APPENDIX 1

OCS LEASING PROCEDURES AND OCS SAFETY AND ENVIRONMENTAL PROTECTION ACTIVITIES OF THE DEPARTMENT OF THE INTERIOR

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Under the OCS Lands Act of 1953, the Department of Interior is charged with administering the mineral development of the Outer Continental Shelf. This involves the following functions in the case of hydrocarbons: selection of areas for leasing; supervision of geological and geophysical exploration; meeting the environmental protection requirements of the National Environmental Policy Act; resource evaluation as a major component of determining the resource sale price; conduct of competitive bidding for the resources; supervision of exploratory drilling and production activities on awarded leases to assure environmental protection; safety and resource conservation; and environmental monitoring. The detailed conduct of these activities are carried on primarily by two agencies of the Department: the Bureau of Land Management and the Geological Survey.

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LEASING PROCEDURES FOR THE OCS

One of the first steps in the leasing process, which is primarily the responsibility of the Bureau of Land Management, is the selection of general areas for inclusion in a schedule. Factors underlying this selection include initial assessments of hydrocarbon potential, as estimated by both industry and Government, environmental resources that might be impacted by OCS development, alternative energy sources, the availability of technology and the proximity to markets. These are weighed and balanced in developing a schedule of proposed lease sales which will result in the most expeditious discovery and production of oil and gas. Once an area is scheduled for a possible sale, several activities occur: (a) an acceleration of industry's collection of G & G data under DOI permits, (b) DOI baseline studies, (c) the Department's tract selection-impact statement-sale decision process, and (d) detailed resource evaluation of each tract by the DOI.

Collection of G & G Data

Most of the information used by both the government and industry on the hydrocarbon potential of various OCS areas is acquired by geological and geophysical surveys. A considerable amount of this data is collected, under permits issued by the Geological Survey, by specialized data collection firms and sold and/or furnished to oil companies and the Department by its own scientists and through contracts.

This geological and geophysical data is used by industry in nominating tracts for lease and to prepare bids and is used by the Department for general sale area identification, for tract selection, environmental assessments, and resource evaluation.

Baseline Studies

Baseline studies are conducted in frontier areas to establish an environmental benchmark to permit continued monitoring after the sale during drilling and production to detect possible adverse effects from these operations. If such adverse effects are detected, additional regulations would be adopted to reduce or eliminate them. Studies cover data on geology, geophysics, biological environment, oceanography and meteorolgy associated with a particular region where offshore leasing may take place. These studies include primary research as well as analyzing existing information.

Call for Nominations

A request for nominations is published in the Federal Rtegister. All interested parties are urged to nominate specific tracts in a broad offshore region. In addition to stating which tracts in an area should be studied for possible leasing because of their oil and gas potentaal, all interested parties (State and local governments, environmental and conservation groups, and industry) are requested to provide environmen economic and technical information on why specific tracts within an area should be excluded from the leasing process because of significant enviornmental consideration or other resource conflicts, such as fishe or recreation.

Announcement of Tracts

The Department uses the nominations of industry, the resource and environmental information received from other Federal, State and local agencies, information received from the public, as well as its own resource, environmental, technological and economic information to select tracts for further analysis in the environmental impact statemen

Draft Environmental Statement (DES)

The draft statement is prepared at the field level where numerous contacts are made with the academic community, private research groups, environmental organizations, and State and local officials. These contacts are essential in order to help ensure a maximum understanding of the environmental and economic concerns and to help gain an understanding of how the local citizenry perceives the issues involved.

The draft statement includes, among other things, a description of the lease proposal, a description of the marine environment and the nearby onshore environment, a detailed analysis on a tract-by-tract basis of any possible adverse impacts on the environment, mitigating measures included in the proposal to reduce the possibility of adverse impacts, alternatives to the proposal and the consultation and coordination with others in preparation of the statement. It also covers the technology necessary for exploration, development, and production from the propos sale, as well as possible socio-economic impacts onshore.

