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GOVERNMENT
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DEPARTMENT OF THE INTERIOR AND RELATED
AGENCIES APPROPRIATIONS FOR 1975

DOCUMENTS

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HEARINGS

BEFORE A

SUBCOMMITTEE OF THE
COMMITTEE ON APPROPRIATIONS
HOUSE OF REPRESENTATIVES

NINETY-THIRD CONGRESS

SECOND SESSION

SUBCOMMITTEE ON DEPARTMENT OF THE INTERIOR
AND RELATED AGENCIES

JULIA BUTLER HANSEN, Washington, *Chairman*

SIDNEY R. YATES, Illinois

GUNN McKAY, Utah

CLARENCE D. LONG, Maryland

FRANK E. EVANS, Colorado

JOSEPH M. McDADE, Pennsylvania

WENDELL WYATT, Oregon

VICTOR V. VEYSEY, California

J. DAVID WILLSON and BYRON S. NIELSON, *Staff Assistants*

PART 6

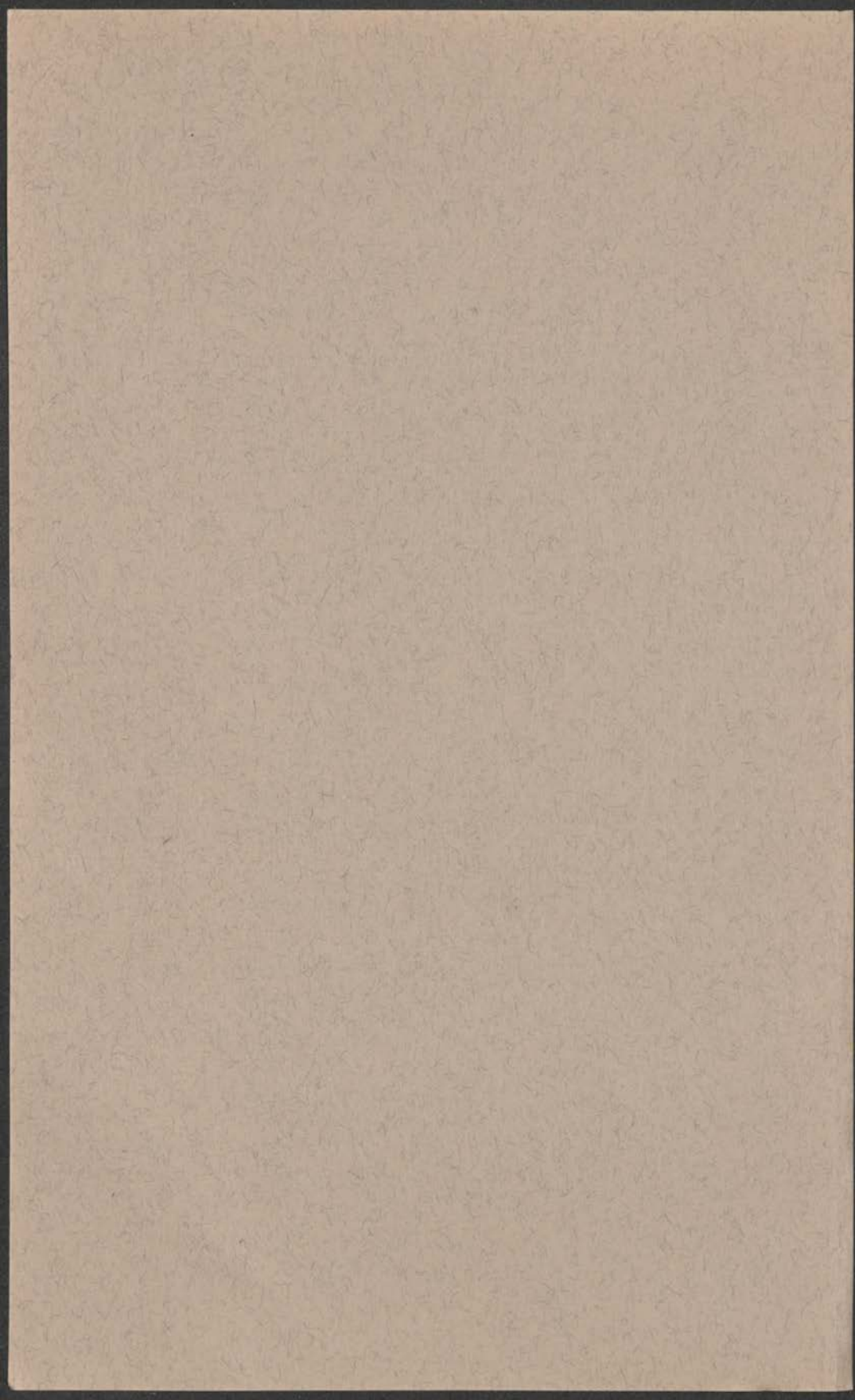
AMENDMENTS TO THE BUDGET FOR 1975

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DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1975

HEARINGS BEFORE A SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES NINETY-THIRD CONGRESS SECOND SESSION

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PART 6 AMENDMENTS TO THE BUDGET FOR 1975



U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON : 1974

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DEPARTMENT OF THE INTERIOR AND RELATED AGEN-
CIES APPROPRIATIONS FOR FISCAL YEAR 1975

TUESDAY, JUNE 11, 1974.

BUDGET AMENDMENTS

FOREST SERVICE

INSECT AND DISEASE RESEARCH

WITNESSES

ROBERT W. LONG, ASSISTANT SECRETARY FOR CONSERVATION,
RESEARCH, AND EDUCATION

R. A. RESLER, ASSOCIATE CHIEF, FOREST SERVICE

R. L. YOUNGS, ASSOCIATE DEPUTY CHIEF, RESEARCH, FOREST
SERVICE

KEITH R. SHEA, DIRECTOR, INSECT AND DISEASE RESEARCH, FOR-
EST SERVICE

RUSSELL K. SMITH, DIRECTOR, INSECT AND DISEASE CONTROL,
FOREST SERVICE

WILLIAM A. CAMPBELL, BUDGET OFFICER, FOREST SERVICE

Mrs. HANSEN. The committee will come to order.

This morning we have the U.S. Forest Service. Our principal
witness is Mr. Robert Long, the Assistant Secretary for Conserva-
tion, Research, and Education.

JUSTIFICATION MATERIAL

We will insert House Document 93-317 and the justification in the
record at this point.

[The information follows:]

DEPARTMENT OF AGRICULTURE

FOREST SERVICE

Budget appendix page	Heading	Request pending	Proposed amendment	Revised request
205	Forest protection and utilization.....	\$385,367,090	\$5,040,000	\$391,407,000

The proposed budget amendment would provide funds to expand research to
determine effective and safe control methods for three of the Nation's most
destructive forest insects—tussock moth, southern pine beetle, and gypsy moth.
All three of these insects are causing major damage and are an increasing
threat to the forest resources of the United States.

The expanded research program is designed to be essentially complete within
3 to 5 years. It will be a departmentwide effort utilizing the resources of sev-
eral bureaus as well as a number of universities. Project managers will be
appointed to help assure that the objectives are met.

UNITED STATES DEPARTMENT OF AGRICULTURE
Forest Service

Fiscal Year 1975 Budget Amendment

<u>Page number in 1975 Budget Appendix</u>	<u>Heading</u>	<u>Request pending</u>	<u>Proposed amendment</u>	<u>Revised request</u>
205	Forest protection and utilization:			
	Forest land management ..	\$291,136,000	- -	\$291,136,000
	Forest research	64,485,000	\$6,040,000	70,525,000
	State and private forestry cooperation	29,746,000	- -	29,746,000

Purpose and Need for Budget Amendment

This budget amendment is needed for research projects involving the Douglas-fir tussock moth, southern pine beetle, and gypsy moth. All three of these insects are causing major damage and are an increasing threat to the forest resources of the United States. Only partially effective control measures are available. Expanded efforts are vitally necessary to quickly determine effective, safe control methods for these insects to minimize the damage to the Nation's natural resources. The proposed program will:

1. Implement the available technological improvements for reduction of losses from the insects.
2. Develop and evaluate new short- and long-term forest pest management systems which will effectively suppress or prevent infestations.

UNITED STATES DEPARTMENT OF AGRICULTURE
Forest Service

Justification of Budget Amendment for
"Forest Protection and Utilization"

<u>Project</u>	<u>Request pending</u>	<u>Proposed amendment</u>	<u>Revised request</u>
FOREST PROTECTION AND UTILIZATION:			
FOREST LAND MANAGEMENT	\$291,136,000	- -	\$291,136,000
FOREST RESEARCH:			
Forest and range management research	26,400,000	- -	26,400,000
Forest protection research:			
Fire and atmospheric sciences research .	8,067,000	- -	8,067,000
Forest insects and disease research	10,936,000	6,040,000	16,976,000
Subtotal, Forest protection research .	19,003,000	6,040,000	25,043,000
Forest products and engineering research	11,488,000	- -	11,488,000
Forest resource economics research	7,594,000	- -	7,594,000
Total, Forest research	64,485,000	6,040,000	70,525,000
STATE AND PRIVATE FORESTRY COOPERATION	29,746,000	- -	29,746,000
TOTAL, FOREST PROTECTION AND UTILIZATION .	385,367,000	6,040,000	391,407,000

Expanded research efforts on three forest insects are proposed--Douglas-fir tussock moth, southern pine beetle, and gypsy moth.

All three of these insects are causing major damage and are an increasing threat to the forest resources of the United States. Only partially effective control measures are available.

Effective control of the tussock moth and the gypsy moth had been attained with DDT. However, the environmental problems associated with DDT have virtually eliminated its use in forest pest control. There is a critical need for the development of substitute methods which are effective and environmentally suitable.

Resources to be assigned. Personnel, facilities, and other resources of the Forest Service research and forest pest management programs, various universities, other U.S. Department of Agriculture bureaus (Cooperative State Research Service, Animal and Plant Health Inspection Service, and Agricultural Research Service), will be utilized to achieve the project objectives. At the time the projects terminate, the functions which are selected for continuance will be carried on by the appropriate Department of Agriculture agencies and will be supported by funds appropriated to those agencies.

Douglas-fir tussock moth, \$2,010,000, an increase of \$1,640,000

Douglas-fir tussock moth populations currently infest 2,371,800 acres in Washington, Oregon, and Idaho. In calendar year 1974 treatment to prevent major loss of forest resources is needed for 650,000 acres. The cost/benefit analysis makes this a desirable project.

During the period of this project (fiscal years 1975-1978) the following achievements are expected:

1. The operational use of the following four recently developed tussock moth suppression agents will be pilot tested in forest pest control programs:

- 1.1 Carbaryl
- 1.2 Dylox
- 1.3 Nuclear polyhedrosis virus (NPV)
- 1.4 Bacillus thuringiensis (Bt)

2. Based on pilot test findings, the most promising integrated combinations of the above agents will be implemented in the forest pest control programs.
3. Recently developed improvements in systems for surveying and evaluating population changes and damage will be pilot tested and implemented.
4. New methods for predicting tussock moth population changes and expected damage will be developed and field tested.
5. Field tests, safety tests, and final airport tests will be completed on two additional chemical agents as toxicants for controlling tussock moth. This effort will include the development of aerial application techniques and carrier formulations.
6. Field tests will be completed with nuclear polyhedrosis virus and Bacillus thuringiensis to optimize the selection of dosages, timing, spray strategies and strains.
7. Field tests, safety tests, and formulation studies will be completed on the use of sex pheromones for early detection of tussock moth populations.
8. Tests will be completed on improved equipment, formulations, and spray systems for aerial applications of toxicants and microbials.
9. Studies will be completed on the potential as control measures of naturally occurring enemies of the tussock moth.
10. The above findings, including newly developed agents and techniques, will be integrated into the optimum combination of control methods against the tussock moth. Preliminary field tests of the optimal strategy will be completed.

Distribution of requested funds will be as follows:

Forest Service	\$1,295,000
Cooperative State Research Service	345,000

Southern pine beetle, \$2,385,000, an increase of \$1,885,000

The southern pine beetle is the most destructive insect enemy of southern pines. Epidemics periodically develop in commercial pine and pine-hardwood forests that occupy more than 60 million acres in 10 southeastern States. Softwood growing stock in these forests totals 72 billion cubic feet. Although substantial volumes of beetle-killed timber are usually salvageable--often at sharply reduced prices--vast quantities are left in the forest. The cost/benefit analysis makes this a desirable project.

During the period of this project (fiscal years 1975-1979) the following achievements are expected:

1. Integrative model for predicting impacts, population levels, and forest susceptibility will be developed and pilot tested.
2. Field and safety tests, formulation studies, and use patterns will be completed for pheromones and other behavioral chemicals used for survey and suppression.
3. Field and safety tests will be completed on new or improved toxicant formulations and methods of application.
4. Studies will be completed on factors contributing to host susceptibility and pilot tests proposed for stand manipulations.
5. Studies will be completed on natural enemies as potential control agents.
6. Optimal forest and pest management systems will be developed using the above information.

Distribution of requested funds will be as follows:

Forest Service	\$1,065,000
Cooperative State Research Service	820,000

The southern pine beetle project is two years longer than the others because the problem with this beetle is more complex. There is less scientific knowledge available and fewer promising control technologies exist.

Gypsy moth, \$3,427,000, an increase of \$2,515,000

Gypsy moth populations have increased greatly in the Northeast since 1968. One and three-fourths million acres (about 2,800 square miles) were defoliated in 1973, more than ever before. This spectacular defoliation occurred mainly in those States recently invaded by the gypsy moth (New Jersey and Pennsylvania) and those with a long history of relatively small outbreaks (Connecticut, New York, Massachusetts, and Rhode Island). Thus, both the great extent and intensity of defoliation is new in these States. In Maine, Massachusetts, and New Hampshire--those States where defoliation and damage were high for many years--defoliation in 1971-1973 was extremely low. The cost/benefit analysis makes this a desirable project.

During the period of this project (fiscal years 1975-1978) the following achievements are expected:

1. Methods for predicting population trends will be updated and refined using new techniques for measuring larvae dispersal, sampling egg masses and pupae and monitoring low populations.
2. Procedures for measuring and predicating impacts will be developed by refining methods for measuring defoliation, relating defoliation to tree mortality and developing additional technology for measuring socioeconomic and environmental impacts.

3. Safety and efficiency tests to evaluate and support registration of nucleopolyhedrosis virus (NPV) will be completed.
4. Optimum formulations and application technology for use of chemicals, Bt and NPV will be developed.
5. Disparlure's use in containment, suppression and possible elimination of populations will have been demonstrated.
6. New chemical insecticide candidates will be screened, evaluated in laboratory and field tested.
7. The effectiveness of available and newly introduced parasitoids will be evaluated.
8. Sterile male techniques will be evaluated for their potential as suppressive or population elimination tools.
9. A mass rearing capability adequate for future program support will have been developed.

Distribution of requested funds will be as follows:

Forest Service	\$1,200,000
Agricultural Research Service	465,000
Animal and Plant Health Inspection Service	710,000
Cooperative State Research Service	140,000

Program or obligational level by fiscal years (in thousands):

Fiscal Year	Tussock Moth		Southern Pine Beetle		Gypsy Moth		Total	
	Forest Service		Forest Service		Forest Service		Forest Service	
	CSRS		CSRS		ARS, APHIS and CSRS		Other USDA Agencies	
1974	1,310	- -	500	100	1,790 <u>1/</u>	488 <u>2/</u>	3,600 <u>1/</u>	588
1975	1,690	345	1,565	920	2,990	1,803	6,245	3,068
1976	2,245	785	3,010	1,410	3,663	4,198	8,918	6,393
1977	2,020	645	2,999	1,298	3,175	2,893	8,194	4,836
1978	280	225	2,905	1,145	- -	250	3,185	1,620
1979	- -	- -	3,238	1,080	- -	- -	3,238	1,080
	7,545	2,000	14,217	5,953	11,618	9,632	33,380	17,585
	9,545		20,170		21,250		50,965	

1/ Includes \$513,000 allocated from ARS.

2/ Funds appropriated to ARS.

DEPARTMENT OF AGRICULTURE
FOREST SERVICE
FOREST PROTECTION AND UTILIZATION

Program and Financing (in thousands of dollars)

Identification code	1975 Request <u>Request</u> <u>pending</u>	1975 Request <u>Proposed</u> <u>amendment</u>	1975 Request <u>Revised</u> <u>request</u>
Program by activities:			
Direct program			
1. Forest land management	292,579	.....	292,579
2. Forest research:			
(a) Forest and range manage- ment	26,579	.....	26,579
(b) Forest protection	18,966	6,040	25,006
(c) Forest products and engineering	10,939	.....	10,939
(d) Forest resource economics	7,462	.....	7,462
Total, forest research	63,946	6,040	69,986
3. State and private forestry cooperation	29,570	.....	29,570
Total, direct program	386,095	6,040	392,135
Reimbursable program			
1. Forest land management	7,600	.....	7,600
2. Forest research	1,800	.....	1,800
3. State and private forestry cooperation	600	.....	600
Total, reimbursable program	10,000	.....	10,000
Total program costs, funded 1/ .	396,095	6,040	402,135
Change in selected resources (undelivered orders)	2,100	.....	2,100
Total obligations	398,195	6,040	404,235
Financing:			
Receipts and reimbursements from:			
Federal funds	-7,700	.....	-7,700
Non-Federal sources	-3,000	.....	-3,000
Unobligated balance available, start of year	-2,128	.....	-2,128
Unobligated balance available, end of year .....	.....	.....	.....
Budget authority	385,367	6,040	391,407

DEPARTMENT OF AGRICULTURE
FOREST SERVICE
FOREST PROTECTION AND UTILIZATION

Program and Financing (in thousands of dollars)--continued

Identification code

	1975 XXXXX <u>Request pending</u>	1975 XXXXX <u>Proposed amendment</u>	1975 XXXXX <u>Revised request</u>
Relation of obligations to outlays:			
Obligations incurred, net	387,495	6,040	393,535
Obligated balance, start of year ...	71,805	.....	71,805
Obligated balance, end of year (-) .	-71,838	-2,815	-74,653
Outlays	386,404	3,225	389,629
Outlays from civilian pay raise supplemental	1,058		1,058
<u>1/ Includes capital outlay as follows:</u>	1975, \$9,050 thousand.		

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DEPARTMENT OF AGRICULTURE
FOREST SERVICE
FOREST PROTECTION AND UTILIZATION

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	19 75 Request pending	1975 Proposed amendment	19 75 Revised request
FOREST SERVICE--Direct obligations			
Personnel compensation:			
11.1 Permanent positions.....	168,590	675	169,265
11.3 Positions other than permanent.....	48,190	85	48,275
11.5 Other personnel compensation.....	3,550	.....	3,550
11.8 Special personal services payments.....	220	.....	220
Total personnel compensation.....	220,550	760	221,310
Personnel benefits:			
12.1 Civilian.....	24,025	83	24,108
13.0 Benefits for former personnel.....	20	.....	20
21.0 Travel and transportation of persons.....	11,100	30	11,120
22.0 Transportation of things.....	12,600	25	12,625
23.0 Rent, communications, and utilities.....	20,925	40	20,965
24.0 Printing and reproduction.....	3,020	20	3,040
25.0 Other services.....	40,321	1,372	41,893
26.0 Supplies and materials.....	18,200	950	19,150
31.0 Equipment.....	7,500	90	7,590
32.0 Lands and structures.....	2,600	.....	2,600
33.0 Investments and loans			
41.0 Grants, subsidies, and contributions.....	27,070	200	27,270
42.0 Insurance claims and indemnities.....	60	.....	60
43.0 Interest and dividends			
44.0 Refunds			
Subtotal, Direct obligations ..	388,191	3,560	391,751
95.0 Quarters and subsistence charges	-1,250	.....	-1,250
Total direct obligations, Forest Service	386,941	3,560	390,501
Total reimbursable obligations,			
99.0 Total obligations, Forest Service	10,000	.....	10,000
Total obligations, Forest Service ...	396,941	3,560	400,501

DEPARTMENT OF AGRICULTURE
FOREST SERVICE
FOREST PROTECTION AND UTILIZATION

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	1975 XXXX	1975 XXXX	1975 XXXX
ALLOCATION ACCOUNTS	Request	Proposed	Revised
Personnel compensation:	<u>pending</u>	<u>amendment</u>	<u>request</u>
11.1 Permanent positions	326	192	518
11.3 Positions other than permanent	359	13	372
11.5 Other personnel compensation	5	.....	5
11.8 Special personal services payments			
Total personnel compensation	690	205	895
Personnel benefits:			
12.1 Civilian	42	18	60
12.2 Benefits for former personnel			
21.0 Travel and transportation of persons	106	52	158
22.0 Transportation of things	43	23	66
23.0 Rent, communications, and utilities	5	42	47
24.0 Printing and reproduction .....	.....	1	1
25.0 Other services	308	350	658
26.0 Supplies and materials	41	321	362
31.0 Equipment	19	163	182
32.0 Lands and structures			
33.0 Investments and loans			
41.0 Grants, subsidies, and contributions .....	.....	1,305	1,305
42.0 Insurance claims and indemnities			
Total obligations, allocation	1,254	2,480	3,734
43.0 Interest and dividends			
Total obligations	398,195	6,040	404,235
44.0 Refunds			
Obligations are distributed as follows:			
Department of Agriculture:			
Forest Service	396,941	3,560	400,501
Animal and Plant Health Inspection Service .....	.....	710	710
Agricultural Research Service .....	.....	465	465
Cooperative State Research Service .....	.....	1,305	1,305
59.0 Total obligations			
Department of the Interior	1,254	.....	1,254

DEPARTMENT OF AGRICULTURE
FOREST SERVICE
FOREST PROTECTION AND UTILIZATION

Personnel Summary

Identification code	19 75 XXXXX Request pending	19 75 XXXXX Proposed amendment	19 75 XXXXX Revised request
FOREST SERVICE			
Total number of permanent positions ..	13,071	47	13,118
Full-time equivalent of other positions	6,440	11	6,451
Average paid employment	18,093	56	18,151
ALLOCATION ACCOUNTS			
Total number of permanent positions ..	30	13	51
Full-time equivalent of other positions	53	2	55
Average paid employment	81	14	95

Personnel Summary

Identification code	F.Y. 19 73 XXXXX	F.Y. 19 74 XXXXX	F.Y. 19 75 XXXXX
FOREST SERVICE			
Average GS grade	8.5	8.5	8.5
Average GS salary	\$13,503	\$14,232	\$14,232
Average salary of ungraded positions .	\$10,173	\$10,640	\$10,640
ALLOCATION ACCOUNTS			
Average GS grade	8.7	8.8	8.8
Average GS salary	\$14,072	\$14,872	\$14,869

STATEMENT OF ASSISTANT SECRETARY LONG

Mrs. HANSEN. Mr. Secretary, it is a pleasure to have you before the committee again.

Mr. LONG. I have a brief statement, Madam Chairman. If I may, I will read it.

It is a pleasure for me to have this opportunity to present our request for a budget amendment for the fiscal year 1975 budget of the Forest Service in order that we may initiate an intensive research and development effort leading to the control of three of our most important forest pests, the Douglas-fir tussock moth, southern pine beetle, and the gypsy moth. We recognize there are a great many more. We have identified these three for a particularly intensive program. There was a balance in this. All three of these insects are causing major damage and are an increasing threat to the forest resources of the United States. Only partially effective control measures are now available. In this amendment, we are proposing a combined Federal department-wide and State effort to develop the necessary effective and safe control methods for these insects.

Research by the Forest Service to find alternatives to DDT for control of forest pests began in 1964, much before the EPA order on DDT in recognition of the need to find other environmentally acceptable control measures. The EPA order underscores the urgency of this proposal not only to find benign control mechanisms at an early date, but to save the resources so vitally needed by our country.

USE OF DDT

I think you know, Madam Chairman, we are using DDT this year in the West on the tussock moth.

Mrs. HANSEN. Is the spraying currently underway?

Mr. LONG. I heard it was delayed. Has it started?

Mr. RESLER. It started. Spraying occurred 1 day thus far. Because of weather, it has been postponed.

Mrs. HANSEN. We have had a lot of rain and snow.

Mr. LONG. Yes, ma'am. We are going to be underway very shortly.

Mrs. HANSEN. How many acres do you plan to spray with DDT?

Mr. LONG. The last count I had—and maybe I should refer the question to someone else—we were talking in the neighborhood of 300,000 to 400,000 acres. Where does it stand as of the virus count? Have we reduced that total coverage for the moment?

Mr. SMITH. Madam Chairman, the total amount we plan to treat is 410,000 acres.

Mrs. HANSEN. How many acres are in Oregon and how many in Washington?

Mr. SMITH. In Oregon there are 170,000 acres. In the State of Washington there are 158,000 acres, and 82,000 in the State of Idaho. Also there are test plots in Idaho and Washington that are being treated along with the others.

Mrs. HANSEN. Is the Department of Natural Resources in Washington and the Department of Forestry and Resources in Idaho, Oregon, and Washington participating with you?

Mr. SMITH. Yes, ma'am. These are all cooperative programs.

Mrs. HANSEN. How much of that land in Oregon, Washington, and Idaho is State land?

Mr. SMITH. Approximately one-third is private and State-owned and two-thirds is Federal.

Mrs. HANSEN. In the three States?

Mr. SMITH. In the three States, yes ma'am.

COOPERATIVE RESEARCH AND DEVELOPMENT PROGRAM

Mr. LONG. A significant part of this effort is not only the spray program but the test programs that are going to parallel this effort.

This proposal is an innovative research and development program. It is designed to involve the extensive internal research competence of the Department of Agriculture as well as the many fine scientists and scientific facilities at our Nation's universities. The cooperative program emphasizes in its management concept a different approach by bringing together scientific teams under a single project leader to provide a greater concentration of effort in resolving the difficult research problems involved. We are confident that more rapid progress will result.

Mrs. HANSEN. What universities are participating in this program?

Mr. SHEA. As the programs are implemented, a number of the universities would be participating in the research program.

Mrs. HANSEN. Do you have a list of those universities?

Mr. SHEA. We cannot decide upon all of the universities until the program is fully approved and ready for implementation.

Mrs. HANSEN. Are the universities in the area, which have Departments of Forestry involved?

Mr. LONG. They will certainly be involved, Madam Chairman.

Mrs. HANSEN. For example, you have the University of Washington and Oregon State University.

Mr. LONG. We will probably be doing some work in Berkeley, too. All these States are more or less involved and concerned with this problem.

Mr. YOUNGS. We have made preliminary contacts with all these leading universities, not to finalize the program but to determine what the options and possibilities are so that we will be prepared to move ahead quickly once the program has been determined.

ALTERNATIVES TO DDT

Mrs. HANSEN. How much hope do you have for developing alternatives to DDT in the Northwest?

Mr. YOUNGS. We are quite hopeful of the prospects for some of the alternatives which we are considering in this program.

GYPSY MOTH

Mrs. HANSEN. How about the gypsy moth?

Mr. YOUNGS. We have some good possibilities there. It's a more complex situation because of the highly urban environment and of course the tendency of the eggs to be carried on vehicles, and so forth. We are quite hopeful that we can control this within the framework outlined.

Mr. LONG. We feel that over the years there has been a long struggle with the gypsy moth and that there has been some tendency to fragment both the State and Federal effort. One of the things we propose

to do is to pull all elements together, with a broad cooperative effort under a project leader approach. The States are generally in accord with the program.

Mrs. HANSEN. You have another factor in the Northwest. You have the tent caterpillars this year in all your deciduous trees. The fruit crop, I understand, isn't too large anyway, yet they are doing a lot of damage.

Mr. LONG. That is right.

INSECT AND DISEASE RESEARCH PROGRAM

Mrs. HANSEN. What research are you conducting in this area?

Mr. LONG. Maybe Mr. Youngs would want to refer to the total research program in the Forest Service.

Mr. YOUNGS. The total research program on insects and diseases amounts to about \$10.9 million. This is directed to most of the major forest insects and diseases throughout the country. You may note that approximately \$1.8 million is proposed to be devoted to these three major insect pests in our previously proposed fiscal year 1975 budget. This is a relatively high proportion of the budget because of their urgency. The rest is distributed over research on such things as the spruce budworm, the forest tent caterpillar and other insects and diseases that are critical to forests in all parts of the country.

Mr. LONG. This completes my formal statement to you and to the committee.

Mrs. HANSEN. Mr. Resler?

STATEMENT OF ASSOCIATE CHIEF RESLER

Mr. RESLER. Madam Chairman and members of the committee, we are here today to discuss with you our proposed 1975 budget amendment in the amount of \$6,040,000 to carry out expanded efforts on three forest insect pests. The insects are the Douglas-fir tussock moth, southern pine beetle, and the gypsy moth. These insects are major damagers of forests in the United States; the Douglas-fir tussock moth in the West, the southern pine beetle in the South, and the gypsy moth in the Northeast. In all of these areas the problem is spreading and as we gain some control in one spot the epidemic flares up again in a neighboring area.

Effective control of the tussock moth and the gypsy moth had been attained with DDT. However, the environmental problems associated with DDT have restricted its use for tussock moth and eliminated its use for gypsy moth. There is a critical need for the development of substitute methods which are effective and environmentally suitable.

The southern pine beetle is the most destructive insect enemy of southern pines. Epidemics periodically develop in commercial pine and pine-hardwood forests that occupy more than 60 million acres in 10 Southeastern States. Annual kill by the southern pine beetle amounts to approximately 1.4 billion board feet of sawtimber.

Mrs. HANSEN. What is the value of that 1.4-billion board feet and how many houses would it construct?

Mr. RESLER. We can give you that estimate.

Mr. YATES. With present mortgage rates?

Mrs. HANSEN. Insert the information in the record.

Mr. RESLER. We would be pleased to do so.
[The information requested follows:]

1.4 billion board feet of southern pine sawtimber would have a stumpage value of about \$150 million (based on first quarter 1974 average prices) and would provide the necessary softwood lumber and plywood to construct about 140,000 single-family homes.

SALVAGEABLE TIMBER

Mr. RESLER. Substantial volumes of beetle-killed timber are usually salvageable, but vast quantities must be left in the forest.

Mrs. HANSEN. Isn't this one of your reasons for forest fires?

Mr. RESLER. Yes, ma'am. It makes a substantial contribution to the forest litter and inflammability of the forest as well.

PROPOSED RESEARCH PROGRAM

All three insects will be attacked with the objective of implementing the available technological improvements for reduction of losses from the insects and developing and evaluating new short and long term forest and pest management systems which will effectively suppress or prevent infestations.

We propose to assign personnel, facilities, and other resources of the Forest Service research and forest pest management programs, various universities, CSRS, APHIS, and ARS, to achieve the project objectives.

The planning for this project has been thorough, the need is clear and urgent, and we are confident that we can make real progress in solving these major problems.

We will be pleased to respond to any questions you may have regarding this amendment.

Mrs. HANSEN. Forest insect pests have been with us for a very long time. Why is this request being made at this time rather than in the regular fiscal year 1975 budget?

Mr. LONG. May I speak to that?

Mrs. HANSEN. Yes.

Mr. LONG. I can't, of course, speak to the years before we started the preparation of this current program, about 8 months ago, both the management and the program arrangements that have finally been worked out. We have finally worked through the process of our own Department and the administration to this hearing. It took us this long to bring the program to you. I apologize for the fact that it is not a part of the regular proposal which, in the future it will be.

Mrs. HANSEN. In your long-term forest program that Mr. McGuire described to the committee, what was the estimate per year for this type of research?

1975 BUDGET FOR RESEARCH

Mr. RESLER. Forest insects and disease research in the fiscal 1975 budget was \$10.9 million.

Mr. LONG. Was the question specifically to the three insects or all insects?

Mrs. HANSEN. All insects.

Mr. LONG. All right.

Mr. RESLER. The figure over a 5-year period is about \$87 million at the high supply level.

Mrs. HANSEN. How much do you have in your regular budget this year?

Mr. YOUNGS. \$10.9 million has been proposed for fiscal year 1975.

Mrs. HANSEN. So this request of \$6 million would be in addition to the \$10.9 million. You also have language in the 1974 supplemental which provides that the funds will remain available until expended. So, actually, you would have this year almost \$17 million. And you would also have whatever is unexpended in fiscal year 1974. Isn't this correct?

Mr. RESLER. Yes, Mrs. Hansen, except I think it needs to be recognized that the bulk of the increase in the supplemental is exclusively for control rather than research as such. The no-year funds would apply to the control program.

Mr. CAMPBELL. The recent provision in the supplemental refers to the control only. This is the research.

RESEARCH AREAS

Mrs. HANSEN. You have given us the three insect pests included in this research program. Why were no others included?

Mr. LONG. Other research is ongoing in these areas. We didn't feel we could accelerate all of the major pests that we have in the forests. We had to identify some within the total. We felt these were the most destructive.

Mrs. HANSEN. What insects are not included in this research program?

Mr. SHEA. The ones that are not listed.

Mrs. HANSEN. Please list the major ones.

Mr. SHEA. The main ones not included in this program are the mountain pine beetle, the larch casebearer, the spruce budworm in the Northwest, and the forest tent caterpillar.

ANNUAL DESTRUCTION

Mrs. HANSEN. Please insert in the record for us the amount of board feet per year that those insects destroy, the value of the timber destroyed, and the number of houses this will construct.

Mr. RESLER. Yes, ma'am.

[The information follows:]

It is estimated the loss from the western bark beetle, larch casebearer, spruce budworm and the forest tent caterpillar to be approximately 4.3 billion board feet of standing timber each year. The value of the timber is estimated at \$200 million. This timber would supply enough lumber and plywood to construct 430,000 typical homes.

TUSOCK MOTH RESEARCH

Mrs. HANSEN. You are requesting an additional \$1,640,000 for tussock moth research. What are the details? What specific projects will the Forest Service be undertaking and what projects will be carried out by the Cooperative State Research Service?

Mr. LONG. I will ask Dr. Shea to respond to that question.

Mr. SHEA. Specifically in the projects that will be carried out on the tussock moth, we will be looking at the operational use of a number of suppression agents. We will be looking at the integrated combination of those agents in control programs. We are also looking at

systems for surveying the population damage. This will enable better prediction of the impact of the outbreak. We will be doing a number of field tests, safety tests and airplane testing with chemicals for controlling the tussock moth. We will also be conducting field tests on the virus and the bacterium as biological controls.

Mrs. HANSEN. Do you work with the Bureau of Sport Fisheries and Wildlife?

Mr. SHEA. On work with the tussock moth, the Bureau of Sport Fisheries and Wildlife is involved in looking at the pesticides in relation to fish.

Mrs. HANSEN. You have big salmon runs in the same country where the tussock moth is present.

PROTECTION AREAS

Mr. RESLER. I might add, Madam Chairman, that as far as this kind of research is concerned—and for all research involving forest lands in general—our objective has been, and will continue to be, to work with all of the agencies, Federal and State, and the universities, that have a direct interest or concern with the specific kind of research.

Mr. LONG. I might add, Madam Chairman, that we are operating under an order from EPA in terms of the application of DDT in the tussock moth area. They have considerable concern over the amount of protection for adjacent streams and other free-flowing water, and so on. I have forgotten how wide the protection band around these waters is, but it's quite substantial. It's an extra precaution. We really don't feel that the level dosage we are applying of this material will be a serious problem.

Mrs. HANSEN. You have an additional problem because of the flood waters on the Snake River. Your banks flood, so that sometimes your band of protection probably isn't wide enough to take care of the overflow on those banks. Isn't this correct?

Mr. LONG. It could well be. I would suspect the program would be adjusted wherever that situation exists.

Mrs. HANSEN. You will have a good chance to watch it this year because of the heavy snow pack on the Upper Snake and Upper Columbia Rivers.

Mr. RESLER. There is a 200-foot band on either side of water courses to avoid direct deposition of pesticides in water. In other work we have done in the past, in similar operational projects, we have used the same basic guidelines. A very minimal amount of DDT actually finds its way into the water courses.

Mrs. HANSEN. Except if you have a flood.

Mr. RESLER. But it would take a very substantial flood, we think, in order to be that damaging.

Mrs. HANSEN. You have had some substantially high waters in those areas. You don't have the same kind of a dam system in that area as you do on the lower river.

Mr. RESLER. That is right. My point is that the applications would not be in water courses. A more likely cause would be from runoff immediately following application.

Mrs. HANSEN. If the tussock moth is spread by the river, you then have another problem.

Mr. RESLER. Yes, ma'am. We would have to resort to some other type of control or accept the damage, one of the two.

Mr. SHEA. This is one of the reasons why we are looking for safer chemicals to use in these areas.

Mr. VEYSEY. Is there another type of control now known that is really useful?

Mr. RESLER. There are other control mechanisms that show promise.

Mr. VEYSEY. You list three or four you are going to start researching, but I mean that are available this year.

Mr. RESLER. I would say there are none that we would consider effective on a large-scale operational basis. In small control circumstances, there are other chemicals, such as we have shown here, that show promise. On these very narrow strips, say, 400 or 500 feet wide along streams, in all probability from an operational standpoint, you would have to suffer some losses as we now operate.

ZECTRAN

Mr. LONG. I think it's interesting to add that Zectran was tested extensively last year. The manufacturer is ceasing production. So it probably will not be available.

Mrs. HANSEN. Why?

Mr. LONG. The sales have been low. The effectiveness of the insecticide has been low and particularly for tussock moth, of course, it has so little persistence, to the degree that it has been ineffective. That first test fairly well established that. We didn't indicate any wide use for it this year for that purpose. Apparently the sales are too low to sustain the product.

Mrs. HANSEN. Were the sales low because they expected to obtain DDT, which was more effective?

Mr. LONG. I think we hoped to substitute for DDT and could not do it. It has not been successful in the application they have previously tried in this area. Maybe Mr. Youngs or some of the others who are familiar with other areas where Zectran had been used could comment. We did not propose to use it to any extent here this year.

Mr. RESLER. We understand there is a new formulation available and will be tested that has a higher order of persistence. I think there are something like 5 gallons available.

Mrs. HANSEN. That will not be very helpful.

RESTRICTION ON USE OF DDT

Mr. VEYSEY. You are severely restricted on the use of DDT at the present time?

Mr. RESLER. Yes, sir.

Mr. VEYSEY. Is it totally banned?

Mr. LONG. Yes, sir.

Mr. RESLER. We have the emergency authorization for use on this one case, the Douglas-fir tussock moth, but with very tight constraints on methods of application.

Mr. VEYSEY. Being remote from the waterways, and so forth?

Mr. RESLER. That is one of the constraints. Of course, that is one constraint we developed as a result of our own research and have followed since we began applying DDT with helicopters and most other

chemical applications, even herbicides, who have a lower order of impact on marine organisms. Those also are not applied in water courses.

EMERGENCY USE OF DDT

Mr. YATES. Why is there an exception in the case of the Douglas fir to the ban on DDT?

Mr. RESLER. I would have to say the magnitude of the problem and losses involved were major factors. There is a tremendous area that is infested to varying degrees. There is something in the neighborhood of over 400,000 acres that will be treated this year under the EPA emergency authorization to use DDT. It's a matter of the magnitude of the problem plus the fact that the insect epidemic continues to show signs of enlarging this year.

We were denied the request we had made for use of DDT last year by EPA. In that case we used a number of other insecticides on a pilot project basis that were available to us. But we were just plain unable to stop the epidemic with these less effective pesticides.

This year, as a last resort, the EPA did authorize emergency application of DDT.

Mr. YATES. How many acres are affected?

Mr. RESLER. I think there are something like 1 million acres that are recognizable from aerial surveys as being infested to varying degrees. There are between some 600,000 to 800,000 acres that are defoliated in varying degree and something like 400,000 acres heavily defoliated that are included in the control project.

Mrs. HANSEN. Isn't it true the destruction east of the mountains could well spread west of the mountains?

Mr. LONG. That is one of the things which I felt concerned us all.

Mrs. HANSEN. If they spread into the Western mountains you would have complete disaster.

Mr. LONG. It was moving very rapidly to the east in Idaho, which is another area that we felt we had to get under control as quickly as possible. No other material that is more effective is available to us, or known to us.

USE OF TIMBER DESTROYED BY INSECTS

Mr. EVANS. What, if anything, do you do with that timber which has already been destroyed by these insects? Is it usable?

Mr. RESLER. Yes, sir. A large percentage of it is. Again, it depends upon the species as to how long it will be usable or salvageable. Some species deteriorate very rapidly. It depends on the question of accessibility, if the forest is well roaded, one can get in and salvage the materials.

Mrs. HANSEN. Which it won't be if the OMB has its way.

Mr. RESLER. There are some substantial areas which are not roaded.

Mrs. HANSEN. Do you think any purchaser of salvageable timber is going to put a heavy investment into roads?

Mr. RESLER. Obviously there is a disincentive.

Mr. EVANS. As a matter of policy, could you tell me what you do in these areas that have not been logged and the trees are killed by insects?

Mr. RESLER. We make every conceivable effort to salvage all of the usable material.

Mr. EVANS. How?

Mr. RESLER. By going in and logging selectively, or by clear-cutting, or whatever seems appropriate to the area.

To answer your question specifically, we make a concerted effort to shift as much of our program and efforts into the salvage of that material as we possibly can.

Mr. EVANS. Is it used for lumber or pulp or for both?

Mr. RESLER. It is used for all purposes. For instance, in the Douglas fir, hemlocks and spruces and the white firs that are heavily affected, all of that material can be salvaged and used if we can get to it quickly enough. Some of the white woods do deteriorate quite rapidly.

Mr. EVANS. How long?

Mr. RESLER. Within 2 to 3 years you have a loss in the structural qualities of the wood. But it can still be salvaged and used.

There is a period of 2 or 3 years, particularly in Douglas fir, where there is a very limited amount of defect that occurs in the standing dead timber. In some of the other species such as I mentioned, the white woods deteriorate much more rapidly, but they can still be used for chips and things of this type.

POSSIBILITIES OF FIRE

Mrs. HANSEN. The tussock moth problem is one of the ingredients that could cause a disaster as far as fires are concerned. Isn't this true?

Mr. RESLER. That is true.

Mrs. HANSEN. Isn't this one of your problems each year? You never know when a dry season will come. You have the dry winds out there and no rainfall.

Mr. YATES. How does that follow? When the tussock moth ravages an area, are the trees particularly fire prone?

Mr. RESLER. They are in the air. There are usually lots of red-tops associated with them. In other words, the defoliation will be sufficient to kill the tree but, nevertheless, there are still a lot of aerial fuels. Particularly during the period of the year when lightning strikes or is rather prevalent it is very easy to get a fire started in that kind of a fuel situation. In fact, we had one or two last year. One at La Grande was directly associated with the tussock moth-killed timber. It was just on the outskirts of La Grande.

TUSOCK MOTH AND GYPSY MOTH

Mr. YATES. How long have you been fighting the tussock moth and the gypsy moth?

Mr. RESLER. The tussock moth is a native species that has been with us for a long time. It goes in cycles.

Mr. YATES. How long?

Mr. RESLER. Mr. Smith says 100 years for the gypsy moth.

Mr. YATES. You have been with the Service a long time. Does your memory of the tussock moth go back to the time you entered the Service?

Mr. RESLER. Yes, sir.

Mr. YATES. And beyond that?

Mr. RESLER. Yes, sir.

Mr. YATES. How many years is that?

Mr. RESLER. I would say back 20 years in my own case, but it occurred long before that.

Mr. YATES. Were you using DDT on the tussock moth back when you first entered the Service?

Mr. RESLER. That is right.

Mr. YATES. You were or were not?

Mr. RESLER. We were in more limited scales, but then it developed to where it was used rather extensively. I was supervisor, in fact, on the last major application of DDT on the forests in eastern Oregon.

Mr. YATES. How long ago was that?

Mr. RESLER. In 1965.

Mr. YATES. The question that is in my mind is if you have been using DDT until it was banned recently, why were you never able to control it then?

Mr. RESLER. You don't absolutely stop the tussock moth. You don't eliminate it. We are not really trying to completely eliminate any insect. We were trying to control the epidemic in those previous cases, including the spruce budworm and other insect defoliators. DDT did prove effective in reducing the epidemic. It didn't eliminate all the insects, obviously.

Mr. LONG. But it did control the tree damage. It reduced the damage substantially. No damage has ever been so great as that which we have had in the last couple of years.

Mr. RESLER. For instance, in the early fifties, I can recall a specific example in which we had a very heavy blowdown in the west side of Oregon and Washington, with major losses from windfall, that created a circumstance in which the Douglas fir bark beetle built up very rapidly. There were losses in the multiplied billions. I think over 3 billion feet of timber were actually killed as a result of that infestation. The primary control method there was trapping, as I indicated earlier. But there were very strenuous and very severe losses that occurred as a result of it. It was so widespread that no specific control there was much of a factor.

Mr. YATES. Perhaps I don't recognize how difficult it is. I think I do recognize how difficult it is to fight these pests, but you have been fighting this one for 20 years and you have been given money to fight them for 20 years. We apparently still don't have any breakthroughs, do we?

Mr. RESLER. I would say we do not have usable control in the defoliators.

Mrs. HANSEN. How long have we been fighting cancer?

Mr. YATES. I think probably not as long as they have been fighting the tussock moth.

EFFECTIVENESS OF DDT

Mr. RESLER. Mr. Yates, where the defoliators are concerned, DDT is an effective control mechanism. It just happens to have some environmental side effects.

Mr. YATES. Let me pause on this for a moment. When you say we have defoliators and DDT is an effective agent, in what way? Do

you kill the mature bug? Do you kill the larvae? Do you kill the growing bug? What is this that you attack?

Mr. RESLER. You eliminate the larvae when it is feeding on the leaves of trees. That is the stage where you can effectively stop it.

Mr. YATES. By spraying the leaves?

Mr. RESLER. Yes, sir. That stops the epidemic. Larval populations drop back down to what we call an endemic or natural level. It may not bother you again for years. It may spring up at some other point. This has been the problem we have encountered over the years.

The means I was talking about earlier, in trapping, of course, that is primarily control of the bark beetles in that group. The only known effective control on the defoliators thus far is applying various pesticides that kill in the larval stage. This has been done effectively. What we are concerned with now is trying to find pesticides that are more benign, that is, are not harmful to non-target species and particularly the mammals and animals of the area.

SPRAYING OF LANDS

Mr. YATES. You are spraying the national forests. What are the private companies doing?

Mr. RESLER. Under these circumstances we are spraying all ownerships. Could you give us an estimate, Russ, of the percentage of ownerships that is included in this project?

Mr. SMITH. Madam Chairman, of the acreage involved in our operations, about one-third is privately owned and two-thirds is on Federal lands.

Mr. YATES. Does this cover the entire area where the tussock moth is a predator?

Mr. SMITH. Yes, sir. It would cover the entire project area. You have to cover all of it.

Mr. YATES. Are none of the other areas affected in the region?

Mr. RESLER. To a lesser degree.

Mr. YATES. Can you draw a line and say this is the area of the tussock moth or the gypsy moth?

Mr. RESLER. Yes, we can do that to a degree, recognizing that we are not perfect in this estimating process. But you can fairly well determine where the intensity of the infestation is such as to cause heavy defoliation. That is the area where the primary thrust is being applied. If we had pesticides that were not as persistent as DDT is, such as some of these which show some real promise, I am sure we would be applying it more broadly.

As it now stands, we try to keep the DDT application sharply constrained to where the heaviest infestation occurs.

USE OF ALTERNATIVES

Mr. LONG. The importance of the program we are proposing here is to, of course, find alternatives. We are using biological materials as well as chemical test areas in order to try to come up with the most effective means of control, so we will not have to use DDT and other persistent pesticides in the future. We make a promise to ourselves, to you, and the EPA and others concerned that we will not be calling for the use of DDT in the future as soon as we can come up with the research that will give us an alternative.

Mr. YATES. What did you use last year? You had the tussock moth then.

Mr. LONG. We did not use DDT. We requested it and it was denied.

Mr. YATES. What did you use?

Mr. RESLER. Zectran was one. There were several others.

Mr. YATES. Which did not do the job apparently.

Mr. RESLER. Not adequately.

Mr. SMITH. We conducted a pilot project using Zectran to see whether it would work. The results were not too confirming. In fact, they were not successful in the case of the tussock moth. We used carbaryl and dylox as a spray for gypsy moth.

IRRITATIONS CAUSED BY TUSSOCK MOTH

Mrs. HANSEN. You had a lot of problems in last year's program, as I remember, with workers being affected by skin irritations. Isn't that correct?

Mr. RESLER. Yes, ma'am. The tussock moth tends to cause irritations when they get to heavy populations, such as you are actually suffering heavy kill of trees and woodworkers and people go through the infested areas. In fact, the spread was so great that they expanded into urban areas and they can be troublesome. Some people are particularly sensitive to the tussock moth.

Mr. YATES. To the moth or to the chemical? I do not understand your question.

Mr. RESLER. To the larvae of the tussock moth itself.

Mr. LONG. There is a very fine hair fuzz on this moth.

Mr. RESLER. I was trying to lead up to a general résumé of the kinds of major insect infestations we have suffered over the years that have caused major losses. We see in the tussock moth control proposal an opportunity hopefully to develop a real breakthrough so that we can effectively control this particular moth.

There are others that are going to continue to be major problems to us, but this is the one that is the most dramatic at the moment.

Mr. YATES. Mr. McDade earlier this year asked about controlling the gypsy moth in his area.

Mrs. HANSEN. Mr. Veysey?

TUSSOCK MOTH

Mr. VEYSEY. I understand that the tussock moth has been with us for a very long time and in the past it has made some serious attacks, apparently in a cyclical manner like every 10 years or so.

Mr. LONG. Every 7 to 10 years.

Mr. VEYSEY. Is it known whether that is related to whatever holds the tussock moth in restraint? Or is it just a natural cycle like the locust?

Mr. SHEA. These are items that we have built into the program, looking at the natural controls, the parasites and predators and natural viruses and climate and factors of this sort. We would be concerning ourselves with the prediction of population changes, and damage in the forests.

Mr. VEYSEY. Are there known natural predators for the tussock moth?

Mr. SHEA. Yes, sir.

Mr. VEYSEY. But they do not include this virus or other treatment that you are proposing?

Mr. SHEA. The virus is a natural virus. The bacterium is a bacterial disease. These are a group of microbials for the control of certain insects.

Mr. VEYSEY. But there are additionally some insect predators or other types of predators.

Mr. SHEA. Yes, there are.

Mr. VEYSEY. You don't know what they are or what promise there is that they might be encouraged?

Mr. SHEA. At this point we know very little about the parasites or predators of the tussock moth. We know there are a number of them, but how they might be used we do not know.

Mr. RESLER. I think this would be the key point, Mr. Veysey. It's one thing to know that certain insects are predators. It's something else to develop the method of being able to use them effectively.

RESEARCH AND CONTROL FUNDS

Mr. VEYSEY. Do I understand that the additional \$6 million that you are asking for is essentially all directed into this research endeavor? Or is some of that for control in the infested areas?

Mr. RESLER. This is exclusively research.

Mr. VEYSEY. That is on top of what is already in the budget for control purposes?

Mr. RESLER. Yes, sir.

Mr. VEYSEY. Which is adequate or sufficient?

Mr. RESLER. We think it is adequate for this year.

Mr. VEYSEY. Thank you.

SOUTHERN PINE BEETLE

Mrs. HANSEN. You are requesting an additional \$1,885,000 for southern pine beetle research. Give us the explanation and justification for this request.

Mr. SHEA. Madam Chairman, during the 5-year program it is proposed we will be learning how to predict the insect populations, damage or impact and the susceptibility of the forest with the idea of detecting outbreaks very early when the control can be most effective.

We will also be looking at field and safety tests, formulation studies, and use patterns for pheromones and other behavior chemicals used for survey and suppression. We will be looking at new or improved toxicant formulations and methods of using them for controlling the southern pine beetle.

We will be looking at the various factors which contribute to host susceptibility and stand factors, that is, forest management practices which contribute or decrease susceptibility.

We will be looking at the natural enemies as potential control agents again. We know the southern pine beetle has a number of parasites and predators and a number of diseases. We will be looking at these.

From the research we hope to develop an optimal forest or pest management system, using the information that we gain from the program over a 5-year period..

Mrs. HANSEN. You note that this project will take 2 years longer than the others because the problems are more complex. Do you want to explain that?

Mr. SHEA. The southern pine beetle, as you know, spreads across the whole South. There is a varied and complex set of conditions, involving the forest, the soil, and other factors. We probably know less about the southern pine beetle than we—

Mr. VEYSEY. You didn't know much about the tussock moth.

Mr. YATES. You know a lot about it. But that doesn't mean you can control it.

Mr. LONG. I could argue only that is not quite true.

Mr. SHEA. It's a much more complex situation. Whereas with the defoliators, you can move toward chemical or biological controls, direct control for the southern pine beetle is much more complex than it is for the defoliator.

Mr. RESLER. Madam Chairman, as I was mentioning earlier, you are well aware of the major losses that have occurred in the past as a result of the bark beetles.

Mrs. HANSEN. Yes.

Mr. RESLER. The control mechanisms are very, very limited. Hopefully, there would be enough comparability in this research in the southern pine beetle that the knowledge might be extrapolated to other areas to treat, or at least give us some better insights into some of the other beetles that are in the same basic family. I think that might be a spinoff value to this particular program.

Mrs. HANSEN. Will that assist you in the Rocky Mountain area?

Mr. RESLER. We are hopeful that that knowledge would be useful to a degree. At least it might provide some important openings and new research lines in connection with mountain pine beetle.

Mr. LONG. Madam Chairman, with the hope that the program can have spinoff values as to the degree it can be useful, it is not going to change the thrust. The direct thrust will be for these three insects and they will be concentrated upon in terms of research. There are many similarities in terms of the families of insects on which we hope to use the information.

MOUNTAIN PINE BEETLE

Mrs. HANSEN. You requested funds for the mountain pine beetle in a supplemental, but you are not requesting funds for it in this request. I am curious as to why? I understood it was a major problem in the Rocky Mountain States.

Mr. LONG. I am sure that is correct. From the outset, in this program, we did not attempt to concentrate on other insects, other than the three we have identified. There are other programs ongoing that will continue on with the work in other insect areas. We are not stopping that. The programs are continuing at their present level. This is an accelerated level over what we have attempted to do in these three insect areas.

Mrs. HANSEN. What is the level of spending for the Rocky Mountain Pine beetle in fiscal year 1974 and 1975?

Mr. RESLER. Could we supply that?

Mr. YOUNGS. We don't have it specifically for the Rocky Mountains area, but we can supply that.

[The information follows:]

Research on control of the mountain pine beetle is funded at \$267,000 in fiscal year 1974 and will be funded at \$281,000 under the budget proposed for fiscal year 1975.

EFFECTS OF DDT ON FISH AND WATER

Mr. YATES. In your use of DDT in the past, has it ever showed up in fish in the area? Does the DDT go into water tables and then into streams and then into the fish?

Mr. SHEA. As I understand your question, it is whether or not DDT does go into the fish if it gets into the water.

Mr. YATES. Where you have used it. I know it does. It has been found in fish in various places in the country and it has had a very bad effect on birds and on other animals. In your experience, where you have sprayed the forests with DDT, have any of the Government agencies found subsequently that, as a result of your spraying or the use of DDT, it was found in the water and in the fish that people eat?

Mr. SHEA. I am familiar with a spray program for control of the hemlock looper on the West Coast where DDT was used a number of years ago. There were small amounts of DDT detected in the water and some of the fish food.

Mrs. HANSEN. Wasn't the problem with your oyster beds?

Mr. SHEA. The oyster beds were the primary problem. There was no DDT level detected in oysters.

Mr. YATES. What does that mean, that they were detected in one area and not in another? You say they were found in the oyster beds. They were found in the oyster then, weren't they?

Mr. SHEA. There was no DDT found in the oyster.

Mrs. HANSEN. On Willapa Harbor?

Mr. SHEA. Yes; where the rivers drained into the bay from the sprayed area. Here again it was a very carefully monitored spray and they stayed away from the streams insofar as possible.

DDT EFFECTS ON BIRDS

Mr. YATES. What happens to the birds in the areas that you spray?

Mr. SHEA. I don't have any data on that.

Mr. RESLER. Mr. Yates, the spray project I was referring to earlier in 1965 was very tightly monitored, both by our own organization and by a number of other State and Federal agencies. There is a comprehensive report out on that monitoring effort.

I think it's clear that any time you apply a hard pesticide, it's going to show up some place along the chain. That certainly was the case there. There were minor quantities, but detectable, nevertheless, found in various animals. But all at such level, as I recall the report, that it was not significant in terms of its effect on their health.

I am not aware of any losses of fish as such yet. There were fish found in the streams that did have detectable quantities of DDT in them.

I guess my point would be, as near as I can recall, levels of DDT that were experienced following that 1965 project were within acceptable limits. One must recognize that DDT is a hard pesticide and it's going to show up. It's a question of whether or not it's significant enough to cause long-term damage.

Mr. LONG. We could say this, that the question of the seriousness of DDT is in dispute among scientists. They disagree quite substantially. There is one scientist, I think in Berkeley, who eats DDT every so often with no ill effects as yet known.

Mr. YATES. As yet.

Mr. LONG. He is still alive.

Mr. YATES. How long has he been eating it?

Mr. LONG. I don't know.

MISUNDERSTANDING ABOUT EFFECTS OF DDT

Mr. VEYSEY. I think there is a misunderstanding about DDT. I am a farmer and we have used it for years. It's considered pretty much nonlethal to humans.

Mr. YATES. Victor, the cancer people say the amount that causes cancer varies because of the resistance of individuals. Small doses accumulate year by year by year. DDT has only been used for 20 years. Maybe if they use it for 25 years that is when it triggers.

Mr. VEYSEY. Maybe.

Mr. YATES. I recognize you have to fight the pests in order to get your crops in.

