin operations before proper equipment arrives and tear up the tundra."

"These are random examples, it's true. And they stand in isolation because they don't represent common practice. Yet, they point up the problem."

"Oil companies face a big job still of educating their personnel on pollution-control practices. ***They must police the actions of their workers and those of independent contractors as well."***

"Everyone from top executives on down the line must "get the word." Protecting the environment is serious business. There can be no winking at violations of good practices in the name of speed or economy. Carelessness or thoughtlessness should not be tolerated."

"This means that management can't stop at setting policy and buying the necessary tools to control pollution. It must make certain that employees are trained in using the equipment and understand clearly the necessity for efficient and careful operations.

"The old days of complacency as to the environment are gone. And it's far safer and less expensive to prevent pollution than to clean up a mess after the damage is done."*

This editorial points out one of the chief problems, people. It has been said that the pollution war is man's battle against his own shortsighted activities.

EPA is working with State agencies, industry organizations such as the American Petroleum Institute, Mid Continent Oil and Gas Association, and the Offshore Operators' Committee, and other Federal agencies. Progress is being made toward problem solutions that both industry and the environment can tolerate. EPA encourages contingency planning and organization of spill response teams at the State and local levels. A quick response with trained personnel and proper equipment lessens the damage resulting from a spill.

Many oil companies have developed their own contingency plans, others are encouraged to do so. API has a model oil company contingency plan which is worthy of consideration.

Industry cooperatives have been formed to combat spills. Two excellent examples of this type organization are The Corpus Christi Area Oil Spill Control Association at Corpus Christi, Texas, and the Clean Channel Association at Houston, Texas. The Corpus Christi Association has its own equipment and trained personnel capable of responding to a spill situation on short notice. This organization is composed of representatives from local industry, city, State and Federal government working together to combat oil spills in that area. The Houston Association is underwritten by local industry representatives which handle 95 percent of the oil transferred in the Houston Ship Channel area. This group employs a contractor equipped to respond to any oil spill on short notice. Organization of more such response elements is encouraged.

EPA is developing inventories of equipment and manpower resources in the inland potential spill areas. The Agency is also developing time-of-travel data at different flow stages and listing points of access on the major rivers within the region.

If the petroleum industry will focus adequate attention and resources on such items as personnel training, equipment design, safety and good housekeeping procedures, it can solve the environmental perplexities confronting it. The industry has already proven its integrity and capability in other endeavors. Environmental protection is not always an expense item, there is a profit to be realized. The best way to reopen some of the doors that have been closed to new prospective areas is for the industry to demonstrate its intentions to the general public: that it can and will conduct its operations in a framework of good housekeeping combined with scientific and engineering excellence, as

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it is capable of doing. Through industry's continued cooperation and sincere desire to achieve a compatible relationship with other elements of the environment, we of EPA believe now, more than ever before, that a true atmosphere of productive harmony is within reach.