The State Government controls and deals with onshore effects such as where pipelines come ashore, but we are actively seeking to work with the States in analyzing and controlling any possible adverse onshore effects.

Pertinent published and unpublished reports and resource evaluations are reviewed in preparation of the DES. When ready, it is submitted to the Council on Environmental Quality and made available to the public for consideration.

Public Hearing

Thirty days after publication of the DES, a public hearing is held. Environmental organizations, the academic community, government representatives, industry and the general public are invited to testify orally or in writing on the draft environmental statement in order to obtain the widest spectrum of views and information possible. All comments submitted for the public hearing are then considered in preparation of the final environmental statement.

Final Environmental Statement (FES)

The comments and contributions of data received through the public hearings are studied, and along with any other late-arising information, are incorporated into the finalenviromental statemnet FES.The FES is submitted to the Council on Environmental Quality and made available to the public.

Decision by the Secretary

At least 30 days after the submission of the FES to the Council on Environmental Quality, a final decision is made by the Secretary as to whether or not the proposed sale will be held. The Secretary considers all environmental, resource, economic, and technical information available in the DES, public hearing, and FES, as well as other pertinent information in order to weigh all factors related to his decision.

If the decision is that a sale will be held, determinations are made as to which tracts will be offered and what the lease terms will be. The lease terms may be tailored to any special requirements of any tract, and any tract may be withdrawn at any stage of this procedure on the basis of late-arising environmental data.

Notice of Sale

If a decision is made to hold a sale, a statement is published in the Federal Register* giving 30 days advance notice of the date of the sale, the tracts to be included in the sale and the terms under which the sale will be held.

Detailed Resource Evaluation of Each Tract

Following the announcement of tracts, and during the preparation and review of the environmental statement, the Geological Survey geologists, geophysists and petroleum engineers prepare detailed estimates of the

value of the oil and gas on each tract that is being considered for sale. These estimates are based upon geophysical and geological data acquired by industry under permit and by the Department itself, geological data the Department may have from other wells in the area or other geological studies, engineering data relative to the facilities and costs of discovering and producing the oil and gas, and factors considering the probability that oil and gas actually exists on a specific tract. These estimates are delivered to BLM immediately prior to the sale for BLM's use in determining whether a lease shall issue.

Sale

Leases are typically sold on the basis of cash bonus bidding with a *16 2/3%* fixed royalty. At the lease sale, sealed bids are opened and read. A decision is made to award a lease to the highest bidder only after the Department has evaluated that bid in terms of its own information concerning the tract's value. As discussed earlier, the Geological Survey spends the four to six months prior to a sale preparing detailed estimates of the value of oil and gas on each tract. These estimates, coupled with indicators of competition expressed at the sale, are used by the Department in determining if fair market value has been received.

Throughout the leasing process, the Department has continued liaison with the National Oceanographic and Atmospheric Administration (NOAA), Army Corps of Engineers, the U. S. Coast Guard, Environmental Protection Agency, and all other Government agencies that play a role in managing the OCS. The Department also seeks liaison with the appropriate coastal State agencies that play an active role in their State's coastal lands. The concern for sound Coastal zone management and liaison with these other Federal agencies does not stop with the issuance of a lease but continues through the exploration and production phases. If oil and gas is found, pipeline permits are issued by the Bureau of Land Management, but only after all safety precautions are met. A pipeline management planning system will be implemented in all frontier areas in order to minimize both onshore and offshore impacts. Pipeline routing on the OCS is determined after consultation with State officials who have authority over pipeline right-of-way in State waters and onshore. Special provisions are made to minimize hazards such as fishing nets becoming snagged on pipelines.

As earlier noted, each pipeline laid on the Outer Continental Shelf requires a permit, which is issued only after all stipulations have been met. Among these stipulations is a requirement that all pipelines in less than 200 foot water depth be buried to a depth of at lease three feet and all valves and taps are buried regardless of depth. Close attention is given to bottom stability, tides and currents. Each application is subjected to an environmental analysis, whether it comes ashore or not.