Mr. VEYSEY. Let me conclude my point with Sid. I think along with those who have had some experience with it—those who are the real users of it, it is considered much less lethal, much less dangerous to humans than any of the alternatives. Agriculture and Forest Service have been forced to a lot of other alternatives that are much more lethal to human beings than is DDT.

Mrs. HANSEN. That is right.

Mr. VEYSEY. Sure, maybe if you eat it for 25 years or 50 years or 110 years you are going to get cancer, but we don't know that, either.

Mr. YATES. Victor, we do know. You are at the other end. I used to have these arguments about the control of natural gas prices at the wellhead. I said at the time to John Lyle of Texas: "It all depends on whether you were born in the shadow of the gas well or the gas stove." That is the truth. You are on a farm and I am a consumer at the other end. I eat the food when it comes into the cities from your farms. I want you to grow the food, but when I get the food I want to be sure I am not eating DDT.

Mr. VEYSEY. You are not. That is monitored. You know that. It's very thoroughly monitored.

Mr. YATES. But it isn't thoroughly monitored.

Mr. VEYSEY. It is.

Mr. YATES. We are off on a tangent here.

GYPSY MOTH RESEARCH

Mrs. HANSEN. You are requesting an additional \$2.5 million for gypsy moth research. What are the details?

Mr. SHEA. During the period of this project, which will run from fiscal year 1975 to 1978, we expect the following achievements:

One. Methods for predicting population trends will be updated and refined using new techniques for measuring larvae dispersal, sampling egg masses and pupae, and monitoring low populations.

Two. Procedures for measuring and predicting impacts will be developed by refining methods for measuring defoliation, relating defoliation to tree mortality, and developing additional technology for measuring socioeconomic and environmental impacts.

Three. Safety and efficiency tests to evaluate and support registration of nucleopolyhedrosis virus (NPV) will be completed.

Four. Optimum formulations and application technology for use of chemicals, Bt and NPV will be developed.

Five. Disparlure's use in containment, suppression, and possible elimination of populations will have been demonstrated.

Six. New chemical insecticide candidates will be screened, evaluated in laboratory, and field tested.

Seven. The effectiveness of available and newly introduced parasitoids will be evaluated.

Eight. Sterile male techniques will be evaluated for their potential as suppressive or population elimination tools.

Nine. A mass-rearing capability adequate for future program support will have been developed.

I would like to comment on that. It's very important to be able to rear the gypsy moth as a part of the sterile male technique for the screening processes and items of that sort.

Mr. EVANS. In this day and age of sexism and all, why are we sterilizing the males instead of the females?

I am dead serious. Is there a scientific reason for that?

Mr. SHEA. There is a good reason why the males are sterilized instead of the females. The males copulate with more than one female. If the male is sterile the female lays infertile eggs. That female does not mate with other males. So it's much more effective.

Mr. EVANS. I was sure there was a good answer.

Mr. LONG. It does seem a little unfair.

FUNDING IN FUTURE YEARS

Mrs. HANSEN. You list in the justifications the future year financing of this program. What assurances do you have from the administration that these funds will actually be included in future budgets?

Mr. LONG. May I respond?

Mrs. HANSEN. Certainly.

Mr. LONG. Who can see the tea leaves over the longer years we have proposed for this program? We started initially to tell them how long we needed funding. We can anticipate that we will have ways to reach the answers by the end of this time. It is a very short period in terms of research. Three years is probably too short. We know that. We feel that by the time we reach the end of the third year we will develop the answers on the gypsy moth and the tussock moth. We presented this as a total program, not just 1 year. We can't, because of the system, ask for all of it at one point in time. We tried to advise our associates as well as others in the executive branch that this is not a 1-year program, otherwise we will waste our funds if we don't continue.

Mrs. HANSEN. We have been trying in this committee for the past 3 years to convince the Office of Management and Budget that our national forests are not a 1-year program. If we want wood, we have

to do some fundamental things; research, reforestation, and effective management. We can't seem to make OMB understand that a tree is not going to grow in 1 year and that something has to be done year by year by year.

We tried to convince them in this committee several years ago that we were going to have an energy crisis. Nothing moved them until the Arabs cut off the oil.

Do we have to have a nationwide catastrophe in our forests to motivate OMB? Oil is more easily secured than forests because forests take time to grow.

Mr. LONG. We have made some progress in the environmental program.

Mrs. HANSEN. That is only temporary.

Mr. LONG. But I think we would agree that at least we have made some progress. There is a practical element in coming back each year because as the program develops we will need to change and adjust. We can only estimate what it may cost the second, third, and fourth year, so we will like to come back with a more precise program. I think there is good support. It took us 8 months to get here. We were talking about the philosophy of the management of this program.

FOREST MANAGEMENT

Mrs. HANSEN. This is what disturbs me about OMB. This committee has been talking about the philosophy of management for a better forest program for 8 years. It has taken us 8 years and still the budget does not recognize our national forest needs. You are well aware that your budget this year has not been increased in any sense of the word when you consider GSA space costs and inflation.

You only have to look at your request for roads. You can't salvage timber if you don't have roads. I do not know many timber buyers who have the capital investment to remove the timber in the time you have to remove it. As you well know the sales of salvageable timber have to be rather abrupt. If you have no roads, you are not going to find a timber buyer who is going to face the problems of weather in the construction of the road, the problems of weather in getting that timber out, and still have the capital.

Mr. LONG. I certainly don't in any way argue with what you have said. I agree that timber management is a long-term program. I think you know that the Department has felt this way for some time.

Mrs. HANSEN. It is not only timber management. You also have to manage our forests in such a way as to protect our wildlife and provide for recreation. Your visitor use is constantly increasing.

Mr. McDADE. Will you yield?

Mrs. HANSEN. Yes.

GYPSY MOTH CONTROL

Mr. McDADE. I want to commend you on the entire package and the increase on the gypsy moth program which I have been very interested in. I am glad you have succeeded in getting it through the OBM.

Tell me a little bit about the current status of your control mechanisms with respect to the gypsy moth. Do we have an effective control method?

Mr. SMITH. We have used effectively Sevin 4 oil as a spray. Also we have a number of pilot projects. I can give a rundown of the suppression projects. In New Jersey, plans are for 66,000 acres to be treated at a cost of about \$200,000; New York, 55,700 acres for \$269,000; Pennsylvania, 75,234 acres at a cost of about \$297,000; Rhode Island, 95,000 acres at a cost of \$138,000. We have had three major pilot projects, two in Pennsylvania and one in Rhode Island, to test various chemicals to improve our control efforts. We also have a pilot project with the State of New Jersey, a cooperative one, to evaluate the impact of aerially applied Bt and carbaryl when applied to the gypsy moth around water. This is to determine if we have a safe pesticide as compared with Bt and to find out how it compares with carbaryl.

Another project with the Pennsylvania State University is being conducted to evaluate the effect of dylox on parasites and as a control for gypsy moth. Another pilot project with the Pennsylvania State University is a pilot test to evaluate the effectiveness of Sevin 4 oil in combination with Disparlure, an attractant against gypsy moth, to determine if it is a feasible control method.

Mr. McDADE. All with aerial spraying?

Mr. SMITH. Yes, sir.

Mr. McDADE. In response your answer is that you have some control mechanisms now but you have not reached the ultimate, that you have to take this research package and get to a much more effective method; is that what you are talking about?

Mr. RESLER. Precisely.

RESULTS OF PROPOSED RESEARCH

Mr. McDADE. I am a little unsure of what you intend to do. I see the dollars requested here and the intended requests in the future. Would I be able to tell a constituent that by 1978 you would have reached the millennia as far as taking care of gypsy moths?

Mr. LONG. I think we should get an effective answer for you on that question. Who is prepared? I would rather have a scientist respond.

Mr. YOUNGS. I think it would be a bit rash to say we would have reached the millennium at that time.

Mr. McDADE. Where do you think you will be?

Mr. YOUNGS. We think we will be at the point where we will have effective environmentally acceptable control methods, developed in the laboratory, tested in the field on a pilot basis, and ready to move into large scale operations. We think they will control the moth. We will not promise that this will be the best possible way of doing it, but we think it will work.

Mr. McDADE. There will be a significant advance in the state of technology in an environmentally acceptable way?

Mr. YOUNGS. That is the criterion upon which we built the program.

Mr. LONG. Another point is that we do not disparage what has gone on before. There has been a major effort for many years. We think we can pull the efforts together. All the interests involved will be working together under a project plan.

Mr. McDADE. That sounds very exciting and I think enormously worth the effort that is being put into it. We are talking about some pretty good sums of money. But as the justifications say in terms of cost benefits, it is highly desirable.

DISTRIBUTION OF GYPSY MOTH FUNDS

Are you able to give me any idea about how much of this research will be done within the various Federal agencies and how much outside?

Mr. SHEA. In fiscal year 1975 we propose that the program be distributed as follows: \$1.2 million to the Forest Service; Agricultural Research Services, \$465,000; APHIS, \$710,000; and Cooperative State Research Service, \$140,000.

Mr. McDADE. Does that mean the Forest Service is going to do the entire \$1.2 million in-house?

Mr. SHEA. No, sir. There would be a portion of that done outside.

Mr. McDADE. How much will be in-house and how much contracted?

Mr. SHEA. Ten to 15 percent will be extramural.

Mr. McDADE. So the vast bulk of it will be done within the Forest Service?

Mr. SHEA. Yes, sir.

Mr. McDADE. Is that true of the other organizations I see listed, the Agricultural Research Service and the Animal Plant Health Inspection Service?

Mr. SHEA. Those activities will be primarily within ARS and APHIS.

Mr. McDADE. Is that through the State governments or directly from the Forest Service?

Mr. SHEA. This would be through the organizational concept of the program through the program manager who would be managing the programs both within the Department of Agriculture and through the universities and extramural contracts.

Mr. McDADE. So we are looking at what is a laboratory phase of the program, aren't we, in the first fiscal year?

Mr. SHEA. In the first fiscal year there are a number of tests being planned, field experiments, and items of this sort.

APPLICATIONS TEST

Mr. McDADE. I see the applications test. That of course will be field tested, wouldn't it?

Mr. SHEA. Yes, sir.

Mr. McDADE. What will you do, for example, on predicting impacts? This is a tremendously important question, I think. Will that be a field test or a laboratory test?

Mr. SHEA. The prediction of impacts for the gypsy moth program will involve, first of all, gathering the field data on the various stages of the insect and incorporating these in predicting models and relating the test with the actual happening. This test is well underway. This represents an expansion of those activities already in the program.

CHEMICAL INSECTICIDE CANDIDATES

Mr. McDADE. On No. 6, on the new chemical candidates, you know I have heard a lot of criticism from people who are happy that you have Sevin, Dylox, and Bt, but they complain that it doesn't have the effectiveness that you would get if you were using DDT. Is what

you are trying to do here going to increase the efficiency of the chemicals you have in inventory now?

Mr. SHEA. There will be two things. One would be to increase the efficiency of the materials we have and the other would be looking at new materials such as pyrethroids and developing those as part of the integrated program.

Mr. McDADE. Moving them into the inventory?

Mr. SHEA. That is right. And then the screening of additional pesticides.

Mr. McDADE. Thank you.

Mrs. HANSEN. Mr. Veysey?

RESEARCH TIME FRAME

Mr. VEYSEY. Of course the Department of Agriculture has had a lot of experience fighting different types of insect pests and not too many real successes over the long pull. Now your program seems to project in the case of the tussock moth a 3- to 4-year stretch and the gypsy moth about 4 years and then presumably you have it done. I don't really believe that.

Mr. LONG. We don't say that at all.

Mr. VEYSEY. You don't say that but you stop funding it at 1978.

Mr. LONG. We are hopeful we can go back to more normal levels of funding after having reached the platform we desire with these three insects.

Mr. VEYSEY. I would like to be an optimist with you. I think there is a lot of experience that tells us the bugs are a lot smarter than the Ph. D.'s you put on the project.

Mr. LONG. It is a continuous war.

Mr. VEYSEY. My guess is that you will not drop down to a lower level. We will have to see about that but I imagine if we go into this with the thought that it is a temporary short-range 3- or 4-year project to clean things up, we will be very lucky and it will not be the result of our efforts. If that is the way it works out, it will be other unrelated factors.

Mr. LONG. We will need some luck as all research depends upon this element to a degree.

Mr. VEYSEY. If this is cyclical, you can play the cycle out and take the credit.

Mr. LONG. It is particularly important that we apply our test and research programs during the period in which the cycles are high, which they are in all three cases.

Mr. VEYSEY. That is when I would like to run a program, too, when they are at the peak and hopefully you can catch them on the down slide. I wish you luck.

GSA SPACE RENTAL

Mrs. HANSEN. What is included in this request for GSA space costs?

Mr. LONG. Who can answer that question? I don't know that we have anticipated there will be any additional space requirements that will involve that.

Mr. RESLER. Madam Chairman, there is no additional GSA space in this program. We think we can handle it in the existing program.

Mrs. HANSEN. Mr. Yates?
 Mr. YATES. No questions.
 Mrs. HANSEN. Thank you very much, gentlemen, for an informative hearing.

TUESDAY, JUNE 11, 1974.

BUREAU OF INDIAN AFFAIRS

INDIAN FINANCING ACT

WITNESSES

MORRIS THOMPSON, COMMISSIONER OF INDIAN AFFAIRS
 JOSE ZUNI, DIRECTOR, OFFICE OF ADMINISTRATION
 JOHN P. SYKES, ADMINISTRATION, FINANCIAL MANAGEMENT SERVICES
 DANIEL D. McDONALD, DIRECTOR, OFFICE OF TRIBAL RESOURCES DEVELOPMENT
 HAROLD D. ROBERSON, ACTING CHIEF, DIVISION OF CREDIT AND FINANCE
 BOBBY L. SELVEY, DIVISION OF CREDIT AND FINANCE
 FRANCIS M. WILES, DIRECTOR OF BUDGET, OFFICE OF THE SECRETARY

Mrs. HANSEN. The next agency to appear is the Bureau of Indian Affairs. The principal witness this morning is Morris Thompson, Commissioner.

We will insert the item from House Document 93-310 and the justifications in the record at this point.

[The information follows:]

DEPARTMENT OF THE INTERIOR—BUREAU OF INDIAN AFFAIRS

Budget appendix page	Heading	1975 budget request	Amendment previously proposed H. Doc. 93-286	Proposed amend- ment	Revised request
581	Operation of Indian Programs..... This proposed amendment is to stimulate and increase Indian-owned business.	\$453,807,000	\$300,000	\$10,000,000	\$464,107,000
588	Indian Revolving Loan Fund..... (Insert the following paragraph under this heading:) For payments to the Indian Revolving Loan Fund as authorized by the Act of April 12, 1974 (Public Law 93-262), \$50,000,000, to remain available until expended. This proposed amendment will provide for increased Indian business opportunities.			50,000,000	50,000,000
588	Indian Loan Guaranty and Insurance Fund..... (Insert the following paragraph under this heading:) For payments to the Indian Loan Guaranty and Insurance Fund as authorized by the Act of April 12, 1974 (Public Law 93-262), \$20,000,000, to remain available until ex- pended. This proposed amendment will provide for increased Indian business opportunities.			20,000,000	20,000,000

STANDARD FORM 300
July 1961, Bureau of the Budget
Circular No. A-11, Revised
500-101

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
OPERATION OF INDIAN PROGRAMS

Program and Financing (in thousands of dollars)

Identification code 10-76-2100-0-1-999	1975 BASE	1975 XCHARGE	1975 EXPEND.
<u>Program by activity:</u>	<u>Request</u> <u>Pending</u>	<u>Proposed</u> <u>Amendment</u>	<u>Revised</u> <u>Request</u>
3. Tribal Resources development:			
(a) Business enterprises development.....	5,980	10,000	15,980
All other activities.....	448,127	----	448,127
Total program costs, obligations.....	454,107	10,000	464,107
<u>Financing:</u>			
Budget authority.....	454,107	10,000	464,107
<u>Budget authority:</u>			
Appropriation (proposed budget amendment).....	454,107	10,000	464,107
<u>Relation of obligations to outlays:</u>			
Obligation incurred, net.....	454,107	10,000	464,107
Obligated balance, start of year	71,463	----	71,463
Obligated balance, end of year..	- 49,343	----	- 49,343
Outlays, excluding pay raise supplemental.....	475,857	10,000	485,857
Outlays from civilian pay raise supplemental.....	370	----	370

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

Operation of Indian Programs

Justification

3. Tribal Resources Development

a. Business Enterprise

Pending request	\$5,980,000
Revised request	<u>15,980,000</u>
Proposed amendment	<u>10,000,000</u>

This proposed amendment for \$10 million is requested pursuant to the Indian Financing Act of 1974 which authorizes an appropriation of \$10 million for each of the fiscal years 1975, 1976, and 1977 for the Indian Business Development program, designed to stimulate and increase Indian entrepreneurship and employment by providing equity capital through nonreimbursable business grants (Title IV).

Cost Factor Involved

\$10,000,000 for grants to provide equity capital for Indian individuals and tribes to establish or expand Indian-owned profit-making business enterprises on or near reservations. (Maximum grant not to exceed \$50,000.)

Need for Program

Due to social and economic disadvantages, Indian individuals have been denied the opportunity to acquire adequate business financing through normal lending channels. All too frequently, an Indian seeking to enter business is refused a loan on the grounds that he lacks equity capital for injection into a prospective business. This lack of capital is probably the one most single factor inhibiting the Indian involvement in America's competitive economic system. The need for the Indian Business Development fund therefore is designed to provide the essential equity financing to induce private lenders to approve the Indian business loans.

Highlights of Recent Accomplishments

In fiscal year 1971 the Congress appropriated \$3.4 million for a similar program. The specific purpose was to stimulate Indian entrepreneurship and employment by providing nonreimbursable capital grants to Indian individuals, tribes, and associations to establish profit making, Indian-owned businesses which will employ Indians or to aid those Indians already engaged in business.

Some 780 applications were submitted. The total value of the requested funds amounted to \$10.8 million, more than three-fold greater than the appropriation received.

Data compiled as of June 1973 indicate that since its inception in FY 1971, a total of 225 new and 144 existing Indian owned small businesses were granted start-up financing. Approximately 1,680 full-time Indian jobs were created with an annual payroll of almost \$5.7 million. The average grant per man-year of employment amounted to about \$1,500, while the average additional capital generated as loans from other sources amounted to over \$7,100. The data also indicate that after three years of experience about 70 businesses closed for an annual failure rate of about 6 percent. The new enterprises begun, and those expanded, included a wide range of business activities; manufacturing, contract construction, agricultural production and services, food stores and services, laundromats and dry cleaners, apparel and accessory stores, and others. These enterprises, though small, offer to the Indian people an entirely new field of economic opportunity. They present an individual a better break in life by getting him on the economic ladder, and for the community they provide the needed services for a viable community life.

Program of Work

A prime tenet of the proposed program is that grants will be used only when other sources of funding are unavailable to the Indian or Indian group seeking financing. The criteria governing the administration of this program, including fund distribution in accordance with the intent of the Act, are presently under development.

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
OPERATION OF INDIAN PROGRAMS
OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	1975 Request	1975 Proposed Amendment	1975 Revised Request
10-76-2100-0-1-999			
Personnel compensation:	Request	Proposed	Revised
11.1 Permanent positions.....	<u>Pending</u> 143,052	<u>Amendment</u> ---	<u>Request</u> 143,052
11.3 Positions other than permanent.....	13,600	---	13,600
11.5 Other personnel compensation.....	4,668	---	4,668
11.8 Special personal services payments.....	920	---	920
Total personnel compensation.....	162,240	---	162,240
Personnel benefits:			
12.1 Civilian.....	16,235	---	16,235
-13.0 - Benefits for former personnel.....			
21.0 Travel and transportation of persons.....	10,000	---	10,000
22.0 Transportation of things.....	5,000	---	5,000
23.0 Rent, communications, and utilities.....	14,769	---	14,769
24.0 Printing and reproduction.....	950	---	950
25.0 Other services.....	126,981	---	126,981
26.0 Supplies and materials.....	35,500	---	35,500
31.0 Equipment.....	5,000	---	5,000
32.0 Lands and structures.....	300	---	300
-33.0 - Investments and loans.....			
41.0 Grants, subsidies, and contributions.....	80,000	10,000	90,000
-42.0 - Insurance claims and indemnities.....			
-43.0 - Interest and dividends.....			
-44.0 - Refunds.....			
Subtotal.....	456,975	10,000	466,975
95.0 Quarters & subsistence charges.....	3,168	---	3,168
99.0 Total obligations.....	453,807	10,000	463,807

OPERATION OF INDIAN PROGRAMS

Average Grade and Salary

Period covered 10-76-2100-0-1-999	1975 XXXXX	1975 XXXXX	1975 XXXXX
	Request Pending	Proposed Increment	Revised Forecast
Average GS grade.....	7.6	---	7.6
Average GS salary.....	\$12,042	---	\$12,767
Average salary of ungraded positions..	\$ 9,535	---	\$10,315

Personnel Summary

Period covered 10-76-2100-0-1-999	1975 XXXXX	1975 XXXXX	1975 XXXXX
	Request Pending	Proposed Increment	Revised Forecast
Total number of permanent positions...	13,002	---	13,002
Full-time equivalent of other positions.....	1,950	---	1,950
Average paid.....	13,173	---	13,173

DEPARTMENT OF THE INTERIOR

BUREAU OF INDIAN AFFAIRS

INDIAN REVOLVING LOAN FUND

For payment to the Indian revolving loan fund for loans as authorized by the Indian Financing Act of 1974, Public Law 93-262, title I, section 101, \$50,000,000, to remain available until expended.

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
MISCELLANEOUS REVENUE FUND

Program of financing (in thousands of dollars)

	1975 XAPAK	1975 XAPAK	1975 XAPAK
	Request Pending	Proposed Amount	Revised Request
<u>Program activities:</u>			
1. Revolving fund for loans.....	3,450	50,000	53,450
2. Liquidation of Hoonah housing....	25		25
Total (costs-obligations)	3,475	50,000	53,475
<u>Financing:</u>			
Receipts and reimbursements from non- Federal sources:			
Collection of loans.....	-1,755	- -	- 1,755
Revenues.....	-1,207	- -	- 1,207
Unobligated balance available, start of year.....	-2,885	- -	- 2,885
Unobligated balance available, end-of-year.....	2,372	- -	2,372
Budget authority.....	-	50,000	50,000
Relation of obligations to outlays:			
71. Obligations incurred, net.....	513	50,000	50,513
90. Outlays.....	513	50,000	50,513
35-650 111			
(Narrower: 71.3)	(Narrower: 9)	(Narrower: 9)	(Narrower: 9)

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

Miscellaneous Revolving Fund

Justification

1. Indian Revolving Loan Fund (Title I) (Proposed amendment) \$50,000,000

The proposed amendment is requested pursuant to Section 108 of the Indian Financing Act of 1974 to provide capital and restore any impairment of capital for the revolving loan fund exclusive of prior authorizations and appropriations. This fund represents the primary source of financing for Indians who cannot borrow from other Government credit agencies or from ordinary commercial lenders because of their low economic status, isolated geographic location, lack of bankable security, and other reasons.

Cost Factor Involved

\$50,000,000 to provide capital for the revolving loan fund to be available for direct Federal loans to Indian tribes and other organizations for economic development enterprises on or near the reservation and for relending to tribal members through tribal relending programs.

Following is a summary of Indian financing needs based on estimates submitted from tribes and other reservation sources:

SUMMARY OF TOTAL FINANCING NEEDS

As of June 30, 1973

1. Housing (Other than loans to individuals, i.e., housing enterprises, apartments, rentals, group participation.)		\$24,917,500
2. Financing of industrial development and group commercial enterprises.		231,010,440
3. Financing of recreation development (Development of recreation complexes; lakes, trailer parks and campgrounds, tourist attractions, etc.)		73,536,300
4. Financing of utility systems, transportation terminals, community buildings, civic facilities, and other governmental purposes.		134,299,305
5. Financing of group arts and crafts enterprises, commercial and cultural enhancement.		1,714,000
6. Loans to individuals.		510,550,531
a. Land - individuals' land purchase needs.	\$98,745,700	
b. Agriculture - agriculture related needs, cattle operations, farming, etc.	88,939,800	
c. Non-Agriculture - land based enterprises, such as subdivisions, etc.	26,511,900	
d. Housing - individuals housing needs for new construction or repairs.	166,783,100	
e. Small business - includes businesses such as service stations; small restaurant, laundromat, barber shops, garages, etc.	90,492,200	
f. Education - needs for continuing education at college level (beyond and above grant programs).	6,797,000	
g. Other - covers all other sundry and miscellaneous needs not readily identifiable in the other categories including short term consumer type financing needs.	<u>32,280,831</u>	
7. Tribal Land Purchase		105,227,000
8. Expert Assistance		<u>817,385</u>
Total Financing Needs		<u><u>\$1,082,072,461</u></u>

The total reservation based Indian financing needs are estimated currently at \$1.08 billion as indicated in the table. This includes loan commitments of \$13.3 million and authorized loan applications of \$15.6 million for a total of \$28.9 million in approved and authorized loans from the present Indian Revolving Fund for loans.

Many tribes have not requested funds for the past several years knowing of the lack of funds available.

The rules and procedures being developed pursuant to the Indian Financing Act will establish priorities for consideration of loan applications based on the intent and purpose of the Act to develop and improve the economic conditions on Indian reservations and communities and the availability of other programs of loan and grant assistance including the other titles of the Indian Financing Act.

In Fiscal Year 1975 direct loans will be made to individual Indians and tribes ranging in size from less than \$1,000 to perhaps in excess of \$1 million. Through these direct loans and relending of revolving loan funds by tribes and other Indian organizations, a major segment of the reservation population will be affected by this program in FY 75.

BUREAU OF INDIAN AFFAIRS
MISCELLANEOUS REVOLVING FUND

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	1975 X-1975 estimate	1975 X-1975 estimate	1975 X-1975 estimate
Personnel compensation:	Request <u>Pending</u>	Proposed <u>Amendment</u>	Revised <u>Request</u>
-11.1---Permanent positions.....			
-11.3---Positions other than permanent.....			
-11.5---Other personnel compensation.....			
-11.8---Special personal services payments.....			
-Total personnel compensation.....			
Personnel benefits:			
-12.1---Civilian.....			
-13.0---Benefits for former personnel.....			
-21.0---Travel and transportation of persons.....			
-22.0---Transportation of things.....			
-23.0---Rent, communications, and utilities.....			
-24.0---Printing and reproduction.....			
25.0 Other services.....	25	- - -	25
-26.0---Supplier and materials.....			
-31.0---Equipment.....			
-32.0---Lands and structures.....			
33.0 Investments and loans.....	3,450	50,000	53,450
-41.0---Grants, subsidies, and contributions.....			
-42.0---Insurance claims and indemnities.....			
-43.0---Interest and dividends.....			
-44.0---Refunds.....			
99.0 Total obligations.....	3,475	50,000	53,475

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

INDIAN LOAN GUARANTY AND INSURANCE FUND

For payment to the loan guaranty and insurance fund as authorized by the Indian Financing Act of 1974, Public Law 93-262, title III, section 302, to carry out the provisions of sections 217 and 301 of the above act to (a) provide capital for a loan guaranty and insurance fund, (b) pay interest subsidy on guaranteed loans, and (c) pay administrative expenses, \$20,000,000, to remain available until expended: Provided, That for the purpose of entering into contracts pursuant to title V, section 502 of the above act, the Secretary is authorized to use not to exceed 5 per centum of any funds appropriated for any fiscal year pursuant to title III, section 302 of the above act.

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
INDIAN LOAN GUARANTY AND INSURANCE FUND

Programs and Financing (in thousands of dollars)

Fiscal year:		1975 actual	1975 estimate	1975 estimate
10-75- -0-3-507		Request Priority	Proposed Amendment	Revised Priority
<u>Programs by activities:</u>				
Capital outlay, funded:				
1. Fund reserve:				
(a) Losses on guaranteed and insured loans.....		-	7,135	7,135
(b) Interest subsidies.....		-	12,065	12,065
Operating costs, funded:				
1. Administrative expense and technical assistance.....		-	1,300	1,300
10 Total (costs-obligations)		-	20,500	20,500
<u>Financing:</u>				
14 Receipts and reimbursements from non-Federal sources:				
Premium on guaranteed and insured loans.....		-	-500	-500
40 Budget authority.....		-	20,000	20,000
Budget authority:				
Current:				
40 Appropriation.....		-	20,000	20,000
Relation of obligations to outlays:				
71 Obligations incurred, net.....		-	20,000	20,000
74 Obligated balance, end of year....		-	-13,500	-13,500
90 Outlays.....		-	6,500	6,500
		(None exist)	(None exist)	(None exist)

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

Indian Loan Guaranty and Insurance Fund

Justification

Indian Loan Guaranty and Insurance Fund (Title II) (Proposed Amendment)
\$20,000,000.

The proposed amendment of \$20,000,000 is requested pursuant to the Indian Financing Act of 1974 to establish a Loan Guaranty and Insurance Revolving Fund to be used: (1) as a reserve for losses on guaranteed and insured loans and to pay other costs incident to, or arising out of, such loans; (2) to pay an interest subsidy, pursuant to Section 301 on loans guaranteed or insured under the provisions of Title II which are necessary to reduce the borrowers interest rate to the rate determined under Section 104 of the Act; (3) to provide competent management and technical assistance, pursuant to Title V, to loan and grant recipients under Titles I, II, and IV of the Act; and (4) for administrative expenses under the Act.

Cost Factors Involved

- (1) \$6,435,000 for reserves for losses on guaranteed and insured loans. This figure represents 15 percent of the amount guaranteed or insured. The amount guaranteed and insured is 90 percent of an estimated \$46.4 million of loans.
- (2) \$200,000 for costs of taxes, insurance, prior liens, etc., incidental to projected defaulted loans.
- (3) \$12,065,000 to cover costs of interest subsidies on the \$46.4 million in loans estimated in cost factor (1) above. These costs represent the difference between the interest costs charged by private lenders and the interest costs resulting from interest rates established by the Secretary to be charged on direct loans. Interest subsidy cost estimates are based on several projected factors:
 - (a) Average life of loan of 10 years;
 - (b) Monthly amortizations;
 - (c) 4 percent differential in interest rate between private lender's rate and rate established by the Secretary for direct loans. Currently these figures are estimated at 11 percent and 7 percent, respectively. There no doubt will be changes over time in these factors, but these cannot be established now.
- (4) \$500,000 to provide competent management and technical assistance to borrowers or grantees through contracts with private sources, or on a reimbursable basis with other Federal agencies. It is intended to use Federal capability, and capability available under existing cooperative arrangements to the fullest extent before resorting to contracting. The \$500,000 amount is based upon 6 months of operation during FY 1975.

- (5) \$800,000 to administer the provisions of the Indian Financing Act of 1974, including:

- (a) Establishing and administering policies, regulations, procedural guidelines, etc.;
- (b) Accepting and processing applications, for loans from the Indian Revolving Loan Fund; and supervising such loans;
- (c) Accepting and processing applications for loan guarantees, insurance, and interest subsidies for loans made under the Loan Guarantee and Insurance Fund, periodic reviews of such loans, and protecting the governments interest to the extent possible on defaulted loans;
- (d) Accepting and processing applications for grants under the Indian Business Development Program.

Added Workload Factors - FY 1975 over FY 1974

<u>Item</u>	<u>Unit</u>	<u>Est. Amount</u>
1. Direct Loans:		
a. New loans made	No.	+ 5,000
b. New loans made	Mil. \$	+\$50.0
2. Guaranteed & Insured Loans:		
a. New loans made	No.	+ 928
b. New loans made	Mil. \$	+\$46.4
3. Indian Business Development Program Grants:		
a. Applications processed	No.	+1,675
b. Grants made	No.	+ 670
c. Grants made	Mil. \$	+\$10.0

The added workload indicated for Direct Loans (item 1. above) will be carried out within the amount requested under the Credit subactivity in the Operation of Indian Programs appropriation. The added workload for Guaranteed and Insured Loans and for the Indian Business Development Program will require 76 additional positions costing \$800,000 for six months of operations. Of the \$800,000, it is estimated \$500,000 will be used for personnel compensation, and the balance for other objects of expenditure. Of the 76 additional positions approximately 45 will be technical professional positions and 31 will be clerical, administrative, or other support positions. All 76 positions are intended to be located in field offices.

BUREAU OF INDIAN AFFAIRS
INDIAN LOAN GUARANTY AND INSURANCE FUND

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code		19 75 actual	1975 estimate	19 75 estimate
10-76-	-0-3-507			
	Personnel compensation:	<u>Request</u>	<u>Proposed</u>	<u>Revised</u>
11.1	Permanent positions.....	<u>Pending</u>	<u>Amendment</u>	<u>Request</u>
			455	455
11.3	Positions other than permanent.....			
11.5	Other personnel compensation.....			
11.8	Special personal services payments.....			
	Total personnel compensation.....		455	455
	Personnel benefits:			
12.1	Civilian.....		45	45
13.0	Benefits for former personnel.....			
21.0	Travel and transportation of persons.....		150	150
22.0	Transportation of things.....		25	25
23.0	Rent, communications, and utilities.....			
24.0	Printing and reproduction.....			
25.0	Other services.....		525	525
26.0	Supplies and materials.....		60	60
31.0	Equipment.....		40	40
32.0	Lands and structures.....			
33.0	Investments and loans.....		7,135	7,135
41.0	Grants, subsidies, and contributions.....			
42.0	Insurance claims and indemnities.....			
43.0	Interest and dividends.....		12,065	12,065
44.0	Refunds.....			
				
				
99.0	Total obligations.....		20,500	20,500

INVESTMENT OF PUBLIC MONIES
IN THE GOVERNMENT AND IN THE PUBLIC SERVICE

Personnel Summary

10-70- -0-3-507			
Total number of permanent positions.....	Request	Proposed	Revised
Full-time equivalent of other positions.....			
Average paid.....	76	76	76
10-70- -0-3-507			
Average Grade and Salary	Request	Proposed	Revised
Average GS grade.....	7.6	7.6	7.6
Average GS salary.....	\$12,660	\$12,767	\$10,315
Average salary of ungraded positions..			
10-70- -0-3-507			
(Monetary)	(Monetary)	(Monetary)	(Monetary)

COMMISSIONER'S OPENING STATEMENT

Mrs. HANSEN. I am sure you have a general statement Mr. Thompson, which you may read or summarize.

Mr. THOMPSON. I will read our statement.

Madam Chairman, the Indian Financing Act of 1974 was signed on April 12, 1974, as Public Law 93-262. The act authorized appropriations of \$80 million which falls into three separate appropriation actions. On June 3, 1974, the President requested the Bureau's fiscal year 1975 budget be amended for the total authorized amount.

Briefly, \$50 million is requested to provide capital for the revolving loan fund to be available for direct Federal loans to Indian tribes, organizations and individuals. This fund represents the primary source of financing for Indians who cannot borrow from other Government credit agencies or ordinary commercial lenders because of the Indians' low economic status, location, and lack of bankable security.

\$20 million is requested for Indian Loan Guaranty and Insurance Funds which is to be used as a reserve for losses and to pay interest subsidies on guaranteed and insured loans and to pay other costs incident to, or arising out of, such loans; to pay certain administrative costs and to provide management and technical assistance to eligible borrowers and recipients of development grants.

\$10 million is requested for the Indian business development program which will stimulate and increase Indian entrepreneurship and employment by providing equity capital through nonreimbursable grants to Indians and Indian tribes to establish and expand profit-making Indian-owned economic enterprises benefiting Indian reservations and communities.

The implementation of this act provides the financial underpinning of the administration's pledge to pursue a policy of Indian self-determination since the ability of the American Indian to shape his own future and to assume control of Federal programs created for his benefit bears a significant relationship to the strength of his economic base. To this end we expect this program to be the nucleus of our total economic development efforts.

TYPES OF PROJECTS FUNDED

Mrs. HANSEN. You have listed the three proposed programs. Will you please explain to the committee the types of projects which will be eligible for funding under each program?

Mr. THOMPSON. We generally feel that the revolving loan funds, the guarantee and interest subsidy and the grant program could be intermingled, but generally can be used to finance housing programs, construction activities to underwrite new Indian operations and organizations that may start out looking primarily toward a profit motive for many of the tribes. So, I believe we have, as part of our justification, some of the activities that we have had requests for over the last couple of years.

Generally they cover housing, industrial development, financing of recreation development, utility systems, transportation terminals, group arts and crafts and enterprises, loans to individuals, and tribal land purchase. Those are some of the primary categories.

Mrs. HANSEN. We have received a request from Congressman Steiger of Arizona in regard to the Yavapai Apache Tribe. It involves the Montezuma Castle National Historical Site. It is a \$1.6 million project. Is that the type of project that is eligible?

Mr. THOMPSON. I am not familiar with that project. Is it recreational development?

Mrs. HANSEN. It is for tourist development.

Mr. THOMPSON. This would be a project that conceivably could be funded under this act, to answer your question generally.

Mrs. HANSEN. Under which one of the categories?

Mr. THOMPSON. Without really looking at the proposal, recreational developments could come out of the revolving loan fund or if we can get private lending institutions to provide the capital necessary to come under the loan guarantee section.

Mrs. HANSEN. In other words, you do see yourselves as providing them with the credit, so to speak, for this kind of operation?

Mr. THOMPSON. Yes.

Mrs. HANSEN. We also have some requests from Indian tribes in the Northwest. They have been asking for a long time, as you know, for adequate funding to be able to buy back some of their land. They have tribal lands and fee lands. The tribe, in order to have an orderly management program, needs the ability to purchase land from the current owners so they can prevent development they don't want such as the establishment of taverns, et cetera, on some of their recreation lands.

A tribe like the Quinalts has not had the tribal financing to do this type of thing. Under what category would this type of program be financed? Would this type of activity be eligible?

Mr. THOMPSON. These types of loans would be eligible, Madam Chairman.

OTHER FEDERAL LENDING PROGRAMS

Mrs. HANSEN. My guess is that a loan would have to be long term, because a forest doesn't grow overnight. These are cutover lands. They had a peculiar timber arrangement. The Indians were forced to sell, not just their timber, but their timber and their land which was a very strange type of timber sale. I think they were taken advantage of. The Indians just don't have the capital to buy back these fee lands.

The Nisqually Tribe, I believe, is asking for funds to buy lands so that they could qualify under Mr. Boldt's decision in the Northwest on Indian fishing.

Mr. THOMPSON. Subject to correction, I believe, Madam Chairman, that there is a Federal program available. I think it is the Farmers Home Loan Administration that is currently making long-term, low-interest loans available to Indian tribes for land purchase. I don't know the amount but it is generally in several millions of dollars.

Mrs. HANSEN. I spent several hours with Mr. Udall when he was Secretary of the Interior. At that particular point in time one tribe wanted to purchase back the land that the fee owner had which lay between them and the beaches. They had the beaches. They had the tidelands and they had the tribal lands lying on the other side of the road. But they wanted to make sure that there was not a lot of development. There was no place for them to go for assistance.

Mr. THOMPSON. To answer your question, Madam Chairman, these funds could be available for that purpose. What we want to do is utilize, as well, other existing Federal loan and grant programs. I am told the new program allowing Indians to borrow from the Federal Government at a relatively low interest rate is a relatively new program, about 2 years old.

Mrs. HANSEN. It must be new because I haven't found many tribes who are aware of the program.

REVOLVING LOAN FUND REQUEST

You are requesting \$50 million for a revolving loan fund. Will this fund be available for such things as recreation?

Mr. THOMPSON. That is correct.

INDIAN LOAN GUARANTY AND INSURANCE FUND

Mrs. HANSEN. \$20 million is requested for the Indian loan guaranty and insurance fund. Can you give a specific example of the loans you plan to grant under this category?

Mr. THOMPSON. These types of loans are loans that Indian tribes may be requesting. The Bureau could work with a tribal organization to obtain the necessary capital needed from private lending institutions where the Federal Government would guarantee the loan up to 90 percent and provide the difference in interest under the subsidy provision. There, too, we can run pretty much, I think, the full gamut of the programs that we have. It depends. We have yet to establish, Madam Chairman, some priorities between the two months.

TECHNICAL ASSISTANCE

Mrs. HANSEN. You say in your statement: "Technical assistance to eligible borrowers and recipients of development grants." Give us an example of this type of assistance.

Mr. THOMPSON. Well, I think one of the shortcomings, perhaps of some of the lending and grant programs across the Federal establishment is that while we do relatively well on getting the grants or loans out to the Indian community, we need to do more to insure that the Indian carries out properly the project for which the loan is made. We believe that this technical assistance to the Indian community will insure that the entire project they are entering into is successful.

Mrs. HANSEN. Or is the right enterprise for that area?

Mr. THOMPSON. Yes. Hopefully, through this technical assistance we will be able to shore up the management. We will hope to strengthen it.

INDIAN BUSINESS DEVELOPMENT FUND

Mrs. HANSEN. \$10 million is requested for the Indian Business Development fund. Give us an example of the projects you intend to fund through this program.

Mr. THOMPSON. The \$10 million is probably one of the keys for successful implementation of the program. It is basically the grant program and we can utilize these funds to piggyback on the other

funds. Primarily this will go out as grants to young, emerging enterprises that don't have the equity that could interest either private lending institutions or the Federal Government.

Mrs. HANSEN. You have many tribes which are requesting assistance for their crafts program. These types of programs are not usually making money immediately. But they create an identity and a sense of security. Is this the kind of program that you could envision some assistance being directed toward?

Mr. THOMPSON. Yes; those and others.

INDIAN AWARENESS OF FINANCING PROGRAM

Mrs. HANSEN. Are the Alaska Indians participating in the Indian Financing Act?

Mr. THOMPSON. The Alaskan Indians are eligible according to the act and according to our regulations.

Mrs. HANSEN. What steps have been taken by the BIA to make the Indian world aware of this new program?

Mr. THOMPSON. I think we are doing several things, Madam Chairman. We recognize that it is a new act and it gives us some new programs, although not totally new possibilities. We have experience with the revolving loan funds. We have met with the National Tribal Chairman's Association and the National Congress of American Indians. We are prepared to sit down with them and go over the regulations. We have put out the normal public relations efforts of notifying them, the tribes, that the act has passed and its status. We have met with the American Banking Association. All of the loan and grant programs within the Federal Establishment have been invited to review our regulations and to review our operations plans to insure that we are getting off to a proper start.

So we feel, so far, that we have done our best to notify other Federal agencies and the Indian community and more importantly the banking community.

HOUSING RENTAL

Mrs. HANSEN. You mention in the justifications loans to individuals for housing enterprises, apartments, rentals, and so forth. Is this housing development on the reservation on a rental basis? Is it the construction or reconstruction of houses? What do you envisage? You have a great backlog in Indian housing.

Mr. THOMPSON. We certainly do. If I may, I will have Mr. Robertson answer that since he is familiar with the summary of total financing need.

Mr. ROBERTSON. This summary was built by getting the tribal input and agency input from out in the Indian country. This was housing need that was not covered otherwise; housing that could be provided on a rental basis, some of it subsidized once it is built under one of the Federal programs.

The other is simply nonprofit housing the tribes could rent to members and to provide them the seed money to get into some of these housing programs that they otherwise could not get into. We have a group of Indian people out there who, in some cases, are a little above the poverty level so that they do not fit into some of the public housing programs. They would be able to make a payment on a house

if something were available, a reasonable payment. This is an attempt to meet the need. This would be, in part, the kind of housing that would fit that group of people. This is housing that tribes have asked for.

Mrs. HANSEN. You are assuming that this is housing on the reservation?

Mr. ROBERSON. Yes.

LAND OWNERSHIP

Mrs. HANSEN. Do they own their own lands or does it belong to the tribe?

Mr. ROBERSON. We have both categories, both individual ownership of allotted lands and tribal ownership of lands.

Mrs. HANSEN. So you have some distinction drawn between the two groups. When you get into housing you have other ramifications, such as, water and sewage facilities. As you know, as part of the housing programs the Indian Health Service provides sanitation facilities.

Mr. THOMPSON. It would be our hope, through the Indian Financing Act, not to supplant or replace any current ongoing Federal program. I guess the broad policy—

Mrs. HANSEN. As you are well aware, you have a deficit of many million dollars worth of housing projects. Some of the need is being met by repair and reconstruction. You have not had too many new houses constructed. You are not catching up. Would the Indian Financing Act be used to catch up on some of your unmet needs? It would not be substituted for a Federal program, when the Federal program isn't meeting your needs.

Mr. THOMPSON. We have not reviewed how the Indian Financing Act is going to mesh with the unmet housing needs of the American Indian.

NEED FOR CONSENSUS ON HOUSING

Mrs. HANSEN. Don't you think you and HUD and the Indian Health Service are going to have to sit down together and develop a good consensus on where your needs are and the costs associated with those needs in order to develop a program that will not overlap?

Mr. THOMPSON. I think that effort is currently going on. We are having meetings with HUD, IHS, BIA, in trying to look at the housing needs of the American Indians.

STATUS OF RULES AND REGULATIONS

Mrs. HANSEN. What is the status of the preparation of rules and regulations and other administrative matters required to implement the act?

Mr. THOMPSON. The act has recently been signed. We have brought people in to study it and draft regulations. They are currently before the Solicitor for review. We have made them available to EDA, FHA, SBA, the American Bankers Association. We have them developed in draft form and they are currently under review. We hope to have them published very shortly.

CRITERIA FOR BUSINESS DEVELOPMENT GRANTS

Mrs. HANSEN. What criteria will be used in making the grants under the Indian Business Development program?

Mr. THOMPSON. There are several criteria. I guess the overall broad reason and philosophy behind the act is to try to improve the economic situation through investment capital in the Indian country. As you know, there has been a reluctance over the years by private lending institutions, because of the uniqueness of the Indian lands and since they are held in trust, the banks don't really feel they have anything to go after. These dollars hopefully will get around that by guaranteeing loans from private lending corporations.

One of the objectives or several of the objectives are to create employment and to generally improve the economic situation of life on the reservation.

Mrs. HANSEN. What evidence do you have that you will be able to find \$10 million worth of worthy projects in fiscal 1975?

Mr. THOMPSON. The program did exist once before. The Bureau made available approximately \$3.4 million in 1972. At that time there was \$11 million worth of requests. There has been a high tribal priority.

Mrs. HANSEN. Please insert in the record a short list of some of the kind of projects that were requested?

Mr. THOMPSON. I will be pleased to.

[The information follows:]

PROJECTS REQUESTED FOR GRANTS

A wide variety of business projects were presented for funding. An example of these projects for which grants were requested are: tribal construction enterprise; automobile repair shop; Indian crafts shop; retail clothing store; logging truck; snack bar and carryout; beauty shop; laundromat; service stations; tribal farming enterprise; and a tribal recreation enterprise.

QUALIFICATIONS FOR LOANS

Mrs. HANSEN. On what basis will you decide whether a proposal qualifies under this program or under a loan program?

Mr. THOMPSON. Do you mean whether it would be a revolving loan fund or a grant?

Mrs. HANSEN. That is correct.

Mr. THOMPSON. Dan?

Mr. McDONALD. The act states that they must not be able to obtain financing even under the other provisions of the act before they are eligible for a grant. That could be determined, of course, by the economic feasibility of the program such as you mentioned, something that obviously could not pay a debt service would be eligible under this, as I see it, under the grant portion.

Mrs. HANSEN. Yet, that might contribute to the economic total benefit of the tribe.

Mr. McDONALD. Yes.

Mrs. HANSEN. Have any proposals been received thus far under this program?

Mr. THOMPSON. I don't know that under this program specifically.

Mr. McDONALD. We have had many calls on it already.

Mrs. HANSEN. For what type of projects?

Mr. McDONALD. Everything from \$40 million sawmills to small home improvement type things.

Mrs. HANSEN. Under what category would the Lummi Aquicultural School proposal be funded?

Mr. THOMPSON. That would probably come under the direct or the revolving loan. I imagine it could come under any one of the three programs.

Mr. McDONALD. You said the school, not the enterprise.

Mrs. HANSEN. Their aquicultural program is really a commercial venture for their tribal use. They have a request for a school program. As you know, there is no authorization for such a school.

Mr. McDONALD. We help fund that under the employment assistance program.

Mr. THOMPSON. We fund students to attend the school.

Mrs. HANSEN. That is what I am asking.

Mr. THOMPSON. But we don't fund the school in total.

Mr. McDONALD. I believe we do in the sense that we pay the school tuition and other costs involved in that manner.

Mrs. HANSEN. What is your estimate of the amount of money which will go to tribes as opposed to other organizations and individuals?

Mr. THOMPSON. I don't believe we have that developed yet, Madam Chairman.

[Discussion off the record.]

ADMINISTRATION OF THE ACT

Mrs. HANSEN. Mr. Evans?

Mr. EVANS. How are you going to administer this Indian Finance Act?

Mr. THOMPSON. We are looking at several methods. As I indicated earlier, we sat down with the American Banking Association and with all the other Federal programs that have loan and grant programs and activities, SBA, EDA, FHA.

Mr. EVANS. What is your concept at the present time?

Mr. THOMPSON. We are seeing the act being administered, of course, within the Bureau. We are not entirely clear whether we will use contract assistance, outside assistance to help us review grants once we get them. We have to determine what types of followup we are required to have. As you know, the Bureau has some experience in this effort in that we had a revolving loan fund that we have operated rather successfully for quite a few years which was a direct loan between the Government and the Indian communities. So we have that experience to fall back on. The new areas are the loan guarantee and interest subsidy programs. So we are not entirely clear on what would be the best way to go forward. We are meeting with the other institutions to determine their successes and weaknesses so we don't repeat their mistakes.

CAPABILITY TO BEGIN PROGRAM

Mr. EVANS. How soon will you be in a position to go into business under this act?

Mr. THOMPSON. I guess it is just about as soon as we can get some of the funds. We have some in-house capability.

Mr. EVANS. Having the funds is one thing. Having your administrative organization all set up with the manpower, guidelines, regulations and policy is an entirely different question.

Mrs. HANSEN. They will have time by the time OMB distributes the money.

Mr. EVANS. When do you think you will be in business under this act?

Mr. THOMPSON. Since the act was passed and prior to the passage we, I think, from an administrative point of view are in excellent shape as far as regulations go. We are looking at our manpower needs and have several things under discussion with the Department as to what types and numbers of manpower.

Mr. EVANS. Is it going to take you 2 weeks, 2 months, 5 months or what?

Mr. THOMPSON. I would estimate about a month.

Mr. McDONALD. We have a target date of October 1 depending on the appropriations.

Mr. EVANS. All these questions will be solved and you will be in business if you have the money?

Mr. McDONALD. We expect to be ready sooner than that.

Mr. ZUNI. We already have an organization that is administering revolving fund programs. So by gearing up to administer the new act we have a base from which to start.

POLICY OF DISTRIBUTING FUNDS

Mr. EVANS. The last question, Madam Chairman: What policy will you have that directs itself to making these funds and programs available all over the country? There are so many Indians from the west coast to the east coast. The chairman suggested even Alaska. You alluded a while ago to an interesting request for a \$40 million sawmill. You would be out of business for the year if you do that. What kind of a policy are you going to undertake to reflect this thin spreading of your assets that you are asking for under this act?

Mr. THOMPSON. I think this is one of the priorities that we have to look to the basic law for. I believe the intent of this act was to generate, stimulate and create a better economic climate on Indian reservations. I feel that was the spirit and intent of the law. If we start from that premise and move out to other priorities, then I imagine the top priority would be Indians residing on or near Indian reservations.

Mr. EVANS. It's obvious you are not going to be able to divide the funds you have here into sufficient piles for each tribe. Will it be done on a first-come-first-served basis?

Mr. THOMPSON. On a project basis. Obviously first-come-first-served may not be the best priority for funding some of these requests. We have to review the applications, look at the repayment possibilities and probabilities to insure that we have a successful program.

ACTUAL ADMINISTERING OF PROGRAMS

Mr. YATES. May I follow that up? Who will do the actual administering, the BIA agents out in the field?

Mr. THOMPSON. The basis is the revolving loan funds, so we have an organization. That question has not really been finally resolved. We are currently looking at the manpower needs as far as numbers and

types. If we are to do the whole job—we are not foreclosing the possibility or probability of using outside expertise to help us in administering the program.

Mr. YATES. Will it be very much like the Small Business fund?

Mr. THOMPSON. I can't say now. We have met with SBA to look at their operating techniques. We have met with the American Bankers Association.

We have not really decided exactly how, in minute detail, the program will be run. We are looking at several management options.

MAXIMUM ALLOWABLE LOAN

Mr. YATES. Is there a maximum loan that an applicant may borrow?

Mr. THOMPSON. I don't believe that has been determined by regulation.

Mr. ROBERSON. The act provides a limit of \$100,000 for a guaranteed loan to an individual. There is no limit to the amount for a tribe or organization of Indians. The grant portion of the act provides a limit of no more than a \$50,000 grant to any one individual or tribe or organization.

Mr. YATES. Thank you.

CRITERIA IN AWARDING LOANS

Mrs. HANSEN. You are requesting \$50 million under the revolving loan fund. What criteria will be used in awarding these loans?

Mr. ROBERSON. As the chairman is well aware, we have the backlog which you have seen. A part of that backlog is \$13 million.

Mrs. HANSEN. I imagine there is another billion dollars that I have not seen.

Mr. ROBERSON. We actually have commitments on approved loans pending the availability of funds of some \$13 million.

Mrs. HANSEN. Can you give us an example of the types of loans?

Mr. ROBERSON. I believe our figures would show that about 42 percent of that amount would be for lending to tribes to relend to their members under their lending programs.

Mrs. HANSEN. For what type of projects are they going to lend the funds?

Mr. ROBERSON. For a wide variety of things, from housing improvement to businesses, to short-term loans, livestock operations, logging operations, small businesses, temporary loans because of certain family circumstances, this sort of thing.

Mrs. HANSEN. When you loan to a tribe, you don't have as much fiscal difficulty of guarantees as you would with an individual, do you, because you do have their land, or is it available?

Mr. THOMPSON. I think this has been one of the problems in getting private capital on Indian lands because of course the tribe and the Department being trustee cannot and will not alienate the Indian's land. So a banker looking at an investment opportunity on the reservation realizes rather immediately that his collectible assets are minimal and consequently other markets are more lucrative to him.

Mrs. HANSEN. Some tribes have collectible assets inasmuch as they own timber. Timber is severable from the land. Suppose you have a

tribe that decides they want to go into a fishing operation. For example, they want to supply Indian fishermen with boats and nets. You can consider that a collectible asset because it is severable from the land. Isn't this correct?

Mr. THOMPSON. That is correct.

TRIBAL FUNDS

Mrs. HANSEN. The Navajos, for example, have sizable tribal funds. Can these funds be used as a guarantee?

Mr. THOMPSON. Madam Chairman, I don't believe those are attachable since they are judgment awards. I don't believe that is attachable income.

Mrs. HANSEN. Supposing they are not judgment awards. Suppose the money in the tribal council has been built up by other things such as sale of timber?

Mr. THOMPSON. If they are nontrust assets, they are assumable.

Mrs. HANSEN. The committee will adjourn until 1 p.m.

AFTERNOON SESSION

REPAYMENTS OF LOANS

Mrs. HANSEN. The committee will come to order.

The \$50 million revolving loan fund is a one-time authorization. Since very little can be expected in loan repayments in 1975, you will be faced with a drastic reduction in your program in fiscal year 1976. Wouldn't it be better to appropriate less than the \$50 million in fiscal year 1975 and "save" some of your authorization for future years?

Mr. THOMPSON. In 1976?

Mrs. HANSEN. Yes.

Mr. THOMPSON. If I understand the question, Madam Chairman, we do have a backlog that we can identify immediately of approximately \$25 million from the revolving loan fund of tribes that have come in. We feel that there is sufficient request to really come pretty close to hitting the mark.

Mrs. HANSEN. If all the funds are expended in fiscal year 1975, then there will be little or nothing to loan in fiscal year 1976 because your repayments will not be coming back into the fund in substantial amounts until after fiscal year 1976. I am asking you if it would be better to only partially fund the program this year and fully fund the program next year?

Mr. THOMPSON. One of the concerns that we had, Madam Chairman, was that the reverse could happen as well, that if we get less appropriated toward the \$50 million which is the total authorization under the revolving loan, as you very well point out, if we get less than that appropriated, we would run over and again have a lot of Indian people saying they were very angry at the Bureau and at us for not being able to respond.

If we had it appropriated in 1975, what we don't use in 1975, if there is a surplus there, would remain available in 1976 since it is no-year money.

Mrs. HANSEN. Of the \$50 million you are requesting, how much do you actually think you will be able to use effectively in 1975? You will probably have more than enough requests to use the \$50 million.

If this happens you might have some very frustrated Indian people not having anything in the fund next year.

Mr. THOMPSON. I think we could handle that somewhat administratively, Madam Chairman, if we were to get the full amount. Administratively I think we can control the amounts of grants and loans so that we don't get in a surplus situation in 1975 and a deficit, if you would, technically, in 1976.

One of the primary reasons of seeking full funding in 1975 was that, should some excellent proposals come through, then we want to be in a position to respond. We are not saying that we want to spend all of the revolving loan money in 1975 and leave nothing for 1976. But we do need some for reserve situations as well.

DISTRIBUTION BETWEEN TRIBES AND INDIVIDUALS

Mrs. HANSEN. What is your estimate of the amount of money which will go to tribes as opposed to individuals and organizations?

Mr. THOMPSON. I don't believe we have that information currently within the Bureau. That will be dependent upon the types and amounts of requests received for assistance. We would probably have no way of projecting that.

Mrs. HANSEN. Will any of these funds be used for land purchase?