Shore-bound pipelines require permits both from the Federal Government and the adjacent State. Department of the Interior personnel work closely with State authorities to assure that the requirements of each are fully met as well as to select safe routes that will result in the minimum environmental damage and the least adverse onshore impact. It is only when hydrocarbons are found in commercial quantities that it is possible to fully analyze the impact and to develop plans for the routing of the pipeline and the associated onshore activity.

SAPETY AND ENVIRONMENTAL PROTECTION

Once a lease is issued, the exploration and production activities on t lease are under the supervision of the Geological Survey (USGS). This supervision is carried out through a set of rules and regulations that are implemented by field inspections and review of applications and plans. The rules and regulations (OCS Orders and Notices) are freque reviewed and revised through a process allowing for public, local go and industry input to reflect changing technology and environmental standards. The regulations that are now in effect and the various p described below are considerably more stringent than those existing at time of the Santa Barbara spills and will prevent a reoccurrence of tha event. The Inspection force presently numbers 62 and is scheduled to expanded to 87 in the coming fiscal year.

Supervision of Drilling Operations

Outer Continental Shelf oil and gas leases are ordinarily forfeited found productive within five years from date of issue. Exploratory ordinarily commences on the more promising tracts within a few months the lease is issued, although some leases may not be tested for two or years.

Before drilling can be initiated, the lessee must submit an "Applicati Permit to Drill." The application must include a contingency plan for handling emergencies during drilling such as spills and fires; a plan exploration and development; and specific information on such items the drilling rig, casing design, cementing program, drilling fluid and blowout preventer equipment. USGS geologists, geophysicists, and engineers review the application for compliance with orders and regulati and for potentially hazardous conditionathat may be antcipated. Unusal hazard conditions such as surface faulting, potential slide areas, shall gas pockets, or deeper abnormal pressures are made known to the opera If the possibility exists that the potential hazard might cause an a during the drilling operation, the lessee will be required to change t drilling plan. Only after the USGS is completely satisfied that safe and environmental requirements can be met will the permit to drill be

As the well is being drilled, casing and drilling fluid programs are followed as approved in the application. As the well reaches a predetermined depth range, a minimum of four remotely-controlled blowout preventers installed to prevent accidents which may result from penetrating u high-pressure zones.

Supervision of Production Operations

Following the discovery of an oil or gas field, production platforms are set and additional production wells are drilled. In established producing areas, such as offshore Louisiana, production on some leases may commecne as early as three years from the date of a lease sale. In frontier areas, where there is no existing petroleum Infrastructure, substantial production will probably require considerably more time.

Erection of production platforms, production drilling and production can proceed only upon the authority of an application to install production facilities approved in advance by the Geological Survey. Such applications are reviewed to assure that the platform design standards provide safeguards appropriate to water depth, surface and subsurface soil conditions, wave and current forces, wind and earthquake loading, and total equipment weight as a safeguard against platform failure. The subsurface safety system, the design of the structure, the surface processing and production equipment, and the personnel facilities, together with incoming and departing pipelines are checked against requirements to assure that all components will properly mesh in an effective platform safety system capable of detecting and stopping any leak.

Each barrel of oil produced must pass through a subsurface safety valve, an automatic fail-closed wellhead valve, a flowline protected by high and low pressure sensors, separators protected by high and low pressure sensors and a relief valve; and finally through pumps equipped with high and low sensors. Any abnormal operating condition will result in an automatic production system shut-in. Emergency shut-in controls, which provide a backup means to manually shut in the entire facility, must be located at strategic points on the platform.

To collect any platform contaminants, curbs and gutters must be installed in all deck areas and piped to a sump. Facilities to dispose of water produced with the oil must be designed to reduce the oil content of the disposed water to an average of not more than 50 ppm. In all cases where sewage is to be discharged, disposal systems which yield effluent that meet specified standards must be installed.