Mr. THOMPSON. The moneys can be used for land purchase programs. As we pointed out, the Department of Agriculture does have an ongoing program. I believe they have about \$25 million to \$30 million in it now. I don't know the total amount available to tribes, but a lot of tribes do have them.

Mrs. HANSEN. What will be the terms and conditions of the loans?

Mr. THOMPSON. You might want to take that question, Mr. Roberson. The act limits the term of any loan to 30 years. Of course, one of the conditions is that the interest rate on direct loans is set by the Treasury Department, based on the current yield on municipal bonds of like maturity to the loans that we are making. So that they furnish us monthly an interest rate.

Mrs. HANSEN. Are you going to be paying more interest than foreign governments pay for their loans?

Mr. ROBERSON. I am sorry I couldn't answer that.

Mrs. HANSEN. You might ask the Treasury Department to make a comparison. What would be your current rate on loans today?

Mr. ROBERSON. Seven percent is what Treasury has furnished us.

Mrs. HANSEN. You know as well as I do that some foreign governments are granted loans at rates way below 7 percent. Why should our own Indian people pay more than some of these foreign governments?

Mr. SYKES. That provision is in the act as it was passed, unfortunately.

LOAN PAYBACK

Mrs. HANSEN. What is your estimate of the payback from these loans in 1976 and 1977?

Mr. THOMPSON. If it follows the trend of the revolving loan fund, it will be very good. Over the years we were relatively proud and the Bureau is relatively proud of the payback percentage we have received through the revolving loan fund.

Mrs. HANSEN. Please insert in the record an estimate of the amount of funds you expect to be paid back in fiscal years 1975 and 1976.

Mr. THOMPSON. We would be pleased to.

[The information follows:]

LOAN PAYBACK

Assuming the appropriation of \$50 million in fiscal year 1975 for the revolving loan fund and that the full amount would be loaned out during that year, collections of principal and interest are estimated at \$7.4 million in 1976 and \$7.3 million in 1977.

LOAN GUARANTY AND INSURANCE FUND

Mrs. HANSEN. You are requesting \$20 million for the Indian loan guaranty and insurance fund. Please explain the various items included in this request?

Mr. THOMPSON. The types of programs, Madam Chairman?

Mrs. HANSEN. Yes.

Mr. THOMPSON. Mr. Roberson might be more informative to the committee on that.

Mr. ROBERSON. The loan guaranty and insurance fund, which is established in title II of the act but funded in title III of the act, allows the Secretary to establish reserves for payment of anticipated losses, to set aside moneys for payment of interest subsidies on guaranteed and insured loan, allows him to take 5 percent of the amount appropriated in title III to buy technical assistance where necessary for the recipients of grants and loans, and allows him to pay certain administrative costs and expenses of the operation of the titles of the act out of that fund. We have requested, out of the \$20 million, amounts for each of those as specified, including the \$800,000 shown there for administrative purposes in fiscal year 1975.

PERSONNEL REQUESTS

You will note that, while the act allows 5 percent of the amount appropriated to be used for technical assistance purposes, since we anticipate only being operative roughly 6 months of this fiscal year, rather than allocating the full 5 percent, we have only taken half of that amount to set aside for that purpose in this fiscal year—\$500,000, in other words, rather than \$1 million.

Mrs. HANSEN. You are requesting 45 technical professional positions. What type of people are you going to hire?

Mr. ROBERSON. The breakdown there was technical in terms of having technical competence either as loan specialists or in business management and the types of skills that would assist that borrower or that grantee in being successful, a combination of those.

Some of our areas and agency offices where the applications will be handled have expertise now in their staff.

Mrs. HANSEN. I know they have expertise in delaying projects.

Mr. ROBERSON. Particularly in business management capability, and other places, the area offices have said we need that capability. A part of that 45 would be loan specialists competent to examine and pass on the feasibility and repayment capacity of loans.

Mrs. HANSEN. Will these technical positions be permanent personnel, or will you hire people on a part-time basis? What do you contemplate? I foresee a brand new bureaucracy at the BIA.

Mr. THOMPSON. We haven't really made any final administrative determination as to what would be the best method of putting people on under the Civil Service, that is, making them Bureau employees or having certain contract people assist us, getting outside people who have a professional business relationship to assist us. These are some of the options we are looking for.

Our real objective and real effort is with the new program to try to maximize the benefit to the Indian community out of the program. Obviously, it's really not our intent here to see how big a number we can add to the Bureau personnel.

Mrs. HANSEN. I understand. Supposing you are going to purchase land. The purchase of land itself in many instances is kind of a one-time task. You wouldn't need that man on a continuing basis.

On the other hand, if you are going to loan money for a logging operation, you would want someone who understands that industry and is available long enough so that all the practices of good management are followed.

Mr. THOMPSON. We would hope to develop a flexible arrangement so that we can allow activities such as that to go on. Where we need expertise on a one-shot basis we can go out to the private sector or other Government agencies and hopefully other bureaus of our Department and ask for assistance in this area on a contractual arrangement. The law did set that mechanism up for us. It did allow us to go out and do that. We hope to make full use of it.

I think the success of fully implementing the Indian Financing Act is going to require a lot of that different type of activity. We are looking forward to doing it, really.

Mr. ROBERSON. Madam Chairman, the provisions of the act bring some new people into eligibility for loans that we haven't been servicing before. Simply because we have money will make it possible to serve other people that we have not been serving. A very good example is in California where we do not have any people present for handling loans, with the exception of the Hoopa Valley Reservation. So we have a whole service population in California and no staff. So we do have some new areas opening up there that we need to cover with staff.

Mr. SYKES. In the two sections of this act, authorizations are made for 3 years, the \$20 million and the \$10 million for 1975, 1976, and 1977, which will be new money coming in. All 3 of those years. These people will have to be available. They won't make all the loans in 1 year. It will be spread over at least 3 years or more.

EXPECTED DEFAULT RATE

Mrs. HANSEN. Is the \$46.4 million in loans all from the private sector?

Mr. ROBERSON. As mentioned on page 12, item 1; yes.

Mrs. HANSEN. You are requesting \$6,435,000 for reserve for losses to cover 15 percent of the amount guaranteed and insured. Do you actually expect a 15-percent default rate?

Mr. THOMPSON. If I understand the mechanics of the act, that is the maximum amount that we have to keep in reserve to satisfy the requirements of the act. I believe that is mechanically how it works. You might want to expand on it.

Mr. SELVEY. When the bill was originally introduced, information was obtained from some of the other agencies that have guaranteed programs and a 15-percent rate was the loss factor at that time. We have used this 15-percent reserve rate for processing the bill. We still think that would be a good figure.

INTEREST SUBSIDY PROGRAM

Mrs. HANSEN. Please explain the operation of your interest subsidy program.

Mr. ROBERSON. The act provides that, in guaranteeing or insuring a loan, the Secretary may pay an interest subsidy in the amount necessary to provide that the borrower will pay no more than the rate he would be paying if he were borrowing the money directly from the Bureau of Indian Affairs revolving loan fund.

For example, if we now have a rate of 7 percent in that fund, if the individual were to negotiate at a rate of 12 percent from the bank, then we could pay a 5-percent subsidy for the term of that loan.

Mr. YATES. Will that rate of interest vary? This is a period of high interest. Of course, that is a subsidized interest rate. Suppose through some miracle the present market rate falls from above 11 percent down to about 8, or 7, or 6 percent. Will your interest rate vary?

Mr. THOMPSON. The basis for the subsidy varies from the Treasury's prime rate. Whatever the current market is requesting—

Mr. YATES. Is there a standard differential?

Mr. THOMPSON. No.

Mr. WILES. It wouldn't necessarily be a varied standard. The costs are different when you borrow money from the bank than from the Treasury. If the bank rate were to drop, certainly the Treasury rate would drop. That difference will be the interest subsidy which BIA will pay.

Mr. YATES. I don't know why it hasn't been done before.

DOMESTIC COUNCIL ON INDIANS

Mrs. HANSEN. Mr. Thompson, you haven't informed the committee yet on the reception the proposed new Domestic Council Committee on the Indians is receiving from the Indian people. We are rapidly approaching markup.

Mr. THOMPSON. We are continuing to meet with other administration people on the Domestic Council.

Mrs. HANSEN. You better meet with the Indian people.

Mr. THOMPSON. We will work with Mr. Wiles on that.

Mrs. HANSEN. Thank you very much.

Mr. THOMPSON. Thank you.

TUESDAY, JUNE 11, 1974.

BUREAU OF LAND MANAGEMENT

ENERGY PROGRAMS

WITNESSES

EDWARD L. HASTEY, ASSISTANT DIRECTOR, ADMINISTRATION
FRANK EDWARDS, ASSISTANT DIRECTOR, MINERALS MANAGEMENT

PAUL VETTERICK, CHIEF, DIVISION OF BUDGET AND PROGRAM DEVELOPMENT

DALE ZIMMERMAN, ACTING CHIEF, DIVISION OF UPLAND MINERALS

FRANCIS M. WILES, DIRECTOR OF BUDGET, OFFICE OF SECRETARY

VINCENT E. McKELVEY, DIRECTOR, GEOLOGICAL SURVEY

RUSSELL G. WAYLAND, CHIEF, CONSERVATION DIVISION, GEOLOGICAL SURVEY

JUSTIFICATION MATERIAL

Mrs. HANSEN. The next agency to appear is the Bureau of Land Management. The principal witness is Mr. Edward L. Hastey, Assistant Director, Administration. We will insert the item from the House Document 93-307 and the justifications in the record at this point.

[The information follows:]

DEPARTMENT OF THE INTERIOR

Budget appen- dix page	Heading	1975 budget request	Amend- ments previously proposed (H. Doc. 93-209 and H. Doc. 93-286)	Proposed amend- ments	Revised requests
BUREAU OF LAND MANAGEMENT					
519	Management of land and resources..... This proposed amendment will provide for the processing of geothermal resource lease applications under the recently announced leasing program, for the timely processing of a substantially increased volume of simultaneous filings for oil and gas leases, and for administrative support for increased energy activity workload. These activities all support programs to accelerate development of domestic energy resources.	\$119,334,000	\$22,025,000	\$1,110,000	\$142,469,000

DEPARTMENT OF THE INTERIOR—BUREAU OF LAND MANAGEMENT

House document No. 93-286 page	Heading	Request pending	Proposed amendment	Revised request
	2 Management of lands and resources.....	\$141,359,000	\$1,110,000	\$142,469,000

DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT, MANAGEMENT OF LANDS AND RESOURCES—
PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

	1975 request pending	1975 proposed amendment	1975 revised request
Program by activities:			
Direct program			
Resource management, conservation and protection.....	119,228	860	120,088
Cadastral survey.....	12,580		12,580
Firefighting and rehabilitation.....	5,400		5,400
General administration.....	4,151	250	4,401
Total, direct program.....	141,359	1,110	142,469
Total, obligations.....	141,359	1,110	142,469
Financing: Budget authority.....	141,359	1,110	142,469
Budget authority: Appropriation.....	141,359	1,110	142,469
Relation of obligations to outlays:			
Obligations incurred, net.....	141,359	1,110	142,469
Obligated balance, start of year.....	5,110		5,110
Obligated balance, end of year.....	-8,646	-20	-8,666
Outlays, excluding pay raise supplemental.....	137,723	1,090	138,813
Outlays from civilian pay raise supplemental.....	100		100

OBJECT CLASSIFICATION (in thousands of dollars)

Direct obligations:			
Personnel compensation:			
Permanent positions.....	55,427	525	55,952
Positions other than permanent.....	8,494	30	8,524
Other personnel compensation.....	3,074	37	3,111
Special personal services payments.....	1,998		1,998
Total personnel compensation.....	68,993	592	69,585
Personnel benefits: Civilian.....	8,077	51	8,128
Travel and transportation of persons.....	7,003	115	7,118
Transportation of things.....	3,472	20	3,492
Rent, communications, and utilities.....	9,866	92	9,958
Printing and reproduction.....	873	45	918
Other services.....	31,866	100	31,966
Supplies and materials.....	7,108	50	7,158
Equipment.....	2,414	45	2,459
Lands and structures.....	1,735		1,735
Grants, subsidies, and contributions.....	2		2
Insurance claims and indemnities.....	20		20
Subtotal.....	141,429	1,110	142,539
Quarters and subsistence charges.....	-70		-70
Total, direct obligations.....	141,359	1,110	142,469

MANAGEMENT OF LAND AND RESOURCES—PERSONNEL SUMMARY

	1975 request pending	1975 proposed amendment	1975 revised request
Direct:			
Total number of permanent positions.....	4,049	53	4,102
Full-time equivalent of other positions.....	1,116	4	1,120
Average paid employment.....	4,917	57	4,974
Average GS grade.....	9.0	9.0	9.0
Average GS salary.....	\$14,527	\$14,527	\$14,527

BUREAU OF LAND MANAGEMENT—CONSOLIDATED SCHEDULE OF PERMANENT POSITIONS PAID FROM FUNDS TO THE BUREAU OF LAND MANAGEMENT—DETAIL OF PERMANENT POSITIONS

	1975 request pending	1975 proposed amendment	1975 revised request
Executive level V.....	1		1
GS-17.....	1		1
GS-16.....	8		8
GS-15.....	42		42
GS-14.....	120		120
GS-13.....	321		321
GS-12.....	506		506
GS-11.....	1,082	7	1,089
GS-10.....	5		5
GS-9.....	1,072	17	1,089
GS-8.....	42		42
GS-7.....	568	15	583
GS-6.....	203		203
GS-5.....	529	14	543
GS-4.....	260		260
GS-3.....	90		90
GS-2.....	27		27
GS-1.....	2		2
Total permanent positions.....	4,879	53	4,932
Unfilled positions, June 30.....	—356		—356
Total permanent employment, end of year.....	4,523	53	4,576

DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT

MANAGEMENT OF LANDS AND RESOURCES

The increase of \$1,110,000 in this appropriation is needed to respond to an increased uncontrollable workload associated with energy resource leasing and to provide administrative support for overall fiscal year 1975 program expansion.

Activity	Program	Amount
1. Resource management, conservation, and protection.....	Geothermal leasing.....	\$500,000
	Oil and gas filings.....	360,000
4. General administration.....		860,000
		250,000
Total.....		1,110,000

DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT

1. RESOURCE MANAGEMENT, CONSERVATION, AND PROTECTION

[Fiscal year 1975: Request pending—\$119,228,000; proposed amendment—\$860,000; revised request—\$120,088,000]

Explanation	Increase (+) or decrease (-)		Total program	
	Amount	Positions	Amount	Positions
To respond to an estimated 6,500 noncompetitive geothermal applications to be received through fiscal year 1975; hold 10 additional competitive lease sales; and issue 1,000 noncompetitive geothermal leases	+\$500,000	+25	\$1,230,000	51
To process an estimated 1,247,000 simultaneous oil and gas filings	+360,000	+18	1,910,000	138
Total	+860,000	+43		

Need for Amendment.—In response to the need for increased energy resource development, the public has generated a sizeable and uncontrollable increase in BLM's workload in handling simultaneous oil and gas filings and in processing geothermal lease applications. The Bureau must have additional capability to respond in a timely manner to these initiatives and thereby fulfill its responsibility for energy resource leasing on national resource lands. Specific requirements in these two areas are discussed below.

GEOTHERMAL LEASING PLUS \$500,000 PLUS 25 POSITIONS

In directing the Department of Interior to prepare a leasing program for the development of geothermal energy on Federal lands, the President in his April 18, 1973, energy message, recognized the importance of geothermal energy in supplying a part of the western energy demand and thereby releasing other energy resources that would have had to be used. While geothermal resources are not expected to provide more than 2 percent of the national electrical power generation requirement by the year 2000, the significance of geothermal development is seen in the fact that the production of one megawatt from geothermal steam saves 35 barrels of oil a day.

On December 18, 1973, the Secretary of the Interior announced that competitive geothermal lease sales would be held in California in January 1974 and that the Department will accept applications to noncompetitively lease geothermal resources on lands outside known geothermal resource areas (KGRA's). The Secretary's decision to open these lands to noncompetitive leasing has substantial impact upon BLM in processing these applications. Due to the timing of the Secretary's decision regarding noncompetitive leasing, capability to handle this additional workload has not been provided in the fiscal year 1975 President's budget since, to date, all program funds have been largely oriented to competitive leasing of about five sales per year. However, the Bureau cannot wait until fiscal year 1976 to acquire this needed additional capability. During the initial 30-day simultaneous period in January, 2,456 noncompetitive lease applications were submitted. The Bureau estimates that approximately 6,500 applications will be submitted between January 1, 1974, and June 30, 1975.

Each of these applications requires establishment of a case file, notation of records, and determination of possible overlap in lands under application. When half or more of the land subject to noncompetitive leasing is covered by another application filed during the same application filing period, land included in the first application will be designated a known geothermal resource area and thereby is subject to competitive leasing. In cases where such overlap exists, a decision must be rendered by an adjudicator and each applicant notified. In cases where leasing may remain noncompetitive, an environmental analysis must be prepared and an on-the-ground review of the proposed plan of operation—submitted with each application—must be completed. Appropriate rehabilitation stipulations must be developed and incorporated into the lease, prior to its issuance. Using a factor of 20 percent, 1,300 of the 6,500 applications projected to be submitted through fiscal year 1975 will contain sufficient overlap in lands under application to be rejected and the lands designated KGRA's.

In response to the interest in geothermal leasing expressed in the 6,500 applications, the Bureau requires additional capability to facilitate a timely, orderly program covering the lands opened to noncompetitive leasing on December 18, 1973, that is, 58 million acres of prospectively valuable lands under Federal control and all other public lands not withdrawn. We are requesting \$500,000 and 25 positions in fiscal year 1975 to process the noncompetitive lease applications and hold competitive sales in the KGRA's created as a result of overlapping applications. In the interest of facilitating exploration and development of geothermal resources and being responsive to public demand work, our request is a minimum requirement. The positions in our geothermal base program are not available for this substantial workload. Nineteen positions in the fiscal year 1974 geothermal base are fully committed to activities related to holding up to five competitive lease sales in fiscal year 1974. These activities include:

- (1) Determining location and order of priority of lease offerings.
- (2) Completing technical exams and environmental impacts statements, including preparation of stipulations.
- (3) Conducting presale evaluations with USGS.
- (4) Publishing lease offerings.
- (5) Holding the sale, performing post-sale evaluation, and awarding the lease.

The remaining seven positions in the base program are being utilized to begin processing the noncompetitive applications received in January and in the months following.

In fiscal year 1975 the base positions will be conducting the above activities for up to 5 competitive lease sales in already designated KGRA's. In addition, they will be administering the leases issued in fiscal year 1974, including reviewing development of mining plans and monitoring for compliance. They will also begin the environmental analysis work preliminary to sales planned for fiscal year 1976. The requested \$500,000 and 25 positions will provide the capability to hold 10 competitive lease sales in addition to the five a year already programed, process the 1,300 noncompetitive applications with over 50 percent overlap, and issue up to 1,000 noncompetitive leases. Ten positions are needed to accomplish the office work associated with processing the applications (records notation, plot location, adjudication, lease issuance or application rejection). Ten positions are needed for field work, including preparing environmental analyses and reviewing operating plans submitted with each application. Five positions are required in association with the preparation and conduct of the additional competitive sales.

Lending urgency to processing the noncompetitive lease applications is the investment of a \$50 filing fee required to be submitted with each application (and deposited in the U.S. Treasury). This sum was established to help defray the cost to the government of processing the application. The 6,500 noncompetitive applications will result in revenues of \$325,000 through filing fees alone. In addition to responding to public demand work in a timely manner, the leases to be issued in our proposal would also result in considerable revenue being deposited in the U.S. Treasury. If each of the 1,000 noncompetitive leases averaged 2,000 acres, the advance rental of not less than \$1 per acre required prior to production would amount to \$2 million annually.

In addition if each competitive multitract sale on a newly created KGRA averaged 20,000 acres and resulted in an average bid of \$50 per acre, the 10 sales would bring \$10 million in bonuses. In view of the urgent need to develop new, clean energy resources, the interest expressed by the public and industry in geothermal leasing, and the revenue which will accrue to the Federal Government through the geothermal program, it is important that the Bureau be provided the requested additional funds and manpower in fiscal year 1975.

SIMULTANEOUS OIL AND GAS FILINGS PLUS \$360,000 PLUS 18 POSITIONS

During fiscal year 1974, there has been a significant increase in the number of simultaneous oil and gas filings which require processing by BLM. For example, where our Wyoming office averaged 19,000 simultaneous filings a month last year, it is now averaging 50,000 filings monthly. Similar acceleration is being experienced in Colorado, New Mexico, Montana, Utah, and in our Eastern States office.

One explanation for this increase in uncontrollable public demand work is the shortage in available oil and gas which has caused the price of crude oil to increase from around \$4/barrel to \$9/barrel. This has stimulated new interest in oil and gas leasing. The Bureau estimates that 1,247,000 simultaneous filings will be received in fiscal year 1975 compared to approximately 679,000 filings in fiscal year 1973. We do not have the capability to handle this substantially increased workload.

The work involved in the simultaneous filing process can be illustrated by the situation now experienced in Wyoming. Each application form received comes in three parts: One part is used as the offer to lease; the second part is mailed back to the unsuccessful applicants informing them that their applications were not selected; the third part is used in the drawing. Processing 50,000 monthly applications then involves handling 150,000 separate pieces of paper as well as accounting for 50,000 filing fees. In Wyoming alone, the simultaneous processing work has required over 1,600 hours of overtime in the last 11 months and has recently exceeded 230 hours during the 10-day filing and lease drawing period each month. In addition, over 2,500 oil and gas lease assignment applications in Wyoming are backlogged due to lack of adjudicative capability, and exploratory or developmental work cannot proceed on these leases without the lease assignment.

Our objective in fiscal year 1975 for simultaneous oil and gas leasing is to review leases as they terminate, perform the adjudication required to assemble monthly lists, process approximately 1,247,000 applications, hold monthly drawings, and issue the associated leases in response to drawing public demand. To accomplish this objective, the Bureau needs an additional \$360,000 and 18 positions over the current oil and gas program base of \$1,550,000. These will be distributed in six of our field offices and in our Eastern States office—all of which are experiencing uncontrollable acceleration in simultaneous filings. Seven positions will be used in processing applications and holding the drawings; four positions will be involved in record notation to keep land status records current; and seven positions will be devoted to adjudication and lease issuance. Realizing that a \$10 filing fee must be submitted with each application, \$12,470,000 will be submitted with the anticipated fiscal year 1975 filings and deposited in the U.S. Treasury. This investment by the applicants should warrant prompt processing of applications by BLM.

Without additional capability for this workload, the Bureau may have to consider bimonthly filing periods. This could reduce by half the number of parcels to be offered for lease and therefore significantly reduce the number of applications to be processed. This alternative would be less responsive to public demand and less responsive to the need for energy resource development in issuing fewer leases; it would also result in a reduction of several million dollars of revenue to the Government in the form of filing fees, rental from leases issued, and royalties from associated production.

The capability provided in the proposed amendment will enable the Bureau to accommodate the workload resulting from the uncontrollable acceleration in simultaneous oil and gas filings. It will be responsive to the public demand for oil and gas leases and encourages exploration and development of energy resources on these lands. Further, it will result in additional revenue to the Government from filing fees and later from royalty payments.

4. GENERAL ADMINISTRATION

[Fiscal year 1975: Request pending—\$4,151,000; proposed amendment—\$250,000; revised request—\$4,401,000]

Explanation	Increase (+) or decrease (—)		Total program	
	Amount	Positions	Amount	Positions
To provide essential administrative support to accelerate major energy initiatives.....	\$250,000	10	\$4,401,000	197

NEED FOR AMENDMENT

Sources of energy production supply have changed drastically within the past 6 months, stimulating accelerated energy initiatives on national resource lands. These accelerated initiatives immediately tax current organizational abilities to carry out these new enlarged efforts.

Increases for administrative support in the past have lagged substantially behind program expansion in resource areas. The supportive administrative programs of financial, personnel and property management, management analysis and procurement need to be expanded to keep pace with this vastly increased workload generated by increased programs. It is essential to the orderly implementation of other programs included in this amendment that administrative

capabilities are made available. A total of 10 permanent positions are requested in job categories of system analysis, personnel management, payroll, voucher examination, computer operation, contract administration and clerical assistance. The funds requested for General Administration include: Salaries, travel, space rentals for new personnel, supplies, materials, equipment, and additional computer time.

OPENING STATEMENT

Mr. HASTEY. I would like to introduce the people with me, Mrs. Hansen. Accompanying me is Paul Vetterick, our Chief, Division of Budget and Program Development; Frank Edwards, our Assistant Director for Minerals Management; Pat Harvey, one of our Budget Analysts, and Dale Zimmerman, who is our Acting Chief, Division of Upland Minerals.

Mrs. HANSEN. Please insert your general statement in the record and summarize it for the committee.

Mr. HASTEY. I will insert the statement in the record.

[The statement follows:]

STATEMENT OF EDWARD L. HASTEY, ASSISTANT DIRECTOR, ADMINISTRATION, BUREAU OF LAND MANAGEMENT, U.S. DEPARTMENT OF THE INTERIOR

Madam Chairman: We are presenting a request in the amount of \$1,110,000 over and above those funds which appear in our regular fiscal year 1975 budget and in our earlier fiscal year 1975 amendment request. This budget amendment is needed in order to permit the Bureau to respond to the sizable and controllable increase in workload associated with handling simultaneous oil and gas filings, and processing geothermal lease applications. Due to the timing of the Secretary's decision on noncompetitive geothermal leasing and the new interest in oil and gas leasing, capability for this workload was not included in the President's budget. In addition, our supportive administrative programs such as personnel, procurement, and management analysis must be expanded to keep pace with the vastly increased workload generated by the overall increase in fiscal year 1975 programs.

On December 18, 1973, the Secretary of the Interior announced that the Department would accept applications to noncompetitively lease geothermal resources on lands outside known geothermal resource areas (KGRA's). To date the Bureau has received 3,763 noncompetitive applications, and we estimate that another 2,740 will be submitted by June 30, 1975. Because our existing geothermal capability is directed to our competitive leasing program, additional capability is needed to process the noncompetitive applications and issue appropriate leases. In addition to responding to public demand work in a timely manner, the leases to be issued in our proposal would result in considerable revenue being deposited in the U.S. Treasury; \$500,000 is needed to provide the required capability.

The large increase in the price of crude oil has stimulated new interest in oil and gas leasing. The Bureau is experiencing a significant increase in the number of simultaneous oil and gas filings which require prompt processing. Our Wyoming office has experienced a 214-percent increase in filings over the last 6 months, and Bureau-wide we anticipate the fiscal year 1975 filings to almost double the fiscal year 1973 level. Processing the increased number of filings will necessitate an additional \$360,000 which will be more than returned in receipts to the U.S. Treasury from filing fees.

The Bureau's accelerated energy initiatives will severely tax current organizational abilities in carrying out these efforts. It is essential to the orderly implementation of programs provided for in our two amendments that additional administrative capabilities are made available; \$250,000 is required for this support.

These programs will contribute to increasing the supply of available energy to the public while giving full consideration to environmental values. We urge this committee's support for these additional budgetary requests.

HIGHLIGHTS OF BUDGET REQUEST

Mr. HASTEY. I will summarize my statement.

We are presenting a request in the amount of \$1,110,000 over and above those funds which appear in our regular fiscal year 1975 budget and in our earlier fiscal year 1975 amendment request. This budget amendment is needed in order to permit the Bureau to respond to the sizable and uncontrollable increase in workload associated with handling simultaneous oil and gas filings, and processing geothermal lease applications. The first program relates to geothermal steam. To date the Bureau has received over 3,700 noncompetitive applications. We estimate about another 2,700 will be submitted by June 30, 1975. This will be a total of 6,500 applications for the 18-month period. Additional capability is needed to process the noncompetitive applications and issue appropriate leases; \$500,000 is needed to provide the requirement capability.

The second program area is concerned with onshore oil and gas leasing. The Bureau is experiencing a significant increase in the number of simultaneous oil and gas filings which require prompt processing. Processing the increased number of filings will necessitate an additional \$360,000.

The third program need is in the area of general administration. The Bureau's accelerated initiatives will severely tax current administrative capabilities. It is essential to the orderly implementation of all BLM programs that additional administrative capabilities are made available; \$250,000 is required for that support.

These programs will contribute to increasing the supply of available energy to the public while giving full consideration to environmental values. We urge this committee's support for these additional budgetary requests.

GEOTHERMAL LEASING REQUEST

Mrs. HANSEN. You are requesting an additional \$500,000 and 25 positions for geothermal leasing. How many of the 25 positions will be in Washington and how many will be in the field?

Mr. HASTEY. All 25 positions will be in the field.

Mrs. HANSEN. What are these positions?

Mr. HASTEY. Ten of the positions will be tied to office work. They will be legal clerks, draftsmen, accounting clerks and docket clerks. The other 15 will be field positions—soil scientists, hydrologists, range and wildlife specialists and sociologists. They will be doing the environmental analysis work. The 10 office positions will be handling the processing of the noncompetitive lease applications and the issuance of the leases themselves.

TITLE PROBLEMS ON GEOTHERMAL RESOURCES

Mrs. HANSEN. How many of these areas in which you will be involved have title problems?

Mr. HASTEY. I will let Frank Edwards comment on that.

Mr. EDWARDS. We don't have a specific number of areas where we have title problems. For instance, in one of the geothermal resource

areas, the Geysers are in California, we do know we have several problems concerning ownership. Those cases are presently under litigation.

There are a number of problems in many of the geothermal areas because of other types of ownership. As to the number that we have, I can't give you a figure on that.

Mrs. HANSEN. On lands in which you own the mineral rights; how do you classify geothermal?

Mr. EDWARDS. Our position is that under the Stockraising Homestead Act the geothermal resources were reserved with the other minerals under that act.

Mrs. HANSEN. Do the courts agree with you?

Mr. EDWARDS. The courts did not agree with us. That decision is presently being appealed and we have not yet had a final decision on that.

Mrs. HANSEN. How far away is a court decision?

Mr. ZIMMERMAN. I don't know if I would want to hazard a guess.

Mrs. HANSEN. Supposing the decision states the geothermal resources are not reserved? Do you have to deal with the owners?

Mr. ZIMMERMAN. The geothermal resource will become the property of the surface owner if the lower court decision stands.

Mrs. HANSEN. Then you have to deal with each of the owners?

Mr. ZIMMERMAN. Right. Presently we have no firm program, although we have a contingency that we are working on to effect a type of escrow agreement between the surface owners and the Federal Government in case there should be demonstrated a real need that we have to go ahead and lease some of these areas, especially in the geysers.

Mr. YATES. Where is the Geysers area?

Mr. VEYSEY. California.

Mr. ZIMMERMAN. There are about 40 million acres involving minerals under the Stockraising Homestead Act reservation. But the same litigation could come up with respect to any patents issued under various other public laws. For instance, the Small Tract Act reserves all minerals. I think the issue could come up again. The court is only addressing the one with respect to stockraising homesteads at the present time.

TERMS AND CONDITIONS OF GEOTHERMAL LEASES

Mr. YATES. What is the nature of the lease that you do give in the land that isn't under any kind of dispute?

Mr. EDWARDS. It's a 10-year lease that gives them the authority to go on the land and to develop the geothermal resources. They do this generally by drilling. They pay a rental and a royalty on that lease.

Mr. YATES. What do they pay?

Mr. EDWARDS. On the noncompetitive, the rental runs at a minimum of \$1 per acre. That is the minimum set by statute.

Mr. YATES. Which statute?

Mr. EDWARDS. The 1970 Geothermal Steam Act. The royalty payments are not less than 10 percent and are not more than 15 percent.

Mr. YATES. Of what?

Mr. EDWARDS. Of the value of the resource that is extracted. The royalty on producing leases would be a minimum of \$2 per year.

That is the minimum or from 10 to 15 percent, whichever is more.

Mr. EVANS. Ten to fifteen percent of what?

Mr. EDWARDS. Of the value of the resource produced.

DETERMINATION OF GEOTHERMAL VALUES

Mr. EVANS. How is that measured in geothermal energy?

Mr. EDWARDS. First of all, before we offer these leases for competitive bids, the U.S. Geological Survey does a presale evaluation by engineering and geological studies and determines what the potential bid value of the resource is. Once a lease goes into operation, they will also establish what the royalty rate should be for a particular tract of land.

Mr. EVANS. Do you test that on a kilowatt per hour basis?

Mr. EDWARDS. Yes; it's essentially that. They start out with what is the value of the kilowatt or heat that is produced. Of course, they have to take into consideration what is the cost of operation, the capital costs involved, and they work back to what is a reasonable royalty for that particular tract.

Mr. YATES. Is this percentage a percentage of the net or of the gross?

Mr. ZIMMERMAN. It's like an oil lease.

Mr. HASTEY. They value the production and then take 10 to 15 percent of that.

Mr. YATES. How does the Geological Survey know what the value is?

Mr. EDWARDS. They have expertise in the field of geology and engineering and know what the nature of these resources are, the same as the companies who are studying these areas.

Mrs. HANSEN. If they go into production they obviously can determine what the cost is. Isn't that correct?

Mr. EDWARDS. Yes; based on information that they have on an existing operation.

SOURCES OF LEASE REVENUES

Mr. VEYSEY. Madam Chairman, I think this is a little bit clouded. The answer is not coming through very clearly. I believe that the leases are of the type where they bid a certain amount of bonus for the gross return, regardless of what the investment is that they have to put on it. They must then pay a stated percent royalty. It's like an oil or gas lease where the Government takes 12½ percent of whatever is taken out plus the rental amount plus a bonus.

Mr. EDWARDS. Our sales have been on the basis that they bid a bonus for the lease. They bid the bonus but the royalty rate and the rental rate is already established.

Mr. YATES. A percent of what value, Victor?

Mr. VEYSEY. Of the return from the geothermal asset. It's usually measured in terms of the power that is sold.

Mr. YATES. Sold at what point, to the consumer?

Mr. VEYSEY. To the utility.

Mr. YATES. To whom is the lease given? Is the lease given to P.G. & E.?

Mr. VEYSEY. No. To the developer.

Mr. YATES. Who is it given to in this case?

RESULTS OF GEOTHERMAL SALES

Mrs. HANSEN. Give us an example of a successful bidder.

Mr. EDWARDS. One company is Geokinetics Energy Resources. We also have sales to Union Oil, Shell Oil, et cetera.

Mr. YATES. You mean that is a consortium?

Mr. VEYSEY. No.

Mr. YATES. When you say they had Shell Oil, you mean as a customer?

Mr. VEYSEY. No.

Mr. EDWARDS. As a successful bidder on the lease.

Mr. ZIMMERMAN. For instance, in one of our first sales out in the Geysers, all of them by the way were individual bids. There was no joint bidding. Shell Oil, Union Oil, Signal, Occidental, and Thermo-genics were the high bidders on the 10 tracts in the Geysers that were sold.

Mr. YATES. How much did they bid?

Mr. ZIMMERMAN. A total of \$6.8 million for 10 tracts.

Mr. YATES. Did you divide that \$6.8 million by 10 to get the amount of each bid?

Mr. ZIMMERMAN. No, because the tracts varied in size from 45 acres upward to 2,400 acres.

DEVELOPMENT REQUIREMENTS AND INCENTIVES

Mr. YATES. Is there any requirement on them to develop the property?

Mr. ZIMMERMAN. Yes, sir, there is.

Mr. YATES. What are they required to do?

Mr. ZIMMERMAN. There is a requirement in the Secretary's regulations that they must begin diligent development immediately. There is a standard rental for the first 5 years. Starting with the sixth year, there is a requirement that they have to expend an amount equal to twice the rental. The rental, by the way escalates by \$1 per acre starting with the sixth year. The rental on these tracts was established at \$2, which was the base rental. Starting with the sixth year, that goes to \$3, in the seventh year it goes to \$4 and to \$5 and \$5 and on up in the years that follow.

Mr. YATES. \$4 or \$5 a tract?

Mr. ZIMMERMAN. Per acre.

Mr. YATES. How many acres are in each tract?

Mrs. HANSEN. It depends.

Mr. ZIMMERMAN. It went from 45 acres to 2,400 acres on these tracts.

Mr. YATES. There isn't much of an acreage rental payment, is there?

Mr. ZIMMERMAN. The work requirements are in addition to the rental, which is twice what the rental is per acre. Once you get a \$3 rental, you have a \$6 per acre work requirement for that particular year.

BASIS FOR GEOTHERMAL ROYALTIES

Mr. YATES. Have you any idea what they will sell the steam for to the utility?

Mr. ZIMMERMAN. I don't have a figure with me.

Mr. YATES. Have you had previous leases in this field?

Mr. ZIMMERMAN. This was the initial lease.

Mr. EDWARDS. The Geological Survey does have a value as to what the resource would sell for which they take into consideration in their presale evaluation. In other words, they get the information on the cost, what the value of the resource is when it's sold, and so forth. This is used in their presale evaluation to determine what the tract should be worth.

Mrs. HANSEN. The utility rates vary. For example, the rates in the Northwest have gone up I think 15 percent within the last few months. They are due to go up another percent.

Mr. YATES. Wouldn't their rates come under review from time to time?

Mr. EDWARDS. That is correct. They would work with the most current rate information that they have. In other words, they would update their information in their presale evaluation with the most current rate each time they have a sale.

Mr. YATES. The royalty figure is 10 percent of the price paid by the purchaser of the steam from your leasee?

Mr. HASTEY. No. It's 10 percent of the gross. The purchaser would really be paying net.

It's similar to royalty payments on our Outer Continental Shelf sales.

Mr. YATES. The purchaser would be paying more than the gross, wouldn't he? Because you have the problems of manufacturing the steam or pulling it out and the work and labor that goes into that. At what point is the 10 percent figured? At what point is the 10-percent calculation made?

Mr. VEYSEY. It's generally 10 percent of what is taken out of the property, such as 10 percent of the power. The power is sold by, we will say, Union Oil if they are the developer, to P.G. & E. on a contract which escalates with increasing fuel costs.

Mrs. HANSEN. What is your measure of sale? Is it a kilowatt hour?

Mr. HASTEY. It can be a kilowatt, or if utilized in the form of heat, it would be on a Btu basis.

Mr. YATES. When is the evaluation made? It's not made at the time the steam comes out of the ground, is it?

Mr. HASTEY. No. It's made when it goes into a usable product. In other words, the steam comes out of the ground and turns the turbine that produces the kilowatts.

Mr. YATES. At the other end you have an evaluation because it's a power unit at that point.

Mr. HASTEY. Steam doesn't have a value until it produces a product such as a kilowatt. So it's 10 percent of the value of that kilowatt produced.

Mr. YATES. So the Government is getting 10 percent and the lessee of the Government at that point gets 90 percent of the value of that steam. Is that right?

Mr. HASTEY. He is paying us 10 percent royalties on what he sells that kilowatt for.

Mr. YATES. So he is getting 90 percent?

Mr. HASTEY. That is right.

Mr. YATES. Isn't that an inordinate share?

Mr. HASTEY. In our leases on the Outer Continental Shelf the lessee pays 16 $\frac{2}{3}$ percent of the value of the production of the oil.

Mrs. HANSEN. They also have to pay the cost of production.

Mr. HASTEY. Right, and they pay a very high bonus as front-end money to acquire the right to develop the lease.

Mr. YATES. But in that case the cost of production goes into it before division.

Mrs. HANSEN. I don't think so.

Mr. YATES. Julia, here is the steam coming out of the ground.

Mrs. HANSEN. Supposing you have a big powerplant and that powerplant is using geothermal energy, coal, hydroelectric, and oil. You might have four total contributors to the production of kilowatt hours in any one given situation. I can't conceive of the four together, but you can conceive of one or two together. So you naturally would not be paying the same rate for the total four as you would for the one product. Isn't this correct?

Mr. VETTERICK. There is a wholesale value for something in place. There is a wholesale market for electrical power. If you have geothermal steam turning a turbine, there is a wholesale value of that power at which it can be sold to utility companies and transmitted to a consumer. The 10-percent royalty is not based on the consumer's price, but the wholesale price.

Mr. YATES. But the wholesale price is at the point of sale from the producer to the customer.

Mr. VETTERICK. That is correct.

Mr. YATES. That is what I was saying. So the Government is getting 10-percent royalty of that wholesale price.

Mr. VETTERICK. That is correct.

Mr. YATES. And the producer is getting 90 percent?

Mr. VETTERICK. Less his capital cost for setting the thing up including his bonus bid and his operating costs.

Mr. YATES. That is being computed before the Government gets its share?

Mr. VETTERICK. That is not.

Mr. VEYSEY. That was a misunderstanding all along. Let me describe what the arrangements are in the Geysers area between private landowners and developers, which is no different, than what has evolved here.

The private landowner may make a lease, we will say, with Union Oil as so many of them have up there, and Union Oil comes in and does the geological work, drills the wells, produces the steam, and they make a contract with P.G. & E. to sell them the steam to turn the turbines which P.G. & E. installs there. It's on a contract of so many mills per kilowatt hour that is taken out with an escalation feature if fuel prices go up.

Mr. YATES. What you are saying is that as the steam comes out of the ground it's metered. Is that right?

Mr. VEYSEY. No. They meter the power which comes out of the generator.

Mr. YATES. How do you get the charge then?

Mr. VEYSEY. That is how you get the charge. So many mills per kilowatt of power generated.

Mr. YATES. As of what point in the process?

Mr. VEYSEY. You pay for every kilowatt hour that is generated out of the generators.

Mr. YATES. Here is the steam coming out of the ground. It goes into a manufacturing device and comes out at the other end. Is this where the Government gets its share?

Mr. VEYSEY. They measure it on the bus bar coming out of the generator.

Mr. YATES. But the costs go into the manufacturer before that point, don't they? It was said previously that the Government shared the wholesale rate.

Mr. VEYSEY. Sure. They have no relationship. I think you were misled by a statement made earlier about costs being figured in. That isn't right. The Government doesn't invest anything. It's just a lease that Union Oil develops and then P.G. & E. comes in to convert steam to electricity.

Mr. EDWARDS. The cost of operation has to be taken into consideration when you determine the total value of a particular tract and what ought to be the minimum bonus bid for selling that tract.

Mr. YATES. What does your lease say? That is the best test, isn't it? What is the language in your lease?

Mr. VEYSEY. It says you pay so much a year rental and then a certain royalty percentage of each kilowatt hour of power taken out.

Mr. YATES. You mean the Government gets a share of the kilowatt power?

Mr. VEYSEY. A certain percentage, 10 percent or whatever.

Mr. YATES. I don't think that is what he said.

Mr. EDWARDS. I will read from the lease form:

The royalty of x percent on the amount of the value of steam or any other form of heat or other associated energy produced, processed, removed, sold, or utilized from this lease are reasonably susceptible to sale for utilization by the lessee.

The royalty rate is set by statute at a limit between no less than 10 percent and no more than 15 percent. The royalty on the leases that we have sold to date have been $12\frac{1}{2}$ percent.

Mr. YATES. That is by the statute itself. The Government could not get 25 or 30 percent?

Mr. EDWARDS. That is right, insofar as the initial lease term is concerned.

Mr. ZIMMERMAN. It can go up to $22\frac{1}{2}$ percent in time under this statute.

Mr. YATES. Why can't it go more? What is the reason for the statute defining the limit?

Suppose the lessee is able to sell the steam for seven mills.

The Government will get 10 percent of that now under this lease. The question that comes up in my mind is why shouldn't they get 50 percent of it?

Mr. VEYSEY. The economics of it just don't figure out that way, Sid. You could go through that. I couldn't duplicate that for you but I have seen it. When you consider the investment and return on it and the rest, it is not there at a royalty of that kind.

Mr. YATES. Suppose the Government takes 50 percent of the net then?

Mr. VEYSEY. That would be another way of approaching it. I don't know how that would figure.

Mrs. HANSEN. Suppose the Government received 50 percent of the Northwest Power revenues?

Mr. YATES. That is why I asked the question, as to why the statute should set this maximum rather than letting the Administrator determine it.

Mr. HASTEY. By law the royalty is within a range of 10 to 15 percent.

Mr. YATES. I don't think the price they pay the consumer bears on this because the Government's share wouldn't alter that at all.

Mr. EVANS. If I can make an observation. I suppose the 90 percent or the 85 percent the company retains is influenced by what they sell it for, what the maximum price is they can sell it per kilowatt-hour and what is their price for operation. After they pay the royalty they have still got to pick up operational costs.

Mr. VEYSEY. That is exactly correct. Power, whether it comes from a nuclear plant or a fossil fuel plant or geothermal plant, is still worth the same amount of money when it goes into the system. Starting from that fact, then you have to consider how much investment, how much development work has to go into it, and what the probable life is. We don't know very much about that now. Based on what they do know, that is about in the right ballpark area.

Mr. YATES. As I understand it, there is no basis for a computation of any increases in the price except an increased rental.

Mr. EVANS. My understanding of the royalty is that as the price of energy per kilowatt, or whatever it is, varies, your percentage of royalty attaches to that. If the price goes up, you get more, and if it goes down, you get less.

Mr. VEYSEY. All the prices I have seen escalate with increasing prices of fossil and nuclear fuels.

Mr. YATES. Is that true?

Mr. HASTEY. Yes.

Mr. YATES. Does the amount the Government receives escalate with increases in price?

Mr. VETTERICK. Yes; 10 percent of \$1 results in one return while 10 percent of \$1.50 would result in a higher return.

Mr. YATES. But it's 10 percent of a wholesale price and the wholesale price may not go up as the retail price goes up.

If the customer pays only a fixed amount for the wholesale price of steam, apparently I don't have a grasp of this.

Mr. VEYSEY. All the contracts that I have seen are not pegged to a fixed price for power. They include an escalator as fuel costs go up.

Mr. YATES. I am asking whether the Government has that. I don't get an answer on that.

Mr. VEYSEY. They do not at this point because the developer, when he sees what he is going to develop and gets his permit to sell to the public utility, will then at that time negotiate his contract with the public utility. All of the contracts I have seen on private lands include escalator factors. I am sure they would in this case too.

Mr. YATES. That is what I am asking.

Mr. VEYSEY. But the contracts are not negotiated at this point in time.

Mr. YATES. The question in my mind is whether that contingency is taken care of in the contract or whether it is 10 percent of the increase in a wholesale price that may not be increased to the con-

sumer. The consumer may get an increase in rates as a result of other factors.

Mr. VEYSEY. Exactly.

Mr. YATES. All the Government would get would be 10 percent of a wholesale price then, isn't that right?

Mr. VEYSEY. That is right. I believe that would be the way it would work.

Mr. EDWARDS. Our leases have a standard clause for readjustment.

Mr. YATES. At what point?

Mr. EDWARDS. "Rentals and royalties may be established in accordance with action not in excess of the rates provided therein"—for royalties that is 22½ percent—"and not less than at 20-year intervals beginning 35 years after the date of the Geothermal Steam Act was enacted."

Mr. YATES. So the Government cannot get a readjustment of the execution of the lease, isn't it, 35 years away? Isn't that what the lease says?

Mr. EDWARDS. Yes.

Mr. YATES. So the government cannot get a readjustment of the lease until 2010; is that right?

Mr. EDWARDS. Yes, but that is in accordance with the statute. That language came directly from the statute itself.

Mr. EVANS. Will the gentleman yield for a question?

Mr. YATES. Yes.

Mr. EVANS. Is it possible for the wholesale price to vary during the first 20 years of the lease. I suppose it is. I suppose from year to year or time to time within that period the price per kilowatt hour of electricity that was developed and sold to the utility companies varies, just like the price of a barrel of oil would vary. As it varies within that 20-year period, the royalty to the Government, the 10 or 15 percent, attaches to whatever the increased price is. Is that correct?

Mr. HASTEY. Yes, as it increases or decreases. The royalty percentage can be readjusted after 20 years but the price of the product can vary from year to year and that is evaluated from year to year by the Geological Survey. So the money paid to the Government can vary up or down depending on the price of the product produced. There is a minimum royalty which is not to go below an equivalent of \$2 per acre.

Mr. YATES. Is that what private owners receive, too, Victor?

Mr. VEYSEY. Well, I believe they receive whatever amount they are able to negotiate. It can be more than that.

Mr. YATES. I wonder what the standard going rate was?

Mr. VEYSEY. I know of a lot that are \$1 an acre and some \$5 an acre where it looks closer to development.

COMPETITIVE GEOTHERMAL SALES

Mrs. HANSEN. How many competitive sales have been held thus far in calendar 1974?

Mr. HASTEY. We have had three competitive sales in California. We have also had two follow on sales which were reoffers of unsold or rejected tracts from the first California sales. We plan one sale in Oregon this month. We will, therefore, have four competitive sales this year excluding the reofferings.

NONCOMPETITIVE GEOTHERMAL LEASING

Mrs. HANSEN. Please explain the procedure for noncompetitive geothermal leasing. How do the revenues from this procedure differ from those under competitive leasing?

Mr. EDWARDS. Starting in January of 1974 we had the first filing and openings of noncompetitive applications. These would be applications for land that lies outside of known geothermal resources areas. We received in the first opening about 2,500 applications. We must review all of these applications, first of all to determine where they are located, and to determine whether or not applications overlap each other by 50 percent or more. This is because the regulations provide that if two applications overlap each other by 50 percent, then the area covered by them becomes what we call a competitive interest KGRA and would be leased by competitive rather than noncompetitive methods.

All of these applications must also be reviewed by the Geological Survey to determine whether there are any other factors involved in the areas that would warrant classification as known geothermal resource areas for competitive leasing.

Mrs. HANSEN. So it is your known areas that are competitive?

Mr. EDWARDS. Yes. We have two major kinds of competitive classifications. Those that are known by geologic information and those that are known by competitive interest.

DRAINAGE OF GEOTHERMAL STEAM

Mrs. HANSEN. Supposing you have two quarter sections located adjacent or near one another. If you lease one quarter section you may take the steam available in the other quarter section. Can this occur?

Mr. EDWARDS. That is a possibility.

Mrs. HANSEN. What can you do about such a possibility? Suppose the Government is tapping the resources of another party and depriving the private owner of his resource?

Mr. EDWARDS. First, on those kinds of applications the Geological Survey would study the area and determine whether there was any such structure in that area. If they determine that there wasn't, a noncompetitive lease could be issued barring other reasons to prohibit a lease. If it was in a known area, then the Geological Survey would recommend to us the manner in which those tracts ought to be leased or blocked out so that the reservoir of steam is protected by not having it drained by operations on an adjoining area.

Mrs. HANSEN. Who are you protecting, the private owner or the Federal Government? At some point it would seem to me if you drained a private owner's resource, you would be liable for a lawsuit.

Mr. EDWARDS. I am sure the prime concern would be in protecting the Federal interest. In terms of that situation, it is the same thing as drainage on oil and gas.

Mrs. HANSEN. I understand. That is the reason I am asking the question.

Mr. EDWARDS. The law of capture has generally prevailed in those situations; those who capture the resources are entitled to recovery.

Mrs. HANSEN. So a private owner could well eliminate the Government's resource?

Mr. EDWARDS. Yes. In that case we may want to initiate a lease in order to capture the resource and not have it drained by another party.

UNCONTROLLABLE NATURE OF THE WORKLOAD

Mr. EVANS. On the first page of your justification you say you want the \$1,110,000 because "This budget amendment is needed in order to permit the Bureau to respond to the sizable and uncontrollable increase in workload, et cetera." Could you explain that word uncontrollable?

Mr. HASTEY. Yes. Our program requests are concerned with non-competitive applications. Beginning January 1 the Secretary opened the public lands to geothermal noncompetitive applications. In January alone we had something like 2,500 applications for geothermal steam outside the known geologic areas.

Mr. EVANS. By the use of the word uncontrollable, do I take it you have no choice but to approve all of these applications?

Mr. HASTEY. We don't have to approve them but we do have to process them. We require a \$50 deposit with each application.

Mr. EVANS. All you have to deposit to apply is \$50?

Mr. HASTEY. That is to cover the processing costs of these applications.

Mr. EVANS. Then you have no choice but to process all of them?

Mr. HASTEY. It is a public demand workload. I guess we could say we wouldn't process the applications, but it is unfair to the applicant to open the areas and take his \$50 filing fee if we don't process it. The way our legislation is set up, the money goes to the general fund of the Treasury so we have to come before the Appropriations Committee for that money to process the applications.

OBJECTIVES OF NONCOMPETITIVE LEASING

Mr. EVANS. Can you explain to me why the decision was made to open up all lands on a noncompetitive basis?

Mr. HASTEY. These are lands outside the known resource areas.

Mr. EVANS. So you are considering leasing rights for geothermal energy on lands you don't know anything about?

Mr. HASTEY. That is right.

Mr. EVANS. Is that good policy?

Mr. HASTEY. It is similar to our simultaneous oil and gas leasing. In both instances we are trying to encourage private exploration and development of an energy resource.

Mr. EVANS. What do you do in your leasing procedures to make certain that you do protect the public interest?

Mr. HASTEY. The protection is through the royalty rate. Once that lease is developed and if it does produce geothermal steam, there is a royalty rate. Of course we don't get the bonus money because it is not competitive.

Mr. EVANS. Do people compete for bids when you don't know what is in the land?

Mr. HASTEY. We have had applications where the filings have overlapped more than 50 percent. Once they overlap in the same area, then they are automatically considered as known geothermal steam

resource areas and they have to go on a competitive bid if the area is to be leased.

Mr. EVANS. Why are they known? You don't know anything more about it than you did before.

Mr. HASTEY. It is known that there are two parties competing for the same area.

Mr. EVANS. Two people are interested in land that you don't know anything about yourself.

Mrs. HANSEN. Why don't you know anything about those lands which you plan to lease on a noncompetitive basis?

Mr. HASTEY. It is a tremendous effort to drill the number of holes required to check all the potential geothermal steam in the public land areas. It is the same problem in oil and gas. There is no end to the inventory and data work we would have to do. By allowing noncompetitive leases we are allowing the private sector to share in the exploratory work.

Mr. EVANS. When the Department of Interior doesn't have any idea about the value of the assets or even if there are any assets, you have gone ahead and leased areas whether they are oil, coal, or geothermal. Why, under those circumstances, do you invite and take noncompetitive bids? Why not make them competitive?

Mr. HASTEY. The fact is that we do not know if there is a resource in that area.

Mr. EVANS. One party makes a bid and he doesn't know either, but he is willing to take a chance. Why not let somebody else come along and say "I will bid a little more?"

Mr. HASTEY. There are many dry holes that are drilled through this method but it encourages development of the resource if it is present. It is impractical for the Government to go out and try to find out all of the things that might lie under the ground.

Mr. EVANS. Do you require them to report to you all their discovered knowledge about that ground?

Mr. HASTEY. They have to develop it within a 10-year period.

Mr. EVANS. Do they have to report to you?

Mr. HASTEY. Yes, sir. They have to develop a plan and submit it to the Geological Survey and that is monitored and supervised by the Survey. They know the value of the resource and they place a value on it and charge royalty rates against the value of the resource produced.

Mr. YATES. Is that true of all minerals?

Mr. HASTEY. Yes. It is true of leasable minerals. All development is monitored by the Geological Survey once the lease is issued. A mining plan must be developed by the leasee.

TERMS APPLICABLE TO NONCOMPETITIVE LEASES

Mr. EVANS. Are you telling me that you take noncompetitive bids because otherwise you will receive no bid because no one knows what is under the land?

Mr. HASTEY. It is a wildcat lease. We don't know what is there. We don't think the person who applies often knows what is there, but he is willing to make the investment of equipment, machinery, and manpower and the risks involved to explore and see if there is a resource to extract.

Mr. EVANS. What is the minimum they have to pay?

Mr. HASTEY. They pay at least \$1 per acre on the rental. Then, of course, they pay the 10 to 15 percent royalty rate if they produce geothermal steam in commercial quantities. But they have an initial term on the lease of 10 years. They have an escalating rental rate after the first 5 years if the lease does not go into production.

Mrs. HANSEN. Why was it set at 10 years?

Mr. HASTEY. That is the primary item. Ten years was probably the average amount of time they felt it would take for the development of a geothermal steam lease.

Mr. YATES. That is not true of the coal leases.

Mr. HASTEY. The primary term for a geothermal lease is 10 years, but you have an escalating rental rate after the 5-year period. The reason why there is a difference between coal and geothermal steam is that each is leased under a different act.

Mr. YATES. Instead of \$1 per acre it becomes \$2 per acre then, which is a 100-percent escalation, but still low—not very much.

Mr. ZIMMERMAN. There is an escalation of rental required in both competitive and noncompetitive leases. These regulations were developed as a result of over 1,000 public comments we received during three proposed rulemakings. The 5-year period was based primarily upon industry expression that it would take roughly that amount of time to gear up to start doing something out on the land. It was felt during this period that a minimum rental, the statutory minimum, would be appropriate and we would start escalating starting with the sixth year in order to encourage the development.

COST REQUIREMENTS ON A GEOTHERMAL LEASEHOLD

Mrs. HANSEN. What is the average cost requirement on one of the geothermal leases?

Mr. ZIMMERMAN. It is my understanding that it costs a minimum of \$50 a foot to drill a hole that would be suitable for production of geothermal steam.

Mrs. HANSEN. What is the depth of a hole?

Mr. ZIMMERMAN. It can vary.

Mrs. HANSEN. I know. From what to what?

Mr. ZIMMERMAN. In the Geyser area it is about 4,000 feet I believe. It can vary anywhere from 1,000 to 8,000 or 10,000 feet. The work requirements, by the way, that the Secretary finally imposed were based upon what would probably be a sort of average cost. If you take a 2,560-acre lease, which is the maximum, and assuming a \$1 base rental and then escalating each year by \$1 starting with the 6th year through the 10th year, and doubling that cost for the added work requirement, it comes out to about a \$100,000 investment over the 10-year period. That is what would be required if the person held it for the full 10-year term. That would be approximately the investment that would be necessary.

Mr. YATES. What do you mean by the 10-year term?

Mr. ZIMMERMAN. There is a primary term of 10 years. It is subject to extensions.

Mr. YATES. It says:

Geothermal shall be a primary of 10 years. If the steam is produced in commercial quantities within this term, such lease shall continue for so long as geothermal steam is produced, but such continuation shall not exceed an additional 40 years.

So actually if they strike steam and they sell it, it is a 50-year lease then, isn't it?

Mr. ZIMMERMAN. That is right.

CLASSIFICATION OF GEOTHERMAL RESOURCE AREAS

Mr. YATES. I look at this document that has been handed to me. It has maps of the Western United States showing lands classified for geothermal resources. It is not entirely an unknown process, is it?

Mr. ZIMMERMAN. No, sir. Under the terms of the act the Geological Survey was required within 120 days after the passage of the act, December 24, 1970, to define the known geothermal resource areas that they were aware of. They designated 44 known geothermal resource areas, encompassing approximately 1,800,000 acres, of which about one-half are privately owned and the other half is federally owned.

Mr. YATES. In reply to Mr. Evans' question I got the impression this was wilddcatting. This is not really wilddcatting, is it?

Mr. HASTEY. The areas in the dark black are known structures subject to competitive leasing. The remaining areas would be open for noncompetitive leasing.

At this time there is probably an additional million acres that will be classified as known geothermal resource areas on the basis of overlapping applications. They have to be filed during a calendar month. We have simultaneous calendar month filing periods. If there are overlapping applications during that calendar month, then that area will be classified as a known geothermal resource area on the basis of competitive interests. This is consistent with the statute. The statute says you will use four tests to establish whether it is a known resource. One is geology. Another is nearby discoveries and another is competitive interests. But we had very little guidance which says what is competitive. Hence, we have established the 50-percent or more overlap. Then we have "other indicia" whatever that catch-all might mean. So it can be any one or a combination of those which will prompt the Geological Survey to classify the areas.

Now we have in excess of 2 million acres which are considered as known geothermal areas which if leased, must be leased competitively.

ANTISPECULATION MEASURES IN GEOTHERMAL LEASING

Mr. EVANS. What, if anything, is there in this statute or in your regulations pertaining to geothermal energy to prevent what happened in the coal lands where people have sat on it and you people have let them have it for years and years without requiring them to lift one shovel? I don't know how many hundreds of thousands of acres of lands have been leased for the development of coal and have been sat on. I am told that you fellows just let them sit there, and even let them speculate. Reports have been made indicating that people come in to bid on coal leases not to produce coal, but for the specula-

tion on the future market of coal. What have you got in these geothermal statutes, regulations, and leases that will prevent that sort of thing?

Mr. EDWARDS. The primary term in the lease is 10 years. They have to be drilling at the time or the lease expires provided they don't get an extension. Second, there are the diligent development requirements. Then, there is the escalating rental. They cannot sit and hold it for nothing. It will cost them.

Mr. EVANS. How do you measure diligent efforts? I know in other lease arrangements you could go out and spend \$100 every 2 or 3 years and that is deemed by you people to be a diligent effort.

Mr. EDWARDS. What has been done in this case is that they must have spent at least twice the amount of the rental beginning in the sixth year. As Mr. Zimmerman explained, if they carried it through to the 10th year, it would cost them at least a \$100,000 investment; in other words, to have done the work that is required under the diligent requirement provisions together with the rentals they would have to expend about \$100,000 for a maximum size lease.

Mr. YATES. Where in the statute do you find any requirement of diligence?

Mr. ZIMMERMAN. There is not a specific requirement in the statute that requires it, only under the terms that it is in the public interest, to encourage timely and organized development.

Mr. YATES. In what part of the statute does it say that?

Mr. ZIMMERMAN. Under section 24 it talks about the rules and regulations. "The Secretary may prescribe" and then it identifies about 10 different items that could be considered.

Mr. YATES. You are talking about the regulations prescribed by the Secretary?

Mr. ZIMMERMAN. Yes, sir.

Mr. YATES. They require diligent development?

Mr. ZIMMERMAN. Yes, sir.

Mr. YATES. I suppose we ought to see those, too, shouldn't we? I understand you are contending that that is a part of the statute now; is that correct?

Mr. ZIMMERMAN. The regulations, yes, sir.

Mr. EVANS. I am not sure of the answer to my last question. The question was what, if anything, are you doing with the regulations on leasing geothermal energy that would prevent what has happened under coal leases where they are leased and not developed? The comment was made that if they have not done any development work by the 10th year, the rent doubles and they have to accomplish work equivalent to twice their escalated rent. Is that the 10 years or the 5 years?

Mr. EDWARDS. The sixth year.

Mr. EVANS. So with a maximum lease and maximum rental, what would they have to invest?

Mr. EDWARDS. In the 6 years?

Mr. EVANS. Yes.

Mr. ZIMMERMAN. Assuming a 2,560-acre lease, which is the maximum, and assuming the \$1 statutory minimum rental for the first 5 years, the sixth year rental would escalate by \$1. By regulation it cannot escalate by more than \$1 per year. That means you have \$2 rental

times 2 which is \$4 per acre times 2,560 which is almost \$10,000 for this particular year.

Mr. EVANS. So under those circumstances that would not be very difficult for anyone; would it?

Mr. ZIMMERMAN. That is the 6 years. Starting with the seventh year the rent is \$3 times 2 or \$6 per acre which amounts to an additional \$15,000 expenditure. In the eighth year it would go up by another \$5,000 or require a \$20,000 investment and so on.

Mr. EVANS. I hope this works. You have a lot of coal under lease that is just sitting there.

EFFORTS TO IDENTIFY ADDITIONAL KGRA'S

Mrs. HANSEN. What effort is the Department making to identify more KGRA's so that a larger portion can be leased competitively?

Mr. EDWARDS. We don't know how many noncompetitive lease applications will result in competitive leases because of the overlap. That is what we are having to analyze now.

Mrs. HANSEN. That is part of the reason you are asking for additional funds.

Mr. EDWARDS. To determine that; yes. All of those applications which overlap by at least 50 percent will go as competitive leases. Then, of course, the Geological Survey is going through the process of analyzing their information to determine whether there are other KGRA's. In other words, whether there should be other geologic areas to be classified as KGRA's. If there are, those areas would go by competitive lease, also.

USGS EXPLORATORY COST ESTIMATES

Mrs. HANSEN. You testified there is something in the vicinity of between 1 and 2 million acres of land to be leased on a noncompetitive basis. Is that correct?

Mr. EDWARDS. Yes.

Mrs. HANSEN. Dr. McKelvey, what would it cost the Geological Survey to identify this 1 to 2 million acres and how long would it take so that more land could transfer from the noncompetitive area to the competitive area?

Mr. MCKELVEY. The 2 million acres in which noncompetitive interest is expected to be expressed and how much it would cost us to evaluate that?

Mrs. HANSEN. That is right.

Mr. MCKELVEY. I can supplement this for the record, Madam Chairman, with perhaps a little better information, but I would say that it would cost us at least of the order of \$1 an acre for a very rough appraisal as to the potential. And to actually identify and determine the extent of geothermal resources, if they do in fact exist, would cost a great deal because it would involve expensive drilling, et cetera. The figure I chose, \$1 an acre, is of the order of what it costs in wilderness surveys in which we do somewhat the same kinds of things that would be involved in a preliminary survey.

Mrs. HANSEN. Would it not be advantageous to the Government to invest that \$2 million in this kind of an effort?

Mr. MCKELVEY. To a degree it is being done in the course of the work that we do in order to determine the extent of new KGRA's and indeed

their location in some instances. That is part of what we will be talking to you about when we come before you officially.

Mrs. HANSEN. I understand.

Mr. McKELVEY. But for us to do the drilling and actual work that would be involved in a careful assessment of the potential would involve a great deal of risk. At this stage in geothermal exploration, I think it perhaps would not be wise to invest to that order of magnitude.

ENCOURAGEMENT OF PRIVATE GEOTHERMAL DEVELOPMENT

Mrs. HANSEN. You think that the Government would recoup more through the normal royalty process? Is that correct?

Mr. McKELVEY. I think this is a time to encourage private initiative in the development of this resource.

Mrs. HANSEN. If the resource is developed.

Mr. McKELVEY. We want to encourage them to.

Mrs. HANSEN. I have listened to who the geothermal bidders are; the major oil companies. They, under present technology, leave two-thirds of the oil in the ground. So I don't know if they are going to produce any better results in the geothermal area.

Mr. McKELVEY. We should encourage them at least.

Mrs. HANSEN. They are being encouraged. Certainly the demand for energy in the United States is an encouragement. The same oil companies have coal leases, geothermal leases, and oil and gas leases.

Mr. McKELVEY. Many of them consider themselves to be energy companies and in fact have so advertised themselves as that. But, Madam Chairman, at this point in the state of the art of the utilization of geothermal resources we are not really very sure about the commercial recoverability of geothermal energy except as it exists in the form of steam.

Mrs. HANSEN. I understand.

Mr. McKELVEY. For some more limited uses at a lower value, it has a value as very hot water. We are looking at a range of things—hot dry rock that may have some ultimate potential. But we don't really know what the value may be in the future, much less now.

LONGEVITY OF GEOTHERMAL RESOURCES

Mrs. HANSEN. How long will the average geyser last? Is there any limitation?

Mr. McKELVEY. We are dealing with a depletable resource. It is a kind of fossil fuel, if you like. It is not energy that is being generated continuously in the locality.

Mrs. HANSEN. You will one day reach the end of the resource.

Mr. McKELVEY. That will happen. I think it is only in the realm of speculation at the present as to what those lives will be. But I think it is something of the order of 50 or 100 years. I think that would be a reasonable guess depending on the character of the reservoir and the way recirculation takes place, et cetera.

Mr. EVANS. What is it that depletes itself, the heat?

Mr. McKELVEY. The heat, yes. You see we are dealing here with a source of energy, in the West at least that consists, chances are, of a cooling body of igneous rock—is a magma that has intruded into the

Earth's crust, solidified and is now cooling. It cools very slowly because rock is a slow conductor. That is a body of diminishing heat. When it is depleted it will become cool and no longer exists.

NATURE OF GEOTHERMAL ENERGY

Mr. YATES. Can you tell us what causes a geyser?

Mr. McKELVEY. In general terms, yes. The geyser consists of meteoric water, that is rain water, that has seeped into a heating chamber where it reaches a certain temperature that causes it to expand and finally exceed the limits of the reservoir. So then it comes out. A geyser that does this on a more or less regular basis is one in which there is a fairly finite limit to the chamber that contains it, so that as the water drains back in it goes through the process, repeats itself and comes back out again. They are not, of course, exactly regular. There is great variation.

Mr. YATES. Is this true of all geothermal patches?

Mr. McKELVEY. A geyser has this characteristic in common with other geothermal reservoirs that are occupied by water or steam. It is extracting heat from the reservoir. The eruption represents an accumulation of heat and beyond a certain point that heat comes out. Much of it passes off into the atmosphere and drops on the surface as it comes back down. The water or steam are merely the agents for transferring heat from the hot rock with which it is in contact. The water bears the same relation to geothermal energy as an electric wire does to electricity at the point of generation. It is the means of conveying the heat that exists within the rock.

Mr. YATES. I suppose this chart that you have here is an indication of where you think these heat chambers are, isn't it?

Mr. McKELVEY. That is correct. There probably are a lot more that actually exist that have not been identified. Most of those that were identified were identified on the basis of hot springs. Actually the hot springs may represent a leaky geothermal reservoir and the best ones may not have any surface manifestation at all.

Mr. YATES. Do we know what causes these heat chambers?

Mr. McKELVEY. Mostly they are cooling bodies of igneous intrusions, molten magma from deep within the Earth's crust that has forced its way up near the surface, sometimes resulting in a volcanic eruption but very often not.

YEARS INVOLVED IN COMPETITIVE LEASE SALES

Mrs. HANSEN. For how many years do you expect to be making competitive geothermal lease sales at the rate of five per year?

Mr. HASTEY. I don't think I can tell you right now. I think it will depend a lot on the development Vince McKelvey referred to. In fiscal year 1975 we are planning 15 competitive sales. In fiscal year 1976 we are planning 20. We were originally estimating about five per year, based on what we could see 6 months ago and upon what our original budget was based. I think it is a learning process for both BLM and GS as to how many we will lease in the future years.

SIMULTANEOUS OIL AND GAS PROGRAM

Mrs. HANSEN. You are requesting an additional \$360,000 and 18 positions for additional oil and gas filings. What are the details?

Mr. HASTEY. A year ago, during fiscal year 1973, we had filings of about 680,000 applications for oil and gas leases. In fiscal 1975 we are estimating something like 1.2 million applications.

Mrs. HANSEN. These are onshore?

Mr. HASTEY. These are onshore, noncompetitive lease filings. These are in areas outside known oil and gas provinces.

Mrs. HANSEN. Why are these areas outside known oil and gas provinces?

Mr. HASTEY. Here again it is the lack of geological data to identify all the possible oil and gas deposits, whether it is there or not there. So we have opened up noncompetitive filings for wildcat operations.

DRILLING RATIOS ON OIL AND GAS LEASES

Mrs. HANSEN. It sounds like Pandora's box.

Mr. HASTEY. I think out of 94,000 or so existing leases, only 8,000 to 9,000 are in production. So in process of exploratory work many dry holes are drilled.

Mrs. HANSEN. What is your ratio on drillings and dry holes onshore in your noncompetitive areas?

Mr. EDWARDS. It is about 1 to 9, I think. GS is in a better position to testify to that.

Mr. McKELVEY. One to nine; yes.

Mr. McDADE. The question here was on the noncompetitive. What is the ratio on the noncompetitive?

Mr. HASTEY. One in ten go to drilling. Of those, the success ratio might be 10 percent.

Mr. McDADE. It is almost the same then.

SIMULTANEOUS FILING PROCEDURE

Mrs. HANSEN. Would you please explain the "simultaneous filing" procedure?

Mr. EDWARDS. The process applies to all lands that have been leased previously and are not now leased for some reason, either the lease expired or it was canceled.

Mrs. HANSEN. How long was that lease?

Mr. EDWARDS. Ten years. As they become available they are listed on a simultaneous oil and gas list each month in our respective land offices. Individuals are allowed to file applications for those. Because we have so many applications for the same tract of land we have a drawing each month to determine in priority who shall be awarded a lease for a specific tract.

Mr. McDADE. Are there competitive efforts for the same tract? Then why are they noncompetitive?

Mr. EDWARDS. Because they are not in areas that are known to be oil and gas producing areas.

Mr. ZIMMERMAN. It is a different test with respect to oil and gas. In oil and gas, by statute, it has to be a known geological structure for producing oil and gas before the Geological Survey can classify it to go competitive. The test is not so severe with respect to geothermal.

Mr. EDWARDS. We are operating under different statutes here.

Mr. McDADE. But the rationale for the difference, is it still effective and operational?

PROPOSED LEGISLATION TO IMPROVE MINERAL LEASING

Mrs. HANSEN. Have you ever sought an amendment to that act?

Mr. EDWARDS. Yes, we have.

Mrs. HANSEN. What is the status of that legislation?

Mr. VETTERICK. It has not been acted upon. The last amendment to the 1920 Mineral Leasing Act was made to facilitate the trans-Alaska pipeline.

Mr. YATES. What other amendments are you seeking?

Mr. EDWARDS. The amendments of 1973, which would place all leaseable minerals under competitive rules.

Mrs. HANSEN. What committee has jurisdiction for that legislation? I assume it would be the Interior Authorizing Committee.

Mr. EDWARDS. I assume that would be the committee the bill is assigned to, but I don't know where it is pending right now.

PRODUCTION FROM NONCOMPETITIVE OIL AND GAS LEASES

Mr. McDADE. Are we receiving any production of oil and gas from the noncompetitive lands in the country today as we have designated them?

Mr. EDWARDS. No. That is the reason they are on the list.

Mr. McDADE. So there is no production at all. Would you like to comment, Mr. Wayland?

Mr. WAYLAND. About 85 percent of the production from Federal lands is from leases that were issued noncompetitively, but then, of course, these leases are perpetuating as long as they are producing. Therefore, they are not released, leased over and over again, by the simultaneous filing system. Therefore, it is the leases that don't get drilled and that expire that don't produce. Of course their production is zero, as Frank Edwards said.

Mr. ZIMMERMAN. Or if they get drilled and there is nothing found.

[Discussion off the record.]

Mr. EDWARDS. Something you have to understand is that some of these leases are only 40 acre tracts and before some of these companies will go ahead with drilling they want a larger leasehold than 40 acres. Because they are parceled in small tracts like that, they are not of much interest to somebody to go in and spend the money to acquire the block and drill the well unless they can put together a package which they feel is worth the investment in drilling.

RETURNS FROM NONCOMPETITIVE LEASES

Mr. McDADE. Somebody felt it was since we have the statistics that 85 percent of the production comes from what were once noncompetitive lands. Are they still paying 50 cents an acre rent?

Mr. EDWARDS. If they are in production, they are paying the 12½ percent royalty.

Mr. McDADE. How much ground rent?

Mr. EDWARDS. There is no rental when they are paying the royalty.

Mr. McDADE. Just a straight royalty?

Mr. EDWARDS. Yes.

Mr. McDADE. Would that be consistent with private leasing practices?

Mr. EDWARDS. I think the royalty is but the rental that is paid for private leases is generally higher. The royalty is generally consistent. It is not true of all the leases. We charge 16⅔ percent royalty on the Outer Continental Shelf.

Mr. EVANS. But the rental ceases with production, right?

Mr. EDWARDS. That is correct.

AVAILABILITY OF USGS DATA

Mr. EVANS. As I understand it, the Geological Survey produces the facts and evidence in relation to what we have in the public lands and you people use that knowledge in the leasing. But I also understand that you in the Geological Survey produce information that you don't pass along to the Bureau of Land Management; is that correct?

Mr. McKELVEY. No, sir. There would be no information withheld from the BLM if they requested it. Much that we know and they are interested in is passed along routinely. Of course a great deal of what we learn we publish. That is one of our principal purposes.

Mr. EVANS. Do you have good working relationships, one with the other?

Mr. McKELVEY. Generally speaking I think we do. We are working to improve them. Recently we formed a coordinating committee that will be cochaired by both our associate directors. That meets frequently to be sure that we are thoroughly coordinated. We have a lower level effective coordinating group involving Frank Edwards and Russell Wayland that meets once a week or something like that.

Mr. EVANS. I suppose that you receive information from companies. Do you see this kind of information on a confidential basis? Does it preclude you from talking about it with BLM?

Mr. McKELVEY. No. We do not withhold it when it is understood and agreed to by BLM that it will be proprietary information as the law requires.

Mr. EVANS. So this provides you with no difficulty either, as I understand it.

Mr. McKELVEY. No.

Mr. EVANS. One last question. Do your leases now require that all information developed by companies under these drilling permits must be disclosed to the Department of the Interior or BLM or the Geological Survey?

Mr. McKELVEY. Yes.

Mr. EVANS. Here you are in a position where you don't begin to have the manpower and capability to really inventory the assets we have. But private people do come in and drill and explore. In the past they have usually kept that information pretty much to themselves, as I understand it.

Mr. McKELVEY. They keep it from the general public and from their competitors in particular. But it is required to be given to us, all information on drilling, production, geophysical surveys, et cetera.

Mr. EVANS. Is this true with coal, gas, and oil and the whole works?

Mr. McKELVEY. It is true with all leases.

Mr. EVANS. Do you have a feeling of confidence that they do disclose to you all the information they develop?

Mr. McKELVEY. Yes, sir. We don't require from them their interpretations of the data. But we do require that they submit logs and make samples available to us and give up other direct information that they acquire.

Mr. EVANS. Do you believe you have as good a chance to interpret material they give you as they do themselves?

Mr. McKELVEY. Yes; by and large. But we don't, as you indicated, have the capacity to go into great detail, except with respect to specific problems. We have much more data than we are able to utilize for some purposes that would be important on a national basis.

We have under consideration now a proposed rulemaking on Federal leases which would require lessees to submit information on their reserves.

What is being considered is to issue this in the Federal Register as an announcement of proposed rulemaking and invite public comment as to what kinds of information ought to be required and how it would be prepared, and so on. Then, depending on the outcome of that, possibly we would propose rulemaking along that line. So this would extend the base of information that the Government now has.

Mr. EVANS. Thank you, Madam Chairman.

BASE FUNDING FOR OIL AND GAS LEASING

Mrs. HANSEN. What funding and personnel are allocated to this activity in your current fiscal year 1975 request?

Mr. HASTEY. Our 1975 base is about \$1,550,000 for oil and gas leasing and the increase of \$360,000 is to handle the increase in noncompetitive oil and gas simultaneous filings.

Mrs. HANSEN. Why didn't you request this additional amount in your original budget request?

Mr. HASTEY. Primarily, Mrs. Hansen, because we did not forecast the huge increased interest in the simultaneous filings.

Mrs. HANSEN. You testified in your regular budget in late February or March. Didn't you recognize the additional workload at that time?

Mr. HASTEY. We were here in March. We recognized it at that time; yes, ma'am.

DELAY IN PROPOSING INCREASED REQUEST

Mrs. HANSEN. Why has it taken those paper shufflers downtown from March until the middle of June to submit a budget amendment? Even the post office isn't that slow.

Mr. HASTEY. They wanted to do a thorough analysis of it. We were aware of it about February.

We could see this continual climb. We do not see it dropping off.

Mrs. HANSEN. The committee has been worried about this situation for 8 years.

Mr. HASTLEY. We saw a continual buildup. The funds we did have in the initial 1975 budget was adequate to handle the earlier rate of filings.

Mrs. HANSEN. You are not going to solve our energy problems in this country without having adequate information.

Mr. HASTLEY. Yes, ma'am.

Mrs. HANSEN. I would have thought OMB would have decided that we weren't traveling by horseback long before they did.

DEVELOPMENT REQUIREMENTS FOR OIL AND GAS LEASES

What incentives are provided in these leases for early development and production of oil and gas?

Mr. HASTLEY. The term of the lease is 10 years.

Mrs. HANSEN. In 10 years, the price of gasoline can go to \$4 a gallon.

Mr. EDWARDS. The term is 10 years. Generally, we haven't had diligent requirements in this type of a lease. This is the wildcat proposition we mentioned before. These are areas that are not known producers. I think, as Dr. McKelvey mentioned earlier, a large share of our production that we have onshore now has come from this type of a lease. Yes; there are some leases that are held. Generally it's a situation where the companies want to get out and explore for the other sources of oil and gas.

Mr. YATES. Does that mean that there is no requirement for diligent production? Is that what you are saying?

Mr. EDWARDS. That is true, except they have to be drilling on the anniversary date of the lease or the lease expires. If they are going to keep the lease they have to drill.

Mr. YATES. To what extent must they drill?

Mr. EDWARDS. If they are drilling on the anniversary date they can get a 2-year extension. If they don't find anything, the lease expires.

Mrs. HANSEN. Suppose they don't drill until just before the 10 years expire? What is to stop them from doing that?

Mr. EDWARDS. Nothing. They get a 2-year extension is all. If they don't produce anything in that period of time, they lose the lease.

Mrs. HANSEN. Can they then obtain another extension?

Mr. EDWARDS. No, they can't.

Mrs. HANSEN. So they have a total of 12 years?

Mr. EDWARDS. Yes.

STATUTORY BASIS FOR LENGTH OF OIL AND GAS LEASES

Mr. EVANS. Why not give them a lease for 3 years? Are you required to have a minimum lease of 10 years? What is wrong with 3 years?

Mr. ZIMMERMAN. This is required by the Mineral Leasing Act. It provides for 10-year terms for noncompetitive leases. It provides for 5-year terms for competitive leases.

Mr. EVANS. Do you interpret that to mean that it is 10 years and no less?

Mr. ZIMMERMAN. Yes, sir. To change the period would probably require an amendment to the act.

OTHER STATUTORY PROVISIONS

Mr. YATES. Is that the act that has the provision in it giving the Secretary of the Interior the power to determine whether a monopoly exists and also to control prices?

Mr. ZIMMERMAN. In the 1920 Mineral Leasing Act?

Mr. YATES. Yes.

Mr. ZIMMERMAN. Yes.

Mr. YATES. So the Secretary does have the power to determine whether certain leases are engaged in monopoly practices, is that correct?

Mr. ZIMMERMAN. The statute addresses this with respect to the acreage limitation. There is an acreage limitation in the statute whereby one individual, corporation, or company cannot hold more than 246,080 acres in any one State, except in Alaska where you are allowed to hold 300,000 acres.

Mr. YATES. I thought it was 46,000 acres in some?

Mr. ZIMMERMAN. That is on coal, only coal. Oil and gas is 246,000 acres.

Mr. YATES. I haven't gotten an answer to my question. You haven't answered my question as to the power the Secretary has. He still has that power, hasn't he?

Mr. ZIMMERMAN. I reckon he does. I have never seen it exercised.

Mr. YATES. It has never been exercised? He also has the control over the prices too, doesn't he?

Mr. ZIMMERMAN. No.

Mr. WILES. Mr. Yates, I think you are right. We supplied a Solicitor's opinion on it which agrees with what you are saying. I believe you are right.

Mr. YATES. That is right. The distinction that was drawn between the Mineral Leasing Act and the act creating the leasing for the Outer Continental Shelf. Insofar as the 1920 Act is concerned, the Secretary does have that power under the specific terms of the act. As a matter of fact, the leases that were sent up to me at my request contained paragraphs containing that power. Right?

Mr. ZIMMERMAN. Yes, sir.

Mr. YATES. But he has never exercised it?

Mr. ZIMMERMAN. Not to my knowledge.

Mr. YATES. But he can, can he not?

Mr. ZIMMERMAN. I would say he can, yes.

REQUESTED INCREASE IN GENERAL ADMINISTRATION

Mrs. HANSEN. You are requesting an additional \$250,000 and 10 positions for general administration. Please justify this request.

Mr. HASTEY. This increase is requested to support the previous budget amendment that we sent over together with this budget amendment. The large increase in positions in our total budget request now amounts to something like 718 additional people. The administrative workload that goes with that requires that we have some administrative support. This would be in the nature of computer operations, personnel, procurement, payrolls, et cetera.

Mrs. HANSEN. How many of these positions will be in Washington and how many in the field?

Mr. HASTEY. These will all be in the field, primarily in our Denver Service Center where we have our centralized contracting, our personnel servicing, financial people and computer equipment.

Mrs. HANSEN. What is the total involved in this request for GSA space?

Mr. HASTEY. There is no GSA space in this \$250,000 request. That was covered in our regular fiscal 1975 budget.

Mrs. HANSEN. Are there any questions?

10 MILLION ACRE OCS LEASING OBJECTIVE

Mr. YATES. Who decided that our national policy should be to engage in a leasing of 10 million acres in the OCS, during the year 1975?

Mr. VETTERICK. That was in the President's energy message of 1974.

Mr. HASTEY. This decision was made by the President after taking into consideration the recommendations and concerns from several agencies including the Secretary of Interior and the Federal Energy Office. After reviewing the pros and cons, this is the decision that he decided to go with.

Mr. YATES. Isn't this really an impossibility? As I read what Mr. Berklund testified to earlier, I think you proposed to lease 2½ million acres off the coast of south Texas, 1 million acres off the coast of southern California, 4½ million acres off the coast of east Texas, and a possible frontier area of 2 million acres. I don't know what "possible frontier" means. Would you tell me?

Mr. HASTEY. That could mean an area off the Atlantic Coast or off the Gulf of Alaska. It is any OCS region where we have not had any previous leases.

The frontier areas we are now considering include the Gulf of Alaska and off the Atlantic coast. We have not determined what frontier area is to be leased yet.

Mr. YATES. Is it possible to even consider leases off the frontier area in 1975?

Mr. HASTEY. It's scheduled for calendar year 1975. So it would be the period from January 1 to December 31, which includes one-half of fiscal year 1976.

Mr. YATES. Where would you lease off the Atlantic coast?

Mr. HASTEY. We are looking right now at areas such as Baltimore Canyon, which the Council of Environmental Quality indicates as a low-risk area from the point of environmental concerns. We are now preparing an environmental impact statement on the decision to lease 10 million acres.

Mr. YATES. Has Dr. McKelvey finished his work with respect to the possibilities of leasing that many acres?

Mr. HASTEY. I think Dr. McKelvey's work is ongoing on all areas right now.

Mr. YATES. You mean there is nothing more for him to do, and all you have to do is lease the acreage?

Mr. HASTEY. No. We have to go through quite a process before we have that acreage leased. We are not ready to say that the 10 million acres as a goal is impossible. We are not sure whether we can attain that goal but we are working to attempt to.

AVAILABILITY OF DRILLING RIGS

Mr. YATES. Why would you want to do it? Wouldn't such an action amount to turning over Federal lands to the lessees at a time of scarcity of oil rigs? Also a shortage of personnel?

Mr. HASTEY. This is one of the things we found out in our call for information from the companies and the environmentalists, as to what priorities would they set in leasing off the Outer Continental Shelf. Many of the companies came in with a 3- to 8-year period to develop these leases. I think some of the companies felt that there was a possibility of attaining that goal. Some felt it would be very difficult because of the lack of equipment.

Mr. YATES. The Oil and Gas Journal of May 6, 1974, states "A rigs shortfall seems possible by 1982. It's extremely unlikely there will be a surplus of offshore mobile rigs or a saturated market during the next 10 to 15 years at today's pace. Indeed, based on announced construction plans, there could be a shortfall of mobile units worldwide by 1982 in anywhere from between 80 and 190 units, according to the forecaster." Is that a reasonable assumption?

Mr. HASTEY. I couldn't tell you. I have heard that there was a shortage of rigs. But I couldn't verify the figures you have read.

Mr. YATES. Don't you think you ought to look into that before you start engaging in a program of leasing?

Mr. HASTEY. One thing that will level this off is the willingness of the companies to bid on these tracts. If they are willing to bid and pay the bonus moneys, I think we can have some assurance they will be able to have rigs out there and be able to develop that at least within their initial 5-year lease period.

Mrs. HANSEN. Did you watch the television program the other day where hundreds of tracts were up for bid and only a portion were bid on? As I understand, that was because of some of the new techniques, which the companies are using, where they are able to tell exactly where the oil is located. Isn't that correct?

Mr. HASTEY. At our last sale, we offered something like 245 tracts and we sold approximately half. Out of 1.3 million acres offered, there were around 565,000 acres that were actually sold. Bids on 115,000 acres were considered to be too low and were rejected.

STATUS OF ACREAGE LEASED PREVIOUSLY

Mr. YATES. How many acres did you lease during 1972?

Mr. HASTEY. I couldn't tell you. But in fiscal year 1973 we leased a little over 2 million acres.

Mr. YATES. How many of those are in drilling?

Mr. HASTEY. For fiscal 1973?

Mr. YATES. Of the ones that you leased?

Mr. HASTEY. I don't have those figures with me.

Mr. EDWARDS. GS might have the figures on drilling, but of course they have 5 years on which to drill.

Mr. YATES. Let's go back to 1971. How many acres did you lease in 1971. It seems to me that we ought not to be turning over Government resources to the companies through these leases when the companies won't be able to develop them. I do not think we ought to do in the Continental Shelf leasing program what we did to the coal

fields, where we turned over so many thousands of acres to companies that are not mining their leases.

Mr. HASTEY. They do have a 5-year initial term where they have to move into drilling and development. You do not have a similar sort of stipulation in our coal leasing.

Mr. YATES. You can extend the term.

Mr. HASTEY. They have to have a rig out there within the 5-year period.

Mr. YATES. You can extend it if they don't?

Mr. HASTEY. If they don't have a rig physically on the tract in that 5-year period, the lease can be terminated.

Mr. YATES. Under what statute?

Mr. HASTEY. The Outer Continental Shelf Lands Act of 1954.

Mr. YATES. How many extensions have you had of the original leases?

Mr. HASTEY. The Geological Survey is working up the data now.

Mr. YATES. As to the number of extensions?

Mr. McKELVEY. Yes; we don't have the data yet, Mr. Congressman, to answer your question today. We didn't get the question until Friday. But we will have it shortly.

[The information follows:]

In the past 10 years, 356 OCS leases have been extended past the first 5 years for reasons other than production. Of these leases, 135 are producing and are extended as long as production is obtained in paying quantities; 157 are currently extended for other reasons; and the remaining 64 have terminated at different times as shown under question No. 3. Also, in the past 10 years, 127 OCS leases obtained production during the first 5 years and continued producing past the 5-year period.

Of the 356 leases extended, none actually produced in the first 5 years, but all leases contained a shut-in well capable of producing in payable quantities, except some leases in unitized areas and those included in the previously proposed national energy reserve in the Santa Barbara Channel.

LIST BY OWNER OF LEASES THAT HAVE BEEN EXTENDED BEYOND THE 5 YEARS
GULF OF MEXICO

686	Tenneco	T-7-68.	789	Shell	P-4-69.
688	Mobil	T-9-71.	790	Continental	P-11-68.
689	Tenneco	T-3-73.	791	do	P-11-68.
709	Shell	P-1-67.	792	do	P-11-68.
713	do	P-1-67.	793	do	P-11-68.
714	do	P-1-67.	794	Shell	P-11-71.
740	Chevron	P-1-61.	795	Forest	P-4-73.
741	Shell	P-1-67.	802	Texaco	P-8-72.
742	do	P-1-67.	804	do	P-10-70.
743	do	P-1-67.	805	do	P-3-71.
744	do	P-1-67.	806	do	P-2-71.
750	Mobil	T-8-70.	807	do	P-1-65.
752	do	P-4-69.	808	do	P-1-65.
757	Phillips	P-6-69.	809	do	P-1-65.
758	Tenneco	P-4-69.	810	Continental	P-11-64.
759	do	P-4-70.	811	do	P-6-70.
761	Forest	P-12-69.	812	do	P-11-64.
762	Mobil	P-2-69.	813	do	P-11-64.
763	Tenneco	P-2-66.	815	do	P-7-69.
764	Continental	P-1-68.	816	do	P-7-69.
770	Tenneco	T-3-67.	817	Union	P-5-69.
766	Continental	P-8-69.	818	Tenneco	Extended.
779	Amoco	P-10-63.	819	do	P-5-70.
780	do	P-10-69.	821	Texaco	Extended.
781	Union	P-10-69.	823	Pennzoil	P-4-68.
784	Amoco	P-10-69.	828	Kerr-McGee	P-4-67.
785	do	P-10-69.	829	Amoco	P-4-72.
786	Gulf	P-4-67.	830	Kerr-McGee	P-4-70.
787	Union	P-3-66.	831	do	P-4-73.
788	Amoco	P-4-72.	832	do	P-4-73.

LIST BY OWNER OF LEASES THAT HAVE BEEN EXTENDED BEYOND THE 5 YEARS
GULF OF MEXICO

840	Amoco	P-4-66.	1159	Shell	T-5-72.
841	Shell	P-4-66.	1160	Texaco	Extended.
842	do	P-4-68.	1161	do	Do.
845	Phillips	T-9-65.	1162	do	T-5-71.
898	Tenneco	P-5-70.	1163	do	T-5-71.
909	Texaco	Extended.	1164	do	T-5-71.
911	Union	P-5-72.	1165	do	T-5-71.
928	do	T-5-69.	1172	Forest	Extended.
932	Continental	P-4-68.	1178	Shell	P-3-69.
933	Mobil	P-4-68.	1179	Gulf	T-2-73.
935	Forest	P-5-70.	1180	Chevron	T-5-74.
938	Consolidated	Extended.	1181	Shell	P-3-69.
950	Shell	T-5-70.	1183	Dixilyn	P-10-70.
952	do	T-5-70.	1184	do	P-4-71.
957	Signal	P-5-70.	1187	Shell	P-10-70.
958	do	P-5-67.	1189	Tenneco	P-2-72.
959	do	P-5-67.	1190	Shell	P-10-66.
960	do	T-5-72.	1192	Chevron	P-2-68.
963	Tenneco	Extended.	1196	Tenneco	P-9-70.
965	Texaco	Do.	1198	Signal	P-5-70.
966	do	P-5-73.	1200	Shell	T-4-72.
970	Chevron	P-5-74.	1202	Texaco	Extended.
971	Amoco	P-5-72.	1203	Shell	T-4-73.
972	Texaco	P-5-71.	1204	Exxon	P-6-73.
973	Shell	T-5-73.	1206	do	T-5-71.
974	Texaco	P-5-71.	1207	Union	T-5-73.
976	Signal	P-5-69.	1208	Signal	P-1-69.
978	Continental	P-4-71.	1209	C. & K	T-8-72.
981	Gulf	P-5-72.	1210	Tenneco	P-7-70.
982	do	P-6-72.	1211	do	P-7-70.
986	Forest	P-5-71.	1212	Phillips	Extended.
987	do	P-5-71.	1216	Forest	Do.
991	do	P-5-71.	1217	do	Do.
992	do	P-4-71.	1220	Shell	P-9-69.
999	SONAT	T-5-73.	1221	Union	Extended.
1014	Continental	P-4-69.	1234	Chevron	Do.
1019	Tenneco	Extended.	1240	do	Do.
1021	Kerr-McGee	P-1-71.	1241	do	Do.
1022	do	P-1-71.	1244	do	Do.
1023	ODECO	P-6-71.	1247	Shell	Do.
1026	Shell	P-11-68.	1249	do	P-4-69.
1027	American Petrofina	Extended.	1250	Exxon	P-1-69.
1031	Union	P-12-67.	1251	do	P-1-69.
1034	Chevron	P-7-69.	1252	do	P-1-69.
1035	do	Extended.	1253	Tenneco	P-9-71.
1036	Union	P-10-66.	1255	Exxon	P-1-69.
1039	Shell	P-3-66.	1256	Gulf	Extended.
1040	ODECO	Extended.	1257	Exxon	T-11-72.
1042	Amoco	Do.	1258	Shell	P-4-69.
1043	Shell	P-8-71.	1261	Chevron	Extended.
1044	Union	P-10-66.	1265	Tenneco	P-9-71.
1045	do	P-11-66.	1269	Chevron	Extended.
1047	Texaco	T-5-72.	1272	Phillips	T-5-67.
1052	Continental	T-4-71.	1282	ODECO	T-5-73.
1053	do	T-5-70.	1294	Shell	P-1-68.
1054	do	Extended.	1312	Chevron	P-5-67.
1057	do	Do.	1329	Amoco	P-7-68.
1058	do	Do.	1330	Shell	P-7-64.
1069	Amoco	P-9-70.	1437	Chevron	T-4-73.
1077	Chevron	Extended.	1470	Continental	P-8-72.
1086	Amoco	P-5-70.	1471	do	Extended.
1088	do	P-10-69.	1473	do	Do.
1096	Exxon	P-6-68.	1476	do	P-1-73.
1099	Amoco	T-6-74.	1477	Mobil	Extended.
1100	Gulf	Extended.	1493	Exxon	T-11-73.
1102	Union	T-5-69.	1512	do	Extended.
1104	Shell	T-5-70.	1526	ODECO	P-6-73.
1105	do	T-5-74.	1534	Signal	Extended.
1107	do	P-7-68.	1535	Chevron	Do.
1108	ODECO	Extended.	1541	do	Do.
1120	Mobil	P-1-71.	1542	do	Do.
1127	Forest	P-5-71.	1548	do	Do.
1128	do	P-5-71.	1555	Continental	Do.
1130	C. & K	Extended.	1560	Gulf	T-6-73.
1131	do	Do.	1562	Oil & Gas Futures	Extended.
1132	Continental	Do.	1564	SONAT	Do.
1133	Shell	P-10-70.	1582	Cities Service	Extended.
1134	Tenneco	P-5-70.	1583	Oil & Gas Futures	Do.
1135	Shell	T-5-68.	1585	Chevron	Do.
1147	do	Extended.	1586	do	Do.
1151	Kerr-McGee	T-4-73.	1593	Hamilton Brothers	T-6-72.
1155	Shell	T-4-74.	1594	Chevron	Extended.
1157	Texaco	Extended.	1597	do	Do.

LIST BY OWNER OF LEASES THAT HAVE BEEN EXTENDED BEYOND THE 5 YEARS

GULF OF MEXICO—Continued

1598	Tenneco	Do.	1747	Chevron	T-6-73.
1609	Gulf	Do.	1748	Union	Extended.
1611	Atlantic Richfield	Do.	1749	Sun	T-5-73.
1612	do	Do.	1750	Texaco	T-12-72.
1614	Shell	Do.	1751	do	T-12-72.
1618	Signal	Do.	1752	Cities Service	P-6-72.
1619	Exxon	Do.	1753	Sun	T-5-73.
1620	Gulf	Do.	1754	Union	Extended.
1629	Mobil	P-6-73.	1755	do	T-6-73.
1633	Chevron	P-6-73.	1756	Exxon	Extended.
1635	Continental	Extended.	1757	do	Do.
1649	Chevron	Do.	1758	Mitchell Energy	Do.
1658	Atlantic Richfield	Do.	1759	Texaco	T-6-73.
1662	Signal	Do.	1767	do	T-6-73.
1665	Continental	Do.	1768	Sun	T-9-73.
1712	Sun	T-5-73.	1771	Superior	T-6-73.
1717	do	T-5-73.	1772	Coastal States	Extended.
1723	Superior	P-8-73.	1773	do	Do.
1724	Phillips	Extended.	1777	do	Do.
1725	Texaco	T-12-73.	1783	Shell	Do.
1726	Sun	T-5-73.	1797	Forest	T-6-73.
1728	Ada	Extended.	1803	Ada	T-6-73.
1730	Texaco	P-12-71.	1807	Union	T-12-73.
1731	Forest	Extended.	1812	Texaco	Extended.
1733	Texaco	P-5-72.	1815	do	Do.
1734	Union	T-12-72.	1817	do	T-5-74.
1735	do	T-12-72.	1818	do	Extended.
1736	do	Extended.	1831	Exxon	Do.
1740	Texaco	T-12-72.	1846	Texaco	Do.
1741	do	T-12-72.	1851	do	Do.
1744	Mobil	T-12-72.	1865	Chevron	Do.
1745	Union	Extended.	1900	do	Do.

PACIFIC

167	Atlantic Richfield & Standard	Extended.	201	do	Do.
168	Gulf-Mobil-Union	Do.	202	Union & Mobil	Do.
169	Humble-Atlantic Richfield-Standard.	Do.	203	do	Do.
170	Union & Mobil	Do.	204	Humble & Standard	Do.
171	Humble-Atlantic Richfield-Standard.	Do.	205	do	Do.
172	Union & Mobil	Do.	206	Humble-Atlantic Richfield-Standard.	Do.
173	Atlantic Richfield & Standard	Do.	207	Humble & Standard	Do. ¹
174	Humble & Standard	Do.	208	do	Do.
175	Humble-Atlantic Richfield-Standard.	Do.	209	do	Do.
176	do	Do.	210	do	Do.
177	Humble O. & R. Co.	Do.	211	Humble-Atlantic Richfield-Standard.	Do.
178	do	Do.	212	do	Do.
179	Humble & Standard	Do.	213	do	Do.
180	Humble O. & R. Co.	Do.	215	Atlantic Richfield & Standard	Do.
181	do	Do.	216	Union Oil Co.	Do.
182	Humble & Standard	Do.	217	Standard	Do.
183	Humble O. & R. Co.	Do.	218	Pauley Petroleum, et al.	Do.
184	do	Do.	219	Union & Gulf	Do.
185	Shell Oil Co.	Do.	220	Union-Gulf-Texas-Mobil	Do.
187	Humble O. & R. Co.	Do.	221	Humble & Standard	Do.
188	do	Do.	222	Humble O. & R. Co.	Do.
189	Humble & Standard	Do.	223	do	Do.
190	Humble O. & R. Co.	Do.	226	Pauley Petroleum, et al.	Do. ²
191	Humble & Standard	Do.	227	Mobil et al.	Do.
192	Humble O. & R. Co.	Do.	228	Union-Gulf-Texas-Mobil	Do.
193	Humble & Standard	Do.	229	do	Do.
194	do	Do.	230	do	Do.
195	do	Do.	231	Humble O. & R. Co.	Do.
196	do	Do.	232	do	Do.
197	do	Do.	233	Union-Gulf-Texas-Mobil	Do.
198	Humble O. & R. Co.	Do.	234	Texas, Union, Gulf & Mobil	Do.
199	do	Do.	237	Union-Gulf-Texas-Mobil	Do.
200	Humble-Atlantic Richfield-Standard.	Do.	238	Humble O. & R. Co.	Do.

¹ Being terminated.² In litigation.

Note: P=Extended, producing. T=Extended, terminated.

Key to length of extension

<i>Date of lease sale :</i>	<i>Lease numbers</i>
Louisiana, Aug. 11, 1959.....	686 to 689
Texas, Feb. 24, 1960.....	700 to 744
Louisiana, Feb. 24, 1960.....	750 to 845
Louisiana, Mar. 13, 1962.....	898 to 1108
Louisiana, Mar. 16, 1962.....	1120 to 1312
Louisiana, Oct. 9, 1962.....	1329 and 1330
Louisiana, Mar. 20, 1966.....	1437
Louisiana, Oct. 18, 1966.....	1470 to 1493
Louisiana, June 13, 1967.....	1512 to 1665
Texas, May 21, 1968.....	1712 to 1851
Louisiana, Nov. 19, 1968.....	1865
Louisiana, Jan. 14, 1969.....	1900
California, Feb. 6, 1968.....	168 to 238

Mr. YATES. But there have been many extensions, haven't there?

Mr. McKELVEY. Yes; mostly because of discoveries.

Mr. YATES. You mean of actual drilling?

Mr. McKELVEY. Yes; I can give you certain minimum figures on that for, I think, the last 10 years. During the last 10 years there were 782 leases issued. I say the last 10 years, up until the end of 1972, 420 of those were issued in the first 5 years, and if they did not have a discovery they would have been terminated unless they were drilling at the end of the initial 5-year term. Eighty-seven of those are still producing. So their term would have been extended because of a commercial discovery.

SALE AND OPERATIONS OF INDIVIDUAL OCS TRACTS

Mr. YATES. When you make a sale or a lease sale of a certain number of acres, you sell those acres as a group, don't you?

Mr. HASTEY. There are 5,000 acres in a tract.

Mr. YATES. Suppose they drill one of those 5,000 acres. Do they qualify then for an extension.

Mr. HASTEY. Yes, sir, but only for that 5,000-acre tract on which drilling took place.

Mr. YATES. So then the other hundreds or thousands of tracts can go undrilled and they could qualify for an extension, couldn't they?

Mr. HASTEY. No; if they drilled one hole on this 5,000 acre tract, only the acres in the tract would qualify for an extension.

Mr. YATES. The rest of it doesn't have to be developed then?

Mr. HASTEY. Within the 5,000 acres?

Mr. EDWARDS. Within the same tract or others?

Mr. YATES. Within the same tract.

Mr. EDWARDS. No; but it doesn't make much sense for them to only drill one hole. If they make a discovery, they obviously want to go into production on the rest of it. If they don't make a discovery, their lease terminates at the end of 5 years.

Mr. YATES. Why does it terminate if, in fact, they have drilled? I was under the impression you said they could get an extension if they drill.

Mr. EDWARDS. If they haven't made a discovery up to the anniversary time of the lease but they are actually drilling, they can get an extension. If they drill and make a discovery and are producing, then the primary term of the lease is extended to the period of time that they are producing.

Mr. EVANS. If they have drilled a dry hole and they don't want to drill anymore at the end of 5 years, the lease lapses?

Mr. EDWARDS. That is right.

Mr. HASTLEY. There are only 5.6 million acres currently under lease, so we have almost 4 million acres that have been leased and have since expired either through dry holes or nondrilling.

IMPACT OF 10-MILLION ACRE OBJECTIVE ON REVENUES

Mr. EVANS. I would think you want to be concerned about the effect on the bids. If you put up 10 million acres for lease under 1 year, what effect will that have on the ability of companies to bid and on total revenues returned to the Federal Government? Obviously if they have to spread themselves thin, it's going to reduce the bids. So your bids are going to be just minimal. If this was your land, wouldn't you be a little more careful about how fast you offered lands for lease in relation to the capital the companies have?

Mr. HASTLEY. At the same time we go through an intensive evaluation of the tracts to evaluate what we feel is a minimum value or a fair market value of that tract. If a company bids less than that, then these bids are subject to rejection.

Mr. EVANS. How much confidence do you have in your evaluation? I am not trying to embarrass anybody. How much confidence do you have in the evaluation of these tracts that have never been drilled?

Mr. HASTLEY. It varies considerably, depending on the amount of control and data the Geological Survey has in terms of well location and whether we are moving into a frontier wildcat area.

Mr. EVANS. But these fellows in G.S. have never been given enough resources to find out what's there, have they?

Mr. HASTLEY. That is right. The private companies will invest their funds in order to explore some of these wildcat areas for the development of oil and gas. But they are taking a risk too. Much of the data they have is not all that good.

Mr. EVANS. What can you tell this committee to give us assurance that, if you can prepare and offer enough acreage to lease 10 million acres in the next calendar year, you can protect the American interests in this property? There is a shortage of drilling rigs. There is a shortage of capital. We don't know much about what is under the Outer Continental Shelf and what the resources really are. It's wildcatting. What in the leasing system do we have that says to you that we will protect the American public's interest in those lands?

Mr. HASTLEY. I can assure you we will take all the necessary steps to protect the environment and receive fair market value for the resource. If we find that the bids are falling off, that the rigs are not available and that the companies that are in the business cannot handle the sales, we will have to readjust.

Mrs. HANSEN. You don't have to offer bids.

Mr. HASTLEY. If the companies' ability to develop these tracts is not there, then we will have to cancel some of our sale plans.

Mr. EVANS. That is what I am getting at, the policy question. Are you under orders to lease? Or is this a target that you are supposed to shoot for within bounds of good management practices and good judgment? If the bid prices go down and you feel that they are too low, do you have the capacity to say, "We are just not going to lease 10 million acres"?

Mr. HASTEY. I think we have the obligation to recommend to the Secretary of Interior, that we don't feel we should move any more sales. We are not under direct orders. An objective has been set to lease 10 million acres. I think if we find through analysis and further sale offerings that this is not a realistic objective, then it's our responsibility to recommend to the Secretary of Interior or to go back to the President and say this goal is too high. We might also find it's too low but I don't think so. I think it would be our responsibility to keep them apprised of the facts.

Mrs. HANSEN. What is the total number of acres of offshore land available for leasing?

Mr. HASTEY. There are about 1.4 billion acres total on the Outer Continental Shelf. This is the entire shelf. As to what is its potential, that is a big unknown in terms of where the oil and gas reserves are located.

OIL DEMAND AND SUPPLY

Mrs. HANSEN. When will the Trans-Alaska pipeline begin to deliver oil?

Mr. HASTEY. In mid- to late 1977.

Mrs. HANSEN. What percentage of the daily use or the yearly use will Trans-Alaska pipeline fulfill of the total oil needs of the United States?

Mr. HASTEY. I think our present consumption is roughly 17 million barrels a day. The Alaska pipeline at full production would be about 2 million barrels a day but this is not expected to occur until the 1980's at which time our consumption will have increased.

Mrs. HANSEN. How much oil are we producing currently onshore that will be in production in 1977?

Mr. HASTEY. In onshore production, are you talking about just Federal lands or all lands.

Mrs. HANSEN. I am talking about total production in the United States.

Mr. HASTEY. On just the Federal lands?

Mrs. HANSEN. How much oil are we importing from Canada?

Mr. VETTERICK. We estimate we will be importing about 2.3 billion barrels of oil by 1975 with a domestic production of about 4 billion barrels of oil per year.

Mrs. HANSEN. From what countries are we importing the remainder of our oil needs?

Mr. VETTERICK. The difference, or the supplemental import supplies to meet the total supply would be about 2.3 billion barrels. These are annual figures.

Mrs. HANSEN. What is the annual amount that we have to import from other nations?

Mr. VETTERICK. By 1975, about 2.3 billion barrels per year. I think our current imports run pretty close to that, about one and a half to two billion barrels a year.

Mrs. HANSEN. Are you considering what the escalation of use may be?

Mr. VETTERICK. That is figured in the 1975 projection.

Mrs. HANSEN. So that you have to obtain the oil that the Trans-Alaska Pipeline will be producing in the future from some other nation?

Mr. VETTERICK. That is correct. The North Slope will be producing about one and a half billion barrels, by 1980.

Mrs. HANSEN. We will still be short of our annual oil needs.

Mr. VETTERICK. That is right.

Mrs. HANSEN. Much of our oil imports come from Venezuela, and the Arab countries. So the fulfillment of our energy needs are contingent on peace in the Near East. Isn't that correct?

Mr. VETTERICK. That is correct.

Mrs. HANSEN. It's kind of a fragile survival.

Mr. VETTERICK. The largest import supplier is Canada.

Mrs. HANSEN. What are we producing offshore per year?

Mr. VETTERICK. About 400 million barrels of oil a year.

Mrs. HANSEN. Do you have any outlook that with increased production we could begin to fill our oil gap?

Mr. HASTEY. This is what we are attempting to do by offering the additional acreage on the Outer Continental Shelf. But it's going to take some time because many of these tracts are in deep water and there will have to be pipelines developed for transportation to the refineries.

Mrs. HANSEN. Even with maximum leasing you have the problems of production and pipelines.

Mr. HASTEY. Yes, Ma'am.

Mrs. HANSEN. It could be 10 years before you reach any kind of a maximum on Outer Continental Shelf production.

Mr. HASTEY. Yes, Ma'am.

Mrs. HANSEN. The reason I have asked these questions is because I see the average person has returned to driving 70 miles an hour. They seem to be paying no attention to any of the warnings about long term energy shortfalls.

Mr. EVANS. Madam Chairman, this great pressure to produce energy resources puts great pressure on the Department of Interior to offer the land for bids and get it leased. I understand these pressures.

What I am also concerned about is the husbanding or the sensible management of this land as we go along.

Mrs. HANSEN. I am interested in the average American consumer saving energy.

REJECTIONS OF OCS BIDS

Mr. EVANS. They have to make some effective energy conservation efforts. Turing back to this leasing, do you ever reject bids?

Mr. HASTEY. Yes, sir.

Mr. EVANS. What percentage of the bids that you receive do you reject?

Mr. HASTEY. In the last sale we had 245 tracts and 123 were bid on. We rejected 21 of them. We rejected about 20 percent of the bids received.

Mr. EVANS. What happened to those rejected bids?

Mr. HASTEY. They were just rejected. We are planning to reoffer these in July.

Mr. EVANS. They can't appeal your rejections, can they?

Mr. HASTEY. Yes they can. We understand there are two tract rejections of our March sale that are being appealed.

Mr. EVANS. What is the history of those bids that you reject and are appealed? To whom do they appeal?

Mr. EDWARDS. In the past up to the last two sales the appeals have gone to the Interior Board of Land Appeals. To my knowledge, we haven't been reversed on a rejection. On the last two sales, the Secretary made the rejections as the final order of the Department. So their only route of appeal now is through the courts. Although we have not seen the papers filed, we understand that there are two companies which are planning to file litigation on two bids that we rejected.

Mr. EVANS. I know you don't have the figures here now, but could you supply for the record how many bids you have rejected over the last 10 years? How many of those rejected bids have been appealed? and what the fate has been of those appeals?

Mr. HASTEY. Yes, sir.

[The information follows:]

OCS bids rejected, appealed, and rejection reversed for period beginning April 28, 1964, to date June 12, 1974: Bids on 149 tracts rejected; 68 rejections appealed;¹ 43 rejections upheld in court; 3 rejections were reversed in court; 22 appeals still pending.

Mr. EVANS. Thank you, Madam Chairman.

Mrs. HANSEN. Mr. Yates?

CAPABILITY OF INDUSTRY TO DEVELOP OCS LEASES

Mr. YATES. I want to point out my interrogation of Mr. Berklund at the hearing last year. At page 1020 of volume 4, I asked Mr. Berklund about the availability of drilling equipment. I said:

At that time, how many drilling rigs will be needed in order to bring the leases in? How many leases are pending and still waiting for drilling rigs?

Mr. BERKLUND. I don't have the figure with me.

Mrs. HANSEN. Insert the information in the record.

Whereupon the BLM said this for the record:

It's difficult to get clear indications from industry as to the number of OCS leases not being developed because drilling rigs are not available. To the extent that such a problem exists, it's exploratory drilling that is being delayed. We estimate that exploratory drilling on approximately 35 to 50 leases may be being held up because of a lack of mobile drilling rigs out of a total of 277 unexplored leases.

Are there only 277 unexplored leases on the OCS?

Mr. VETTERICK. That is probably correct. If you look at our lease figures, as of the end of last calendar year, we had about 1,258 leases in force, in effect. Of those, about 716 were active leases. More than half of those leases are active and into development and production. So there probably is somewhere in the neighborhood of 277 leases that that awaiting some form of exploration activity by industry.

Mr. HASTEY. These were probably leases issued just in the last 1 or 2 years.

Mr. YATES. Turn to page 1028 where Mr. Evans asked Mr. Berklund the question:

Are you going to be able on a reasonable basis to put together 10 million acres of leased lands for 1975?

Mr. BERKLUND. It relates to calendar year 1975. That is our goal, to lease 10 million acres in calendar 1975. In order to lease 10 million acres, we think we will have to offer between 14 and 18 million acres.

¹ Two additional rejections from March 1974 sale are about to be appealed.

Mr. VETTERICK. That is correct.

Mr. YATES. Mr. Berklund continues:

The question has been raised as to whether the goal can be achieved. We feel it's definitely our obligation, if we are going to meet the energy needs of the Nation, to make the lands available for exploration. If the steel, the drilling rigs and capital are not available, industry will not be able to acquire the 10 million acres.