The USGS has the specific responsibility to inspect, monitor, and document the day-to-day activities of oil and gas lessees on the Outer Continental Shelf by on-site surveys and by witnessing the testing of safety and pollution control equipment. To facilitate inspections the OCS Orders and Regulations have been condensed *into* a checklist composed of questions that are answered by the inspection team either positively for compliance or negatively for noncompliance. Each incident of noncompliance requires that the inspector take a prescribed enforcement action which will result in either a warning or a shutdown of operations. If the incident results in a shutdown, the condition must be corrected before operations can be resumed.

Inspection teams composed of petroleum engineering technicians visit OCS facilities, traveling to the activities by helicopter and boat, observing the water surface for any incidents of pollution while en route. Additional flights are made for the sole purpose of pollution detection. Inspections of drilling rigs and related equipment in the Gulf of Mexico are conducted at least once during the drilling of each wildcat well and during drilling of the first development well from a platform. New production facilities are inspected upon commencement of operations. All major platforms are scheduled for inspection semi-annually. All drilling rigs and production platforms in the Dos Cuadras Field in Santa Barbara Channel are inspected daily.

Blowouts, fires, pipeline leaks, and other accidents are investigated by the inspection teams to determine the contributing factors involved in an accident so that proper steps may be taken to avoid such accidents in the future.

To inform all lessees about the probable cause of certain equipment failures, "Safety Alerts" are sent out to all OCS lessees to provide details of a hazardous situation that has resulted in an incident. This information enables lessees not involved in a particular incident to eva similar actuations in their own operations and thus help eliminate potent hazards in the future.

Efforts to Improve Safety of OCS Operations

Since the oil spill in Santa Barbara Channel in January 1969 a large numbe of specific actions have been taken to provide more effective supervision drilling and producing operations on the Outer Continental Shelf, includ the following:

- Inspection force increased from 7 in 1968 to the present 62, with an additional 25 programmed for FY 1976.

- Regulations updated and revised on all phases of drilling and production, including casing depths and cementing practices, blowout preventer equipment, remotely activated subsurface safety valves, pollution and waste disposal, and well completion. A 20-well platform now has about 300 safety devices.

- OCS supervision activities have benefited from the adoption of many recommendations contained in published studies on the OCS operations made by the National Academy of Engineering, a team of National Aeronautics and Space Administration experts, a team of USGS analysts

a University of Oklahoma study sponsored by the National Science Foundation, and the Council of Environmental Quality's environmental assessment of OCS oil and gas operations.

- Accident investigation procedures were established with the requirement that reports of major accidents be made available to the public.

- Operators are now required to submit contingency plans for oil spill containment and cleanup prior to any lease operations. Clean-up organizations and equipment are available to all areas where drilling and production are in progress.

A Review Committee to provide an independent audit of the effectiveness of USGS operations and procedures has been established under the aegis of the National Academy of Engineering.

- Three cooperative committees have been established with the American Petroleum Institute on offshore safety and anti-pollution research, standards, and training. An important result of these comittee actions has been the development and issuance of a specification for subsurface safety valves and a recommened practice for design, installation, and operation of subsurface safety valve systems.

- The "Safety Alert" system previously referred to was established.

The results of these measures to improve the safety performance of OCS operators are apparent in the extremely low frequency rates of pollution-causing accidents. Since the beginning of 1969 more than 5,000 wells have been drilled on the OCS. of which only four resulted in accidents that caused an oil spill of more than 250 barrels. All occurred in the Gulf of Mexico. In the Santa Barbara Channel more than 200 wells have been drilled without incident since 1969.

The total of all major accidents from both drilling and production was 13, of which eight resulted in any significant oil pollution. During this period the number of fixed structures on the OCS increased from 1,575 to more then 2,000.