That is not true?

Mr. VETTERICK. They will not bid on them if they do not have the capability to develop them.

Mr. YATES. If they do not have the rigs, they are not going to bid.

Mr. VETTERICK. Then the sales will go no bid and they will not be leased anyway.

Mr. YATES. Won't they take a chance on bidding and try to get the rigs over 5 years?

Mr. VETTERICK. I am sure that industry will take some risk and make some assumptions that they will be able to get the rigs. I think what Mr. Berklund was saying is that we will offer it. It's not within our power to lease it. The companies have to submit a reasonable bid and, in so doing, we have to take the assumption that, when they float that kind of capital in a bonus bid, they are prepared to go ahead and to develop that lease within the 5-year primary term.

CRITICISMS OF COAL LEASING PROGRAM

Mr. YATES. May I turn your attention to the coal leasing program. I don't know whether you have read the report put out by the Council on Economic Priorities on the Study of the Public and Indian Coal-Leasing Lands.

Mr. HASTEY. I have not read it. I have seen a copy.

Mr. YATES. I read from it:

C&P found, because of weakness in the original leasing and mismanagement on the part of Interior, the public coal leasing program for the last 54 years has not operated in the public interest, it has failed to encourage resource development, failed to provide fair market value to the public and to the Indian treasuries, and saddled the Nation with a huge block of leased, but unmined coal that may well frustrate energy resources planning for decades to come.

What comment would you make on that?

Mr. HASTEY. That is a tough one.

Mr. YATES. I don't know that it's your fault. I think it may be the fault of some of your predecessors, but the point is correct, isn't it?

Mr. HASTEY. It's correct. I can't argue that it's not. This is why we have proposed changes in the 1920 Mineral Leasing Act, to bring about more diligent development of coal and also to restrict offerings to competitive leasing.

As you know, the act under which these leases were issued was written in 1920. The leases we have are many years old and they do not have diligent clauses in them.

Mrs. HANSEN. Do you want diligent development of coal in the West? I am not so sure we want to tear up our western lands.

Mr. YATES. That is right. Then why lease them? That is the point. Don't put them in the hands of new owners who just own them and don't operate them.

REVISED COAL LEASING PRACTICES

Mr. EDWARDS. Could I point out one thing? Since 1971 we have only issued five coal leases of federally-owned coal that is under administration of the Bureau of Land Management. Those five did contain some diligent development requirements for those particular leases.

However, most of those leases were adjacent to or involved in an ongoing mining operation at the present time. So they would be coming into development quickly anyway. At least for the last 3 years we have not issued any more coal leases than that.

Mr. YATES. That is because you have a moratorium.

Mr. EDWARDS. Essentially it's a moratorium. It's undeclared, but essentially it is.

Mr. YATES. I am told the moratorium is coming to an end and the Secretary is contemplating engaging in new coal leases. Is that correct?

Mr. EDWARDS. The Secretary has under consideration policy changes that would be needed in coal leasing. We are in the process of preparing an environmental impact statement on the coal leasing program which will be reviewed prior to the time that the Secretary is going to make any decision on this. Too, we are trying to develop a program to determine which is the best place to lease coal where the land can be reclaimed, that can do a minimum amount of harm or impact on the environment. We are trying to determine a system of time, size and location of where coal should be leased to meet the energy requirements of the region and of the Nation as a whole.

We are looking toward a departmental or Government controlled type of leasing operation rather than leasing over the counter as the public comes in and requests it.

The decisions on this have not been made final by the Secretary. We are simply exploring options or the various ways we have in order to make recommendations to the Secretary for changes at this time.

GAO REPORT ON COAL LEASES

Mr. YATES. Well, rather than reading to you further from this Council of Economic Priorities report I will read to you from the report of the Comptroller General of March 29, 1972, with which I am sure you are familiar, in which it is pointed out that there has been relatively little mining of Federal coal deposits and they apparently have no plans to begin coal mining operations. That is correct, isn't it?

Mr. HASTEY. That is correct.

Mr. YATES. The conclusion and recommendation of the GAO is this: We recommend that the Secretary of Interior consider discontinuing the practices of issuing leases for Federal lands that permit lessees to defer mining operation on the lands and permit leases if there is mining on the lands within 1 year unless the lessees can justify that the mining be suspended. I am concerned that the Secretary won't continue to engage in the same kind of practices that have resulted in what I think is a scandalous program over the years and the fact that leases have been engaged in which are turning over control the lands of the West into the control of companies that are not going to develop them, but are merely engaged in speculative practices; isn't that correct?

Mr. EDWARDS. I think the Secretary most assuredly is not going to continue as was in the past. I think that is borne out in the statement

he made in February of 1973 where he said, we will not issue any new coal leases except those required to meet the needs of existing ongoing mining operations or where there was a reserve needed in the short term. That is the basis on which we have issued these five coal leases.

I think the policy announced at that time was a clear indication that the Secretary had no intention of continuing past practices in the future and that he was considering changes in our leasing policy entirely.

LONGEVITY OF COAL LEASES

Mr. YATES. One other point is made in the study by the Council on Economic Priorities. I guess you can tell whether it is true. They make the contention that coal leases are forever, that there is no way of canceling coal leases; is that correct?

Mr. EDWARDS. Yes; that is essentially correct.

Mr. ZIMMERMAN. The statute provides that coal leases are for indefinite periods but they are contingent upon diligent development and continuous operations. Now the issue is that there has never been a challenge as to what constitutes diligent development and continuous operation. It is a thing that the Department is presently addressing itself to.

I suggest that the existing leases are going to carry much more specific requirements as they come up for their 20-year renewal periods. When these leases do come up for the renewal periods, then there will be provision put into these leases for the production or advance rentals which is one thing that we are now putting into leases, which says if you don't produce, you have to pay royalties as though you were in full production.

Mr. EVANS. Would you submit for the record the number of acres per year under the coal leasing program that are coming up to the end of their 20-year period so that we would have some means of knowing where we stand?

Mr. EDWARDS. Yes, Congressman. We will insert that in the record. [The information follows:]

REVIEW DATES FOR OUTSTANDING COAL LEASES ON FEDERAL LANDS

Year	Number of leases	Total acres
1974.....	5	1,981.75
1975.....	8	6,935.40
1976.....	12	15,168.34
1977.....	13	11,404.48
1978.....	24	23,057.53
1979.....	11	13,362.54
1980.....	13	7,767.74
1981.....	46	60,056.01
1982.....	40	49,926.88
1983.....	29	41,067.51
1984.....	34	35,118.17
1985.....	63	101,833.54
1986.....	37	62,510.82
1987.....	77	173,895.36
1988.....	39	69,288.65
1989.....	16	24,238.40
1990.....	25	32,963.70
1991.....	18	33,633.44
1992.....	8	6,682.17
1993.....	13	10,858.48
1994.....	2	3,670.24
Total.....	533	785,421.15

CONCENTRATION OF COAL LEASEHOLDERS

Mr. YATES. The assertion is made that there is a great concentration of leases among corporation. The top 15 of 144 leaseholders control 70 percent of all the land under lease. Five oil companies—Continental, Shell, Sun Oil, Gulf and Arco—are among the top 15. These major leaseholders include seven of the 15 largest coal producers in the country, and three electric utilities.

Would you know whether that is correct?

Mr. ZIMMERMAN. These figures don't quite agree with the most current figures we have. We are not sure when the Council compiled their figures. We suggest that maybe they compiled them some time ago.

Mr. YATES. What are your figures?

Mr. ZIMMERMAN. I don't have them available. With respect to the breakdown of the 534 leases we have outstanding, we can identify individual leases by the company that presently holds those leases.

Mr. HASTEY. I imagine some of that data was received from the Bureau some years back. We have updated some of that data.

Mr. EVANS. If you will yield, if your lessees sublet their leases they must inform you, isn't that correct?

Mr. HASTEY. Yes.

Mr. EVANS. So you have current information on who the lessees or sublessees are?

Mr. HASTEY. That is correct.

Mr. YATES. Can you object to the sale of leases from your lessee to a sublessee?

Mr. EDWARDS. Yes, but only on the basis of the qualifications of the receiver of the lease, whether he qualifies under the act.

Mr. YATES. Could you object to it on the grounds that such a transfer would be monopolistic?

Mr. EDWARDS. To the extent that they exceed 46,080 acres.

Mr. YATES. Only to that extent? Is that what you propose to limit the anti-monopoly limitation to in the statute?

Mr. EDWARDS. The acreage restriction would be one. The section the Secretary has concerning monopoly and fair pricing would be another. But as Mr. Zimmerman pointed out, that has never really been invoked.

Mr. YATES. I don't think any of these have been invoked, have they, even the diligent exploitation provision "Leases shall be for indeterminate times depending on the diligent operation of the mines." That has never been invoked?

Mr. EDWARDS. That is correct.

Mr. YATES. You have scores of leases where the lessees have not turned over the shovel, have they?

Mr. EDWARDS. That is correct.

Mr. YATES. They are just holding the leases and waiting for the day when they can make a killing on it.

Mrs. HANSEN. Thank you, Mr. Hastey for an informative hearing.

Mr. HASTEY. Thank you.

TUESDAY, JUNE 11, 1974.

GEOLOGICAL SURVEY

ENERGY PROGRAMS

WITNESSES

VINCENT E. McKELVEY, DIRECTOR

HENRY W. COULTER, ASSISTANT DIRECTOR, ENVIRONMENTAL
CONSERVATION

RUSSELL G. WAYLAND, CHIEF, CONSERVATION DIVISION

JACK J. STASSI, BUDGET OFFICER

EDWARD L. HASTEY, ASSISTANT DIRECTOR, ADMINISTRATION,
BUREAU OF LAND MANAGEMENT

Mrs. HANSEN. We have now the Geological Survey.

Our principal witness is Dr. Vincent E. McKelvey, the Director.
We will insert the item from House Document 93-307 and the justifi-
cations in the record at this point.

[The information follows:]

DEPARTMENT OF THE INTERIOR

Budget appendix page	Heading	1975 budget request	Amendments, previously proposed (H. Doc. 93-209 and H. Doc. 93-286)	Proposed amendments	Revised request
561	Surveys, investigations, and research..... This proposed amendment is to provide support for accelerated leasing of the Outer Continental Shelf, including determination of tract values before lease sales and post-lease supervision, on-shore energy activity, environmental impact statement preparation, geothermal resource evaluation, oil shale evaluation and lease management, and Arctic research for utility corridor planning. These activities all support programs to accelerate development of domestic energy resources.	205,571,000	27,925,000	15,205,000	248,701,000

GEOLOGICAL SURVEY

H. Doc. 93-307 page	Heading	Request pending	Proposed amendment	Revised request
2	Surveys, investigations, and research.....	\$233,496,000	\$15,205,000	\$248,701,000

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
SURVEYS, INVESTIGATIONS, AND RESEARCH

Program and Financing (in thousands of dollars)

Identification code	19 75 Actual	19 75 Estimated	19 75 Estimated
10-28-0804-0-1-409			
	<u>Request Pending</u>	<u>Proposed Amendment</u>	<u>Revised Request</u>
Program by activities:			
Direct program			
1. Special resource and environmental projects -----	11,358	3,805	15,163
7. Conservation of lands and minerals -----	22,628	11,400	34,028
All other activities -----	199,515	---	199,515
Total, direct program ---	233,501	15,205	248,706
Total reimbursable program -----	54,683	---	54,683
10 Total program costs, funded, obligations -----	288,184	15,205	303,389
Financing:			
Receipts and reimbursements from:			
11 Federal funds (-) -----	-17,198	---	-17,198
14 Non-Federal sources (-) -----	-37,485	---	-37,485
17 Recovery of prior year obligations (-) -----	-5	---	-5
21 Unobligated balance available, start of year (-) -----	-400	---	-400
24 Unobligated balance available, end of year -----	400	---	400
Budget authority -----	233,496	15,205	248,701

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
SURVEYS, INVESTIGATIONS, AND RESEARCH

FINANCING AND OUTLAYS (in thousands of dollars)

Identification code	19 75 19 74	19 75 19 74	19 75 19 74
10-28-0804-0-1-409			
	<u>Request Pending</u>	<u>Proposed Amendment</u>	<u>Revised Request</u>
Budget authority:			
40 Appropriation -----	233,496	15,205	248,701
Relation of obligations to outlays:			
71 Obligations incurred, net -----	233,496	15,205	248,701
72 Obligated balance, start of year	-26,525	---	26,525
74 Obligated balance, end of year (-)	-31,873	-2,905	-34,778
90 Outlays -----	228,148	12,300	240,448

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
SURVEYS, INVESTIGATIONS, AND RESEARCH
DIRECT PROGRAM

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code 10-28-0804-0-1-409	1975 actual Request Pending	1975 estimate Proposed Amendment	1975 estimate Revised Request
Personnel compensation:			
11.1 Permanent positions.....	106,347	4,059	110,406
11.3 Positions other than permanent.....	6,903	—	6,903
11.5 Other personnel compensation.....	1,365	—	1,365
11.8 Special personal services payments.....			
Total personnel compensation.....	114,615	4,059	118,674
Personnel benefits:			
12.1 Civilian.....	11,727	661	12,388
13.0 Benefits for former personnel.....	7	—	7
21.0 Travel and transportation of persons.....	6,252	397	6,649
22.0 Transportation of things.....	2,562	24	2,586
23.0 Rent, communications, and utilities.....	26,554	401	26,955
24.0 Printing and reproduction.....	2,707	285	2,992
25.0 Other services.....	48,670	9,126	57,796
26.0 Supplies and materials.....	8,900	98	8,998
31.0 Equipment.....	10,380	154	10,534
32.0 Lands and structures.....			
33.0 Investments and loans.....	5	—	5
41.0 Grants, subsidies, and contributions.....	1,100	—	1,100
42.0 Insurance claims and indemnities.....	25	—	25
43.0 Interest and dividends.....			
44.0 Refunds.....			
95.0 Quarters and subsistence charges.....	-3	—	-3
99.0 Total obligations.....	233,501	15,205	248,706

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
SURVEYS, INVESTIGATIONS AND RESEARCH

PERSONNEL SUMMARY

Identification code 10-28-0804-0-1-409	1975 Request	1975 Proposed Amendment	1975 Revised Request
<u>Direct Program</u>			
Total number of permanent positions	6,504	287	6,791
Full-time equivalent of other positions	777	---	777
Average paid employment -----	7,276	287	7,563
Average GS grade -----	9.6	9.9	9.6
Average GS salary -----	\$16,668	\$14,523	\$16,578
Average salary of ungraded positions	\$13,074	---	\$13,074

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSOLIDATED SCHEDULE OF PERMANENT POSITIONS PAID
FROM FUNDS AVAILABLE TO THE GEOLOGICAL SURVEY

DETAIL OF PERMANENT POSITIONS

	19 75 actual	19 75 estimated	19 75 estimated
GRADE	<u>Request Pending</u>	<u>Proposed Amendment</u>	<u>Revised Request</u>
Executive level V -----	1	--	1
GS-18 -----	6	--	6
GS-17 -----	13	--	13
GS-16 -----	52	--	52
GS-15 -----	341	2	343
GS-14 -----	512	5	517
GS-13 -----	869	37	906
GS-12 -----	1,078	72	1,150
GS-11 -----	1,356	57	1,413
GS-10 -----	133	2	135
GS-9 -----	1,098	38	1,136
GS-8 -----	207	1	208
GS-7 -----	677	24	701
GS-6 -----	425	17	442
GS-5 -----	735	12	747
GS-4 -----	477	16	493
GS-3 -----	216	4	220
GS-2 -----	59	--	59
GS-1 -----	8	--	8

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSOLIDATED SCHEDULE OF PERMANENT POSITIONS PAID
FROM FUNDS AVAILABLE TO THE GEOLOGICAL SURVEY

DETAIL OF PERMANENT POSITIONS

	19 75 actual	19 75 estimate	19 75 estimate
	<u>Request Pending</u>	<u>Proposed Amendment</u>	<u>Revised Request</u>
Grades established by the Administrator, Agency for International Development: (75 Stat. 450)			
FC-13, \$32,680 to \$36,000 -----	1	--	1
FC-12, \$28,380 to \$36,000 -----	5	--	5
FC-11, \$24,122 to \$31,820 -----	14	--	14
FC-10, \$20,677 to \$26,878 -----	14	--	14
FC-9, \$17,559 to \$22,744 -----	3	--	3
FC-8, \$14,787 to \$19,039 -----	4	--	4
FC-6, \$12,257 to \$15,741 -----	3	--	3
FC-3, \$8,954 to \$11,645 -----	1	--	1
Ungraded -----	498	--	498
Total permanent positions -----	8,806	287	9,093
Unfilled positions, June 30 -----	-5	--	-5
Total permanent employment, end of year	8,801	287	9,088

1. Special Resource and Environmental Projects

FY 1975 request pending, \$11,358,000; revised request, \$15,163,000; proposed amendment, \$3,805,000. The increase consists of:

	<u>Increase (+) or Decrease (-)</u>		<u>Total Program</u>	<u>Total Positions</u>	<u>Explanation</u>
	<u>Amount</u>	<u>Positions</u>			
(1)	\$+805,000	+25	\$950,000	26	To evaluate and classify geothermal resources on Federal lands.
(2)	+2,600,000	+71	2,600,000	71	For energy impact evaluation
(3)	+400,000	+7	400,000	7	For geotechnical studies of energy related transportation corridors in Alaska.
	\$+3,805,000	+103			

Cost Factors Involved in the Increase

- (1) Personnel services and benefits costs for twenty-five (25) positions at an average rate of \$15,880, \$397,000; other related expenses, \$88,000; purchase of geophysical data for geothermal lease evaluation and computer rental, \$320,000
- (2) Personnel services and benefits costs for seventy-one (71) positions at an average rate of \$17,775, \$1,262,000; other related expenses \$801,000; and contractual services, \$537,000.
- (3) Personnel services and benefits costs for seven (7) positions at an average rate of \$18,571, \$130,000; other related costs, \$90,000; helicopter services, research and miscellaneous contracts, \$180,000.

Analysis by Subactivity

Subactivity	FY 1975 Request Pending	Revised Request	Proposed Amendment
(a) Urban Area Studies -----	\$1,027,000	\$1,027,000	\$ --
(b) Responsibilities Under the Mining and Minerals Policy Act of 1970 -----	267,000	267,000	--
(c) Geothermal Investigations -----	10,064,000	10,369,000	+805,000
(d) Energy Impact Evaluation -----	--	2,600,000	+2,600,000
(e) Arctic Environmental Studies -----	--	400,000	+400,000
TOTAL -----	11,358,000	15,163,000	+3,805,000

- (c) Geothermal Investigations: FY 1975 request pending, \$10,064,000; revised request, \$10,869,000; proposed amendment, \$805,000. The increase consists of:

<u>Increase (+) or Decrease (-)</u>		<u>Total</u>	<u>Total</u>	<u>Explanation</u>
<u>Amount</u>	<u>Positions</u>	<u>Program</u>	<u>Positions</u>	
\$+805,000	+25	\$950,000	26	To evaluate and classify geothermal resources on Federal lands
\$+805,000	+25			

Need for Amendment:

The timing for structuring the geothermal leasing and management programs authorized by the Geothermal Steam Act of 1970 was dependent upon completion of the analysis of its environmental consequences in compliance with NEPA. The decision for implementation was not made until December 1973. Until the first lease offerings in January of 1974 and receipt of the first non-competitive lease application in February 1974, there could not have been a reliable estimate of the size of the program or the area of interest. So not until after February 1974 were final programs and budget plans developed in response to the degree of interest exhibited for leasing.

The Survey program involves classification of public lands, establishment of Known Geothermal Resource Areas (KGRA's), recommendations for selection and evaluation of lease tracts and supervision of operations.

To help meet the objectives of Project Independence, the development of this supplemental energy resource is important. Private investment of several hundred million dollars toward the development of geothermal resources has been indicated.

The \$805,000 and 25 positions requested in this amendment will be used to support the resource evaluation and classification functions of the new Geothermal Program and is based on the following assumptions for FY 1975:

- (1) There will be successful sales resulting in the competitive leasing of 300,000 acres.
- (2) For FY 1974 and FY 1975 we project a total of 6,500 applications for non-competitive leases. Of these 6,500 applications we anticipate about 1,000 involving 2 million acres will be approved in FY 1975 as non-competitive leases.

In addition to the funds being requested in this budget amendment for classification and evaluation activities for geothermal development, funds and manpower will be needed for lease management activities. We are proposing that this requirement, totalling \$855,000, be met from funds previously requested in the fiscal year 1975 budget for geothermal investigations, which have been included in the "Special Energy Research and Development Appropriation Bill, 1975," passed by the House.

Program of Work:

The proposed amendment provides for:

- a. evaluation to determine the fair value of lease tracts to be offered in 15 lease sales in FY 1975 and the necessary advance work for leases scheduled to be sold early in FY 1976. The Bureau of Land Management projections indicate that of the 15 sales planned for FY 1975, five involving 100,000 acres will be in geologic KGRA's
- b. defining 1,000,000 acres as Known Geothermal Resource Areas (KGRA's) from geologic and engineering knowledge.
- c. refining, with geologic and other scientific data, 1,000,000 acres of KGRA's established by a showing of competitive interest.

The Bureau of Land Management also estimates that 3,500 non-competitive lease applications will be recorded in FY 1975. The Geological Survey must review each of these lease applications to determine if they conflict with defined or undefined KGRA's. From the 6,500 applications for non-competitive leases recorded in FY 1974 and FY 1975, about 1,000 non-competitive leases involving 2 million acres will be issued in FY 1975. Therefore, about 2.4 million acres may be under lease for management and supervision by the end of FY 1975, as compared to 50,000 to 60,000 acres in FY 1974.

Supervision of operations on the leases sold in FY 1974 and to be sold in FY 1975 will include the following work:

- a. analyzing, approving and monitoring the exploratory and development plans and activities of lessees;
- b. developing geothermal orders to systematize operations and procedures in areas with similar geologic character and operating problems;
- c. developing systems to manage data for reports which will be needed in various forms to satisfy Executive and Congressional requests; and
- d. developing monitoring systems for determining effect of operations on the environment. Close supervision will be required to safeguard against adverse environmental impact as there has been only limited experience in developing geothermal reservoirs.

- (d) Energy Impact Evaluation: FY 1975, request pending, \$0; revised request \$2,600,000; proposed amendment, \$2,600,000. The increase consists of:

<u>Increase (+) or Decrease (-)</u>		<u>Total</u>	<u>Total</u>	<u>Explanation</u>
<u>Amount</u>	<u>Positions</u>	<u>Program</u>	<u>Positions</u>	
(1) \$+2,600,000	+71	\$2,600,000	71	For energy impact evaluation - environmental impact statements

Need for Amendment

The energy crisis and the Administration's accelerated programs related to Project Independence are resulting in greatly increased exploration for and development of oil, gas, coal and uranium on Federal and Indian lands and the Outer Continental Shelf. Literally thousands of Federal and Indian leases for various minerals, oil, and gas were issued prior to or shortly after the enactment of NEPA without the preparation of environmental impact statements by the surface management agencies. Thus Survey approval of proposed mining plans, drilling permits and development plans constitute the first Federal actions on the leases subsequent to NEPA, and therefore NEPA responsibility rests with the Survey. For example, there are more than 700,000 acres of coal lands under lease, less than 9% of which are presently active. A similar, although somewhat less critical, situation exists for oil and gas leases.

Until now the environmental assessments and environmental impact statements required by NEPA have been funded by redirecting the efforts of Survey's professional staff. However, the additional assessments and statements generated by the energy crisis and now projected for FY 1975 cannot be accommodated on an ad hoc basis within the FY 1975 programs without serious impact on equally important energy-related work.

Program of Work

The Survey is receiving an increasing number of applications for onshore oil and gas exploration wells, geologic and geophysical exploration on the OCS, plans for development on OCS oil and gas leases, and requests for approval of lease exploration plans, new mining plans, or significant revisions to existing approved mining plans for coal, phosphate, and other leasable minerals. Although most Survey Environmental Impact Statements preparation in the foreseeable future will involve proposed onshore mining and oil and gas operations, some OCS operations may also require environmental impact statement actions by the Survey. It is necessary to assess the environmental impact of these proposals, obtain and evaluate input from other governmental agencies, and determine whether

each proposal constitutes a major Federal action significantly affecting the quality of the environment and thus requiring an environmental impact statement. In FY 1975 a principal concern is the planned submission of 25-30 separate and distinct coal mining and reclamation plans to Survey for approval. Most of these plans will be for totally new mine developments; the others will be major revisions of existing plans for ongoing mining operations that call for substantial increases in production and/or mine expansion.

In addition, a number of future mines are associated with, or are being developed specifically to supply mine-mouth electric generating plants and coal gasification plants. The Geological Survey will be partially involved in preparing environmental impact statements for these plants, as well as for related power transmission lines, water supplies, railroad lines and spurs, and pipelines for gas, oil, and water.

The requested funds will provide for the preparation of these required environmental impact statements and environmental analyses and will involve a diversity of Geological Survey disciplines plus marine biologists, terrestrial biologists, soils scientists, economists, ecologists, structural engineers, archeologists, and oceanographers. These latter services will be obtained from other Federal or State agencies or from outside consultants.

To date the Survey's NEPA responsibilities have been met by ad hoc task forces operating under very tight time constraints. The costs associated with such activities have been borne by existing funds and staff at the expense of established program elements and activities. Meeting NEPA requirements has infringed on our capability to accomplish other important legislated responsibilities involving mineral resources conservation and attendant environmental protection on public lands.

Conservation Division Projects Involving
(or expected to involve)
an EIS

A. Active 1974 CY

1. Ocala National Forest
2. Santa Ynez Unit
3. OCS G&G Regulations
4. Big Sky Mine
5. Eastern Powder River Basin Coal Resources and Railroads:
 - a. Carter (North Rawhide)
 - b. Kerr-McGee N.
 - c. Amax (Belle Ayre North)
 - d. Wyodak
 - e. Sun
 - f. Amax (Belle Ayre South)
 - g. ARCO (Black Thunder)
 - h. Kerr-McGee S.
 - i. Peabody
 - j. Pacific Power

6. Santa Barbara Channel Development

B. Pending 1974 CY

1. Star Lake - Peabody coal mining (N.M.)
2. Seneca No. 2 - Peabody coal mining (Colo.)
3. Western Energy Coal mining (Montana)(Billings lease no.) new area, old mine
4. Western Energy Coal mining (Montana)(Montana lease no.) new mine
5. International Minerals and Chemicals - Caribou National Forest (Phosphate Mining)

C. Potential 1974 CY

1. Ark Land Company coal mining project (Seminoe, Wyo.)
(extension onto 2 Federal Leases)
2. 30 CFR 211 Mining Regulations
3. Pacific Power Coal Mining (Montana) new mine
4. Decker Coal mining (Montana)(enlargement)
5. Decker Coal Mining (Montana)(new mine)
6. Energy Development coal mining (Wyo.)(extension onto Federal lease)
7. Ark Land Company coal mining (Wyo.)(Wyo. lease no.)
8. Ark Land Company coal mining (Wyo.)(Cheyenne lease no.)
9. Searles Lake (Mining)
10. Ark Land Company (Mining) Wyo. (extension onto Federal lease)
11. Ark Land Company (Mining) Wyo. (resume mining on lease previously mined)
12. North American (Mining) N. Dakota (extension of old mine)
13. Patagonia (Ariz.) Mining (copper)
14. Shell Oil - New Mine, Montana, N. of Sheridan (Crow Reservation)
(Probably not rec'd. in Cy-74)
15. Peabody, Gillette Wyo., North Lease near Carter
16. Energy Fuels - Colorado (D-052547, 081330, and Lease Applic. 0128433)
17. Shell Oil - Crow Reservation, Montana (Mining)

CONSERVATION DIVISION PROJECTS INVOLVING AID TO OTHER AGENCIES IN
PREPARING EIS

Active

OCS Sale #35 (California)	BLM	O&G
OCS SALE #36 (La. Deepwater)	BLM	O&G
OCS Sale #37 (South Texas)	BLM	O&G
OCS Sale #38 (E. Texas Deepwater)	BLM	O&G
Onshore Programmatic	BLM	O&G
Offshore Programmatic	BLM	O&G
Mining Programmatic	BLM	Mining
Los Padres	BLM	Mining
Yampa Project (Colo)	REA	Mining
Westmoreland (Sarpy Creek Mont.)	BIA	Mining
Hardrock Mining OCS	BLM	Mining
4 Corners Area (4 statements)	Bu. of Rec.	Mining
Cholla	USDA	Mining (Power)
Osceola	BLM	Mining
Crow India Programmatic	BIA	Mining
N. Cheyenne Res. Programmatic	BIA	Mining
Kaiporowitz	BLM	Mining (Power)
Surface Mine and Reclamation Act	BOM	Mining

- (e) Arctic Environmental Studies: FY 1975 request pending, \$0; revised request, \$400,000; proposed amendment, \$400,000. The increase consists of:

Increase (+) or Decrease (-)		Total Program	Total Positions	Explanation
Amount	Positions			
\$+400,000	+7	\$400,000	7	For geotechnical studies of energy related transportation corridors in Alaska.

Need for Amendment

The construction of the trans-Alaska pipeline, which is beginning in 1974, is the first large-scale construction undertaking of its kind in the Arctic. In anticipation of greatly accelerated future construction activities in the Arctic, such as pipelines, airfields, roads, and so on, and their inevitable environmental disruption, it is essential to learn as much as possible from the trans-Alaska pipeline experience. Many of the engineering geologic, seismologic, and hydrologic research investigations begun during the planning stages should be continued during the actual construction and operation phases so that opportunities to gather data made possible by the construction of the pipeline are not lost.

Fundamental to the deliberation on the trans-Alaska pipeline was the formulation of stipulations to minimize the environmental impact of this major construction project. It is important to see if the stipulations as formulated achieve the desired results as a guide to modification of stipulations in future construction activities and to assessment of environmental impact. Existing funds for the Survey's program related to the Alyeska Pipeline Service Company (formerly TAPS) proposal were authorized by Congress with the understanding that all costs would be reimbursable by the applicant. Thus these funds must be restricted to activities related to surveillance and monitoring to insure compliance with the stipulations. New non-reimbursable funding is necessary to conduct geologic, seismologic and hydrologic studies that will provide tests of the predictions upon which the stipulations are based under actual conditions.

Based on research directly related to the construction of the trans-Alaska pipeline, analogous studies must be undertaken for other energy related transportation corridors in Alaska. This work will provide the background information that will be necessary for evaluation of alternative routes for construction of additional pipelines and other major engineering undertakings.

Program of Work

The program is designed to obtain the maximum geologic and hydrologic data from the construction of the trans-Alaska pipeline, and to interpret and extend data and findings so that they might be used

in evaluating, planning, and constructing other utility corridors, pipelines or other facilities in the Arctic. The FY 1975 program will include:

1. Study of critical areas and special problems such as effect of permafrost, landslides, and other geologic and hydrologic hazards.
2. Hydrologic and related biologic surveys and investigations.
3. Seismologic surveys and analysis in zones of high seismicity.
4. Research and application of remote-sensing techniques including ERTS.
5. Compilation and analysis of available Alaskan data on geology, hydrology, and seismology of potential energy-related transportation corridors.
6. Reconnaissance surficial and engineering geologic mapping at a scale of 1:125,000.
7. Acquisition of geologic and hydrologic base-line data for environmental impact assessment.
8. Publication of maps and reports and establishment of data files resulting from these investigations.

7. Conservation of Lands and Minerals

FY 1975 request pending \$22,628,000; FY 1975 revised request \$34,028,000; proposed amendment, \$11,400,000. The increase consists of:

	<u>Increase (+) or Decrease (-)</u>		<u>Total Program</u>	<u>Total Positions</u>	<u>Explanation</u>
	<u>Amount</u>	<u>Positions</u>			
(1)	\$+2,050,000	+30	\$10,191,000	293	To meet increased regulatory and inspection requirements of the Department's 10 million acre per year leasing schedule.
(2)	+8,700,000	+140	12,980,000	216	To meet energy resource evaluation requirements of the Department's 10 million acre per year leasing schedule.
(3)	+360,000	+9	360,000	9	To regulate development on experimental oil shale leases on Federal lands.
(4)	+290,000	+5	290,000	5	To evaluate and classify oil shale resources of Federal lands.
	<u>\$+11,400,000</u>	<u>+184</u>			

Cost Factors Involved in the Increase

- (1) Personnel services and benefits costs for thirty (30) positions at an average rate of \$14,495, \$434,850; other related expenses, \$225,150; helicopter services and communication systems for dispatch of inspector personnel and monitoring in-flight progress for purpose of safety of personnel, \$1,390,000.
- (2) Personnel services and benefits costs for one hundred-forty (140) positions at an average rate of \$14,495, \$2,029,300; other related expenses, \$1,050,700; purchase of geophysical data and related contractual expenses, \$5,620,000.
- (3) Personnel services and benefits costs for nine (9) positions at an average rate of \$14,700, \$132,300; other related expenses, \$29,700; and contractual services of \$198,000.
- (4) Personnel services and benefits costs for five (5) positions at an average rate of \$14,700, \$73,500; other related expenses, \$113,500; and contractual services of \$103,000.

Analysis by Subactivity			
Subactivity	FY 1975 Request Pending	Revised Request	Proposed Amendment
<u>A. Mineral Lease Management:</u>			
(1) Outer Continental Shelf -----	\$8,141,000	\$10,191,000	\$+2,050,000
(2) Federal and Indian Lands -----	7,069,000	7,429,000	+360,000
<u>B. Resource Evaluation and Classification:</u>			
(1) Outer Continental Shelf -----	4,280,000	12,980,000	+8,700,000
(2) Federal and Indian Lands -----	3,138,000	3,428,000	+290,000
TOTAL -----	22,628,000	34,028,000	+11,400,000

Accelerated Outer Continental Shelf Leasing -- Increase \$+10,750,000Need for Amendment

The President's 1974 Energy Message calls for the leasing of 10 million acres of OCS lands in 1975 for oil and gas development. This is more than three times the area that was planned when the initial FY 1975 budget was prepared for submittal to Congress, five times more than leased in any prior year, and slightly more than the total acres leased during the 20-year history of OCS leasing. To meet the President's goal, previously untested, immediate exploration target areas of the OCS, most probably in the Atlantic, Southern California, Gulf of Mexico, and the Gulf of Alaska, must be offered for lease.

The Department of the Interior responsibility in the sale of leases on the OCS lies in providing for (1) an orderly and timely development of the lands, (2) a fair market value to the government, and (3) an environmentally-safe exploration and development. Equally important, the public must be assured that decisions on tracts to be offered, fair market values, and safety are based on adequate information. Geologic, resource, and environmental information in these frontier areas is presently inadequate for this purpose.

Geological Survey responsibility in OCS leasing covers the full spectrum of activities from geological and geophysical evaluations in support of initial area selections to management and regulation of OCS exploration and development activities. Sequentially, these responsibilities are Area Selection, Tract Selection, Tract Evaluation, and Management and Regulation. Information gathered in each stage of these investigations will contribute materially to subsequent stages of investigation and analysis.

Program of Work:Lease Management -- Increase \$2,050,000

The increase from 3 to 10 million acres leased in calendar year 1975 will result in an approximate increase in FY 1975 of 5 million acres leased. This will approximately double the OCS acreage currently under lease (5.6 million acres) and will result in the need for lease management activities for an additional 900 to 1000 leases in the latter half of FY 1975. Although lease management (regulation) functions during FY 1975 will be largely confined to exploratory drilling from mobile rigs, the full impact on this function will be felt as discoveries are made and production is established, and will increase rapidly in succeeding years. The expanded program will permit the review of lessees' proposals to conduct exploratory drilling operations and adequate monitoring of exploratory operations for safety and pollution control. This is a major requirement in new areas, where operations initially need much more in-depth analysis, more care in execution, and more

frequent inspection than in proved areas where problems and trends have been identified and can be anticipated.

It is currently indicated that the expanded leasing program for FY 1975 will be confined to undeveloped Southern California and Gulf of Mexico areas. Three new field offices and the possible expansion of existing offices -- in addition to the proposed program at the 3 million acre leasing level providing for one new field office and the move of one existing office in the Gulf of Mexico area -- will be needed in FY 1975 in these areas to provide for the necessary regulation and inspection of increased drilling and initial development activities. The new areas to be leased will extend operations so far beyond the range of present inspection capability that the offices near new operations will be required. Communication and transportation systems must be established or extended to permit efficient utilization of helicopters and personnel.

Resource Evaluation -- Increase \$8,700,000

A program to lease 10 million acres in calendar year 1975 will also greatly increase the Tract Selection and Tract Evaluation workload in FY 1975 for those sales by FY 1975 and for preparation for the early FY 1976 sales.

This amendment provides for personnel and data required to assist BLM in the selection of tracts, to evaluate these tracts and to determine their "fair market value," and to identify and appraise in detail the geologic hazards to structures and operations. Approximately 80,000 line miles of Common Depth Point geophysical data purchased by contract will be interpreted for use in selection, evaluation, and determination of the value of tracts offered for sale. About 40,000 miles of high resolution seismic data will be acquired and interpreted for environmental impact analysis and identification of potential hazards to structures and operations.

Oil Shale Leasing -- Increase \$650,000

Need for Amendment

The proposed oil shale program initiated by legislation in October 1969 was not approved by the Secretary as an action program until November 28, 1973, after completion of all environmental requirements under NEPA. Also the size of the program and rate of development could not be determined until the initial lease offering, which took place in January 1974, and showed real industry interest.

The Survey's obligation is to be responsive to the development rates prescribed under the leases. Now that a serious industry effort is assuredly mounting toward large-scale oil shale development, prompt and proper staffing is an urgent need.

Bonus credits of over \$160 million to date with a potential of over \$200 million on all sales toward development are dependent on prompt Departmental response to industry requests for permits and approval on development plans. The need to expedite this development as part of the Project Independence is evident and requires immediate action to fulfill those goals.

The first oil shale lease was sold January 8, the second on February 12, and bids on the third were opened March 12. A total of six sales are scheduled in FY 1974. These first six prototype sales are aimed at developing a commercial scale technology. The Geological Survey's FY 1975 budget for conservation of land and minerals does not provide for supervision of activities during FY 1975 on leases sold in FY 1974. Nor does the budget provide for evaluating oil shale resource areas in proposed land and mineral exchanges now before the Department. This new oil shale resource workload cannot be undertaken within the requested FY 1975 budget without sacrificing equally important efforts in connection with the coal or oil and gas resource lease evaluation and management.

Program of Work:

Proposals by the new lessees for development activities on the first leases have been received with requests for prompt analysis and approval. Judging from sales to date and those planned before the end of FY 1974, activities on about 30,000 acres of oil shale leases will have to be supervised in FY 1975. Development of these initial leases is expected to include both surface and underground mining and possibly a test of in-situ extraction operations. Since these will be new development operations with major attendant problems, all industry plans must be rigorously analyzed by competent scientists and engineers to insure that only the best available technology and procedures are approved.

The oil shale regulations and lease form stipulations require the lessees (under the supervision of an Oil Shale Supervisor in the Conservation Division) to develop plans for environmental monitoring and to establish monitoring stations for surface and ground waters and air quality and to develop research plans for mining and reclamation, structures, roads, mining waste disposal, etc. Lease management during FY 1975 will include review of these plans, proposals for modification, field inspections, and other monitoring activities. Coordination with other Federal, State, and local interests in all exploration and development operations is a specific requirement of all levels and cannot be undertaken without adequate Survey staff.

INTRODUCTION OF WITNESSES

Mrs. HANSEN. Mr. McKelvey, you have a general statement.

Mr. McKELVEY. May I first introduce my associates here, Dr. Henry Coulter, our Assistant Director for Environmental Conservation and Dr. Russell Wayland, Chief of our Conservation Division, and Mr. Jack Stassi, our Budget Officer. We are glad to have Mr. Frank Wiles, the Department's Director of the Budget, with us.

STATEMENT OF DIRECTOR

Mrs. HANSEN. Mr. Wiles is a useful person to have present.

Mr. McKELVEY. I have a written statement, but if I may insert it in the record, I will just give a brief summary of it.

Mrs. HANSEN. Please do.

[The statement follows:]

Madam Chairman: I am here today to discuss a fiscal year 1975 budget amendment for \$15,205,000. This amendment, when added to our present budget request of \$233,496,000 that you are now considering, will increase the Geological Survey's budget proposal for fiscal year 1975 to \$248,701,000.

The proposed increases included in this budget amendment are all directly related to the Federal effort to resolve the energy problem now facing the Nation.

ACCELERATED LEASING OF THE OUTER CONTINENTAL SHELF

Two of the increases we are requesting relate to the leasing of 10 million acres of Federal land on the Outer Continental Shelf (OCS) for oil and gas development. These increases include \$2,050,000 for lease management activities and \$8,700,000 for lease tract selection and evaluation requirements.

The President in his January 1974 energy message called for the leasing of 10 million acres of OCS lands in calendar year 1975 for oil and gas development to help meet the increasing public demand for energy and to help resolve the energy problems now facing the Nation. This is more than three times the area that was planned to be leased when the initial fiscal year 1975 budget was prepared, five times more than leased in any prior year, and slightly more than the total acres leased during the 20-year history of OSC leasing.

These increases would assure, first, that the personnel and data required are available for tract selection, determination of tract values, and for identification and appraisal in detail of the geological hazards to drilling rigs, platforms, pipelines and other structures; second, that there will be adequate supervision and inspection of drilling and producing operations for safety and pollution control; and third, that the exploration and development of the OCS lands will be carried out in an environmentally safe fashion.

GEOTHERMAL AND OIL SHALE LEASE MANAGEMENT AND EVALUATION

Two increases are included in this amendment related to onshore activities for lease management and evaluation and classification; these are \$805,000 for geothermal resource development and \$650,000 for oil shale development. The increase for geothermal resource development includes only those funds needed for tract evaluation and for classification of geothermal resources on Federal lands. Funds needed for the lease management aspects, as proposed in this budget amendment, would be made available from geothermal research investigation funds included in the fiscal year 1975 budget request.

The Secretary of the Interior's decision to implement leasing of Federal lands for geothermal and oil shale development will require the Geological Survey to initiate a new program of lease management and resource evaluation, including designating more known geothermal resource areas (KGRA's), to insure that these resources are developed in an efficient and environmentally safe manner and in accordance with the act. For geothermal resource development the Survey programs will involve utilization of all research and exploratory results in establishing KGRA's, and evaluating tracts and supervising operations. Similarly, for oil shale development, because of the nature of the tech-

niques to be employed in the extraction processes, and the extensive environmental effects, careful attention to the planning and conduct of operations is required to assure that this resource is developed in accordance with the best interests of the American people.

ENERGY IMPACT EVALUATION

The next increase concerns a request for \$2,600,000 for the preparation of environmental assessments and impact statements for the accelerated energy program.

The energy problem and the accelerated energy programs being developed to resolve it are resulting in increased exploration and development of all energy resources on Federal and Indian lands as well as the OCS. This has placed an added burden on the Geological Survey to prepare environmental assessments and impact statements to determine the extent to which each proposal for exploration and development will affect the quality of the environment as well as the extent to which cumulative effects of regionalized operations will affect the environment. Until now, the necessary environmental assessments and impact statements have been accomplished by redirecting the efforts of Survey's professional staff. However, the additional assessments and statements generated by industry's response to the energy problem and now projected for fiscal year 1975 cannot be accomplished on an ad hoc basis within the fiscal year 1975 programs without severely impacting other equally important energy-related work.

ARCTIC ENVIRONMENTAL STUDIES

The next, and final increase we are requesting is for \$400,000 for Arctic environmental studies involving geotechnical studies of energy related transportation corridors in Alaska. The construction of the Trans-Alaska pipeline is the first large scale construction undertaking of its kind in the Arctic. In anticipation of accelerated future construction activities in the Arctic, and their inevitable environmental disruption, it is essential to learn as much as possible from the trans-Alaska pipeline experience. Based upon research directly related to the pipeline construction, we are proposing analogous studies for other energy related transportation corridors in Alaska. These studies will provide the background needed to evaluate alternative routes for construction of additional pipelines and other major engineering undertakings.

Madam Chairman, this concludes my statement. I will be glad to discuss any questions you may have regarding this budget amendment.

THE 1975 BUDGET AMENDMENT INCREASE

Mr. McKELVEY. We are requesting an additional \$15,205,000 in our fiscal 1975 budget as an amendment to the budget already before you. The increases that we propose are all related, really, to the Federal effort to resolve the energy problem with which the Nation is very much concerned. Two of the increases we are requesting relate to the leasing of 10 million acres of Federal land on the Outer Continental Shelf. They include about \$2 million for lease management activity and about \$8.7 million for lease tract selection and evaluation requirements.

Two other increases included in this amendment would support onshore activities for lease management evaluation and classification. These increases include one of \$805,000 for geothermal classification and evaluation and another of \$650,000 for oil shale evaluation and lease supervision. The increase for geothermal resource development includes only those funds needed for tract evaluation and for classification of geothermal resources on Federal lands. The funds needed for the geothermal lease management aspects as proposed in this budget amendment would be made available from geothermal resource

investigation funds included in the fiscal year 1975 budget request. We think they might be as much as \$855,000 in total.

Another increase is a request for \$2,600,000 for the preparation of environmental assessments and impact statements for the accelerated energy program. Until now the environmental assessments and impact statements necessary for lease operations under NEPA have been accomplished by redirecting the efforts of the survey's professional staff. But the additional assessments and statements generated by industry's response to the energy problem simply cannot be accomplished any longer on an ad hoc basis within the fiscal 1975 program without severely impacting other important activities.

The last increase we are requesting is \$400,000 for Arctic environmental studies involving geological engineering studies of related energy transportation corridors in Alaska.

ARCTIC ENVIRONMENTAL STUDIES

Mrs. HANSEN. Are funds included in the budget amendment relative to the gas proposals?

Mr. McKELVEY. No. It would relate eventually to that, but this is a study that would deal primarily with observation of the construction of the Alaska pipeline.

Mrs. HANSEN. Why didn't you include this request in your regular budget?

Mr. McKELVEY. Madam Chairman, for this particular item, we were simply not certain what the activities, with respect to the construction of the trans-Alaska pipeline, were going to be. What we are proposing here is really research of a kind that will have future application in the selection of pipeline corridors in Alaska.

PETROLEUM RESERVE NO. 4

Mrs. HANSEN. I discovered that the House Committee reform bill that was presented to the House, had Pet No. 4 under the jurisdiction of the Energy and Environment Committee. I have a suspicion that an attempt is being made to drain off this resource.

Mr. McKELVEY. I am not aware that there is a drainage problem yet at least, Madam Chairman. I understand there are some leases.

Mrs. HANSEN. But under the jurisdiction of another committee the Pet No. 4 reserve may not be maintained.

Mr. McKELVEY. The development of petroleum reserve No. 4 certainly is an option that the Government has, particularly as it might be used for the Department of Defense or for the Navy itself.

It would have the effect, if it were developed for that purpose, of course, of freeing supplies of oil from other purposes for public use.

Mrs. HANSEN. But under the proposed reform the Armed Services Committee would have no jurisdiction over Pet No. 4.

Mr. McKELVEY. Well, that certainly would be an option that the American people could consider. I have no knowledge, of course, as to how that might develop.

Mrs. HANSEN. It has been stated that the reserve would be drained off anyway when the Trans-Alaska pipeline is in operation.

Mr. McKELVEY. It certainly would not be drained off. No amount of adjacent development leases would be likely to empty it.

[Discussion off the record.]

Mr. McKELVEY. That essentially concludes my summary, Madam Chairman.

GEOHERMAL INVESTIGATIONS

Mrs. HANSEN. You are requesting an additional \$805,000 and 25 positions for geothermal investigations. What are the details of this request?

Mr. McKELVEY. The \$805,000 requested is for the purpose of classification and evaluation of lands that are being considered for geothermal leasing. An additional \$855,000, as I mentioned, would be reprogrammed from funds previously requested for R. & D. We are not sure how large that will be, but it will be reprogrammed from funds requested for R. & D. for the purpose of lease management.

But the increase here is primarily for evaluation activities centering on the establishment of Known Geothermal Resource Areas. As you heard from the Bureau of Land Management, there has been a very large number of applications for noncompetitive leases, about 4,500 in fiscal 1974 and 2,000 additional expected in fiscal 1975. Many of these are overlapping. Our job, then, is to determine what areas should be established as KGRA's for competitive bidding.

GEOHERMAL LEASE MANAGEMENT

Mrs. HANSEN. You state the \$855,000 will be used for lease management activities from funds provided in the energy appropriation bill. Since these funds were to be used for geothermal investigations, aren't you in fact requesting a reprogramming of money you have not received yet?

Mr. McKELVEY. That is right.

Mrs. HANSEN. That is a strange procedure. You request funds for an item which has been approved by the House and now all of a sudden you are asking to reprogram those funds. Did OMB change your mind?

Mr. McKELVEY. This is an administration decision having to do with that very point of establishing the priorities.

Mrs. HANSEN. Can't OMB make up their minds? The committee was very thoughtful and very careful and granted the funds you originally requested. The bill has not even passed the Senate.

Mr. EVANS. What are they taking the funds from?

Mrs. HANSEN. Will you explain this financial transaction? I understood the Office of Management and Budget did rattle papers but I didn't know they shook them.

Mr. McKELVEY. The proposal is that those funds be redirected from the rather large increase that was requested in the 1975 budget.

Mrs. HANSEN. But you haven't received the funds.

Mr. McKELVEY. That is correct. We are simply asking that our request be revised.

Mr. EVANS. From what to what?

Mr. STASSI. What we are asking is that of the \$7.1 million that is being added on for geothermal R. & D. activity, up to approximately \$855,000 be reprogrammed from R. & D. activity into these areas.

Mr. EVANS. That is interesting. Why was that decision made and who made it?

Mr. McKELVEY. As I say, it represents the administration's final assessment of its priorities in the geothermal program. But I think also, Congressman Evans, it reflects some uncertainty as to the rate at which our activities in the field of lease management are going to develop. Several leases have just been sold. We don't know how rapidly they are going to be developed and what our increase in workload will be, because it depends on industry activities down the road.

Mr. EVANS. The policy decision, as I understand it, is to take this money out of research and development and put it into lease management and data collection.

Mr. McKELVEY. Up to that amount, yes.

Mr. EVANS. So you are deemphasizing research and development and you are emphasizing lease management?

Mr. McKELVEY. I think it is not much of a deemphasis in the R. & D. It is a recognition of the possibility of an immediate need in lease management that had not been provided for.

Mr. EVANS. Thank you, Madam Chairman.

GEO THERMAL ACREAGE TO BE LEASED IN FISCAL YEAR 1975

Mrs. HANSEN. How many acres of geothermal lands will be leased competitively and how many noncompetitively in 1975?

Mr. McKELVEY. I understand that approximately 300,000 acres will be offered for competitive leasing in 1975 and that there is an expectation of about 1,000 lease applications or the approval of about 1,000 lease applications that would involve roughly 2 million acres as non-competitive leases in fiscal 1975.

Mrs. HANSEN. Please explain the relationships between your work and the work of the BLM in geothermal leasing.

Mr. McKELVEY. The Geological Survey, in the leasing process itself, is responsible for the definition of KGRA's and responsible for the evaluation of the worth of tracts that are to be issued by competitive bidding. Then we are responsible after leases have been issued for the supervision of operations and the collection of royalties.

ACREAGE UNDER LEASE AND TO BE LEASED

Mrs. HANSEN. How many acres will be under lease at the beginning of 1975 and how many acres will be leased during 1975?

Mr. McKELVEY. I will ask Dr. Wayland if he can answer how many will be under lease at the beginning of fiscal 1975. If we are unable to answer that, we can supply it for the record.

Mr. WAYLAND. I have some incomplete figures on that with me.

Mr. HASTEY. It is about 25,000 acres at the beginning of 1975.

Mr. McKELVEY. During 1975 there is the expectation of offering for lease by competitive bidding 300,000 acres.

Mrs. HANSEN. That will bring it to a total of 325,000?

Mr. McKELVEY. 325,000.

Mrs. HANSEN. You have some lands under lease currently.

Mr. McKELVEY. But under noncompetitive leasing there is an addition of perhaps as much as 2 million acres.

POWER FROM GEOTHERMAL LEASES

Mrs. HANSEN. When do you expect the first power to be generated from geothermal leases?

Mr. McKELVEY. There are already leases which have been issued. To my knowledge exploration has not begun on any of them as yet. It is possible that in the Geysers area that the development of steam could begin within a year with consequent generation of electric power.

Mrs. HANSEN. There is no geothermal development in wilderness or national park areas?

Mr. McKELVEY. No.

FORMULATION OF REGULATIONS FOR MANAGEMENT OF GEOTHERMAL LEASES

Mrs. HANSEN. Have all necessary orders and regulations been formulated for the management of the geothermal leases?

Mr. McKELVEY. I believe they have, Madam Chairman. But, of course, we are beginning a new activity here and I have no doubt that additional orders will be developed in time just as they are still being developed with respect to oil and gas.

BID PROCESS PROCEDURE

Mrs. HANSEN. Mr. Yates had a question earlier when the Bureau of Land Management appeared on the bid process and the establishment of the costs. Mr. Yates.

Mr. YATES. What about the process that the chairman was asking about, Dr. McKelvey? What is the procedure that you undertake?

Mr. McKELVEY. In establishing the value of leases?

Mrs. HANSEN. Yes.

ADEQUACY OF STAFF

Mr. YATES. Do you have enough personnel to really establish value?

Mr. McKELVEY. Well, to really establish values—

Mr. YATES. In other words, to do a good job, what you are supposed to do?

Mr. McKELVEY. To do a good job, I think that what we are requesting would give us the personnel—

Mr. YATES. Bare bones?

Mr. McKELVEY. But keep in mind that a good job in this is very difficult to define in the first place.

Mr. YATES. Are you doing a good enough job to protect the resources of the people of the United States?

Mr. McKELVEY. Yes, I think I can answer that affirmatively, that we would be able to do that.

Mr. YATES. But you don't get as much information as the oil companies do, though, do you?

Mr. McKELVEY. In this particular area, if we just confine ourselves to the geothermal—

Mr. YATES. You keep moving from geothermal to OCS to coal.

In this respect I can see where you have a fighting chance to have as much information as possible about leases and what is a good possibility for geothermal development.

APPRAISAL OF GEOTHERMAL POTENTIAL

Mr. McKELVEY. We are dealing with a resource here that is difficult to appraise at this point.

Mr. YATES. How do you do it?

Mr. McKELVEY. There are several ways of doing it. In an area such as the Geysers where there has been exploration and there is production, we can approach it in a way similar to that which we might use in the appraisal of an oil and gas field near production with some knowledge of the steam content of the reservoir, the pounds of steam per hour that can be reproduced from a well, the spacing of wells per acre and so on.

So in an area of that sort, we can approach it in a pretty quantitative fashion. Sure, opinions would differ as to what the worth of an unexplored tract would be. Still, it would be a quantitative approach in which engineers would all approach it in a rather similar fashion. Their exact arithmetic might differ.

In an area in which there is not such production, then we can identify what we call geologic indicators of the possible presence of high temperatures at depth. I mentioned Hot Springs earlier as being one of these. It is an important one, but it is by no means an infallible indicator of recoverable geothermal energy.

There are some other similar geothermal indicators that we are developing knowledge of. They may play a considerably greater importance in the future as we learn more about them.

There is then the additional and very pragmatic approach of what private lands with geothermal prospects are selling for. You might say that is the marketplace indicator. It can be a significant one. In some places it may be the only one that we have that we would attach any importance to.

IMPORTANCE OF GEOTHERMAL ENERGY

Mr. YATES. How much importance do you attach to geothermal energy as contributing toward a solution of our energy needs?

Mr. McKELVEY. Potentially I feel that it can make a considerable contribution. It is infinitesimal in its contribution presently, but we believe there is reason to hope that over time it will contribute a few percent of our requirements for electric power, possibly even a few times that amount.

This is one of the big problems that we are concerned with in our total geothermal program. That is, evaluation of the national resource potential. Presently there is a wide range of statements and estimates as to what that potential might be.

Several years ago I represented the U.S. Government at a meeting in an advisory council that the United Nations formed in the general energy field. The director of the Italian Geothermal Research Institute at Pisa, at that time one of the leading or the leading research institute in the world in this field, likened the potential for geothermal energy to that for petroleum simply on the basis that the broad tectonic belts with which geothermal energy is associated, are somewhat similar. They are not the same ones, but they are somewhat similar in their world distribution to those of petroleum.

That certainly is a very far-out estimate, but it was a thoughtful reflection on the part of a scientist who had thought a great deal about the problem.

That is a potential that, if it does exist, is way down the road. But it is certainly one that we can't ignore.

ENERGY IMPACT EVALUATION

Mrs. HANSEN. You are requesting an additional \$2.6 million and 71 positions for energy impact evaluations. What are the details? Are you going to reprogram these funds if they are appropriated?

Mr. McKELVEY. Madam Chairman, I have to confess—and I guess I have already made this confession a number of times here before—that we have been handling the preparation of environmental impact statements on a reprogramming basis, if you like, because all of the work that we have done in this field we have done from our regular appropriations.

As I have indicated to you in previous hearings, while it has been picked up from bits and pieces here and there, in sum this has amounted to a substantial figure. In 1974 we estimated that the cost of preparing environmental analyses and environmental assessments and environmental impact statements to meet the requirements of NEPA were of the order of about \$3.2 million.

What we are looking at are requirements for environmental impact statements that simply cannot be squeezed out of that turnip.

As the committee discussed with the Bureau of Land Management, there are a great many leases already existing on which there has been no development and now, all of a sudden, we are getting proposals for development of new mines—for coal, for example. The NEPA requirement at this stage falls on the Geological Survey to meet because the major Federal action, with a significant impact on the environment, is the approval, for example, of a mining plan or a request to develop a new mine.

PREPARATION OF ENVIRONMENTAL IMPACT STATEMENTS

Mr. EVANS. I notice on one of the pages of the justifications you state, "For example, there are more than 700,000 acres of coal lands under lease, less than 9 percent of which are presently active."

If any portion of that which is not active now becomes active, would separate environmental statements have to be filed?

Mr. McKELVEY. An environmental statement of some kind would have to be prepared.

Mr. EVANS. Who would prepare those—you people or the lessee?

Mr. McKELVEY. We would. It's required that the Government do it. The lessee contributes an important phase. First of all, he has to supply a very detailed mining plan and his description of what the consequences of that will be.

We ask also that they supply information on other consequences of what their program will be.

PROVISIONS OF NEPA

Mr. EVANS. You have to file impact statements on those existing leases that are going into production now? It's the law, isn't it?

Mr. McKELVEY. Yes. First of all, the language in that act concerns a major Federal action with a significant effect on the environment. Of course, those terms are not easily defined, but their meaning has gradually been established.

Mr. EVANS. What positive action does the Government have to take to permit these existing coal leases to go into production? Do they have to get mining permits or other permits?

Mr. McKELVEY. They have to furnish a detailed mining plan and reclamation plan that must either be modified to meet our requirements or, when it is in acceptable form, be approved.

Mr. EVANS. This is what there has to be, an act to bring it under the environmental impact statement.

Mr. McKELVEY. The initial step is an environmental assessment to see if in fact this is a major Federal action with a significant effect on the environment. If the conclusion from that assessment is a positive one, then an impact statement must be prepared.

Mr. EVANS. Would you see all such actions as major?

Mr. McKELVEY. I am afraid that nearly all actions in this area are going to have that result.

With respect to coal, and certainly coal to be mined by surface methods, this is true.

Mr. COULTER. There is another caveat in the bill that it has a significant impact on the environment or is of a controversial nature. Despite the impact, if it is indeed a subject of public controversy, then an impact statement is also required.

Mr. YATES. Is this true of leases that were entered into in 1961?

Mr. McKELVEY. Yes.

Mr. YATES. At the time they entered into leases with the Government, they received certain rights to go ahead, did they not, and to proceed with the development of the property? Have those rights been changed by subsequent legislation?

Mr. McKELVEY. No, not really, sir. The leases always required that their plans be approved by the Government. This is simply a step in that process. The Secretary made the decision at a rather early stage. As far as I know, it has not been contested.

Whether each individual lease will require an impact statement is something else again. It's possible that several leases in the same area can be treated with a single statement. In one way or another, when the conclusion of the assessment is that an impact statement is required to meet the provisions of NEPA, then one has to be prepared. These are substantial studies and I am sure you have seen some of them.

Mrs. HANSEN. Yes.

Mr. McKELVEY. They are several hundred pages in length. It's a very large order. Just the potential that we are looking at now in coal is about 17 of the leases where requests are pending or we have learned that they are likely to be made in the near future.

Mr. YATES. Are these new leases or old ones?

Mr. McKELVEY. They are old leases. The new leases would be covered by the Bureau of Land Management. We would contribute, but the responsibility is with the agency that has the major action. The major action on existing leases is the Geological Survey's responsibility.

PREPARING AND REVIEWING ENVIRONMENTAL IMPACT STATEMENTS

Mrs. HANSEN. You state that environmental assessments have been formerly done by redirecting your professional staff. How many man-years and dollars has this involved?

Mr. McKELVEY. This has involved about \$3.2 million in fiscal 1974. I am not sure about the man-years. Henry, can you speak to that? If not, we can supply it.

Mr. COULTER. This would be about 90 man-years.

Mrs. HANSEN. What accounts did you take those people and funds from?

Mr. McKELVEY. We took it from here, there, and elsewhere, Madam Chairman. Mostly those people who are involved necessarily represent a wide range of specialties. So we lift them from wherever they are, and their salary comes with them. Some come from our Water Resources Division, some come from the Conservation Division, some from the Geologic Division, and so on. This is the first time, as I say, that we have come before the committee with a request for help to meet this responsibility.

Mrs. HANSEN. How much of this work will be carried out in-house and how much by contract?

Mr. McKELVEY. Virtually all of this work, Madam Chairman, would be done in-house.

WORKLOAD ASSUMPTIONS USED TO JUSTIFY AMENDMENT REQUEST

Mrs. HANSEN. You list many projects for which environmental statements are expected to be required. What additional workload assumptions were the basis for this request?

Mr. McKELVEY. That represents the principal basis.

Mr. COULTER. We do have contributions to statements prepared by other Interior agencies.

Mr. McKELVEY. Right. But it's primarily the anticipated load for environmental impact statements that are involved.

Mrs. HANSEN. Obviously you did not study the Navajo Indian lands in the uranium mines areas.

Mr. McKELVEY. No. That would have been the Bureau of Indian Affairs responsibility. We might have been called on for some assistance, but I am not aware of any request. This is the uranium permit to Exxon?

Mrs. HANSEN. Yes. This article was in the Washington Post. I am sure you saw it.

Mr. McKELVEY. I am not familiar with that article.

Mr. YATES. It was on lung cancer.

ARCTIC ENVIRONMENTAL STUDIES

Mrs. HANSEN. You are requesting an additional \$400,000 and seven positions for the Arctic environmental studies. Will you please justify this request. What is the basis for requesting that these funds not be reimbursed by Alyeska?

Mr. McKELVEY. The basis for that, Madam Chairman, is that this is work that is not essential to the construction of the pipeline. This is

an opportunity for the Government to learn from the construction of the pipeline.

Mrs. HANSEN. In other words, as you monitor the pipeline, you are doing some additional research with those findings? Is that correct?

Mr. McKELVEY. That is correct. We expect to be able to use that information in evaluating other corridors that may be proposed for pipeline development in the Arctic.

In the course of the evaluation of Alyeska's proposal and the preparation of the very substantial impact statement that was prepared at that time, we made a good many judgments as to how land would react when subjected to this kind of stress—permafrost in particular judgments that represented our best knowledge at the time, but judgments that can now be tested and observed. The work that is going to be done, if we are there to take advantage of it, will give us a substantially improved base of knowledge for decisions down the road.

Mrs. HANSEN. But there was an item deleted by the OMB of \$450,000 from the regular budget presentation.

Mr. McKELVEY. That was the part of our budget that was reimbursable by the pipeline company.

CONTRACTS

Mrs. HANSEN. What contracts will be involved in this work?

Mr. McKELVEY. There will be some helicopter contracting and similar service activities. That would be it. As far as the manpower is concerned, it would be mostly in-house and it's important that it be this way because, as I said, this is the Government's opportunity to learn.

OCS LEASE MANAGEMENT

Mrs. HANSEN. You are requesting an additional \$2,050,000 and 30 positions for OCS lease management. You state the number of acres under lease will double in 1975, yet this is only about a 25-percent increase. How do you explain this?

Mr. McKELVEY. The increased load on us from the accelerating leasing and lease management will hit largely in later years. You notice that in the companion increase for the Conservation Division related to offshore evaluation, we have a request for a very large increase of some \$8.7 million. That represents a very substantial increase in the lease evaluation area. That is what is going to hit us immediately.

On the management side of it, that will impact mainly in future years as drilling commences.

ADEQUACY OF REQUEST

Mrs. HANSEN. Will the \$2,050,000 request fully provide you with the capability to effectively enforce all rules and regulations in the OCS?

Mr. McKELVEY. We believe it will, Madam Chairman. Here again we are dealing with a problem of a rather subjective nature, where it's difficult to decide just what is enough. It involves inspections and how many inspectors do you have, and that sort of thing. We are still in a developmental stage in this area.

Mrs. HANSEN. In other words, present estimates of workload indicate you would not require more than the 25-percent increase?

Mr. McKELVEY. That is what we think.

DATA ACQUISITION ON THE OCS

Mrs. HANSEN. You are requesting an additional \$8.7 million and 140 positions for OCS resource evaluation. How much of this will be for data acquisition and how much for personnel costs relating to evaluation?

Mr. McKELVEY. For data acquisition, I believe it's of the order of \$6 million.

Mrs. HANSEN. Is that sufficient?

Mr. McKELVEY. Yes. That is relatively proportional to the costs that we have been encumbering for this purpose as far as the number of acres leased in the past.

PROCEDURE FOR ESTABLISHING FAIR MARKET VALUE

Mrs. HANSEN. There has been some criticism recently concerning your procedures for establishing "fair market value." What changes have been made in the past several months to improve these procedures? Does this request provide you with all that you need to prepare accurate, fair market determinations?

Mr. McKELVEY. I believe it does, Madam Chairman, to the extent that we continue to follow the historic procedures in which drilling itself—which is the only sure way of determining whether oil is present, and if so, how much—is done after the lease has been issued and is done by private industry.

NEW TECHNIQUES FOR DETECTION OF OIL AND GAS

Mrs. HANSEN. As I mentioned earlier there was a lengthy report on television the other night about new techniques that the industry has developed to determine, prior to bidding, the amount of resources in a particular tract or area.

Mr. McKELVEY. That is a very new important development. It's known under various names. One of the most common ones is the bright spot technique. They use that term because on seismograms that are processed to bring out this effect, there appears a bright spot that in many cases represents the occurrence of gas—sometimes oil, but it's most effective in reflecting the presence of gas.

This is going to have a very great effect in improving the efficiency of oil exploration. At the present time, even that method, useful as it is, is not infallible. There are dry holes on bright spot identifications as of right now.

So, it's not 100 percent effective, either in the sense that a bright spot always represents the presence of hydrocarbons or in the sense that all hydrocarbon accumulations will be reflected in a bright spot.

GEOLOGICAL SURVEY TECHNIQUES DEVELOPED FOR RESOURCE DISCOVERY

Mrs. HANSEN. What technique is the Geological Survey developing to give you a better knowledge of the resources?

Mr. McKELVEY. We are able to buy bright spot seismic data. In the last sale, just a few weeks ago, we had been able to cover almost all the tracts with bright spot seismic data before the sale was held. I have not yet received an analysis of how the tracts on which bright

spots were identified, how they fared in the bidding. But as the Bureau of Land Management mentioned in their testimony, only about half of the leases that were offered were bid on at all. It is quite plain that the companies were highly selective in choosing those tracts in which they recognized the greatest promise. We understand that bright spot identification constituted a principal part of their selection process. Now we are able to buy those data and they are expensive, but still we are utilizing that technique ourselves.

I might say, Madam Chairman, that we are proud of the fact that we developed a somewhat similar method ourselves which has a much greater application on land than it does offshore. Without going into the details of it, the bright spot phenomenon is a reflection of the fact that gas is very much lighter than water. That very same property in some fields can be used by a direct measurement of gravity. One of our people, Thane McCulloh, has done considerable work in the development of gravity technology and the direct identification of hydrocarbons by that method. But I say, that technology is not very useful at this point offshore.

Exploration technology is developing and it is important that it continue to develop. The easy prospects that were identified by oil seeps at the surface in the old days are gone. It is important that the exploration technology and its effectiveness be improved. I think this bright spot technology itself certainly is the brightest new development in this area. I think it is a very significant one.

OIL SHALE LEASING

Mrs. HANSEN. You are requesting an additional \$650,000 and 14 positions for oil shale leasing. Why were not these requirements known at the time the original budget was prepared?

Mr. McKELVEY. Madam Chairman, you may recall that the decision to have an oil shale leasing program and then the sale itself were not made until about the time that the President's budget was being wrapped up at the end of 1973.

Mrs. HANSEN. But you have money in the 1975 budget for the exploration and discussion of the problems involved with oil shale on water. I would presume you would have to have answers on this prior to doing any leasing of the oil shale lands.

You know, you have to have those answers.

Mr. McKELVEY. That is true. It was just, Madam Chairman, that the development of that oil shale leasing program was in flux at the time the President's budget was finally put together. Then it was not really known until the sale itself as to what industry's interests would be. You will recall the previous attempt at leasing. No leases were made.

PROTOTYPE LEASES

Mrs. HANSEN. You have to develop answers on what to do with the spoils, on the amount of water that is necessary, and what happens to the water in that area. I don't understand why you need \$650,000 and 14 positions to proceed with leasing until you obtain the results of your prototype leases.

Mr. McKELVEY. The management part of this is related to the prototype leases.

Mrs. HANSEN. How much is related to the prototype and how much is related to further leasing which I don't think this committee has approved?

Mr. STASSI. \$360,000 is for management of those prototypes.

Mr. McKELVEY. The remainder, the \$290,000 is for evaluation.

Mrs. HANSEN. You have stated in previous hearings that you are going to wait on the results of the prototype leases before proceeding with any additional leases.

Mr. McKELVEY. That is right. This is partly related to evaluation of leases that are being considered for exchange. You know, there is an exchange or there are exchange proposals with some companies that have scattered private lands and then offers are being made to exchange Federal lands of equal value so that they can put together a minable tract. The same is true with the State of Utah.

OIL SHALE TRACT LEASING

Mr. EVANS. May I direct a question to that issue? I am told that the companies that bid in on that first 5,000 acre tract are also owners of adjacent private land that contains oil shale. My question is: Do you know whether or not this is going to be a development confined to the 5,000 acre tract that was leased by the Federal Government or is this going to be 5,000 acres of Federal land combined with untold thousands of private acreage?

Mr. McKELVEY. I will ask Dr. Wayland to speak to that. I believe that in at least one of the areas there are some privately held lands adjacent or nearby.

Mr. EVANS. Where private acreage far exceeds the 5,000 acres under this one lease?

Mr. WAYLAND. Not immediately adjacent to either of the Colorado leases. The first lease which was bid in by Standard of Indiana and by Gulf is pretty well surrounded by other Federal lands that are not available. Now there are some small homestead patches in that area. It is possible that they will be exchanged. But the plan that was filed with us does not involve any Non-Federal lands for Gulf or Amoco operations.

Mr. EVANS. How about the other?

Mr. WAYLAND. The other is Atlantic Shell, Ashland and Tosco. That is the deep lease. It is not far from homestead lands but they are tracts of 160 acres each. This is a 5,000 acre lease. Thus untold acreage being available to them for expansion is not so. With respect to the Utah leases, the State of Utah is now taking steps to make available some adjacent acreage or acreage nearby to the two Federal oil shale leases with the idea that a more viable operation might result by some arrangement between the lessees.

We recognize right now that the two leases in Utah are borderline as to whether they can make a go of it on their own. Therefore, in such a case as that it might be a very good thing in order to get an economic feasible operation to be able to add a few additional tracts onto a Federal lease. The law simply prohibits any Federal leases from exceeding 5,000 acres, that is Federal acres in the possession of any one company.

It doesn't say that additional State or private oil shale lands cannot also be operated if they are controlled by the same lessee.

Mr. EVANS. Thank you.

GSA SPACE RENTAL

Mrs. HANSEN. What is included in this request for GSA space rental?

Mr. STASSI. There is no specific request for GSA space rental. That was included in our original budget. However there may be some needed for these additional 287 positions but I don't have that specifically identified.

Mrs. HANSEN. Please identify these costs, and insert a statement on these costs in the record.

[The information follows:]

GSA SPACE COSTS INCLUDED IN AMENDMENT

No specific amounts are identified nor earmarked in the amendment for GSA space costs. However, to the extent that additional space is required for the additional personnel being requested in field locations such space would be acquired either through GSA or through our own efforts depending upon the location of the space. This space cost is estimated to cost approximately \$50,000 yearly.

Mr. WAYLAND. Could I return to the previous item?

Mrs. HANSEN. I just want to make sure that we identify all GSA space costs. I don't trust GSA from here to here.

Mr. EVANS. Let the record show that that was from the chair to the table.

Mrs. HANSEN. You would think GSA was renting the Palace of Versailles out in some of those places in the West.

OIL SHALE EVALUATION AND CLASSIFICATION

Mr. WAYLAND. I think there is a possibility of some misunderstanding here with respect to the evaluation part of the oil shale package. The funds needed for evaluation are put in for two purposes in addition to a small amount looking toward future exchanges. The bulk of the funds will be used in support of the management engineers—in other words these will be geologists who will work with the engineers in evaluating the results of the development drilling and doing the geological side of analyzing the mining plans. The other part of this package is that these people will also do on a time available basis some systematic mapping for classification of oil lands not yet under lease with the idea of delimiting rather sharply those lands that are oil shale lands from those lands that are not, because under old law and regulations lands classified as oil shale are denied development for other minerals except oil and gas and sodium. This is a deferred type of oil shale classification activity which is causing problems to other industries in some cases.

DEVELOPMENT OF OIL SHALE LANDS

Mr. EVANS. Do you have other people who want to develop the lands for other purposes?

Mr. WAYLAND. Yes, for example there are some oil shale lands in Wyoming we have to call oil shale lands although we know they are very poor oil shale lands. There are some coal operators who cannot get coal leases for those lands because they are oil shale lands. It is up to us to do work in those areas where they are of such quality that we can classify them permanently as oil shale and deny coal leasing or classify them as nonoil shale lands and remove the problem to the coal utilization.

NEPA STATEMENTS FOR COAL MINING

Mr. EVANS. I yield to you, Mr. Yates.

Mr. YATES. Dr. McKelvey, are companies that are now mining coal required to file an EIS statement, too?

Mr. MCKELVEY. They are required to request permission to undertake new activities to revise their mining plans, or whatever like activity may be involved. But for an existing mine, and I think perhaps that is what you are getting at, for an existing mine proceeding by plans that were approved prior to NEPA, no statement needs to be prepared.

Mr. YATES. You say none needs to be prepared?

Mr. MCKELVEY. That is correct.

TECHNIQUES FOR ACQUIRING AND EVALUATING DATA

Mr. YATES. What techniques does Geological Survey currently use to acquire and evaluate data on the federally-controlled coal reserves?

Mr. MCKELVEY. Two primary techniques; one, we acquire a certain amount of data through our own mapping and sampling. In some areas this includes drilling. Then, if the land is under lease the lessee is required to turn over his information, his basic data, whatever information he has on the characteristics of the coal.

Mr. WAYLAND. If I could add a word, the operations of oil and gas lessees provide logs which in some instances can be interpreted to give us coal information.

Mr. YATES. Are they required to turn such information over to you?

Mr. MCKELVEY. The lessee is so required.

Mr. YATES. Is this true of the OCS as well?

Mr. MCKELVEY. Yes.

Mr. YATES. Under the terms of the lease?

Mr. MCKELVEY. Yes.

TECHNIQUES FOR ASCERTAINING VALUES OF OCS TRACTS

Mr. YATES. What are the techniques you use to ascertain the value of the OCS tracts offered for sale? In response to Mrs. Hansen's question you talked about the seismic charts you were purchasing. That is obviously one technique.

Mr. MCKELVEY. Yes. There are two primary sources of information. One is geophysical surveys, most of which we purchase from seismic service companies and other geophysical service companies. The other is information that is turned over to us from lessees in nearby areas. The combination of those two kinds of information is used to build up

our best projection of the geologic environment of the lease and the prospect that it may contain oil and gas.

ADEQUACY OF GEOLOGICAL SURVEY STAFF TO PROTECT INTEREST OF AMERICAN PUBLIC

Mr. YATES. Do you believe that Geological Survey is able to do an adequate job of protecting the interests of the American people with the staff and budget that you have?

Mr. McKELVEY. Yes, Congressman Yates, I think we can. Again, keep in mind that the evaluation problem here is very difficult and very uncertain, both for us and for the companies. I have often said, maybe I have even said it here, that our problem is not just to determine the value of a pig in a poke, it is the value of a poke that may or may not contain a pig. That is difficult for everyone to do.

Mr. COULTER. Could I say one more thing on that? There is a lot of confusion and a lot of criticism due to the confusion between the fair market value of a tract and the high bid. On fair market value we have had quite good experience in hitting very close to the average of bids. There is no way in the world, nor would we ever attempt to estimate or to accommodate for all the reasons that an individual company may come in for a bid that is much higher than the fair market value. The fair market value takes care of getting an adequate return for the resource. The high bid may be predicated on the location of a company's processing facilities, on a whole series of things. That aspect, the difference between the fair market value and the high bid price is taken care of by the competitive aspect of the lease sale. Many people who criticize the system say, "Well, your fair market value was only half of what some company bid for this lease." We are not trying to guess the highest price they would conceivably bid. We are trying to set the minimum acceptable value that represents a fair return on the particular lease. We have had good experience in coming at the average of bids on each individual tract, but never the high bid.

DEVELOPMENT OF COAL RESOURCES

Mr. YATES. Dr. McKelvey, should our coal resources be developed to a much greater extent than is presently being done in view of the energy crisis?

Mr. McKELVEY. I would say there are policy judgments involved here that I think the American public as a whole is really going to have to address. I would really not attempt to answer that question in a direct way. I can say this, that under consideration now in Project Independence, the administration is trying to define just what Project Independence ought to be and how it would be achieved. The tradeoffs between the development of coal and nuclear energy and so on are being examined.

Hearings will be held at some point in the development of this plan. I think that is very appropriate because basically it is the American people that are going to have to decide which of the basic tradeoffs are acceptable. Among them are the ones Madam Chairman spoke about during the BLM testimony, the matter of energy conservation.

I have said in a number of speeches during the last year or so that when we search around to try to find who to blame for the energy crisis,

let's keep in mind the Pogo comic strip of a number of years ago in which Pogo reported that we have identified the enemy and they are us. Well, we are the ones that are continually using more energy. What has happened is not really that energy production has diminished. It is that energy demand has overtaken our ability to keep up with these so-called new requirements, many of which are simply wish requirements on our part as individuals.

Mr. YATES. Have we undertaken the planning that is necessary for meeting Project Independence?

Mr. McKELVEY. This is in process currently. The Federal Energy Administration has organized what is called Project Independence Blueprint, a very large effort to examine all of the alternatives to see what the constraints are and the kind of thing that you were all talking about earlier, whether manpower and equipment and so on represent limitations that are going to constrain the development of OCS land or the development of coal resources and so on.

LEASING OF 10 MILLION ACRES ON OCS IN 1975

Mr. YATES. Aren't you going ahead without the planning? Haven't you already decided that you are going to lease 10 million acres in the Gulf regardless of whether you have the manpower, the rigs, regardless of whether you have the raw materials for doing it?

Mr. McKELVEY. Well, the President announced in his January message, I believe it was, that it was the Government's plan to accelerate leasing to 10 million acres in 1975. But at the same time an environmental impact statement is now being prepared on that as a major Federal action with a significant effect on the environment.

Mr. YATES. Shouldn't the environmental impact statement have been prepared before the 10 million acres were announced?

Mr. McKELVEY. I suppose there has to be a decision or a proposed decision before there is a call for the impact statement in a formal way. That is what has happened. It is conceivable to me, and certainly that is also one of the purposes of preparing an impact statement, that that might reveal reasons why that is not a good decision.

But for the Government still to accomplish that, it has to lay plans that would allow it to carry out that program if alternatively it turns out to be a very good decision.

Mr. YATES. I will yield to Mr. Evans.

Mr. EVANS. In the process of deciding policy to lease 10 million acres in calendar year 1975 on the OCS, were you or your offices asked for your opinions about how much accelerated leasing could be done? Were you asked what would be the maximum, the minimum, the optimum and what the problems were that would be involved?

Mr. YATES. In short, how much research did you do for the White House before that statement came out? Isn't that it?

Mr. McKELVEY. We were asked for our opinion about how leasing could be accelerated and what would be the effects of acceleration at various levels. All of Interior, I am sure, and FEA were asked at that time, too.

Mr. EVANS. At the time you were asked this question, was the 10 million figure proposed to you, or was this under circumstances where you were to come up with a suggested figure which they would consider?

Mr. McKELVEY. We did both. Both happened.

Mr. EVANS. Which came first?

Mr. McKELVEY. The question of how leasing could be accelerated.

Mr. EVANS. To a given figure?

Mr. McKELVEY. To what levels would be possible.

Mr. EVANS. Did they come to you saying, "We thought we would like to accelerate to 10 million acres. Do you think we can? Or how much of this do you think we can?" Or did they come to you and say, "We would like to accelerate. What is the optimum figure we could accelerate to?"

Mr. McKELVEY. As I say, it began with the question of how much acceleration would be possible. We participated in discussions of that question. We always had an opportunity, within the latter in the development of discussions and the basis for the President's discussion to react to specific figures.

REACTION TO 10 MILLION ACRE LEASING GOAL

Mr. EVANS. Did you react favorably to a 10-million-acre goal?

Mr. McKELVEY. Congressman Evans, I have to say that 10 million acres seems like an enormous goal to meet, one that will be very difficult to achieve.

We accept it as a goal and are going to do our very best to achieve it in a fully satisfactory manner.

Mr. EVANS. You stated that very gracefully. Our friend from BLM is here. Would he respond in any different fashion?

Mr. HASTEY. No. We work very carefully with Geological Survey. We came out about the same way.

Mr. YATES. Let me follow that up. Do you have any data which would justify your projecting an estimated lease of 2 million acres in the so-called frontier area?

Mr. McKELVEY. We are in the course of acquiring data.

DRILLING OFF COAST OF WASHINGTON

Mr. YATES. You are going to drill off the coast of Washington, aren't you?

Mrs. HANSEN. They did drill at one time.

Mr. McKELVEY. It is not likely. It was drilled once. There were dry holes and \$32 million worth of leases. How many dry holes were there?

Mr. WAYLAND. Several.

DRILLING IN GULF OF ALASKA

Mr. McKELVEY. One of the areas that is being considered is the Gulf of Alaska, where a considerable amount of information has been acquired. There was a proposed sale in the Gulf of Alaska several years ago, but it didn't come off. There are a lot of seismic surveys.

Mr. EVANS. I thought that Alaska tract was supposed to be one of the most hazardous environmentally.

Mr. McKELVEY. It certainly is one that poses difficult problems.

Mr. EVANS. That still isn't included in the 10 million acres you are going to offer for lease?

Mr. McKELVEY. No. Not until it is evaluated as being acceptable from an environmental standpoint.

The work that will go on in the Gulf of Alaska this summer and next will in large part be directed not so much at the evaluation of the prospects for the occurrence of petroleum—many very promising prospects have already been identified there—but at the environmental considerations that will make possible this final judgment as to whether that is an area in which petroleum development can be conducted in an acceptable fashion.

USE OF INDUSTRY DATA

Mr. YATES. In response to a question of mine in the hearings that appear in part 1, page 39, somebody who prepared this statement said this on page 40:

The Government's predilection against giveaways can only be its judgment of prospective value based on a probability of discovery being made in a given tract. This judgment is made by the Geological Survey, usually using the same geophysical surveys and geological information as the bidding companies.

Is that true?

Mr. McKELVEY. Very often that is true, yes.

Mr. YATES. How often is very often? How often do you use the same information that the bidding companies use?

Mr. McKELVEY. I am not able to give you a percentage figure. This is what happens and to an increasing extent in recent years. The principal basis for the evaluation is seismic surveying. This is done by service companies.

Mr. YATES. You don't spend near the money private companies do, do you?

Mr. McKELVEY. Very often we spend the same amount because the data are acquired under what is called a group shoot, in which 30 or 40 companies will band together and pay a geophysical service company to acquire data to their specifications. After that point, where they all start out with the same data, their processing techniques and their interpretation techniques may differ a great deal. You might say the quality of the interpreted information that is available to them prior to the sale may vary considerably.

I said very often we use the same data because some companies may acquire their own, in which case at the present time those data are not available to us. The pattern in the industry has been to look to the geophysical service companies for the basic information and the difference has come in the way in which we and the oil companies process it.

We talked about the bright spot technology. A couple of years ago one of the companies got on to this ahead of others. Whereas they all had the same data, one of them was able to process the data in a way in which the bright spot anomalies were revealed. Their bidding was so much higher on a number of tracts that other companies suspected they had something. They knew that their basic data were the same but they figured that they must have some additional wrinkle and everybody got busy then and the technique was developed in other parts of the industry also.

FORM OF LEASES FOR THE 10 MILLION ACRES ON OCS

Mr. YATES. Do you know what form of lease will be used for leasing the 10 million acres, as to whether it will be the bonus system, the royalty system, or the profit-sharing system?

Mr. McKELVEY. First of all, there is a question as to whether it could be a profit-sharing system without a change in the Outer Continental Shelf Lands Act. As to whether it will be royalty or bonus, my guess would be that, because of the time frame involved, the bulk of it at least would be by bonus bidding.

As I am sure you know, a royalty bidding sale or sale of leases on a royalty bidding basis is being planned for the near future as an experiment. The outcome of that experiment could possibly influence the Government to decide that royalty bidding should be used on an increasing basis.

REPORT ON POTENTIAL FUTURE OF OCS LEASING

Mr. YATES. Here I have a report on the responses received in reply to the request for comments on the potential future of the Outer Continental Shelf oil and gas leasing prepared by the Bureau of Land Management and signed by Mr. Hastey who was the Acting Associate Director at that time.

On pages 12, 13, and 14, you find comments on the constraints on the North Atlantic and the South Atlantic, Central Gulf, Southern California, and Western Gulf. In all of them you see the constraint of limited supply of rigs and tubular goods and platforms and seismic activity and the questions involved in deep water technology that may be implicit in all these things. Aren't all these constraints necessary for you to consider in connection with the potential lease of the 10 million acres?

Mr. McKELVEY. Yes, sir.

Mr. YATES. This is the reason you have such hesitation in your mind about it.

Mr. McKELVEY. That is part of it, yes.

Mr. LONG. Would the additional expenditure of \$500,000 for the employment of 25 more persons enable you to prepare a more detailed and comprehensive environmental analysis with each application in noncompetitive leasing?

Mr. McKELVEY. The 25 positions and related funds being requested in this increase item are for the evaluation of geothermal resources rather than for preparing environmental analysis. However, we are requesting that funds and staff be made available for lease supervision and management, which would include environmental analysis and monitoring through reprogramming of funds currently being considered in the special energy research and development bill for 1975. At this time we are not sure of the exact number of positions nor funds that would be involved in this reprogramming, but sufficient resources would be made available to prepare more detailed and comprehensive environmental analysis with each application in noncompetitive leasing.

Mr. LONG. Is the \$2,600,000 for 71 new positions for energy impact evaluation and environmental impact statements needed just to keep pace with the increased number of applications?

Mr. McKELVEY. Yes, that is correct. The numbers of such causative applications has increased dramatically—and particularly so in just

the last 6 to 8 months. I might add that although most of these applications are energy related, a respectable increase in applications relating to mining of other important minerals is also taking place. These too require full NEPA consideration.

Mr. LONG. How extensive a monitoring system for pollution control is planned as a result of the additional request of \$2,050,000 for lease management in the accelerated OCS program?

Mr. McKELVEY. The proposed budget request will provide for personnel, office space, communication system and helicopter transportation to effectively monitor all areas in which OCS oil and gas drilling and producing activities will be conducted during fiscal year 1975 as a result of the accelerated leasing. This will provide an inspection network from the central Florida gulf coast westward through the Gulf of Mexico OCS area to the Mexican border. Additionally, the inspection system now in existence in the Santa Barbara Channel will be expanded to include any OCS lands leased off California and other Pacific frontier areas during fiscal year 1975.

Mr. YATES. I would like to give you these questions and have you reply to me if you will.

Mr. McKELVEY. I would be glad to.

[The information follows:]

Question. Does the Interior Department have a full record of all the Government's coal holdings, including those which underlie private lands?

Answer. The BLM State offices maintain land and mineral status records on Master Title Plats. These plats contain complete ownership records of all BLM administered lands including the various mineral reservations. Coal holdings, therefore, are documented on these plats, but as of yet these records have not been fully centralized. Thus, the Department of the Interior has coal ownership data in raw form, unaggregated to the extent that it is not possible to make definitive determinations on an overview scale of where and how much coal acreage, surface and subsurface, is administered by the BLM.

To correct this paucity of overview data, the BLM is engaged in an accelerated minerals management mapping program. The program is designed to produce color-coded surface ownership and cross-hatched categories of mineral ownership on planimetric quadrangle maps at a scale of $\frac{1}{2}$ inch to 1 mile. The completion date for the first series of maps, depicting these lands within the USGS classification of known coal leasing area (KCLA), is scheduled for September of this year. Eventually all BLM lands will be so mapped. However, initial priorities are concerned with the portrayal of land status and the mineral estate in energy resource areas. After the ownership data has been extracted from the MT plats and planned on the surface/minerals management quads, the maps will be digitized so as to compile a centralized record of all land and mineral ownership status. The data file, when completed, will provide a ready reference for questions concerning coal holdings or any major category of mineral reservation. This land status and mineral estate data file will eventually be merged with coal, water and other resource data to provide a land and resource information system for management decisions.

Question. To what extent does the Department have exploratory data on publicly owned coal, sufficient to judge the resources and reserves in place? The quality of reserves, including sulfur content, ash content and BTU value? Whether publicly owned coal exists in sufficient quantities to be subject to competitive leasing.

Answer. The Department has a large amount of exploratory data on publicly owned coal. The Geological Survey requires the submission of the results of all coal drilling and coring on Federal coal leases. Information submitted pertaining to oil and gas operations on Federal lands provides valuable secondary data. The Geological Survey conducts a limited coal coring program for evaluation of public land and this capacity is to be expanded during the coming year. Field mapping and analysis of surface coal outcrops has been conducted virtually since the beginning of the Geological Survey. Work is also continuously conducted by both the Survey and the Bureau of Mines on coal resources and reserves. All coal data derived from these various sources include information on the quality, sulfur content, ash content and BTU value of the coals encountered,

except where such analyses were not considered justifiable by the operator or investigator or where the data were derived from oil and gas well logs.

We are presently investigating the extent to which the existing exploratory data is sufficient to judge the resources and reserves of publicly owned coal in place. Until the advent of the recent energy situation the Department was interested in the nationwide reserves and resources of coal, or on the mineral value of specific Federal lands for leasing, retention or exchange. The Department has now initiated its Energy Minerals Allocation Recommendation System (EMARS) which involves input from both the Bureau of Land Management and the Geological Survey, along with other Bureaus. The first step in an exhaustive investigation of the extent and location of the Federal mineral estate available for leasing. This will include not only determining on which lands the Government has retained or acquired all or part of its mineral rights but also an assessment of which lands have not been withdrawn from mineral leasing or are impossible to develop due to other legal constraints. This work has already begun. Assessment of the adequacy of the coal exploration data can then proceed in an orderly fashion with the Geological Survey matching its data with the BLM land status maps (color quads). Data gaps will be filled as necessary to meet the needs of the Department's leasing policy. At the present time it appears that we have sufficient exploratory data to broadly estimate the reserves and resources of coal under Federal lands. We do not, however, have sufficient data to estimate reserves of coal on all Federal lands. Programs are now in progress to improve our knowledge of the coal resources and reserves on Federal lands.

The Department has adequate exploratory data to determine whether coal exists in sufficient quantities to be subject to competitive leasing. Ten known coal leasing areas have already been designated in the Western United States, exclusive of Alaska and another 11 will be defined before the end of 1974. These actions will encompass the major areas in the Western United States where quality and quantity of the coal is sufficient to justify competitive leasing. There is very little Federal coal in the Eastern States. The status of Federal lands in Alaska is still unsettled and changing. Coal lands in the Eastern States and Alaska will therefore be leased on a tract by tract basis until known leasing areas can be established.

Question. What is the present amount of Federal coal committed to private development by lease or preference right application?

Answer. For private development by lease, our preliminary analysis of existing coal leases in the major coal leasing States indicates that there are 515 Federal coal leases in effect containing 16.2 billion tons of recoverable coal. The amount for preference right application is estimated to be 6.9 billion tons, which could possibly be committed if leases are issued. This estimate is contained in a table from the Bureau of Land Management Draft Environmental Statement, Proposed Coal Leasing Program as follows:

RECOVERABLE COAL RESERVES HELD UNDER FEDERAL PREFERENCE RIGHT COAL LEASE APPLICATION ¹

	Surface minable		Underground minable	Total reserves	Total application
	Acres	tons (million)	tons (million)	tons (million)	(acres)
Alaska.....	0	0	0	0	0
Colorado.....	(?)	(?)	(?)	1,190	38,283
Montana.....	26,306	400	0	400	26,306
New Mexico.....	45,351	513	0	513	45,351
North Dakota.....	0	0	0	0	0
Oklahoma.....	0	0	15	15	3,810
Utah.....	1,920	17	421	438	26,586
Wyoming.....	36,575	638	2,876	4,299	154,421
Other States.....	0	0	5	5	1,282
Total.....	110,152	1,568	3,317	6,850	296,039

¹ Includes only those lands and reserves where preliminary reserve calculations have been done. Other preference right lease application lands considered as prospecting-permit lands for purposes of this report.

² Reserves not yet split into underground and surface minable categories.

³ Represents minable reserves for northern one-half and southwestern one-quarter of Wyoming only. Reserves for southeastern one-quarter Wyoming not yet divided into surface or underground. Reserves for southeastern one-quarter Wyoming included in total reserves, Wyoming.

⁴ Includes 785,000,000 tons recoverable reserves in southeastern one-quarter of Wyoming which have not been separated into or shown in this table as either underground or surface minable.

⁵ Other States include Alabama, California, Kentucky, Ohio, Oregon, Washington, and West Virginia.

Source: Geological Survey, Conservation Division. Draft environmental statement, proposed federal coal leasing program, Vol. 1 (DES 74-53).

Question. How much of these reserves are strippable low-sulphur coal?

Answer. Of the 16.2 billion tons of coal currently under Federal lease, 10.7 billion tons are strippable and 5.5 billion tons are recoverable by underground mining methods. Essentially all of the leased coal is low in sulphur content.

Question. Under projected rates of development, for how many years would the reserves presently under lease be sufficient?

Answer. Based upon an analysis conducted by the Geological Survey, the years of production remaining beyond 1985 for leases that are currently producing is estimated at 19 years and for leases with known plans to produce is estimated at 35 years. Assuming a 5 percent annual increase in production beyond 1985 shortens the life of these categories of reserves to 14 and 21 years respectively. An analysis of leases with no known plans to produce indicates that there are 38 logical mining units that contain sufficient reserves to supply major coal contracts.

I have three tables which I will explain which show the results of the analysis, but final conclusions are subject to further exhaustive study.

In table I, data for existing leases have been grouped into the three categories of (1) leases currently producing, (2) leases with known plans to produce, and (3) leases with no known plans to produce. Shown in each of these categories are the number of logical mining units and the number of leases contained within them, the reserves by type of mining and total, and estimated production rates for 1975, 1980 and 1985. From the above data, cumulative production and reserves remaining in 1985 are calculated and shown. Two assumptions have been made for production projections beyond 1985: (1) production is assumed to continue with no increase, (2) an annual 5 percent growth in production level. Using the second of these assumptions, and adding 10 years from the present time to 1985, the years of production that remain from the present time for the first two categories listed are 24 years for currently producing leases and 31 years for leases with plans to produce. Since major contracts generally extend from 25 to 35 years, and many contracts have options to renew at the expiration of the contract, logical mining units and leases in this category appear to be reasonably committed, in the aggregate and using averages. It should be noted, however, that individual leases may contain a surplus or deficit of coal reserves.

Table I also shows that the major portion of reserves at the present time, 9,352 million tons, is contained within logical mining units that have no known plans for production.

TABLE I.—ANALYSIS OF PRODUCTION AND RESERVES, FEDERAL COAL LEASES

	Leases currently producing	Leases with known plans to produce	Leases with no known plans to produce	Totals
Logical mining units.....	42	36	135	213
Leases in units.....	103	121	291	515
Reserves:				
Surface.....	1,336.65	3,383.50	5,939.61	10,659.76
Underground.....	889.12	1,231.50	3,412.80	5,533.42
Total.....	2,225.77	4,615.00	9,352.41	16,193.18
Estimated production:				
1975.....	40.19	12.63	-----	52.82
1980.....	70.42	98.57	-----	168.99
1985.....	80.42	108.45	-----	188.87
Cumulative production through 1985.....	653.625	795.550	-----	1,449.175
Reserves remaining 1985.....	1,572.145	3,819.45	9,352.41	14,744.005

NOTES

Production and reserves in millions of tons.

Logical mining unit (LMU)—Logical mining unit (LMU) means a mining unit established by or approved by the mining supervisor as a unit of land within a compact area that can be developed in an efficient, economical and orderly manner and that will result in conservation of coal reserves. The unit may consist of one or more Federal leases and may include intervening or adjacent private or State lands insofar as all lands are under the effective control of a single operator or collective contract. (30 U.S.C. 201-1).

Reserves are considered to be the tons of recoverable coal based on contemporary economic factors. No consideration has been given to legal or political constraints.

Includes only the major coal leasing States of Colorado, Montana, New Mexico, North Dakota, Oklahoma, Utah, and Wyoming. Excludes Alabama, Alaska, California, Kentucky, Ohio, Oregon, and Washington.

Table II represents a preliminary analysis classifying these logical mining units by size of reserves. A total of 50 million tons has been used as an arbitrary cutoff for the reason that any unit containing less reserves would be unable to bid on a major coal supply contract extending over a lengthy period. This analysis shows that of the 135 logical mining units, 38 (28 percent) containing 149 leases (51 percent) contain 88 percent of the reserves. The remaining 12 percent of the reserves are contained within 142 leaseholds which may not be economically viable.

Uncommitted leased reserves appear available for future use in 38 logical mining units summarized as follows:

TABLE II.—FEDERAL LEASEHOLDS WITH NO KNOWN PLANS FOR PRODUCTION
CLASSIFICATION BY SIZE OF RESERVES OVER 50,000,000 TONS
[Reserves in millions of tons]

State	50 to 99			100 to 199			200 to 299			Over 300		
	LMU's	Leases	Reserves	LMU's	Leases	Reserves	LMU's	Leases	Reserves	LMU's	Leases	Reserves
Colorado	2	8	133.58									
Montana	1	1	60.00									
North Dakota	(1)	(1)	(1)	(1)	(1)	(1)	2	3	475.129	(1)	(1)	(1)
New Mexico	2	8	144.532				(1)	(1)	(1)	(1)	(1)	(1)
Oklahoma	(1)	(1)	(1)	(1)	(1)	(1)	(1)	15	513.445	(1)	28	1,086.90
Utah	8	36	548.08	2	23	365.650	(1)	8	1,225.361	3	13	3,357.132
Wyoming	3	5	238.156	1	1	101.386	5			7		
Total	16	58	1,124.348	3	24	467.036	9	26	2,213.935	10	41	4,424.032

1 None.

	Total—no known plans to produce	Total—no known plans to produce reserves more than 50,000,000 tons	Total—no known plans to produce reserves less than 50,000,000 tons
LMU's.....	135	38	
Leases.....	291	149	97
Reserves.....	9,352.41	8,229.351	1,123.059

TABLE III.—RESERVES MORE THAN 50,000,000 TONS—NO KNOWN PLANS FOR PRODUCTION

Million tons	LMU's	Leases	Reserves
50 to 99.....	16	58	1,124.348
100 to 199.....	3	24	467.035
200 to 299.....	9	26	2,213.935
Over 300.....	10	41	4,424.032
Total.....	38	149	8,229.351

The above indicates that there are 38 logical mining units available at the present time to supply coal for major contracts. They are distributed as follows:

State	LMU's
Colorado.....	2
Montana.....	3
North Dakota.....	0
New Mexico.....	2
Oklahoma.....	0
Utah.....	15
Wyoming.....	16
Total.....	38

Considering necessary leadtimes of 8 years for an electrical generating facility using coal and 10 years for a synthetic gas plant, projections of future coal needs in light of the above available coal reserves should indicate the desired level of future leasing of Federal lands.

Question. When and under what conditions are individuals and companies prospecting or holding leases for coal on public lands required to submit their data on resources and reserves to the Government?

Answer. The present requirement for submitting new prospecting data is on a monthly basis and the data submitted must contain detailed geological information on completion or suspension of prospecting operations. The new proposed coal mining operating regulations will require that detailed coal reserve calculations be submitted at the time a mining plan is submitted to the Geological Survey for approval.

Question. Does the Government know as much as industry about the reserves and resources of oil and gas on the Outer Continental Shelf?

Answer. Individual companies may know more about reserves on the properties under their control but the Government knows more about the total resources of oil and gas on the OCS as a whole, and in time will know more about the reserves. The Government has access to all data from all leases on the OCS, while individual companies within industry generally have only their data. Each company determines the reservoir reserves for its own leases and has been doing so since it began developing its leases. Still, each company has only its own reserves information. The Survey has not been in a position from a data and personnel standpoint to accomplish the task of determining the reserves in all the thousands of reservoirs in the OCS. Work is proceeding on this task.

The Geological Survey has compiled the most complete existing file of well logs of the Outer Continental Shelf. It contains more than 25,000 logs of the more than 8,700 producible oil and gas completions and 5,000 nonproducing holes, with their corresponding test reports, completion reports, production records, directional surveys, etc. Other data include almost 2,000 detailed paleontology reports; several hundred paleontologic summaries and paleobathymetric maps covering all determinable paleogeological zones based on correlations, biostratigraphic markers, and assemblages indicating a plane or time line; more than 140,000 line miles of CDP seismic coverage and thousands of line miles of sea gravity,

magnetics, sparker and high resolution geophysics; computerized sand/shale ratio studies; and computerized reservoir studies.

Question. What is the present methodology used by the Interior Department for acquiring, assessing, and presenting geological and geophysical data on the extent and quality of OCS oil and gas resources and reserves in the following categories:

- (a) Underdeveloped regions (for example, Atlantic, Gulf of Alaska);
- (b) Underdeveloped provinces of currently producing regions; and
- (c) Producing provinces.

Answer. This involves a rather extensive explanation, therefore, I would like to submit the response for this question for the record. The Department of the Interior has developed a three-phase approach for resource assessments in undeveloped regions of the OCS such as the Atlantic and Gulf of Alaska. In producing provinces and undeveloped provinces of currently producing regions, phase I has been accomplished and the Geological Survey is involved in phases II and III.

Phase I involves broad areal studies to define favorable regions for exploration and to develop the basic data for adequate resource evaluations. Most of the data for phase I is gathered by various geophysical techniques—primarily seismic. The Geological Survey uses data collected by other Government agencies, where applicable, but for the most part contracts for its acquisitions or collects the data itself depending on the area, timing, and quality of data required. Data gathered under contract with industry is restricted; data gathered exclusively for or by the Survey is open to the public. Phase I studies also include the literature evaluation of available onshore and offshore geology as well as the evaluation of new geological data. The objective of these studies is to determine the quality and quantity of potential oil bearing rock, its distribution, and its configuration in space. Whatever the source of the data, its evaluation and interpretation is performed by Survey scientists and, in the initial stage of the leasing process, is included in the preliminary geological resource evaluation prepared for BLM prior to publishing the Call for Nominations in the Federal Register.

Phase II involves a detailed study of targeted basins, identified in phase I, for purposes of tract selection and further refinement of resource estimates. Geophysical data is still the primary information source in both developed and undeveloped provinces and is primarily acquired from industry sources by purchase agreement. The data are proprietary as are any interpretations therefrom; this means that the Government has access to the data for evaluation purposes but cannot publish the basis for their evaluation. In developed provinces well data is the most extensively used information source. The evaluation and interpretations are carried out by Survey scientists and recommendations are made to BLM as to what tracts to offer for lease.

Phase III studies comprise detailed trace evaluation through potential reserve assessment and the identification and application of many economic factors. In phase III proprietary geophysical data acquired by purchase and geological data obtained through regulation are used by Survey scientists to determine a fair market value.

The regulations and procedures used by the Geological Survey in acquiring, assessing, and presenting geological and geophysical data on the extent and quality of offshore resources and reserves in both undeveloped areas and producing provinces for purposes of resource evaluation are as follows:

(1) Industry is required to supply data on their OCS exploration and development. For core drilling programs in wildcat areas the Survey requires splits of the cores, copies of pertinent reports, and the supporting geophysical records. Also, Geological Survey observers are aboard the exploration vessels. Regulations do not require submittal of geophysical data acquired under nonexclusive permit, but proposed regulations requiring such submittals are presently being considered.

(2) For exploratory and development drilling done on leases the lessees are required to submit all pertinent data including preliminary seismic interpretations of prospective pay and hazardous zones prior to drilling, well engineering, platform data, downhole electrical logs and all other surveys, monthly production data, well test data, paleontologic data and/or a split of the well cuttings, and, if necessary, complete geological and engineering studies of each field necessary to support maximum efficient recovery determinations, commingling, and unitization. The Survey has access to all pertinent data from lease operations, and,

therefore, has much more data than any individual operator. This information is supplemented by data and scientific studies generated within the Survey.

(3) To supplement these data modern sophisticated geophysical data covering the areas to be evaluated are acquired. Because normal surface geologic mapping is impossible on submerged lands and the absence of well control in undeveloped areas prevents adequate subsurface geologic mapping, geophysical data are the primary sources of information for the evaluation of these areas. These data do not prove the presence of oil and gas but are necessary to define the sedimentary section and locate geologic structures favorable for the occurrence of oil or gas in commercial quantities. Since 1969, when budgetary support for acquisition of geophysical data was obtained for resource evaluation programs, the Geological Survey has purchased necessary data from seismic service companies. A determination is made of the amount and proposed location of the data as well as the technical specifications required, and these and other technical parameters are given to contract specialists within Geological Survey to advertise the Government's intent to acquire the data and to conduct the necessary contractual procedures in acquiring it. This assures that all companies with the capability to provide the data needed have an opportunity to contract their services. When the data are received in the specified format, they are reviewed by Geological Survey geophysicists for conformance with technical specifications. Using these acquisition procedures, the type and quality of data used is controlled and obtained at the lowest possible cost. For lease sale tract selection purposes Survey geophysicists make a preliminary interpretation of the data and prepare a travel time-structure-contour map to determine the most prospective structures. These data and maps are used, at this stage, for both environmental impact assessments and statements. Following the final tract selections, which are the localized areas to be evaluated for potential resources, detailed geophysical interpretations and maps are prepared.

(4) Using the detailed geophysical maps and reports, geologists redraw the maps on depth (instead of travel time) and, with the aid of stratigraphers and paleontologists, prepare maps showing reservoir thicknesses. This requires knowledge of all related geology from trends, stratigraphy, and paleontology.

(5) Petroleum engineers use the maps and accompanying data to determine the acre-feet of potential hydrocarbon bearing reservoir. Many factors concerning reservoir mechanisms and characteristics are determined from the nearest exploratory and producing wells and comparable producing fields. Hydrocarbon recovery factors are estimated from these data and potential resources are estimated. These estimates are, for the purpose of lease sales, considered to be estimated recoverable reserves and treated accordingly to determine presale values. Using many factors such as exploratory well costs, operating costs, price of products, rate of return on invested capital, et cetera, the present worth value of each tract is determined by a discounted cash flow calculation. A risk or probability of success factor is applied and the resulting figure is adjusted for condemnation or dry hole costs.

(6) For the December 1972 and later OCS sales, the formerly used discounted cash flow method was expanded into a new technique called the range of values method by the Survey and which has proven merit in scientific applications where there is great uncertainty.

The most probable outcome or result of a series of interrelated factors or events, each of which is unknown or uncertain, is predicted by a random selection of values for each factor, based on the laws of probability.

The range of values computer program developed by USGS determines a value for each OCS tract using the discounted cash flow method, but instead of considering just the most reasonable estimate of each significant parameter, the program considers all reasonable estimates. As an example, USGS scientists may agree that the most reasonable estimate of the thickness of an oil-bearing sand is 100 feet. They may also agree that the sand may very well be only 20 feet thick, but that it might be as much as 200 feet thick. The computer program randomly selects a number between 20 and 200. Other critical parameters such as permeability of the sand, cost of drilling, etc., are handled in a similar manner, and using these randomly selected values for the factors a value is computed for the tract. The process is repeated 500 times and 500 different values are obtained and plotted by computer on a histogram and bar graph. Thus, for each tract a range of values is obtained. The probability of each value occurring is also printed in percentiles. The most probable or expected value can be visually determined quickly. Recommendations derived from Survey resource evaluation programs are presented to the Bureau of Land Management for use in (1) pre-

paring lease sale schedules, (2) environmental analyses, (3) tract selections for sales, and (4) evaluation of bid acceptance or rejection. Evaluation data are also used in programs involving management and supervision of operations on leased OCS lands.

Question. Is the present data acquisition and assessment system considered adequate for assessing:

- (a) The role of OCS in meeting national energy demand?
- (b) The value of the resources at the time of alienation?

Answer. With the increases we are requesting in the fiscal year 1975 budget the present data acquisition and assessment system will become adequate for making a general assessment for the role of the OCS in meeting the national energy demand. In addition, the system may be improved if the proposed rules concerning geological and geophysical data submission and disclosure published in the Federal Register, vol. 39, No. 96, p. 17446 are adopted. It should be noted, however, that in frontier OCS areas, until a number of wells have been drilled, resources and reserves, and alternatively the role of the OCS in meeting the national energy demand cannot be completely assessed.

We believe that the data acquisition and assessment system is adequate for the determination of the value of the resources at the time of alienation. The system was developed over a period of years and like any scientific program it is being studied, and tested constantly for improvements.

Question. When and under what conditions is industry required to submit OCS exploratory and production data to the Government under the conditions of my preceding question?

Answer. Under the conditions of a prelease permit, the industry is required to submit all significant information which may be developed during any coring operations. Such operations require prior approval, and conduct of work in accordance with stipulations. Specific data requirements include: a daily log of all operations, a copy of all well logs and sample descriptions, and availability of samples and cores for examination.

The Department is now considering a revision of the regulations to take more information available in the future for the Government and for public review. This would include both geological and geophysical data. A copy of the Federal Register notice describing the proposed rules is enclosed.

After a lease is issued, a great amount of information is submitted to the USGS under present regulations and OCS orders, copies enclosed. Pages 16, 17, and 18 of the regulations provide considerable detail on basic requirements. OCS Order No. 12 gives direction to the procedures for submitting forms for public disclosure. Forms 9-331C, 9-331, 9-152, 9-330, and 9-153 are enclosed, and these and other requirements are explained briefly below.

Form 9-331C: Application for Permit to Drill, Deepen, or Plug Back, must be submitted prior to any drilling operations for approval. It follows the exploratory or development plan as described under 30 CFR 250.34, page 10, of the regulations booklet.

Form 9-331: Sundry Notices and Reports on Wells, must be submitted for approval prior to any well repair operation.

Form 9-152: Monthly Report of Operations, must be submitted as information following each month of production and other operations. It is presented by lease, and each well with its appropriate contribution or activity must be listed. This form was revised slightly with the advent of OCS Order No. 11, May 1, 1974, copy enclosed.

Form 9-153: Statement of Oil and Gas Runs and Royalties, is required following each month's production to show product sales amounts and the values for royalty purposes.

Form 9-330: Well Completion or Recompletion Report and Log, is required following newly drilled or recompleted wells which involve making a new completion.

Under OCS Order No. 5, each operator is required to submit quarterly a failure-analysis report identifying mechanical failures, the cause, and the corrective action taken.

Under OCS Order No. 7, all spills or leakage of oil and liquid pollutants shall be reported.

Under OCS Order No. 8, the operator must submit for approval important design characteristics on any platform prior to installation. A report on water discharge sampling and the results is required on all effluents discharged over-

board. A diagram of the firefighting system and an application for a gas detection system must be filed.

Under OCS order No. 9, the operator shall submit an application to the oil and gas supervisor for those pipelines authorized under 30 CFR 250.18(c). A completion report is then required following the installation.

Under the current OCS Order No. 11, several new forms are now required. Form 9-1866, "Request for Reservoir Maximum Efficient Rate," requires all available basic reservoir data as well as all support information used in determining an MER. It must be reviewed and submitted at least annually for approval. Form 9-1867, "Request for Well Maximum Production Rate," must be submitted for each completion and reviewed on a quarterly basis. The production rates shall be based on well tests and any mechanical limitations. Form 9-1868, "Well Potential Test Report," must be submitted as test data to establish or increase an oil well MPR. It must be submitted following a new completion and again later if an increase in production is justified. Form 9-1869, "Quarterly Oil Well Test Report," shall be presented at least quarterly to reflect the results of production testing each oil completion for 6 consecutive hours. Form 9-1870, "Semi-annual Gas Well Test Report," must be presented at least semiannually to show gas completion tests results. Form 9-1871, "Packer Test," shall be submitted following the initial production tests of multiple or selective completions and annually thereafter to show that the perforated zones are isolated.

Also, OCS Order No. 11 requires a multiple back pressure test to be run and submitted on initial gas completions, and an application must be approved to flare oil well gas under conditions where the operator has initiated positive nonflare action or where an evaluation shows the ultimate hydrocarbon energy production may be enhanced if flaring of gas is permitted.

less than the amount which the supervisor determines would be payable if the gas had been sold without processing.

(c) In determining the value of natural gasoline, the volume of such gasoline shall be adjusted to a standard by a method approved by the supervisor when necessary to adjust volumetric differences between natural gasolines of various specifications.

(d) No allowance shall be made for boosting residue gas or other expenses incidental to marketing.

(e) The lessee, with the approval of the supervisor, may establish a gross value per unit of 1,000 cubic feet of gas on the lease or at the wellhead for the purpose of computing royalty on gas processed for the recovery of constituent products, provided that the royalty shall not be less than that which would accrue by computing royalties in accordance with the provisions of paragraph (a) through (d) of this section. [As amended at 34 F.R. 13544, Aug. 22, 1969.]

§250.68 Commingling production.

Subject to such conditions as he may prescribe for measurement and allocation of production, the supervisor may authorize the lessee to move production from the lease to a central point for purposes of treating, measuring, and storing, and in moving such production, the lessee may commingle the production from different wells, leases, pools, and fields, and with production of other operators. The central point may be on shore or at any other convenient place selected by lessee.

§250.69 Measurement of sulphur.

The measurement of sulphur for the purpose of computing royalty shall be on such basis and shall conform to such standards as the supervisor may approve.

PROCEDURE IN CASE OF DEFAULT BY LESSEE

§250.60 Default.

Whenever the owner of a lease fails to comply with the provisions of the regulations in this part, the supervisor is authorized to give 30-day notice of such default by registered letter to the lessee at his record post office address as provided in section 5(b)(1) of the act and to recommend to the Secretary, through the Director, lease cancellation pursuant to section 5(b)(1) and (2) of the act, appropriate action under the penalty provisions of section 5(a)(2) of the act, or the exercise of such other legal or equitable remedy as the lessor may have.

§250.81 Appeals.

Orders or decisions issued under the regulations in this part may be appealed as provided in part 290 of this chapter. Compliance with any such order or decision shall not be suspended by reason of any appeal having been taken unless such suspension is authorized in writing by the Director or the Board of Land Appeals (depending upon the official before whom the appeal is pending) and then only upon a determination that such suspension will not be detrimental to the lessor or upon the submission and acceptance of a bond deemed adequate to indemnify the lessor from loss or damage. [As amended at 38 F.R. 10004, April 23, 1973.]

§250.82 Judicial review.

Nothing contained in this part shall be construed to prevent any interested party from seeking judicial review as authorized by law.

REPORTS TO BE MADE BY ALL LESSEES (Including Operators)

§250.90 General requirements.

Information required to be submitted in accordance with the regulations in this part shall be furnished in the manner and form prescribed in the regulations in this part or as directed by the supervisor. Copies of forms can be obtained from the supervisor and must be filled out completely and filed punctually with that official.

§250.91 Application for permit to drill, deepen, or plug back.

Applications for permits to drill, deepen, or plug back must be filed in triplicate on Form 9-331C. Prior to commencing such operations approval in writing must be received from the supervisor.

(a) Application for permit to drill.

(1) The application must give the surface location and projected bottom-hole location in feet from the lease boundaries; elevation of the derrick floor; water depth; depth to which the well is proposed to be drilled; estimated depths to the top of significant markers; depths at which water, oil, gas, and mineral deposits are expected; the proposed blowout prevention and casing program, including the size, weight, grade, and setting depth of casing, and the quantity of cement to be used, together with all other information specified on Form 9-331C. Information also shall be furnished relative to the proposed plan for drilling other wells from the same platform, for casing at specified depths, and for electrical and other

logging, together with any other information required by the supervisor.

(2) At least two copies of the application shall be accompanied by: (i) A certified plat drawn to a scale of 2,000 feet to the inch, showing surface and subsurface location of the well to be drilled and all wells theretofore drilled in the vicinity for which information is available, and (ii) information specified in §250.34 to the extent not included in the application or previously furnished (reference must be made thereto).

(b) *Application for permit to deepen or plug back.* The application must describe fully: (1) The present status of the well including the production string or last string of casing, well depth, present productive zones and productive capability, and other pertinent matters; and (2) the details of the proposed work and the necessity therefor. [As amended and renamed at 34 F.R. 13544, Aug. 22, 1969.]

§250.92 Sundry notices and reports on wells.

All notices of intention to fracture treat, acidize, repair, multiple complete, abandon, change plans, and for other similar purposes, and all subsequent reports pertaining to such operations shall be submitted on Form 9-331 in triplicate in accordance with §250.38(b). Prior to commencing such operations approval must be received from the supervisor in writing.

(a) *Notice of intention to change the condition of a well.* Form 9-331 shall contain a detailed statement of the proposed work for repairing (other than work incidental to ordinary well operation), acidizing or stimulating production by other methods, perforating, sidetracking, squeezing with mud or cement, or commencing any operations that will materially change the approved program for drilling a well or alter the condition of a completed well other than those operations covered by §250.91.

(b) *Subsequent report of changing the condition of a well.* Form 9-331 shall contain a detailed report of all work done and the results obtained. The report shall set forth the amount and rate of production of oil, gas, and water before and after the work was completed and shall include a complete statement of the dates on which the work was accomplished and the methods employed.

(c) *Notice of intention to abandon well.* Form 9-331 shall contain a detailed statement of the proposed work for abandonment of any well, including a drilling well, a depleted producing well, an injection well, or a dry hole. The statement as to a producing well shall set forth the reasons for abandonment and the amount and date of last production and, as to all

wells, shall describe the proposed work, including kind, location, and length of plugs (by depths), and plans for mudging, cementing, shooting, testing, removing casing, and other pertinent information.

(d) *Subsequent report of abandonment.* Form 9-331 shall contain a detailed report of the manner in which the abandonment or plugging work was accomplished, including the nature and quantities of materials used in plugging and the location and extent (by depths) of casing left in the well; and the volume of mud fluid used. If an attempt was made to part any casing, a description of the methods used and results obtained must be included. [As amended and redesignated from 250.91 at 34 F.R. 13544, Aug. 22, 1969.]

§250.93 Monthly report of operations.

A separate report of operations for each lease must be made on Form 9-152 for each calendar month, beginning with the month in which drilling operations are initiated, and must be filed in duplicate with the supervisor on or before the 20th day of the succeeding month, unless an extension of time for the filing of such report is granted by the supervisor. The report on this form shall disclose accurately all operations conducted on each well during each month, the status of operations on the last day of the month, and a general summary of the status of operations on the leased lands, and the report must be submitted each month until the lease is terminated or until omission of the report is authorized by the supervisor. It is particularly necessary that the report shall show for each calendar month:

(a) Each well listed separately by number and its location shown if possible.

(b) The number of days each well produced, whether oil or gas, and the number of days each input well was in operation.

(c) The quantity of oil, gas, and water produced; the total amount of gasoline and other lease products recovered; and other required information. When oil and gas, or oil, gas, and gasoline, or other hydrocarbons are concurrently produced from the same lease, separate reports on this form should be submitted for oil and gas and gasoline, unless otherwise authorized or directed by the supervisor.

(d) The depth of each active or suspended well; the name, character, and depth of each formation drilled during the month; the date each such depth was reached; the date and reason for every shutdown; the names and depths of important formation changes and contents of formations; the amount and size of any casing run since last report; the dates and results of any tests such as production, water shut-off, or gasoline content; and any other noteworthy information on operations not specifically provided for in the form.

(c) If no runs or sales were made during the calendar month, the report must so state.

§250.94 Statement of oil and gas runs and royalties.

When directed by the supervisor, a monthly report shall be made by the lessee in duplicate, on Form 9-153, showing each run of oil; all sales of gas, gasoline, and other lease products; and the royalty accruing therefrom to the lessee. [As amended at 34 F.R. 13544, Aug. 22, 1969.]

§250.95 Well completion or recompletion report and log.

All reports and logs of well completions or recompletions shall be submitted on or attached to Form 9-330 in duplicate in accordance with §250.38(b). The form shall contain a complete and accurate log and report of all operations conducted on the well as specified on the form. Duplicate copies of logs that may have been compiled for geologic information from cores or formation samples shall be filed in addition to the regular log. Geologic markers and all important zones of porosity and contents thereof; cored intervals; and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries shall be shown as provided therefor on Form 9-330 or on attachments thereto. If not previously furnished, duplicate copies of composites of multiple runs of all well bore surveys, including electric, radioactive, sonic and other logs, temperature surveys, and directional surveys shall be attached. (Such copies are in addition to field prints filed pursuant to §250.38(d).) [As amended and redesignated from 250.92 at 34 F.R. 13544, Aug. 22, 1969.]

§250.96 Special forms or reports.

When special forms or reports other than those referred to in the regulations in this part may be necessary, instructions for the filing of such forms or reports will be given by the supervisor. [Redesignated from 250.95 at 34 F.R. 13544, Aug. 22, 1969.]

§250.97 Public inspection of records.

Geological and geophysical interpretations, maps, and data required to be submitted under this part shall

not be available for public inspection without the consent of the lessee so long as the lease remains in effect or until such time as the supervisor determines that release of such information is required and necessary for the proper development of the field or area. [F.R. Doc. 69-10027; Filed Aug. 21, 1969.]

MINERAL LEASES AFFECTED BY SECTION 6 OF OUTER CONTINENTAL SHELF LANDS ACT

§250.100 Effect of regulations on provisions of lease.

(a) As contemplated by section 6(b) of the act, the regulations in this part will supersede the provisions of any lease which is determined to meet the requirements of section 6(a) of the act, to the extent that they cover the same subject matter, with the following exceptions: The provisions of a lease with respect to the area covered by the lease, the minerals covered by the lease, the rentals payable under the lease, the royalties payable under the lease (subject to the provisions of sections 6(a)(8) and 6(a)(9) of the act), and the term of the lease (subject to the provisions of section 6(a)(10) of the act and, as to sulphur, subject to the provisions of section 6(b)(2) of the act) shall continue in effect and, in the event of any conflict or inconsistency, shall take precedence over the regulations in this part.

(b) A lease that meets the requirements of section 6(a) of the act shall also be subject to the mineral leasing regulations applicable to the Outer Continental Shelf, as well as the regulations relating to geophysical and geological exploratory operations and to pipeline rights-of-way in the Outer Continental Shelf, to the extent that those regulations are not contrary to or inconsistent with the provisions of the lease relating to the area covered, the minerals covered, the rentals payable, the royalties payable, and the terms of the lease.

NOTE: The record keeping or reporting requirements of this part have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942. [See 43 CFR, Part 3300.]

proposed rules

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rulemaking prior to the adoption of the final rules.

DEPARTMENT OF THE TREASURY

Customs Service

[19 CFR Parts 133, 141]

TRADEMARKS, TRADE NAMES, AND COPYRIGHTS AND ENTRY OF MERCHANDISE

Invoices Accompanying Shipments of Books; Extension of Time

Correction

In FR Doc. 74-19987 appearing on page 17105 of the issue for Monday, May 13, 1974, in the last line, the comment closing date, reading "May 3, 1974," should read "May 31, 1974."

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[43 CFR Part 3300]

OUTER CONTINENTAL SHELF LANDS ACT

Geological and Geophysical Data Submission Disclosure

CROSS REFERENCE: For a document issued jointly by the Geological Survey, Department of the Interior, and the Bureau of Land Management, see FR Doc. 74-11228, *infra*.

*Geological Survey

[30 CFR Part 250]

OUTER CONTINENTAL SHELF LANDS ACT

Geological and Geophysical Data Submission Disclosure

CROSS REFERENCE: For a document issued jointly by the Geological Survey, Department of the Interior, and the Bureau of Land Management, see FR Doc. 74-11228, *infra*.

Office of the Secretary

[30 CFR Part 250]

[43 CFR Part 3300]

OUTER CONTINENTAL SHELF LANDS ACT

Geological and Geophysical Data Submission Disclosure

The Department of the Interior is considering amending the regulations issued pursuant to the Outer Continental Shelf Lands Act (OCS Act) (43 U.S.C. 1331-1343) with the objective of imposing new requirements with respect to geological and geophysical exploration under permits and pursuant to leases on the Outer Continental Shelf and the disclosure of information and data obtained by such exploration. It is believed that the submission of such data to the Geological Survey and the disclosure of such in-

formation to the Public will serve the public interest, conserve natural resources, encourage competitive bidding, and assure the receipt of a fair market value for Federal resources. To that purpose the Department has under consideration the amendment of 30 CFR Part 250 and 43 CFR Part 3300: a draft of such regulations is set forth below.

A public hearing will be held in the Auditorium, Department of the Interior, Washington, D.C., beginning at 10 a.m., Monday, July 15, 1974, and continue, if necessary, through July 16, 1974. Requests to appear at the hearing should be submitted to the Director, Geological Survey, National Headquarters Center, U.S. Geological Survey, Reston, Virginia 22092, by July 8, 1974. A notice announcing procedures to be followed at the hearing and information which must be filed with the requests to appear will be published in the FEDERAL REGISTER on May 31, 1974. Written comments, including suggested modifications of, or amendments to, the draft regulations or alternative proposals, should be submitted to the Director, Geological Survey by the close of business July 8, 1974. The purpose of requesting such comments prior to the hearing is to assist the Department in the conduct of the hearing. Written comments may be submitted to the same officer after the hearing and will be received until the close of business on Friday, August 23, 1974.

At the hearing and in the written comments the Department particularly wishes to receive both comments on the draft regulations and recommendations as to alternative methods of achieving these objectives. After all comments and recommendations have been received and studied the Department will publish a proposed regulation for comment.

The draft amendments of 30 CFR Part 250 and 43 CFR Part 3300 are as follows:

1. In § 250.38 the heading is revised, paragraph (g) is redesignated paragraph (h) and a new paragraph (g) is added as follows:

§ 250.38 Records from geological and geophysical surveys and well operations.

(g) Upon request by the Supervisor the lessee shall make available to the Supervisor all data obtained in any geophysical exploration on the lessee and the processed information derived from such data with extraneous signals and interference removed, in a format and quality suitable for interpretative evaluation, reflecting state-of-the-art processing techniques, including: (1) common-depth-point seismic data, (2) high resolution

data, including those from shallow and deep subbottom profilers, bathymetry, side scan sonars, magnetometers and bottom profilers, (3) gravity and magnetic data and (4) data from special studies such as refraction surveys, velocity surveys and isomorph conformation studies.

2. Section 250.70 is added to read as follows:

§ 250.70 Geological and geophysical exploration permits.

Any agency of the United States or any person wishing to conduct geological or geophysical explorations on the Outer Continental Shelf must obtain a permit for such exploration from the Supervisor. The Supervisor may issue such a permit upon receiving a proper application and upon finding that such exploration will not interfere with or endanger natural operations under any lease maintained or granted pursuant to the Outer Continental Shelf Lands Act and that such exploration will not be unduly harmful to aquatic life in such area. The application for an exploration permit shall be on a form approved by the Director, Geological Survey, and contain at a minimum the following information: (1) time of exploration to be conducted, (2) manner in which the exploration will be conducted, (3) location on the Outer Continental Shelf where the exploration will be conducted, (4) purpose of conducting such exploration, (5) the format in which the data collected will be represented, and (6) the dates on which the exploration will be commenced and completed.

3. Section 250.71 is added to read as follows:

§ 250.71 Geological Exploration.

The following geological data and processed information when required under any geological and geophysical exploration permit approved by the Supervisor, shall be made available to the Supervisor within 30 days after the collection of the data: *Provided, however*, That any data and processed information obtained during geological explorations depicting environmental hazards or hydrocarbon shows or both shall become available to the Supervisor immediately upon collection:

(a) Accurate and complete records of all geological and geotechnical data resulting from each drilling operation;

(b) Paleontological records identifying microfossils by depth and resulting interpretations based upon such identification) unless washed samples are maintained by the permittee

PROPOSED RULES

for paleontological determination and are made available for inspection by the Geological Survey:

(c) Copies of logs or charts of electrical, radioactive, sonic, and other well logging operations;

(d) Analyses of cores or bottom samples or a representative cut or split of the core or bottom sample;

(e) Detailed descriptions of any hydrocarbon shows or hazardous conditions encountered during operations, including near losses of well control, abnormal geopressures, and losses of circulation; and

(f) Such other geological and geochemical data and processed information to be obtained under the permit as may be specified by the Supervisor.

4. Section 250.72 is added to read as follows:

§ 250.72 Geophysical Exploration.

The following geophysical data and processed information when acquired under any geological and geophysical exploration permit approved by the Supervisor shall be made available to the Supervisor within 30 days after collection: *Provided, however*, That any data and processed information obtained during geophysical explorations depicting environmental hazards or hydrocarbon shows or both shall be made available to the Supervisor immediately upon collection:

(a) Accurate and complete records of each geophysical survey conducted under exploration permit, including final location maps of all survey stations; and

(b) All data developed under any exploration permit and the processed information derived therefrom with extraneous signals and interference removed, in a format and quality suitable for interpretative evaluation, reflecting state-of-the-art processing techniques, including:

(1) Common-depth-point seismic data,

(2) High resolution data, including those from shallow and deep sub-bottom profilers, bathymetry, side scan sonars, magnetometers and bottom profilers,

(3) Gravity and magnetic data, and

(4) Data from special studies such as from refraction surveys, velocity surveys and domal configuration studies.

5. Section 250.73 is added to read as follows:

§ 250.73 Terms and Conditions of Permits.

Geological and geophysical exploration permits issued by the Supervisor shall be subject to such terms and conditions as he may determine to be necessary and proper including but not by way of limitation, terms and conditions to:

(1) Avoid interfering with or endangering actual operations under any lease maintained or granted pursuant to the OCS Act,

(2) Prevent undue harm to aquatic life in the area of the geological or geophysical explorations; and

(3) Provide for the means by which data will be collected, the format by

which the data will be represented, and the manner in which it will be made available to the public pursuant to 30 CFR 250.97.

6. Section 250.74 is added to read as follows:

§ 250.74 Reservation of Right.

As a condition of the right to conduct geological and geophysical explorations on the Outer Continental Shelf under a permit approved by the Supervisor the Supervisor may at his discretion require that an employee of the Geological Survey be present at any or all times during which geological and geophysical explorations are being conducted pursuant to an approved permit.

7. Section 250.97 is revised to read as follows:

§ 250.97 Public availability of records.

(a) Geological and geophysical interpretations, maps, data and processed information relating to the submerged lands of the Outer Continental Shelf obtained prior to January 1, 1975, pursuant to exploration permits or under leases and required to be submitted to the Supervisor under this Part or 43 CFR Part 3300 shall not be made available for public inspection without the consent of the lessee so long as the lease remains in effect or until such time as the Supervisor determines that release of such information is required and necessary for the proper development of a field or area: *Provided, however*, That data and processed information depicting environmental hazards shall be made public immediately.

(b) Geological and geophysical interpretations, maps, data and processed information relating to submerged lands on the Outer Continental Shelf obtained after January 1, 1975, pursuant to exploration permits or under leases and required to be submitted to the Supervisor under this Part or 43 CFR Part 3300 shall be made available for public inspection, if relating to submerged lands which have been leased, 60 days after the data and processed information were obtained or, if relating to submerged lands which have not been leased, ten years after the data and processed information were obtained, or after the issuance of a lease, whichever is sooner: *Provided, however*, That data and processed information obtained under exploration permits depicting environmental hazards shall be made public immediately.

8. It is proposed to amend to 43 CFR Part 3300 by adding paragraph (c) to section 3300.1:

§ 3300.1 Persons qualified to hold leases.

(c) In order for any person to be a qualified bidder pursuant to the requirements of section 8(a) of the OCS Act, at any outer Continental Shelf lease sale to be held after January 1, 1975, that person must have made available to the

Supervisor within 120 days after the call for nominations for that sale is published in the *FEDERAL REGISTER* all geological and geophysical data and processed information of the following specified types obtained by that person at any time after August 7, 1953, within that area defined by the call for nominations:

(1) *Geological*: (a) Structural interpretations based on available geological and geophysical data of the type which would be submitted with an application for approval of an exploratory drilling program pursuant to 30 CFR 250.34(a), (b) accurate and complete records of drilling, logging, directional well surveys, perforations, formations penetrated, the content and character of oil, gas, and other mineral deposits and water in each formation, and any other pertinent geologic and geophysical information, (c) paleontological reports identifying microscopic fossils by depths (not the resulting age interpretations based upon such identifications) unless washed well samples normally maintained by the lessee for paleontological determinations are made available for inspection, (d) copies of logs or charts of electrical, radioactive, sonic and other well logging operations and directional well surveys, (e) copies of reports on cementing, perforating, acidizing, analyses of cores or similar services, and (f) any other geological reports and records of operations when required and in the manner and form prescribed by the Supervisor;

(2) *Geophysical*: (a) Accurate and complete records of each geophysical survey conducted within the area defined within the call for nominations for that sale including final location maps of all survey stations, (b) all data developed in any geophysical exploration and the processed information derived from that data with extraneous signals and interference removed, in a format and quality suitable for interpretative evaluation, reflecting state-of-the-art processing techniques, including: (1) Common-depth-point seismic data, (2) high resolution data, including those from shallow and deep sub-bottom profilers, bathymetry, side scan sonars, magnetometers and bottom profilers, (3) gravity and magnetic data and (4) data from special studies such as refraction surveys, velocity surveys and domal configuration studies.

Dated: May 10, 1974.

JOHN C. WHITAKER,
Under Secretary of the Interior.
[FR Doc. 74-11228 Filed 5-15-74; 8:45 am]

**DEPARTMENT OF HEALTH,
EDUCATION, AND WELFARE**

Food and Drug Administration

[21 CFR Part 310]

METHADONE

Multiple Enrollment Prevention

Section 310.505(e) (3) (21 CFR 310.505(e) (3)), formerly § 130.44(e) (3) of

Form G-255
(Rev. 5-64)UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE*

(See other in-
structions on
reverse side)Form approved
Budget Bureau No. 42-33514.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DAY ☐ Other _____ 2. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. CENTR. ☐ Other _____ 3. NAME OF OPERATOR _____ 4. ADDRESS OF OPERATOR _____ 5. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface _____ At top prod. interval reported below _____ At total depth _____										6. IF INDIAN, ALLOTTEE OR TRIBE NAME _____ 7. UNIT AGREEMENT NAME _____ 8. FARM OR LEASE NAME _____ 9. WELL NO. _____ 10. FIELD AND POOL, OR WILDCAT _____ 11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA _____	
12. PERMIT NO. _____ DATE ISSUED _____										12. COUNTY OR PARISH _____ 13. STATE _____	
14. DATE SPUNDED _____		15. DATE T.D. REACHED _____		17. DATE COMPL. (Ready to prod.) _____		18. ELEVATION (OF, BGR, ST, GR, ETC.)* _____		19. ELEV. CASINGHEAD _____			
20. TOTAL DEPTH, MD & TVD _____		21. FLUG, BACK T.D., MD & TVD _____		22. IF MULTIPLE COMPL. HOW MANY* _____		23. INTERVALS DRILLED BY _____		24. ROTARY TOOLS _____			
25. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* _____										26. WAS DIRECTIONAL SURVEY MADE _____	
27. TYPE ELECTRIC AND OTHER LOGS RUN _____										28. WAS WELL Cased _____	
CASINO RECORD (Report all strings set in well)											
CASINO SIZE		WEIGHT, LB./FT.		DEPTH SET (MD)		HOLE SIZE		CEMENTING RECORD		AMOUNT PULLED	
29. LINER RECORD						30. TUBING RECORD					
SIZE		TOP (MD)		BOTTOM (MD)		BACKS CEMENT*		SCREEN (MD)		SIZE	
										DEPTH SET (MD)	
										PACKER SET (MD)	
31. PERFORATION RECORD (Interval, size and number)						32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.					
						DEPTH INTERVAL (MD)		AMOUNT AND KIND OF MATERIAL USED			
33. PRODUCTION											
DAYS FIRST PRODUCTION		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)						WELL STATUS (Producing or shut-in)			
DATE OF TEST		ROCKS TESTED		CHOSE SIZE		PROD'N. FOR TEST PERIOD		OIL—BBL.		GAS—MCF.	
FLOW, TUBING PRESS.		CASING PRESSURE		CALCULATED 24-HOUR RATE		OIL—BBL.		GAS—MCF.		WATER—BBL.	
										OIL GRAVITY—API (CORR.)	
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)										TEST WITNESSED BY	
35. LIST OF ATTACHMENTS											
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records											
SIGNED _____				TITLE _____				DATE _____			

*(See Instructions and Spaces for Additional Data on Reverse Side)

STORM CHOKE

TYPE _____ LOC. _____

Generally, this form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency or both pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or national offices, are set forth in the instructions to the form. The instructions to the form may be obtained from the nearest Federal oil and/or State office. See instructions on items 22 and 24, and 25, below regarding the number of copies to be submitted.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers', geologists', and core analysis, all types electric, etc.), formation and pressure records, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be filed on this form, see Item 35.

Item 21: Indicate the type of well, the applicable State requirements, locations on Federal or Indian land should be described in accordance with requirements. Consult local State office for Federal office for use on this form.

Item 23: Indicate which well elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments. Items 23 and 24: If this well is completed for separate production from more than one interval (as defined), so indicate in Item 23. Submit a separate report (page) on this form, adequately identifying the interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in Item 33. Submit a separate report (page) on this form, adequately identifying for each additional interval, top(s) to be separately produced, showing the additional data pertinent to such interval.

Item 25: Submit a "Concise" Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 for details of the cementing tool.)

37. SUMMARY OF LOGGING ZONES:		38. GEOLOGIC MARKERS	
FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.

39. LOG OF TESTS:		40. GEOLOGIC MARKERS	
FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.

Form 9-331
(May 1963)UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEYSUBMIT IN TRIPLICATE*
(Other instructions on re-
verse side)Form approved.
Budget Bureau No. 42-R1424.
5. LEASE DESIGNATION AND SERIAL NO.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER ☐		6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
2. NAME OF OPERATOR		7. UNIT AGREEMENT NAME	
3. ADDRESS OF OPERATOR		8. FARM OR LEASE NAME	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface At top prod. interval At total depth		9. WELL NO.	
10. FIELD AND POOL, OR WILDCAT		11. SEC., T., R., W., OR BLE. AND SURTACE OR AREA	
14. PERMIT NO.	15. ELEVATIONS (Show whether OF, AT, OR, etc.)	12. COUNTY OR PARISH	13. STATE

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐	PULL OR ALTER CASING ☐
FRACURE TREAT ☐	MULTIPLE COMPLETE ☐
SHOOT OR ACIDIZE ☐	ABANDON* ☐
REPAIR WELL ☐	CHANGE PLANS ☐
(Other) ☐	

SUBSEQUENT REPORT OF:

WATER SHUT-OFF ☐	REPAIRING WELL ☐
FRACURE TREATMENT ☐	ALTERING CASING ☐
SHOOTING OR ACIDIZING ☐	ABANDONMENT* ☐
(Other) ☐	

(Note: Report results of multiple completion on Well Completion or Recalculation Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of startline and proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and codes pertinent to this work.)*

18. I hereby certify that the foregoing is true and correct

SIGNED _____

TITLE _____

DATE _____

(This space for Federal or State office use)

APPROVED BY _____

TITLE _____

DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Instructions

General: This form is designed for submitting proposals to perform certain well operations, and reports of such operations when completed, as indicated, on Federal and Indian lands pursuant to applicable Federal law and regulations, and, if approved or accepted by any State, on all lands within the boundaries of that State. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 17: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by local Federal and/or State offices. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present production; reasons for abandonment with present significant above plugs; amount of cement used; method of placement of cement plugs; mud or other material used; method of pulling of any casing, liner or tubing pulled and the depth to top of any left in the hole; method of closing top of well; and date well site conditioned for final inspection looking to approval of the abandonment.

Form 9-311 C
(May 1952)UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEYSUBMIT IN TRIPLICATE*
(Other instructions on
reverse side)Form approved.
Budget Bureau No. 42-B1423.

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☐DEEPEN ☐PLUG BACK ☐

b. TYPE OF WELL

OIL ☐GAS ☐OTHER ☐SINGLE ☐MULTIPLE ☐

2. NAME OF OPERATOR

3. ADDRESS OF OPERATOR

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements*)
At surface

At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

15. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST
PROPERTY OR LEASE LINE, FT.
(Also to nearest oil, salt, etc., if any)

16. NO. OF ACRES IN LEASE

17. NO. OF ACRES ASSIGNED
TO THIS WELL18. DISTANCE FROM PROPOSED LOCATION*
TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.

19. PROPOSED DEPTH

20. ROTARY OR CABLE TOOLS

21. ELEVATIONS (Show whether D.P., RT., GR., etc.)

22. APPROX. DATE WORK WILL START*

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout prevention program, if any.

SIGNED _____ TITLE _____ DATE _____

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

Instructions

General: This form is designed for submitting proposals to perform certain well operations, as indicated, on all types of lands and leases for appropriate action by either a Federal or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary Federal or State action concerning the use of this form and the collection of fees to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

Item 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable State or Federal regulations concerning subsequent work proposals or reports on the well.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 11: Needed only when location of well cannot readily be found by road from the land or lease description. A plat or plots, separate or on this reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal or State agency officials.

Items 13 and 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective production zone.

Item 22: Consult applicable Federal or State regulations, or appropriate officials, concerning approval of the proposal before operations are started.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
GULF OF MEXICO AREA

74-3

April 18, 1974

NOTICE TO LESSEES AND OPERATORS
OCS ORDER NUMBER 11

The attached OCS Order No. 11 supersedes Interim Order No. 11 dated April 5, 1972, and shall be applicable to all oil and gas wells located on the Outer Continental Shelf, Gulf of Mexico, with the limitations as described in the first paragraph of the Order.

The Order, which is effective May 1, 1974, will be under the administration of the Area Oil and Gas Supervisor for Production Control. All applications for approval and all submittals of information required by this Order will be made to the Area Oil and Gas Supervisor for Production Control, Post Office Box 7944, Metairie, Louisiana 70011.

The effective date for balancing production in compliance with Paragraph 4 of the Order shall be July 1, 1974. Prior to that date, operators shall submit on Form 9-1866 (Request for Reservoir MER) a proposed maximum efficient rate (MER) for each producing reservoir, including as much as is available of the information requested on the form. As of July 1, 1974, production from all reservoirs shall be considered in balance and all production subsequent to July 1, 1974, shall be maintained in balance with approved MER's in accordance with the provisions of Paragraph 4.

The date for submittal of the initial Quarterly Oil Well Test Report (Form 9-1869) shall be September 10, 1974 (Testing Period: June 11 - September 10). Subsequent reports shall be submitted in accordance with the provisions of subparagraph 5.C.

The date for submittal of the initial Semiannual Gas Well Test Report (Form 9-1870) shall be December 10, 1974 (Testing Period: June 11 - December 10). Subsequent reports shall be submitted in accordance with the provisions of subparagraph 6.C.

The forms attached to the Order are typewritten copies of those required to be submitted. It will be approximately 60 days before the United States Printing Office can furnish us a supply of printed forms for distribution. Until we receive the printed forms, we suggest that you use reproductions of the attached forms. We will maintain a limited supply of the typewritten copies which we can furnish upon request for reproduction purposes.

The number of copies required to be submitted for each of the attached forms shall be as follows:

<u>Form Number</u>	<u>Title</u>	<u>Number of Copies</u>
9-152	Monthly Report of Operations	3 (one (1) marked for PUBLIC INFORMATION)
9-1866	Request for Reservoir MER	2
9-1867	Request for Well MPR	2
9-1868	Well Potential Test Report	2
9-1869	Quarterly Oil Well Test Report	3 (one (1) marked for PUBLIC INFORMATION)
9-1870	Semi-Annual Gas Well Test Report	3 (one (1) marked for PUBLIC INFORMATION)
9-1871	Packer Test	2

Please note that Form 9-152 (Monthly Report of Operations) will be submitted to the Area Office in Metairie, Louisiana, subsequent to the date of this Order. Formerly, this form was submitted to the appropriate District office.

L. E. McBee
Acting Oil and Gas Supervisor
Production Control
Gulf of Mexico Area

Attachments

May 1, 1974

OCS Order No. 11

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
GULF OF MEXICO OCS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS
LEASES IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

OIL AND GAS PRODUCTION RATES,
PREVENTION OF WASTE, AND
PROTECTION OF CORRELATIVE RIGHTS

This Order is established pursuant to the authority prescribed in 30 CFR 250.1, 30 CFR 250.11, and in accordance with all other applicable provisions of 30 CFR Part 250, and the notice appearing in the Federal Register, dated December 5, 1970 (35 F.R. 18559), to provide for the prevention of waste and conservation of the natural resources of the Outer Continental Shelf, and the protection of correlative rights therein. This Order shall be applicable to all oil and gas wells on Federal leases in the Outer Continental Shelf of the Gulf of Mexico; provided, however, that it shall not apply to oil and gas wells on a lease of which any part lies within the disputed area referred to in paragraph 4 of the Supplemental Decree of December 20, 1971, in United States vs. Louisiana, et al., 404 U.S. 388 (1971). All departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b). References in this Order to approvals, determinations, and requirements for submittal of information or applications for approval are to those granted, made, or required by the Oil and Gas Supervisor or his delegated representative.

1. Definition of Terms. As used in this Order, the following terms shall have the meanings indicated:
 - A. Waste of Oil and Gas. The definition of waste appearing in 30 CFR 250.2(h) shall apply, and includes the failure to timely initiate enhanced recovery operations where such methods would result in an increased ultimate recovery of oil or gas under sound engineering and economic principles. Enhanced recovery operations refers to pressure maintenance operations, secondary and tertiary recovery, cycling, and similar recovery operations which alter the natural forces in a reservoir to increase the ultimate recovery of oil or gas.

- B. Correlative Rights. The opportunity afforded each lessee or operator to produce without waste his just and equitable share of oil and gas from a common source of supply.
- C. Maximum Efficient Rate (MER). The maximum sustainable daily oil or gas withdrawal rate from a reservoir which will permit economic development and depletion of that reservoir without detriment to ultimate recovery.
- D. Maximum Production Rate (MPR). The approved maximum daily rate at which oil may be produced from a specified oil well completion or the maximum approved daily rate at which gas may be produced from a specified gas well completion.
- E. Interested Party. The operators and lessees, as defined in 30 CFR 250.2(f) and (g), of the lease or leases involved in any proceeding initiated under this Order.
- F. Reservoir. An oil or gas accumulation which is separated from and not in oil or gas communication with any other such accumulation.
- G. Competitive Reservoir. A reservoir as defined herein containing one or more producible or producing well completions on each of two or more leases, or portions thereof, in which the lease or operating interests are not the same.
- H. Property Line. A boundary dividing leases, or portions thereof, in which the lease or operating interest is not the same. The boundaries of Federally approved unit areas shall be considered property lines. The boundaries dividing leased and unleased acreage shall be considered property lines for the purpose of this Order.
- I. Oil Reservoir. A reservoir that contains hydrocarbons predominantly in a liquid (single-phase) state.
- J. Oil Well Completion. A well completed in an oil reservoir or in the oil accumulation of an oil reservoir with an associated gas cap.
- K. Gas Reservoir. A reservoir that contains hydrocarbons predominantly in a gaseous (single-phase) state.
- L. Gas Well Completion. A well completed in a gas reservoir or in the gas cap of an oil reservoir with an associated gas cap.
- M. Oil Reservoir with an Associated Gas Cap. A reservoir that contains hydrocarbons in both a liquid and a gaseous state (two-phase).

- N. Producible Well Completion. A well which is physically capable of production and which is shut in at the wellhead or at the surface, but not necessarily connected to production facilities, and from which the operator plans future production.

2. Classification of Reservoirs.

- A. Initial Classification. Each producing reservoir shall be classified by the operator, subject to approval by the Supervisor, as an oil reservoir, an oil reservoir with an associated gas cap, or a gas reservoir.

- (1) The initial classification of each reservoir from which production is commenced subsequent to the date of this Order shall be submitted for approval with the initial submittal of MER data for the reservoir.
- (2) Each reservoir from which production commenced on or prior to the date of this Order shall be classified by the operator, based on existing reservoir conditions. Such classification shall be determined and submitted to the Supervisor within six (6) months of the date of this Order.

- B. Reclassification. A reservoir may be reclassified by the Supervisor, on his own initiative or upon application of an operator, during its productive life when information becomes available showing that such reclassification is warranted.

3. Oil and Gas Production Rates.

- A. Maximum Efficient Rate (MER). The operator shall propose a maximum efficient rate (MER) for each producing reservoir based on sound engineering and economic principles. When approved at the proposed or other rate, such rate shall not be exceeded, except as provided in paragraph 4 of this Order.

- (1) Submittal of Initial MER. Within 45 days after the date of first production or such longer period as may be approved, the operator shall submit a Request for Reservoir MER (Form 9-1866) with appropriate supporting information.

- (2) Revision of MER. The operator may request a revision of an MER by submitting the proposed revision to the Supervisor on a Request for Reservoir MER (Form 9-1866) with appropriate supporting information. The Operator shall obtain approval to produce at test rates which exceed an approved MER when such testing is necessary to substantiate an increase in the MER.
 - (3) Review of MER. The MER for each reservoir will be reviewed by the operator annually, or at such other required or approved interval of time. The results of the review, with all current supporting information, shall be submitted on a Request for Reservoir MER (Form 9-1866).
 - (4) Effective Date of MER. The effective date of an MER, or revision thereof, will be determined by the Supervisor and shown on a Request for Reservoir MER (Form 9-1866) when the MER is approved. The effective date for an initial MER shall be the first day following the completion of an approved testing period. The effective date for a revised MER shall be the first day following the completion of an approved testing period, or if testing is not conducted, the date the revision is approved.
- B. Maximum Production Rate (MPR). The operator shall propose a maximum production rate (MPR) for each producing well completion in a reservoir together with full information on the method used in its determination. When an MPR has been approved for a well completion, that rate shall not be exceeded, except as provided in paragraph 4 of this Order. The MPR shall be based on well tests and any limitations imposed by (1) well tubing, safety equipment, artificial lift equipment, surface back pressure, and equipment capacity; (2) sand producing problems; (3) producing gas-oil and water-oil ratios; (4) relative structural position of the well with respect to gas-oil or water-oil contacts; (5) position of perforated interval within total production zone; and (6) prudent operating practices. The MPR established for each well completion shall not exceed 110 percent of the rate demonstrated by a well test unless justified by supporting information.
- (1) Submittal of Initial MPR. The operator shall have 30 days from the date of first continuous production

within which to conduct a potential test, as specified under subparagraphs 5.B and 6.B of this Order, on all new and reworked well completions. Within 15 days after the date of the potential test, the operator shall submit a proposed MPR for the individual well completion on a Request for Well Maximum Production Rate (MPR) (Form 9-1867), with the results of the potential test on a Well Potential Test Report (Form 9-1868). Extension of the 30-day test period may be granted. The effective date for any approved initial MPR shall be the first day following the test period. During the 30-day period allowed for testing, or any approved extensions thereof, the operator may produce a new or reworked well completion at rates necessary to establish the MPR. The operator shall report the total production obtained during the test period, and approved extensions thereof, on the Well Potential Test Report (Form 9-1868).

- (2) Revision of MPR Increase. If necessary to test a well completion at rates above the approved MPR to determine whether the MPR should be increased, notification of intent to test the well at such higher rates, not to exceed a stated maximum rate during a specified test period, shall be filed with the Supervisor. Such tests may commence on the day following the date of filing notification, unless otherwise ordered by the Supervisor. If an operator determines that the MPR should be increased, he shall submit, within 15 days after the specified test period, a proposed increased MPR on a Request for Well Maximum Production Rate (MPR) (Form 9-1867), and any other available data to support the requested revision, including the results of the potential test and the total production obtained during the test period on a Well Potential Test Report (Form 9-1868). Prior to approval of the proposed increased MPR, the operator may produce the well completion at a rate not to exceed the proposed increased MPR of the well. The effective date for any approved increased MPR shall be the first day following the test period. If testing rates or increased MPR rates result in production from the reservoir in excess of the approved MPR, this excess production shall be balanced by underproduction from the reservoir under the provisions of subparagraph 4.B of this Order.
- (3) Revision of MPR Decrease. When the quarterly test rate for an oil well completion or the semiannual test rate for a gas well completion required under subparagraphs 5.C and 6.C of this Order is less than 90 percent of the

existing approved MPR for the well, a new reduced MPR will be established automatically for that well completion equal to 110 percent of the test rate submitted. The effective date for the new MPR for such well completion shall be the first day of the quarter following the required date of submittal of periodic well-test results under subparagraphs 5.C and 6.C of this Order. Also, the operator may notify the Supervisor on a Request for Well Maximum Production Rate (MPR) (Form 9-1867) of, or the Supervisor may require, a downward revision of a well MPR at any time when the well is no longer capable of producing its approved MPR on a sustained basis. The effective date for such reduced MPR for a well completion shall be the first day of the month following the date of notification.

- (4) Continuation of MPR. If submittal of the results of a quarterly well test for an oil completion or a semi-annual well test for a gas well completion, as provided for in subparagraphs 5.C and 6.C of this Order, cannot be timely, continuation of production under the last approved MPR for the well may be authorized, provided an extension of time in which to submit the test results is requested and approved in advance.
 - (5) Cancellation of MPR. When a well completion ceases to produce, is shut in pending workover, or any other condition exists which causes the assigned MPR to be no longer appropriate, the operator shall notify the Supervisor accordingly on a Request for Well Maximum Production Rate (MPR) (Form 9-1867), indicating the date of last production from the well, and the MPR will be canceled. Reporting of temporary shut-ins by the operator for well maintenance, safety conditions, or other normal operating conditions is not required, except as is necessary for completion of the Monthly Report of Operations (Form 9-152).
- C. MER and MPR Relationship. The withdrawal rate from a reservoir shall not exceed the approved MER and may be produced from any combination of well completions subject to any limitations imposed by the MPR established for each well completion. The rate of production from the reservoir shall not exceed the MER although the summation of individual well MPR's may be greater than the MER.

4. Balancing of Production.

- A. Production Variances. Temporary well production rates resulting from normal variations and fluctuations exceeding a well MPR or reservoir MER shall not be considered a violation of this Order, and such production may be sold or transferred pursuant to paragraph 8 of this Order. However, when normal variations and fluctuations result in production in excess of a reservoir MER, any operator who is overproduced shall balance such production in accordance with subparagraph 4.B below. Such operator shall advise the Supervisor of the amount of such excess production from the reservoir for the month at the same time as Form 9-152 is filed for that month.
- B. Balancing Periods. As of the first day of the month following the month in which this Order becomes effective, all reservoirs shall be considered in balance. Balancing periods for overproduction of a reservoir MER shall end on January 1, April 1, July 1, and October 1 of each year. If a reservoir is produced at a rate in excess of the MER for any month, the operator who is overproduced shall take steps to balance production during the next succeeding month. In any event, all overproduction shall be balanced by the end of the next succeeding quarter following the quarter in which the overproduction occurred. The operator shall notify the Supervisor at the end of the month in which he has balanced the production from an overproduced reservoir.
- C. Shut-in for Overproduction. Any operator in an overproduction status in any reservoir for two successive quarters which has not been brought into balance within the balancing period shall be shut in from that reservoir until the actual production equals that which would have occurred under the approved MER.
- D. Temporary Shut-in. If, as the result of storm, hurricanes, emergencies, or other conditions peculiar to offshore operations, an operator is forced to curtail or shut in production from a reservoir, the Supervisor may, on request, approve makeup of all or part of this production loss.

5. Oil Well Testing Procedures.

- A. General. Tests shall be conducted for not less than four consecutive hours. Immediately prior to the 4-hour test period, the well completion shall have produced under stabilized conditions for a period of not less than six consecutive hours.

The 6-hour pretest period shall not begin until after recovery of a volume of fluid equivalent to the amount of fluids introduced into the formation for any purpose. Measured gas volumes shall be adjusted to the standard conditions of 15.025 psia and 60° F. for all tests. When orifice meters are used, a specific gravity shall be obtained or estimated for the gas and a specific gravity correction factor applied to the orifice coefficient. The Supervisor may require a prolonged test or retest of a well completion if such test is determined to be necessary for the establishment of a well MPR or a reservoir MER. The Supervisor may approve test periods of less than four hours and pretest stabilization periods of less than six hours for well completions, provided that test reliability can be demonstrated under such procedures.

- B. Potential Test. Test data to establish or to increase an oil well MPR shall be submitted on a Well Potential Test Report (Form 9-1868). The total production obtained from all tests during the test period shall be reported on such form.
- C. Quarterly Test. Tests shall be conducted on each producing oil well completion quarterly, and test results shall be submitted on a Quarterly Oil Well Test Report (Form 9-1869). Testing periods and submittal dates shall be as follows:

<u>Testing Period</u>	<u>Latest Date for Submittal of Test Results</u>	<u>For Quarter Beginning</u>
September 11 - December 10	December 10	January 1
December 11 - March 10	March 10	April 1
March 11 - June 10	June 10	July 1
June 11 - September 10	September 10	October 1

There shall be a minimum of 45 days between quarterly tests for an oil well completion.

6. Gas Well Testing Procedures.

- A. General. Testing procedures for gas well completions shall be the same as those specified for oil well completions in subparagraph 5.A except for the initial test which shall be a multi-point back-pressure test as described in paragraph 6.D.
- B. Potential Test. Test data to establish or to increase a gas well MPR shall be submitted on a Well Potential Test Report (Form 9-1868).

- C. Semiannual Test. Tests shall be conducted on each producing gas well completion semiannually, and test results shall be submitted on a Semiannual Gas Well Test Report (Form 9-1870). Testing periods and submittal dates shall be as follows:

<u>Testing Period</u>	<u>For Submittal of Test Results</u>	<u>For Semi- Annual Period, Beginning</u>
June 11 - December 10	December 10	January 1
December 11 - June 10	June 10	July 1

There shall be a minimum of 90 days between semiannual tests for a gas well completion.

- D. Back-Pressure Tests. A multi-point back-pressure test to determine the theoretical open-flow potential of gas wells shall be conducted within thirty days after connection to a pipeline. If bottom-hole pressures are not measured, such pressures shall be calculated from surface pressures using the method, or other similar method, found in the Interstate Oil Compact Commission (IOCC) Manual of Back-Pressure Testing of gas wells. The results of all back-pressure tests conducted by the operator shall be filed with the Supervisor, including all basic data used in determining the test results. The Supervisor may waive this requirement if multi-point back-pressure test information has previously been obtained on a representative number of wells in a reservoir.
7. Witnessing Well Tests. The Supervisor may have a representative witness any potential or periodic well tests on oil and gas well completions. Upon request, an operator shall notify the appropriate District office of the time and date of well tests.
8. Sale or Transfer of Production. Oil and gas produced pursuant to the provisions of this Order, including test production, may be sold to purchasers or transferred as production authorized for disposal hereunder.
9. Bottom-Hole Pressure Tests. Static bottom-hole pressure tests shall be conducted annually on sufficient key wells to establish an average reservoir pressure in each producing reservoir unless a different frequency is approved. The Operator may be required to test specific wells. Results of bottom-hole pressure tests shall be submitted within 60 days after the date of the test.
10. Flaring and Venting of Gas. Oil- and gas-well gas shall not be flared or vented, except as provided herein.
- A. Small-Volume or Short-Term Flaring or Venting. Oil- and gas-well gas may be flared or vented in small volumes or temporarily without the approval of the Supervisor in the following situations:

- (1) Gas Vapors. When gas vapors are released from storage and other low-pressure production vessels if such gas vapors cannot be economically recovered or retained.
 - (2) Emergencies. During temporary emergency situations, such as compressor or other equipment failure, or the relief of abnormal system pressures.
 - (3) Well Purging and Evaluation Tests. During the unloading or cleaning up of a well and during drillstem, producing, or other well evaluation tests not exceeding a period of 24 hours.
- B. Approval for Routine or Special Well Tests. Oil- and gas-well gas may be flared or vented during routine and special well tests, other than those described in paragraph A above, only after approval of the Supervisor.
- C. Gas-Well Gas. Except as provided in A and B above, gas-well gas shall not be flared or vented.
- D. Oil-Well Gas. Except as provided in A and B above, oil-well gas shall not be flared or vented unless approved by the Supervisor. The Supervisor may approve an application for flaring or venting of oil-well gas for periods not exceeding one year if (1) the operator has initiated positive action which will eliminate flaring or venting, or (2) the operator has submitted an evaluation supported by engineering, geologic, and economic data indicating that rejection of an application to flare or vent the gas will result in an ultimate greater loss of equivalent total energy than could be recovered for beneficial use from the lease if flaring or venting were allowed.
- E. Content of Application. Applications under paragraph D above for existing operations, as of the date of this Notice, shall be filed within three months from the effective date of this Order. Applications under paragraph D(2) above shall include all appropriate engineering, geologic, and economic data in an evaluation showing that absence of approval to flare or vent the gas will result in premature abandonment of oil and gas production or curtailment of lease development. Applications shall include an estimate of the amount and value of the oil and gas reserves that would not be recovered if the application to flare or vent were rejected and an estimate of the total amount of oil to be recovered and associated gas that would be flared or vented if the application were approved.

11. Disposition of Gas. The disposition of all gas produced from each lease shall be reported monthly on, or attached to, Form 9-152. The report shall be submitted in the following manner:

	<u>Oil-Well Gas (MCF)</u>	<u>Gas-Well Gas (MCF)</u>
Sales	_____	_____
Fuel	_____	_____
*Injected	_____	_____
Flared	_____	_____
Vented	_____	_____
Other (Specify)	_____	_____
Total	_____	_____

*Gas produced from the lease and injected on or off the lease.

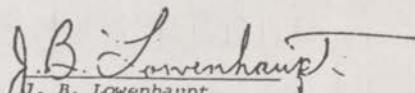
12. Multiple and Selective Completions.

- A. Number of Completions. A well bore may contain any number of producible completions when justified and approved.
- B. Numbering Well Completions. Well completions made after the date of this Order shall be designated using numerical and alphabetical nomenclature. Once designated as a reservoir completion, the well completion number shall not change. Appendix A contains a detailed explanation of procedures for naming well completions.
- C. Packer Tests. Multiple and selective completions shall be equipped to isolate the respective producing reservoirs. A packer test or other appropriate reservoir isolation test shall be conducted prior to or immediately after initiating production and annually thereafter on all multiply completed wells. Should the reservoirs in any multiply completed well become intercommunicative the operator shall make repairs and again conduct reservoir isolation tests unless some other operational procedure is approved. The results of all tests shall be submitted on a Packer Test (Form 9-1871) within 30 days after the date of the test.
- D. Selective Completions. Completion equipment may be installed to permit selective reservoir isolation or exposure in a well bore through wireline or other operations. All selective completions shall be designated in accordance with subparagraph 12.B when the application for approval of such completions is filed.

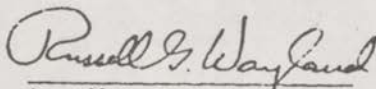
- E. Commingling. Commingling of production from two or more separate reservoirs within a common well bore may be permitted if it is determined that, collectively, the ultimate recovery will not be decreased. An application to commingle hydrocarbons from multiple reservoirs within a common well bore shall be submitted for approval and shall include all pertinent well information, geologic and reservoir engineering data, and a schematic diagram of well equipment. For all competitive reservoirs, notice of the application shall be sent by the applicant to all other operators of interest in the reservoirs prior to submitting the application to the Supervisor. The application shall specify the well completion number to be used for subsequent reporting purposes.
13. Gas-Cap Well Completions. All existing and future wells completed in the gas cap of a reservoir which has been classified and approved as an associated oil reservoir shall be shut in until such time as the oil is depleted or the reservoir is reclassified as a gas reservoir; provided, however, that production from such wells may be approved when (1) it can be shown that such gas-cap production would not lead to waste of oil and gas, or (2) when necessary to protect correlative rights unless it can be shown that this production will lead to waste of oil and gas.
14. Location of Wells.
- A. General. The location and spacing of all exploratory and development wells shall be in accordance with approved programs and plans required in 30 CFR 250.17 and 250.34. Such location and spacing shall be determined independently for each lease or reservoir in a manner which will locate wells in the optimum structural position for the most effective production of reservoir fluids and to avoid the drilling of unnecessary wells.
- B. Distance from Property Line. An operator may drill exploratory or development wells at any location on a lease in accordance with approved plans; provided that no well directionally or vertically drilled and completed after the date of this Order in which the completed interval is less than 500 feet from a property line shall be produced unless approved by the Supervisor. For wells drilled as vertical holes, the surface location of the well shall be considered as the location of the completed interval but shall be subject to the provisions of 30 CFR 250.40(b). An operator requesting approval to produce a directionally drilled well in which the completed interval is located closer than 500 feet from a property line, or approval to produce a vertically drilled well with a surface location closer than 500 feet from a property line, shall furnish the Supervisor with letters expressing acceptance or objection from operators of offset properties.

15. Enhanced Oil and Gas Recovery Operations. Operators shall timely initiate enhanced oil and gas recovery operations for all competitive and noncompetitive reservoirs where such operations would result in an increased ultimate recovery of oil or gas under sound engineering and economic principles. A plan for such operations shall be submitted with the results of the annual MER review as required in paragraph 3A(3) of this Order.
16. Competitive Reservoir Operations. Development and production operations in a competitive reservoir may be required to be conducted under either pooling and drilling agreements or unitization agreements when the Conservation Manager determines, pursuant to 30 CFR 250.50 and delegated authority, that such agreements are practicable and necessary or advisable and in the interest of conservation.
 - A. Competitive Reservoir Determination. The Supervisor shall notify the operators when he has made a preliminary determination that a reservoir is competitive as defined in this Order. An operator may request at any time that the Supervisor make a preliminary determination as to whether a reservoir is competitive. The operators, within thirty (30) days of such preliminary notification or such extension of time as approved by the Supervisor, shall advise of their concurrence with such determination, or submit objections with supporting evidence. The Supervisor will make a final determination and notify the operators.
 - B. Development and Production Plans. When drilling and/or producing operations are conducted in a competitive reservoir, the operators shall submit for approval a plan governing the applicable operations. The plan shall be submitted within ninety (90) days after a determination by the Supervisor that a reservoir is competitive or within such extended period of time as approved by the Supervisor. The plan shall provide for the development and/or production of the reservoir, and may provide for the submittal of supplemental plans for approval by the Supervisor.
 - (1) Development Plan. When a competitive reservoir is still being developed or future development is contemplated, a development plan may be required in addition to a production plan. This plan shall include the information required in 30 CFR 250.34. If agreement to a joint development plan cannot be reached by the operators, each shall submit a separate plan and any differences may be resolved in accordance with paragraph 17 of this Order.

- (2) Production Plan. A joint production plan is required for each competitive reservoir. This plan shall include (a) the proposed MER for the reservoir, (b) the proposed MER for each completion in the reservoir, (c) the percentage allocation of reservoir MER for each lease involved, and (d) plans for secondary recovery or pressure maintenance operations. If agreement to a joint production plan cannot be reached by the operators, each shall submit a separate plan, and any differences may be resolved in accordance with paragraph 17 of this Order.
- C. Unitization. The Conservation Manager shall determine when conservation will be best served by unitization of a competitive reservoir, or any reservoir reasonably delineated and determined to be productive, in lieu of a development and/or production plan or when the operators and lessees involved have been unable to voluntarily effect unitization. In such cases, the Conservation Manager may require that development and/or production operations be conducted under an approved unitization plan. Within six (6) months after notification by the Conservation Manager that such a unit plan is required, or within such extended period of time as approved by the Conservation Manager, the lessees and operators shall submit a proposed unit plan for designation of the unit area and approval of the form of agreement pursuant to 30 CFR 250.51.
17. Conferences, Decisions and Appeals. Conferences with interested parties may be held to discuss matters relating to applications and statements of position filed by the parties relating to operations conducted pursuant to this Order. The Supervisor or Conservation Manager may call a conference with one or more, or all, interested parties on his own initiative or at the request of any interested party. All interested parties shall be served with copies of the Supervisor's or Conservation Manager's decisions. Any interested party may appeal decisions of the Supervisor or Conservation Manager pursuant to 30 CFR 250.81. Decisions of the Supervisor or Conservation Manager shall remain in effect and shall not be suspended by reason of any appeal, except as provided in that regulation.


 J. B. Lowenhaupt
 Oil and Gas Supervisor
 Production Control
 Gulf of Mexico Area

Approved: May 1, 1974


 Russell G. Wayland
 Chief, Conservation Division

APPENDIX A

Subparagraph 12.B.: "Numbering Well Completions. Well completions made after the date of this Order shall be designated using numerical and alphabetical nomenclature. Once designated as a reservoir completion, the well completion number shall not change..."

The intent of this subparagraph is not necessarily to change the existing well completion names but to change the method of naming well completions after the effective date of this Order in order to insure that a completion in a given reservoir and a specific well bore will be assigned a unique name and will retain that name permanently. For further clarification, the following guidelines and examples are offered:

1. Each well bore will have a distinct, permanent number.
2. Each reservoir completion in a well bore will have a unique permanent designation which includes the well bore number in its nomenclature.
3. For the purpose of this subparagraph, a "completion" is defined as all perforations in a given reservoir in a specific well bore and is not necessarily associated with a tubing string or strings.
4. If more than one completion is made in a well bore, an alphabetical suffix must be used in the nomenclature to differentiate between completions.
5. An alphabetical prefix may be utilized to designate the platform from which the well will be produced.

Example No. 1: The first well drilled from the A Platform is a single completion.

Well No. A-1

(Should an operator wish to use an alphabetical suffix with a single completion, he may do so.)

Example No. 2: A well drilled by a mobile rig need not carry an alphabetical prefix.

Well No. 1

(If the well is later connected to and produced from a production platform, the well shall be redesignated to reflect an alphabetical prefix.)

Example No. 3: The second well drilled from the A Platform is a triple completion.

<u>First Completion</u>	<u>Second Completion</u>	<u>Third Completion</u>
A-2	A-2-D	A-2-T

(In the above example, the letters "D" and "T" were used in naming the second and third completions utilizing current industry practice, although the intent is not to restrict operators to the use of these particular alphabetical suffixes. Any alphabetical suffix may be used as long as it is unique to the completion in that reservoir.)

Example No. 4: The drawing is shown to illustrate the fact that once a completion in a specific well bore is designated in a given reservoir, it will retain that name permanently. Let us consider the A-2 completion shown in Example No. 3. Should a recompletion be made in a different reservoir at a later date, it shall be renamed; however, the production from the reservoir associated with the original A-2 completion will always be identified with the A-2 completion. Once the A-2 completion in the 10,000' sand is squeezed and plugged off and the recompletion made to the 7,000' sand, the completion in the 7,000' sand would be designated A-2-A (or some other alphabetical suffix other than the "D" or "T" presently associated with other completions in the 9,000' and 8,000' sands).

The Sundry Notices and Reports on Wells (Form 9-331) submitted to obtain approval for the workover shall be the vehicle for naming the new completion.

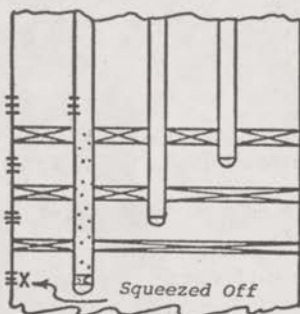
Reservoir

7,000' Sd.

8,000' Sd.

9,000' Sd.

10,000' Sd.



Completion Name

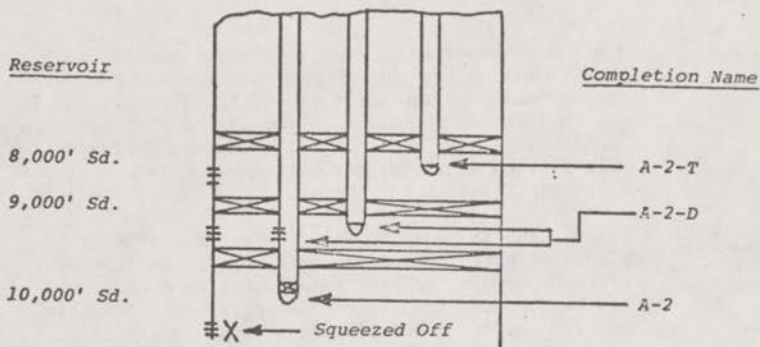
A-2-A

A-2-T

A-2-D

A-2

Example No. 5: If the A-2 completion in Example No. 4 had been recom-
pleted from the 10,000' sand to the 9,000' sand (where
the A-2-D is currently completed), the completion would
still be named A-2-D as both tubing strings would be
considered one completion for purposes of this Order.



Form 9-1866
Jan. 1974)

REQUEST FOR RESERVOIR MER

FORM APPROVED
BUDGET BUREAU NO. 42-R 1694

TE _____
SERVOIR _____
ASE _____
ELD _____
IVE MECHANISM* _____
ERATOR _____

Requested MER _____

Present MER _____

Reservoir Classification:

Oil _____ Oilw/Assoc. Gas Cap _____ Gas _____

Reservoir Discovery Year _____

BASIC DATA REQUIRED

.. Cut offs	Ø Upper	Lower	0.	0.	20.	Kv	_____
	K Upper	Lower md	_____	_____	21.	API @ 60°F.	_____
.. G/O Interface	_____	_____	_____	_____	22.	SG	0. _____
.. W/O Interface	_____	_____	_____	_____	23.	Rsi	_____
.. Area @ G/O	_____	_____	_____	_____	24.	poi	_____
.. Area used to det'n Rock Vol.	_____	_____	_____	_____	25.	µo	_____
.. Oil Zone Rock Volume	_____	_____	_____	_____	26.	Tavg	_____
.. Gas Zone Rock Volume	_____	_____	_____	_____	27.	Pi	_____
.. H, h	_____	_____	_____	_____	28.	Pws	_____
.. Ø	0.	_____	_____	_____	29.	Pb	_____
.. Sv	0.	_____	_____	_____	30.	Datum Depth	_____
.. Sg	0.	_____	_____	_____	31.	GOR	_____
.. 1-Sw-Sg	0.	_____	_____	_____	32.	WOR	_____
.. 1/Boi	_____	_____	_____	_____	33.	Injection Completions	_____
.. N	_____	_____	_____	_____	34.	Abandoned Completions	_____
.. Ri	0.	_____	_____	_____	35.	No. of active Completions	_____
.. RiN	_____	_____	_____	_____	36.	Np(1) (Date)	_____
.. Np/N	0.	_____	_____	_____	37.	Np(2) (Date)	_____
.. Average Well Depth	_____	_____	_____	_____	38.	Gp(1) (Date)	_____
.. Kh	_____	_____	_____	_____	39.	Gp(2) (Date)	_____
	_____	_____	_____	_____	40.	Wp(1) (Date)	_____
	_____	_____	_____	_____	41.	Wp(2) (Date)	_____

LIST OF ATTACHMENTS OF GEOLOGIC, GEOPHYSIC, PETROPHYSIC, ENGINEERING, SIMULATION, ECONOMIC
DATA AND REPORTS SUBMITTED IN SUPPORT OF RESERVOIR MER

REMARKS:

SIGNED:

DATE:

TITLE:

APPROVED:

DATE:

Oil and Gas Supervisor
Gulf of Mexico Area

Where more than one recovery mechanism is operating in a reservoir, a summary sheet is to be provided with estimated water influx rates, gas cap expansion rates, etc.

DATE EFFECTIVE: _____

This form is to be filed with the Oil and Gas Supervisor as required by Section 3.A.(1), (2), and (3) of OCS Order No. 11, and shall contain all information required unless such information is not available at the time of submittal because of the stage of development of the reservoir.

The United States Criminal Code, 18 U.S.C. 1001, makes it a criminal offense to make a willfully false statement or representation to any Department or Agency of the United States to any matter within its jurisdiction.

DEFINITIONS OF BASIC DATA REQUIRED

(REQUESTED MER: MER determined from a plot of ultimate recovery versus rate - Present
MER: Previously approved MER)

1. ϕ cut-offs - Upper and lower porosity cut-offs (fractions)
- K cut-offs - Upper and lower cut-offs to air permeability (md)
2. G/O interface - Initial gas-oil interface (feet subsea)
3. W/O interface - Initial water-oil interface (feet subsea)
4. Area @ G/O - Area of gas-oil contact (acres)
5. Area used to Det'n Rock Vol. - Area @ W/O contact or area of reserve isopach (acres)
6. Oil zone rock vol. - Rock volumes used to determine N. (acre-feet)
7. Gas zone rock vol. - Rock volume of gas cap (acre-feet)
8. H,h - Average gross, average net pay thickness (feet. Compatible with 5 & 6.)
9. ϕ - Effective porosity (fraction)
10. Sw - Connate water saturation (fraction)
11. Sg - Initial gas saturation (fraction)
12. 1-Sw-Sg - Initial liquid hydrocarbon saturation (fraction)
13. 1/Boi - Reciprocal initial flash formation volume factor (fraction)
14. N - 7758 Ah ϕ (1-Sw-Sg) 1/Boi stock tank barrels of oil-in-place
15. Ri - Estimated recovery for drive mechanism (fraction)
16. RiN - Ultimate recoverable oil for drive mechanism (stock tank barrels)
17. Np/N - Depletion of initial oil-in-place (fraction)
18. Average well depth

$$\sum \frac{T+B}{2N}$$

Σ = the sum of

T = vertical depth from KB elevation to top of productive oil pay

B = vertical depth from KB elevation to base of productive oil pay

N = number of completions

19. Kh - Average horizontal air permeability (md)
20. Kv - Average vertical air permeability (md)
21. γ_{API} - Average API gravity of stock tank oil (degrees @ 60°F)
22. SG - Specific gravity of gas (air = 1.00)
23. Rsi - Initial solution gas-oil ratio (SCF-STB)
24. μ_{oi} - Initial reservoir oil viscosity (cp)
25. μ_o - Reservoir oil viscosity at current reservoir pressure (cp)
26. Tavg - Average reservoir temperature (°F)
27. Pi - Initial static reservoir pressure at datum (PSIG)
28. Pws - Current static reservoir pressure at datum (PSIG)
29. Pb - Bubble point pressure (PSIG)
30. Datum Depth - Reference depth for static pressure (feet subsea)
31. GOR - Producing gas-oil ratio for specified month, scf/stb
32. WOR - Producing water-oil ratio for specified month, bbl/stb
33. Injection Completions - Number of completions injecting fluid related to drive mechanism
34. Abandoned Completions - Number of producing completions abandoned
35. No. of active Completions - Number of well completions for requested MER
36. Np(1) - Cumulative oil production, STB at last submission
37. Np(2) - Cumulative oil production, STB this submission
38. Gp(1) - Cumulative gas production, MSCF at last submission
39. Gp(2) - Cumulative gas production, MSCF this submission
40. Wp(1) - Cumulative water production, BBL at last submission
41. Wp(2) - Cumulative water production, BBL this submission

Form 9-1866
(Jan. 1974)REQUEST FOR RESERVOIR MERFORM APPROVED
BUDGET BUREAU NO. 42-R 1694

Requested MER _____
 Present MER _____
 Reservoir Classification:
 _____ Oil _____ Oilw/Assoc. Gas Cap _____ Gas
 Reservoir Discovery Year _____

BASIC DATA REQUIRED

1. Cut offs	ϕ Upper	Lower	0.	0.	20. Kv	_____
	K Upper	Lower md	_____	_____	21. API @ 60°F.	_____
2. G/O Interface	_____	_____	_____	_____	22. SG	0.
3. W/O Interface	_____	_____	_____	_____	23. Rsi	_____
4. Area @ G/O	_____	_____	_____	_____	24. μ oi	_____
5. Area used to det'n Rock Vol.	_____	_____	_____	_____	25. μ o	_____
6. Oil Zone Rock Volume	_____	_____	_____	_____	26. Tav _g	_____
7. Gas Zone Rock Volume	_____	_____	_____	_____	27. Pi	_____
8. H, h	_____	_____	_____	_____	28. Pws	_____
9. ϕ	0.	_____	_____	_____	29. Pb	_____
10. Sw	0.	_____	_____	_____	30. Datum Depth	_____
11. Sg	0.	_____	_____	_____	31. GOR	_____
12. 1-Sw-Sg	0.	_____	_____	_____	32. WOR	_____
13. 1/Boi	_____	_____	_____	_____	33. Injection Completions	_____
14. N	_____	_____	_____	_____	34. Abandoned Completions	_____
15. Ri	0.	_____	_____	_____	35. No. of active Completions	_____
16. RiN	_____	_____	_____	_____	36. Np(1) (Date)	_____
17. Np/N	0.	_____	_____	_____	37. Np(2) (Date)	_____
18. Average Well Depth	_____	_____	_____	_____	38. Cp(1) (Date)	_____
19. Kh	_____	_____	_____	_____	39. Cp(2) (Date)	_____
					40. Wp(1) (Date)	_____
					41. Wp(2) (Date)	_____

LIST OF ATTACHMENTS OF GEOLOGIC, GEOPHYSIC, PETROPHYSIC, ENGINEERING, SIMULATION, ECONOMIC DATA AND REPORTS SUBMITTED IN SUPPORT OF RESERVOIR MER

REMARKS:

SIGNED: _____

DATE: _____

TITLE: _____

APPROVED: _____

DATE: _____

Oil and Gas Supervisor
Gulf of Mexico Area

Where more than one recovery mechanism is operating in a reservoir, a summary sheet is to be provided with estimated water influx rates, gas cap expansion rates, etc.

DATE EFFECTIVE: _____

This form is to be filed with the Oil and Gas Supervisor as required by Section 3.A.(1), (2), and (3) of OCS Order No. 11, and shall contain all information required unless such information is not available at the time of submittal because of the stage of development of the reservoir.

The United States Criminal Code, 18 U.S.C. 1001, makes it a criminal offense to make a willfully false statement or representation to any Department or Agency of the United States as to any matter within its jurisdiction.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

REQUEST FOR WELL MAXIMUM PRODUCTION RATE (MPR)

Operator: _____

Address: _____

Field: _____ Lease No.: _____

<u>Well</u> <u>Completion</u> <u>No.</u>	<u>API Well</u> <u>Serial No.</u>	<u>Reservoir</u>	<u>Present</u> <u>MPR</u>	<u>Requested</u> <u>MPR</u>	<u>Effective</u> <u>Date</u>
--	--------------------------------------	------------------	------------------------------	--------------------------------	---------------------------------

Signed: _____ Date: _____

Approved: _____ Date: _____

Oil and Gas Supervisor
Gulf of Mexico Area

United States
Department of the Interior
Geological Survey

Approved
Budget Bureau No. 42-R 169

WELL POTENTIAL TEST REPORT

Field _____ Operator _____

Area &
Block _____ Lease No. _____ API Well No. _____

Type Well: Oil () Gas () Well Name and No. _____

Type Test: Init. Comp. () Recomp. () Rework () Retest ()

Perf. Int. _____ to _____ (MD) Flowing () Gas Lift () Pumping ()

Date of First Production (After comp. or Recomp.) _____

Pretest time _____ hrs. Choke size _____ in.

Date of test _____ No. of hrs. tested _____ hrs. Choke size _____ in.

Production During Test Period:

Oil _____ bbls. Gas _____ MCF Water _____ bbls.

GOR _____ cu.ft./bbl. Water Cut _____ % Flowing Tubing Pressure _____ psig

Calculated 24-hr. Rate:

Oil _____ bbls. Gas _____ MCF Water _____ bbls.

Oil Gravity _____ Deg. API Specific Gravity of Gas _____

Static Bottom Hole Pressure (if taken prior to test): _____

Cumulative production during entire approved testing period:

Oil _____ bbls. Gas _____ MCF Water _____ bbls.

REMARKS: _____

I hereby certify that the foregoing results are true and correct.

Signed _____ Title _____ Date _____

Form 9-1871
Jan. 1974)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Form Approved
Budget Bureau No. 42-K 1890

Packer Test

Field Name _____ Area Block _____
Operator _____ Lease _____ Well _____
U.S.G.S. District _____ API Serial No. _____
Comp. No. _____

Test No. 1

Date and time well shut in _____ (Both Completions)

DATA ON PRODUCING COMPLETION: Date & Time Well Opened _____
Completion producing _____ Reservoir _____ Choke Size _____ inches
Stabilized shut-in pressure prior to test _____ psi
Stabilized flowing pressure during test _____ psi
Length of time required for stabilization of flowing pressure _____ hours
Stabilized shut-in pressure at the end of test _____ psi
Length of time required for obtaining this stabilized shut-in pressure _____ hours

DATA ON SHUT-IN COMPLETION:

Completion shut-in _____ Reservoir _____
Stabilized Shut-in pressure prior to test _____ psi
Shut-in pressure during test: Minimum _____ psi; Maximum _____ psi
Stabilized shut-in pressure at the end of the test _____ psi
Length of time required for obtaining this stabilized pressure at the end of the test: _____ hours.
Maximum pressure change of shut-in completion during test _____ psi (increase)
(decrease)

Test No. 2

Same well bore as in Test No. 1, but with _____ completion
producing and _____ completion shut-in.
Date and time shut in _____

DATA ON PRODUCING COMPLETION: Date & Time Well Opened _____
Completion producing _____ Reservoir _____ Choke Size _____
Stabilized shut-in pressure prior to test _____ psi
Stabilized flowing pressure during test _____ psi
Length of time required for stabilization of flowing pressure: _____ hours

DATA ON SHUT-IN COMPLETION:

Completion shut-in _____ Reservoir _____
Stabilized shut-in pressure prior to test _____ psi
Shut-in pressure during test: Minimum _____ psi; Maximum _____ psi
Maximum pressure change of shut-in completion during test _____ psi (increase)
(decrease)

Classification of completion testing, whether oil well or gas well:

Tubing _____ Casing _____

REMARKS:

I certify that the above is true and correct.

Signed _____ Title _____ Date _____

OCS Order No. 5
June 5, 1972

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS
LEASES IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

INSTALLATION OF SUBSURFACE SAFETY DEVICE

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.41(b). Section 250.41(b) provides as follows:

- (b) Completed Wells. In the conduct of all its operations, the lessee shall take all steps necessary to prevent blowouts, and the lessee shall immediately take whatever action is required to bring under control any well over which control has been lost. The lessee shall: (1) in wells capable of flowing oil or gas, when required by the supervisor, install and maintain in operating condition storm chokes or similar subsurface safety devices; (2) for producing wells not capable of flowing oil or gas, install and maintain surface safety valves with automatic shutdown controls; and (3) periodically test or inspect such devices or equipment as prescribed by the supervisor.

The operator shall comply with the following requirements. All departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b). All applications for approval under the provisions of this Order shall be submitted to the appropriate District office. References in this Order to approvals, determinations, or requirements are to those given or made by the Supervisor or his delegated representative.

1. Installation. All new and existing tubing installations open to hydrocarbon-bearing zones shall be equipped with a subsurface-controlled or a surface- or other remotely controlled subsurface safety device, to be installed at a depth of 100 feet or more below the sea floor unless, after application and justification, the well is determined to be incapable of flowing oil or gas. These installations shall be made as required in subparagraphs A and B below within two (2) days after stabilized production is established, and during this period of time the well shall not be left unattended while open to production.

- A. New Wells. All tubing installations in wells completed after December 1, 1972, shall be equipped with a surface- or other remotely controlled subsurface safety device; provided, that wells with a shut-in tubing pressure of 4,000 psig or greater shall be equipped with a subsurface-controlled subsurface safety device in lieu of a surface- or other remotely controlled subsurface safety device unless a surface- or other remotely controlled subsurface safety device is approved or required. When the shut-in tubing pressure declines below 4,000 psig, a surface- or other remotely controlled subsurface safety device shall be installed when the tubing is first removed and reinstalled.
- B. Existing Wells. All tubing installations in wells existing on the date of this Order shall be equipped with a surface- or other remotely controlled subsurface safety device when the tubing is first removed and reinstalled after December 1, 1972; provided, that wells with a shut-in tubing pressure of 4,000 psig or greater shall be equipped with a subsurface-controlled subsurface safety device in lieu of a surface- or other remotely controlled subsurface safety device unless a surface- or other remotely controlled subsurface safety device is approved or required. When the shut-in tubing pressure declines below 4,000 psig, a surface- or other remotely controlled subsurface safety device shall be installed when the tubing is first removed and reinstalled.

Tubing installations in existing wells completed from single-well and multi-well satellite caissons or jackets and sea-floor completions may be equipped with a subsurface-controlled subsurface safety device, in lieu of a surface- or other remotely controlled subsurface safety device, upon application, justification, and approval.

- C. Shut-in Wells. A tubing plug shall be installed in lieu of, or in addition to, other subsurface safety devices if a well has been shut in for a period of six (6) months. Such plugs shall be set at a depth of 100 feet or more below the sea floor. All retrievable plugs installed after the date of this Order shall be of the pump-through type. All wells perforated and completed, but not placed on production, shall be equipped with a subsurface safety device or tubing plug within two (2) days after completion.
- D. Injection Wells. Subsurface safety devices as required in subparagraphs A and B above shall be installed in all injection wells unless, after application and justification, it is determined that the well is incapable of flowing oil or gas, which condition shall be verified annually.

2. Technological Advancement. As technological research, progress, and product improvement result in increased effectiveness of existing safety devices or the development of new devices or systems, such devices or systems may be required or used upon application, justification, and approval. Applications for routine use shall include evidence that the device or system has been field-tested at least once each month for a minimum of six (6) consecutive months, and that each test indicated proper operation.
3. Testing and Inspection. Subsurface safety devices shall be designed, adjusted, installed, and maintained to insure reliable operation. During testing and inspection procedures, the well shall not be left unattended while open to production unless a properly operating subsurface safety device has been installed in the well.
 - A. Surface-Controlled Subsurface Safety Devices. Each surface- or other remotely controlled subsurface safety device installed in a well shall be tested in place for proper operation when installed and thereafter at intervals not exceeding six (6) months. If the device does not operate properly, it shall be removed, repaired, and reinstalled or replaced and tested to insure proper operation.
 - B. Subsurface-Controlled Subsurface Safety Devices. Each subsurface-controlled subsurface safety device installed in a well shall be removed, inspected, and repaired or adjusted as necessary and reinstalled at intervals not exceeding six (6) months; provided, that such removable devices set in a landing nipple shall be removed, inspected, and repaired or adjusted as necessary and reinstalled at intervals not exceeding twelve (12) months. Each velocity-type device shall be designed to close at a flow rate not to exceed the larger of either 150 percent of, or 200 BFPD above, the most recent well-test rate which equals or exceeds the approved production rate. The above closing flow rate shall not exceed the calculated capacity of the well to produce against a flowing wellhead pressure of 50 psig. Each preset tubing-pressure-actuated device shall be designed to close prior to reduction of the flowing wellhead pressure to 50 psig.
 - C. Tubing Plug. A shut-in well equipped with a tubing plug shall be inspected for leakage by opening the well to possible flow at intervals not exceeding six (6) months. If sustained liquid flow exceeds 400 cc/min., or gas flow exceeds 15 cu. ft./min., the plug shall be removed, repaired, and reinstalled or an additional tubing plug installed to prevent leakage.

4. Temporary Removal. Each wireline- or pumpdown-retrievable subsurface safety device may be removed, without further authority or notice, for a routine operation which does not require approval of a Sundry Notice and Report on Wells (Form 9-331) for a period not to exceed fifteen (15) days. The well shall be clearly identified as being without a subsurface safety device and shall not be left unattended while open to production. The provisions of this paragraph are not applicable to the testing and inspection procedures in paragraph 3 above.
5. Additional Protective Equipment. All tubing installations made after the date of this Order in which a wireline- or pumpdown-retrievable subsurface safety device is to be installed shall be equipped with a landing nipple, with flow couplings or other protective equipment above and below, to provide for setting of the subsurface safety device. All wells in which a subsurface safety device or tubing plug is installed shall have the tubing-casing annulus packed off above the uppermost open casing perforations. The control system for all surface-controlled subsurface safety devices shall be an integral part of the platform shut-in system, or of an independent remote shut-in system.
6. Departures. All departures (or waivers) approved prior to the date of this Order are hereby terminated as of December 1, 1972, unless new applications are submitted prior to that date. All such new applications will be considered for approval pursuant to 30 CFR 250.12(b) and the requirements of this Order. All applications for departures shall include a detailed statement of the well conditions, efforts made to overcome any difficulties, and proposed alternate safety measures.
7. Emergency Action. All tubing installations open to hydrocarbon-bearing zones and not equipped with a subsurface safety device as permitted by this Order shall be clearly identified as not being so equipped, and a subsurface safety device or tubing plug shall be available at the field location. In the event of an emergency, such as an impending hurricane, such device or plug shall be promptly installed within the limits of practicability, due consideration being given to personnel safety.
8. Records. The operator shall maintain the following records for a minimum period of one year for each subsurface safety device and tubing plug installed, which records shall be available to any authorized representative of the Geological Survey.
 - A. Field Records. Individual well records shall be maintained at or near the field and shall include, as a minimum, the following information:

- (1) A record which will give design and other information; i.e., make, model, type, spacers, bean and spring size, pressure, etc.
- (2) Verification of assembly by a qualified person in charge of installing the device and installation date.
- (3) Verification of setting depth and all operational tests as required in this Order.
- (4) Removal date, reason for removal, and reinstallation date.
- (5) A record of all modifications of design in the field.
- (6) All mechanical failures or malfunctions, including sand-cutting, of such devices, with notation as to cause or probable cause.
- (7) Verification that a failure report was submitted.

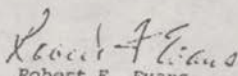
B. Other Records. The following records, as a minimum, shall be maintained at the operator's office:

- (1) Verified design information of subsurface-controlled subsurface safety devices for the individual well.
- (2) Verification of assembly and installation according to design information.
- (3) All failure reports.
- (4) All laboratory analysis reports of failed or damaged parts.
- (5) Quarterly failure-analysis report.

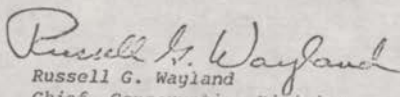
9. Reports. Well completion reports (Form 9-330) and any subsequent reports of workover (Form 9-331) shall include the type and the depth of the subsurface safety devices and tubing plugs installed in the well or indicate that a departure has been granted.

To establish a failure-reporting and corrective-action program as a basis for reliability and quality control, each operator shall submit a quarterly failure-analysis report to the office of the Supervisor, identifying mechanical failures by lease and well, make and model, cause or probable cause of failure, and action taken to correct the failure. The reporting period shall begin the first day of the month following the date of this

Order. The reports shall be submitted by February 28, May 31, August 31, and November 30 for the periods ending January 31, April 30, July 31, and October 31 of each year.


Robert F. Evans
Supervisor

Approved: June 5, 1972


Russell G. Wayland
Chief, Conservation Division

OCS Order No. 7
August 28, 1969

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL LEASES
IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

POLLUTION AND WASTE DISPOSAL

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.43. Section 250.43 provides as follows:

- (a) The lessee shall not pollute land or water or damage the aquatic life of the sea or allow extraneous matter to enter and damage any mineral- or water-bearing formation. The lessee shall dispose of all liquid and non-liquid waste materials as prescribed by the supervisor. All spills or leakage of oil or waste materials shall be recorded by the lessee and, upon request of the supervisor, shall be reported to him. All spills or leakage of a substantial size or quantity, as defined by the supervisor, and those of any size or quantity which cannot be immediately controlled also shall be reported by the lessee without delay to the supervisor and to the Coast Guard and the Regional Director of the Federal Water Pollution Control Administration. All spills or leakage of oil or waste materials of a size or quantity specified by the designee under the pollution contingency plan shall also be reported by the lessee without delay to such designee.
- (b) If the waters of the sea are polluted by the drilling or production operations conducted by or on behalf of the lessee, and such pollution damages or threatens to damage aquatic life, wildlife, or public or private property, the control and total removal of the pollutant, wheresoever found, proximately resulting therefrom shall be at the expense of the lessee. Upon failure of the lessee to control and remove the pollutant the supervisor, in cooperation with other appropriate agencies of the Federal, State and local governments, or in cooperation with the lessee, or both, shall have the right to accomplish the control and removal of the pollutant in accordance with any established contingency plan for combating oil spills or by other means at the cost of the lessee. Such action shall not relieve the lessee of any responsibility as provided herein.

- (c) The lessee's liability to third parties, other than for cleaning up the pollutant in accordance with subsection (b) above, shall be governed by applicable law.

The operator shall comply with the following requirements. Any departures from the requirements specified in this Order must be approved pursuant to 30 CFR 250.12(b).

1. Pollution Prevention. In the conduct of all oil, gas and sulphur operations, the operator shall prevent pollution of the waters of the Gulf of Mexico. The operator shall comply with the following pollution prevention requirements:

- A. Liquid Disposal.

- (1) Oil in any form shall not be disposed of into the waters of the Gulf.
 - (2) Liquid waste materials containing substances which may be harmful to aquatic life or wildlife, or injurious in any manner to life or property, shall be treated to avoid disposal of harmful substances into the waters of the Gulf.
 - (3) Drilling mud containing oil shall not be disposed of into the Gulf. Drilling mud containing toxic substances shall be neutralized prior to disposal.

- B. Solid Waste Disposal.

- (1) Drill cuttings, sand, and other solids containing oil shall not be disposed of into the Gulf unless the oil has been removed.
 - (2) Mud containers and other solid waste materials shall be incinerated or transported to shore for disposal.

- C. Production Facilities.

- (1) All production facilities, such as separators, tanks, treaters, and other equipment, shall be such as are necessary to control the maximum anticipated pressures and production of oil, gas, and sulphur, and shall be maintained at all times in a manner necessary to prevent pollution.

- (2) All platforms and structures shall be curbed and connected by drains to a collecting tank or sump unless drip pans, or equivalents, are placed under equipment, from which a pollutant may spill into the Gulf, and piped to a tank or sump.
 - (3) The operator's personnel shall be thoroughly instructed, in the techniques of equipment maintenance and operation for the prevention of pollution. Non-operator personnel shall be informed in writing, prior to executing contracts, of the operator's obligations to prevent pollution.
2. Inspections and Reports. The operator shall comply with the following pollution inspection and reporting requirements:

A. Pollution Inspections.

- (1) Manned facilities shall be inspected daily.
- (2) Unattended facilities, including those equipped with remote control and monitoring systems, shall be inspected at frequent intervals. The district engineer may prescribe the frequency of inspections for these facilities.

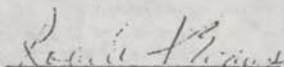
B. Pollution Reports.

- (1) All spills or leakage of oil and liquid pollutants shall be recorded showing the cause, size of spill, and action taken, and the record shall be maintained and available for inspection by the supervisor. All spills or leakage of less than 15 barrels shall be reported to the district engineer when requested by him.
- (2) All spills or leakage of oil and liquid pollutants of 15 to 50 barrels shall be reported orally to the district engineer without delay and shall be confirmed in writing.
- (3) All spills or leakage of oil and liquid pollutants of a substantial size or quantity, which is defined as more than 50 barrels, and those of any size or quantity which cannot be immediately controlled, shall be reported orally without delay to the supervisor, the district engineer, the Coast Guard, and the Regional Director, Federal Water Pollution Control Administration. All oral reports shall be confirmed in writing.

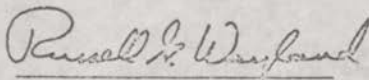
- (4) Operators shall notify each other upon observation of equipment malfunction or pollution resulting from another's operation.

3. Control and Removal.

- A. Corrective Action. Immediate corrective action shall be taken in all cases where pollution has occurred. Each operator shall have an emergency plan for initiating corrective action to control and remove pollution and such plan shall be filed with the supervisor. Corrective action taken under the plan shall be subject to modification when directed by the supervisor.
- B. Equipment. Standby pollution control equipment shall be maintained by or shall be immediately available to each operator at a land base location. This equipment shall include containment booms, skimming apparatus, and approved chemical dispersants and shall be available prior to the commencement of operations. The equipment shall be regularly inspected and maintained in good condition for use. The equipment and the location of land bases shall be approved by the supervisor. The operator shall notify the supervisor of the location at which such equipment is located for operations conducted on or for each lease. All changes in location and equipment maintained at each location shall be approved by the supervisor.


Robert F. Evans
Supervisor

Approved: August 28, 1969


Russell G. Wayland
Chief, Conservation Division.

OCS Order No. 8
October 30, 1970

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL LEASES IN THE
OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

APPROVAL PROCEDURE FOR INSTALLATION AND OPERATION OF PLATFORMS,
FIXED AND MOBILE STRUCTURES, AND ARTIFICIAL ISLANDS

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.19(a). Section 250.19(a) provides as follows:

- (a) The Supervisor is authorized to approve the design, other features, and plan of installation of all platforms, fixed structures, and artificial islands as a condition of the granting of a right of use or easement under Paragraphs (a) and (b) of Section 250.18 or authorized under any lease issued or maintained under the Act.

The operator shall be responsible for compliance with the requirements of this Order in the installation and operation of all platforms, fixed and mobile structures, and artificial islands, including all facilities installed on a platform or structure whether or not operated or owned by the operator. Any departures from the requirements specified in this Order must be approved pursuant to 30 CFR 250.12(b).

- 1. The following requirements are applicable to all platforms approved and installed subsequent to the effective date of this Order, and to all platforms when structural and equipment modifications are to be made:

- A. General Design. The design of platforms, fixed structures, and artificial islands shall include consideration of such factors as water depth, surface and subsurface soil conditions, wave and current forces, wind forces, total equipment weight, and other pertinent geological, geographical, environmental, and operational conditions.

- B. Application. The operator shall submit, in duplicate, the following to the appropriate District Office for approval:

(1) Design Features. Information relative to design features on an 8" x 10½" plat or plats showing the platform dimensions, plan and two elevations, number and location of well slots, and water depth. In addition, the plat shall include:

- (a) Nominal size and thickness range of piling.
- (b) Nominal size and thickness range of jacket column leg.
- (c) Nominal size and thickness range of deck column leg.
- (d) Design piling penetration.
- (e) Maximum bearing and lateral load per pile in tons.
- (f) Identification data which shall be the lease number, block number, area, and operator.
- (g) The following certification signed and dated with the title of the company representative:

" Operator certifies that this platform has been certified by a registered professional engineer and that the structure will be constructed, operated, and maintained as described in the application, and any approved modification thereto. Certified plans are on file at _____."

(2) Non-design Features. Information relative to non-design features including the following:

- (a) Primary use intended, including drilling, production of oil and gas, sulphur, or salt.

(b) Personnel and personnel transfer facilities including living quarters, boat landings, and heliport.

(c) Type of deck, such as steel or wood, and whether coated with protective material.

(d) Method of protection from corrosion.

(e) Production facilities including separators, treaters, storage tanks, compressors, line pumps, and metering devices, except that when initially designed and utilized for drilling, this information may be submitted prior to installation.

(f) Safety and pollution control equipment and features.

(g) Other information when required.

C. Certified Plan. Detailed structural plans certified by a registered professional engineer shall be on file and maintained by the operator or his designee.

2. Safety and Pollution Control Equipment and Procedures.

A. The following requirements shall apply to all platforms. Operators of platforms installed prior to the effective date of this Order shall comply with the requirements of subparagraphs (1)(a) through (f), (2), and (3) within three months, with subparagraphs (1)(g) and (4) within six months, and with subparagraphs (5), (6), (7), (8), and (9) within one year, from the effective date of this Order.

(1) The following shut-in devices shall be installed and maintained in an operating condition on all pressurized vessels and water separation facilities when such vessels and separation facilities are in service. The operator shall submit records to the appropriate District Office semi-annually showing the present status and past history of each device including dates and details of inspection, testing, repairing, adjustment, and reinstallation.

- (a) All separators shall be equipped with high-low pressure shut-in sensors, low level shut-in controls, and a relief valve. High liquid level control devices shall be installed when the vessel can discharge to a flare.
- (b) All pressure surge tanks shall be equipped with a high and low pressure shut-in sensor, a high level shut-in control, flare line, and relief valve.
- (c) Atmospheric surge tanks shall be equipped with a high level shut-in sensor.
- (d) All other hydrocarbon handling pressure vessels shall be equipped with high-low pressure shut-in sensors, high-low level shut-in controls, and relief valves, unless determined to be otherwise protected.
- (e) Pilot-operated pressure relief valves shall be equipped to permit testing with an external pressure source. Spring-loaded pressure relief valves shall either be bench-tested or equipped to permit testing with an external pressure source. A relief valve shall be set no higher than the designed working pressure of the vessel. The high pressure shut-in sensor shall be set no higher than 5% below the rated or designed working pressure and the low pressure shut-in sensor shall be set no lower than 10% below the lowest pressure in the operating pressure range on all vessels with a rated or designed working pressure of more than 400 psi. On lower pressure vessels the above percentages shall be used as guidelines for sensor settings considering pressure and operating conditions involved; except that sensor settings shall not be within 5 psi of the rated or designed working pressure or the lowest pressure in the operating pressure range.
- (f) All sensors shall be equipped to permit testing with an external pressure source.
- (g) All flare lines shall be equipped with a scrubber or similar separation equipment.

(2) The following remote and local automatic shut-in devices shall be installed and maintained in an operating condition at all times when the affected well (or wells) is producing. The operator shall submit records to the appropriate District Office semi-annually showing the present status and past history of each such device including dates and details of inspection, testing, repairing, adjustment, and reinstallation.

- (a) All wellhead assemblies shall be equipped with an automatic fail-close valve. Automatic safety valves temporarily out of service shall be flagged.
- (b) All flowlines from wellheads shall be equipped with high-low pressure sensors located close to the wellhead. The pressure sensors shall be set to activate the wellhead valve in the event of abnormal pressures in the flowline.
- (c) All headers shall be equipped with check valves on the individual flowlines. The flowline and valves from each well located upstream of, and including, the header valves shall withstand the shut-in pressure of that well, unless protected by a relief valve with connections to bypass the header. If there is an inlet valve to a separator, the valve, flowline, and all equipment upstream of the valve shall also withstand shut-in wellhead pressure, unless protected by a relief valve with connections to bypass the header.
- (d) All pneumatic shut-in control lines shall be equipped with fusible material at strategic points.
- (e) Remote shut-in controls shall be located on the helicopter deck and all exit stairway landings, including at least one on each boat landing. These controls shall be quick-opening valves.

- (f) All pressure sensors shall be tested for proper pressure settings monthly for at least four months. At such time as the monthly results are consistent, a quarterly test shall be required for at least one year. If these results are consistent, a longer period of time between testing may then be approved by the Supervisor. In the event any testing sequence reveals inconsistent results, the monthly testing sequence shall be reinstituted. Results of all tests shall be recorded and maintained in the field.
- (g) All automatic wellhead safety valves shall be tested for operation weekly. All automatic wellhead safety valves shall be tested for holding pressure monthly. If these results are consistent, a longer period of time between pressure tests, not to exceed quarterly, may then be approved by the Supervisor. In the event that any pressure testing sequence, exceeding monthly, reveals inconsistent results, the monthly testing sequence shall be reinstituted. Results of all tests shall be recorded and maintained in the field.
- (h) Check valves shall be tested for holding pressure monthly for at least four months. At such time as the monthly results are satisfactory, a quarterly test shall be required for at least one year. If these results are consistent, a longer period of time between testing may then be approved by the Supervisor. In the event any testing sequence reveals inconsistent results, the monthly testing sequence shall be reinstituted. Results of all tests shall be recorded and maintained in the field.
- (i) A complete testing and inspection of the safety system shall be witnessed by Geological Survey representatives at the time production is commenced. Thereafter, the operator shall arrange for a test every six months. The test shall be conducted when it can be witnessed by Geological Survey representatives.

- (j) A standard procedure for testing of safety equipment shall be prepared and posted in a prominent place on the platform.
- (3) Curbs, gutters, and drains shall be constructed in all deck areas in a manner necessary to collect all contaminants, unless drip pans or equivalent are placed, under equipment and piped to a sump which will automatically maintain the oil at a level sufficient to prevent discharge of oil into the Gulf waters. Alternate methods to obtain the same results will be acceptable. These systems shall not permit spilled oil to flow into the wellhead area.
- (4) An auxiliary electrical power supply shall be installed to provide emergency power capable of operating all electrical equipment required to maintain safety of operation in the event the primary electrical power supply fails.
- (5) The following requirements shall apply to the handling and disposal of all produced waste water discharged into the Gulf of Mexico. The disposal of waste water other than into the Gulf waters shall have the method and location approved by the Supervisor.
 - (a) Water discharged shall not create conditions which will adversely affect the public health or the use of the waters for the propagation of aquatic life, recreation, navigation, or other legitimate uses.
 - (b) Waste water disposal systems shall be designed and maintained to reduce the oil content of the disposed water to an average of not more than fifty ppm. An effluent sampling station shall be located at a point prior to discharge into the receiving waters where a representative sample of the treated effluent can be obtained. On one day each month four effluent samples shall be taken within a 24-hour period and determinations shall be made on the temperature, suspended solids, settleable solids, pH, total oil content, and volume of sample obtained.

All samples shall be taken and all analyses for oil content shall be performed in accordance with the American Society for Testing and Materials test D1340, "Oily Matter in Industrial Waste Water". The Supervisor may approve different methods for determination of oil content if the method to be used is indicated to be reliable. No effluent containing in excess of one hundred ppm of total oil content shall be discharged into the Gulf of Mexico. A written report of the results shall be furnished to the Regional Office annually. The report shall contain dates, time and location of sample, volumes of waste discharge on the date of sampling in barrels per day, and the results of the specific analysis and physical observations.

(6) A firefighting system shall be installed and maintained in an operating condition in accordance with the following:

(a) A fixed automatic water spray system shall be installed in all inadequately ventilated well-head areas as these areas are defined in Paragraph 9 API RP 500A. These systems shall be installed in accordance with the most current edition of National Fire Protection Association's Pamphlet No. 15.

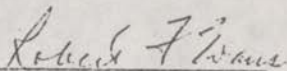
(b) A firewater system of rigid pipe with fire hose stations shall be installed and may include a fixed water spray system. Such a system shall be installed in a manner necessary to provide needed protection in areas where production handling equipment is located. A firefighting system using chemicals may be considered for installation in certain platform areas in lieu of a firewater system in that area, if determined to provide equivalent fire protection control.

(c) Pumps for the firewater systems shall be inspected and test-operated weekly. A record of the tests shall be maintained in the field and submitted semi-annually to the appropriate District Office. An alternate fuel or power source shall be installed to provide continued pump operation during platform shutdown unless an alternate firefighting system is provided.

- (d) Portable fire extinguishers shall be located in the living quarters and in other strategic areas.
 - (e) A diagram of the firefighting system showing the location of all equipment shall be posted in a prominent place on the platform and a copy submitted to the appropriate District Office.
- (7) An automatic gas detector and alarm system shall be installed and maintained in an operating condition in accordance with the following:
- (a) Gas detection systems shall be installed in all enclosed areas containing gas handling facilities or equipment and in other enclosed areas which are classified as hazardous areas as defined in API RP 500 and the most current edition of the National Electric Code.
 - (b) All gas detection systems shall be capable of continuously monitoring for the presence of combustible gas in the areas in which the detection devices are located.
 - (c) The central control shall be capable of giving an alarm at some point below the lower explosive limit of 1.3% as shown in the Bureau of Mines Bulletin No. 503. This low level shall be for alarm purposes only.
 - (d) A high level setting of not more than 4.9% shall be used for shut-in sequences and the operation of emergency equipment.
 - (e) An application for the installation and maintenance of any gas detection system shall be filed with the appropriate District Office for approval. The application shall include the following:
 - (i) Type, location, and number of detection or sampling heads.
 - (ii) Cycling, noncycling, and frequency information.
 - (iii) Type and kind of alarm including emergency equipment to be activated.

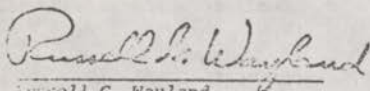
- (iv) Method used for detection of combustible gas.
- (v) Method and frequency of calibration.
- (vi) A diagram of the gas detection system.
- (vii) Other pertinent information.
- (f) A diagram of the gas detection system showing the location of all gas detection points shall be posted in a prominent place on the platform.
- (8) The following requirements shall be applicable to all electrical equipment and systems installed:
 - (a) All engines shall be equipped with low-tension ignition systems containing rigid connections and shielded wiring which shall prevent the release of sufficient electrical energy under normal or abnormal conditions to cause ignition of a combustible mixture.
 - (b) All electrical generators, motors, and lighting systems shall be installed, protected, and maintained in accordance with the most current edition of the National Electric Code and API RP 500A and B, as appropriate.
 - (c) Marine-armored cable or metal-clad cable may be substituted for wire in conduit in any area.
- (9) Sewage disposal systems shall be installed and used in all cases where sewage is discharged into the Gulf of Mexico. Sewage is defined as human body wastes and the wastes from toilets and other receptacles intended to receive or retain body wastes. Following sewage treatment, the effluent shall contain 50 ppm or less of biochemical oxygen demand (BOD), 150 ppm or less of suspended solids, and shall have a minimum chlorine residual of 1.0 mg/liter after a minimum retention time of fifteen minutes.

- B. The requirements of subparagraphs 2.A(3), (4), (6), and (9) shall apply to all mobile drilling structures used to conduct drilling or workover operations on Federal leases in the Gulf of Mexico.



Robert F. Evans
Supervisor

Approved: October 30, 1970



Russell G. Wayland
Chief, Conservation Division

OCS Order No. 9
October 30, 1970

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS LEASES
IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

APPROVAL PROCEDURE FOR OIL AND GAS PIPELINES

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.19(b). Section 250.19(b) provides as follows:

- (b) The Supervisor is authorized to approve the design, other features, and plan of installation of all pipelines for which a right of use or easement has been granted under Paragraph (c) of Section 250.18 or authorized under any lease issued or maintained under the Act, including those portions of such lines which extend onto or traverse areas other than the Outer Continental Shelf.

The operator shall comply with the following requirements. Any departures from the requirements specified in this Order must be approved pursuant to 30 CFR 250.12(b).

1. General Design. All pipelines shall be designed and maintained in accordance with the following:

A. The operator shall be responsible for the installation of the following control devices on all oil and gas pipelines connected to a platform including pipelines which are not operated or owned by the operator. Operators of platforms installed prior to the effective date of this Order shall comply with the requirements of subparagraphs (1) and (2) within six months of the effective date of this Order. The operator shall submit records semi-annually showing the present status and past history of each device, including dates and details of inspection, testing, repairing, adjustment, and reinstallation.

- (1) All oil and gas pipelines leaving a platform receiving production from the platform shall be equipped with a high-low pressure sensor to directly or indirectly shut-in the wells on the platform.

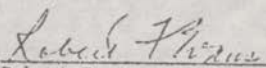
- (2) (a) All oil and gas pipelines delivering production to production facilities on a platform shall be equipped with an automatic shut-in valve connected to the platform's automatic and remote shut-in system.
 - (b) All oil and gas pipelines coming onto a platform shall be equipped with a check valve to avoid backflow.
 - (c) Any oil or gas pipelines crossing a platform which do not deliver production to the platform, but which may or may not receive production from the platform, shall be equipped with high-low pressure sensors to activate an automatic shut-in valve to be located in the upstream portion of the pipeline at the platform. This automatic shut-in valve shall be connected to either the platform automatic and remote shut-in system or to an independent remote shut-in system.
 - (d) All pipeline pumps shall be equipped with high-low pressure shut-in devices.
- B. All pipelines shall be protected from loss of metal by corrosion that would endanger the strength and safety of the lines either by providing extra metal for corrosion allowance, or by some means of preventing loss of metal such as protective coatings or cathodic protection.
 - C. All pipelines shall be installed and maintained to be compatible with trawling operations and other uses.
 - D. All pipelines shall be hydrostatically tested to 1.25 times the designed working pressure for a minimum of 2 hours prior to placing the line in service.
 - E. All pipelines shall be maintained in good operating condition at all times and inspected monthly for indication of leakage using aircraft, floating equipment, or other methods. Records of these inspections including the date, methods, and results of each inspection shall be maintained by the pipeline operator and submitted annually by April 1. The pipeline operator shall submit records indicating the cause, effect, and remedial action taken regarding all pipeline leaks within one week following each such occurrence.

- F. All pipelines shall be designed to be protected against water currents, storm scouring, soft bottoms, and other environmental factors.

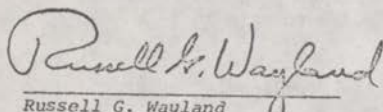
2. Application. The operator shall submit in duplicate the following to the Supervisor for approval:

- A. Drawing on 8" x 10½" plat or plats showing the major features and other pertinent data including: (1) water depth, (2) route, (3) location, (4) length, (5) connecting facilities, (6) size, and (7) burial depth, if buried.
- B. A schematic drawing showing the following pipeline safety equipment and the manner in which the equipment functions: (1) high-low pressure sensors, (2) automatic shut-in valves, and (3) check valves.
- C. General information concerning the pipeline including the following:
 - (1) Product or products to be transported by the pipeline.
 - (2) Size, weight, and grade of the pipe.
 - (3) Length of line.
 - (4) Maximum water depth.
 - (5) Type or types of corrosion protection.
 - (6) Description of protective coating.
 - (7) Bulk specific gravity of line (with the line empty).
 - (8) Anticipated gravity or density of the product or products.
 - (9) Design working pressure and capacity.
 - (10) Maximum working pressure and capacity.
 - (11) Hydrostatic pressure and hold time to which the line will be tested after installation.
 - (12) Size and location of pumps and prime movers.
 - (13) Any other pertinent information as the Supervisor may prescribe.

3. Completion Report. The operator shall notify the Supervisor when installation of the pipeline is completed and submit a drawing on 8" x 10½" plats showing the location of the line as installed, accompanied by all hydrostatic test data including procedure, test pressure, hold time, and results.


Robert F. Evans
Supervisor

Approved: October 30, 1970


Russell G. Wayland
Chief, Conservation Division

OCS Order No. 12
August 13, 1971

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL LEASES IN THE
OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

PUBLIC INSPECTION OF RECORDS

Interim Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.97 and 43 CFR 2.2. Section 2.2 of 30 CFR provides as follows:

Public Inspection of Records. Geological and geophysical interpretations, maps, and data required to be submitted under this part shall not be available for public inspection without the consent of the lessee so long as the lease remains in effect or until such time as the supervisor determines that release of such information is required and necessary for the proper development of the field or area.

Section 2.2 of 43 CFR provides in part as follows:

Determinations as to Availability of Records. (a) Section 552 of Title 5, U.S. Code, as amended by Public Law 90-23 (the act codifying the "Public Information Act") requires that identifiable agency records be made available for inspection. Subsection (b)¹ of section 552 exempts several categories of records from the general requirement but does not require the withholding from inspection of all records which may fall within the categories exempted. Accordingly, no request made of a field office to inspect a record shall be denied unless the head of the office or such higher field authority as the head of the bureau may designate shall determine (1) that the record falls within one or more of

Section (b) of section 552 provides that:
This section does not apply to matters that are--

... Trade secrets and commercial or financial information obtained from a person and privileged or confidential;

... Geological and geophysical information and data, including maps, diagrams, and well logs.

the categories exempted and (2) either that disclosure is prohibited by statute or Executive Order or that sound grounds exist which require the invocation of the exemption. A request to inspect a record located in the headquarters office or a bureau shall not be denied except on the basis of a similar determination made by the head of the bureau or his designee, and a request made to inspect a record located in a major organizational unit of the Office of the Secretary shall not be denied except on the basis of a similar determination by the head of that unit. Officers and employees of the Department shall be guided by the "Attorney General's Memorandum on the Public Information Section of the Administrative Procedure Act" of June 1967.

(b) An applicant may appeal from a determination that a record is not available for inspection to the Solicitor of the Department of the Interior, who may exercise all of the authority of the Secretary of the Interior in this regard. The Deputy Solicitor may decide such appeals and may exercise all of the authority of the Secretary in this regard.

The operator shall comply with the requirements of this Order. Any departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

1. Availability of Records Filed on or after December 1, 1970. It has been determined that certain records pertaining to leases and wells in the Outer Continental Shelf and submitted under 30 CFR 250 shall be made available for public inspection, as specified below, in the Area office, Metairie, Louisiana.

- A. Form 9-152 - Monthly Report of Operations. All information contained on this form shall be available except the information required in the Remarks column.
- B. Form 9-330 - Well Completion or Recompletion Report and Log.
 - (1) Prior to commencement of production all information contained on this form shall be available except Item 1a, Type of Well; Item 4, Location of Well, At top prod. interval reported below; Item 22, if Multiple Compl., How many; Item 24, Producing Interval; Item 26, Type Electric and Other Logs Run; Item 28, Casing Record; Item 29, Liner Record; Item 30, Tubing Record; Item 31, Perforation Record; Item 32, Acid, Shot, Fracture, Cement Squeeze, etc.; Item 33, Production; Item 37, Summary of Porous Zones; and Item 38, Geologic Markers.
 - (2) After commencement of production all information shall be available except Item 37, Summary of Porous Zones; and Item 38, Geologic Markers.

- (3) If production has not commenced after an elapsed time of five years from the date of filing Form 9-330 as required in 30 CFR 250.38(h), all information contained on this form shall be available except Item 37, Summary of Porous Zones; and Item 38, Geologic Markers. Within 90 days prior to the end of the five-year period the lessee or operator may submit objections to the release of such information. The supervisor, taking into consideration the objections of the lessee, proximity to unleased lands, and the best interests of the United States, may determine that such information shall not be released.

- C. Form 9-331 - Sundry Notices and Report on Wells. (1) When used as a "Notice of Intention to" conduct operations, all information contained on this form shall be available except Item 4, Location of Well, At top prod. interval; and Item 17, Describe Proposed or Completed Operations.

(2) When used as a "Subsequent Report of" operations, and after commencement of production, all information contained on this form shall be available except information under Item 17 as to subsurface locations and measured and true vertical depths for all markers and zones not placed on production.

- D. Form 9-331C - Application for Permit to Drill, Deepen or Plug Back. All information contained on this form, and location plat attached thereto, shall be available except Item 4, Location of Well, At proposed prod. zone; and Item 23, Proposed Casing and Cementing Program.

- E. Sales of Lease Production. Information contained on monthly Geological Survey computer printout showing sales of production of oil, condensate, gas and liquid products, by lease, shall be made available.

2. Filing of Reports. All reports on Forms 9-152, 9-330, 9-331, and 9-331C shall be filed in accordance with the following:

- A. All reports submitted on these forms after the effective date of this Order shall be filed in two separate sets. All items on the forms in one set shall be completed in full and such forms, and all attachments thereto, shall not be available for public inspection. The additional set shall be completed in full, except that the items described in 1.(A), (B), (C), and (D) above, and the attachments relating to such items, may be excluded. The words "Public Information" shall be shown on the lower right-hand corner of this set. This additional set shall be made available for public inspection.
- B. Copies of reports on these forms which were filed between December 1, 1970, and the effective date of this Order, shall be resubmitted (in duplicate or triplicate, as provided by

the regulations) within 30 days after the effective date of this Order. These reports may exclude the items described in 1. (A), (B), (C), and (D) above, and shall show the words "Public Information" on the lower right-hand corner and shall be made available for public inspection.

3. Availability of Records Filed Prior to December 1, 1970. Information filed prior to December 1, 1970, on the forms referred to in (1) above, is not in a form which can be readily made available for public inspection. Requests for information on these forms shall be submitted to the supervisor in writing and shall be made available in accordance with 43 CFR Part 2.

Robert F. Evans

Robert F. Evans
Supervisor

Approved: August 13, 1971

Russell G. Wayland

Russell G. Wayland
Chief, Conservation Division

Question. I understand that there has been under consideration a number of years in the Interior Department, a system which would require private companies conducting geological and geophysical exploration to submit all their raw data to the Government as a condition to a permit for such activity. What are the objections to such a system?

Answer. The private companies object to having to handle and convey to the Government large amounts of data which they collected and paid for. They are very concerned over the possibility that some or all of those data may be made public before the owner realizes the competitive advantage he expects for the costs incurred. From the Government's point of view, we would need large storage facilities, thermostatically and magnetic field controlled to house this data. This would require a large staff to handle, check, and verify and use the data.

Question. What would be the costs in terms of dollars, manpower, and time of a Government-run exploratory system to bring the Government's understanding of OCS resources and reserves at least up to a par of that of industry?

Answer. We believe that Government's understanding of the overall OCS resources and reserves is, in general, equal to or greater than that of industry. In knowledge of reserves, each company undoubtedly knows more about its own reserves on its own leases but the Government knows as much as industry as a whole about total OCS reserves.

All data necessary to calculate reserves on the Outer Continental Shelf are now submitted to the Government under existing regulations. No one company or group of companies has access to all this data. To date we have not had the funding or personnel to completely evaluate these data. We estimate that 125 professional and support personnel would be needed for 2 years at a cost of about \$5 million to independently calculate total reserves in the developed areas of the OCS.

Question. How much total acreage will be leased from 1974 to 1980?

Answer. The Department's current goals for leasing are 3 million acres in 1974 and 10 million acres in 1975. A revised leasing schedule for years after 1975 will not be issued until the Department has had an opportunity to analyze the effects of accelerated leasing. Some of the factors which will be analyzed are the rate of development of the leases and the effect on revenues. As will be described in answers to questions below, the Department will insure the receipt of fair market value and protection of the environment under any level of leasing.

Question. Is the oil and gas industry interested in acquiring that much acreage in 1975 under truly competitive conditions?

Answer. Recognizing that leasing 10 million acres in 1975 could have an impact on competition at OCS lease sales, the Department is considering new regulations to insure competitive conditions. One of these is a ban on joint bidding between the largest oil companies. This is an attempt to increase the number of bidders on individual tracts and maintain competition for leases. Draft rules to implement this ban were published in the April 24 Federal Register and a public hearing on them will be held June 25. After all comments concerning the draft regulations are reviewed the Department will decide as to whether to adopt such regulations. Final rules could be announced in the fall. Another measure under consideration is the use of royalty bidding at the lease sales. Royalty bidding may improve competition by enabling more small companies to receive leases. The Department plans to lease 10 tracts on a royalty basis at the proposed OCS lease sale No. 36 in September. This experiment should provide data for analyzing royalty bidding as opposed to current cash bonus bidding. We are currently analyzing the most recent OCS sales to determine the effect of increased lease offerings. The results of this study should help us determine what steps, if any, are needed to insure competition.

Question. Can the industry bring that amount of additional acreage into production before 1980?

Answer. The industry cannot bring that amount of additional acreage into full production before 1980. In developed areas with optimum conditions, that is, close to shore, shallow water, existing pipelines, et cetera, the minimum time from drilling to production has been over 2 years and the average time ranges from 4 to 6 years. In a frontier area the time can be considerably longer.

Question. What are the constraints in terms of exploration rigs, particularly deep water?

Answer. The constraints consist of a steel shortage, lengthy construction time, and the competition for existing rigs from overseas exploration.

Question. What are the constraints in terms of production platforms?

Answer. A steel shortage is likewise holding up the fabrication of platforms.

Question. What are the constraints in terms of pipelines?

Answer. Tabular goods such as pipe for pipelines and casing and tubing are in short supply. Most pipe manufacturers do not make as much profit on pipe as they do on plate steel.

Question. What about other equipment?

Answer. There are ample derrick barges and pipeline-laying barges to meet the demand in the Gulf of Mexico for the current rate of development.

Question. What about onshore and support facilities and equipment?

Answer. There are ample docking facilities on the coast of the Gulf of Mexico. There are also sample support boats.

The industry formed "Clean Gulf Associates," a cooperative operation to combat oil spills offshore. They have several locations on the coast of the Gulf of Mexico which allows rapid cleanup responses to oil spills.

Question. What will be the Department's position if industry is unable to explore these leases and bring them to a production status within the 5-year lease term? According to the OCS Lands Act this means the lease should be returned to the Government, yet industry has paid huge amounts for the leases. Won't the Department be under tremendous pressure to violate the law and extend the leases? In the past how many leases has the Department canceled for failure to bring to a producing status within the 5-year lease term?

Answer. The Department will not violate the law to extend leases. Lease extensions may be granted where a discovery has been made and the lessee is engaged in developing the lease for production; leases committed to a unit agreement when the optimum plan of development can be best realized under unitized operations, and when drilling operations are being conducted. These extensions are granted only in conformance with the Outer Continental Shelf Lands Act and the regulations promulgated thereunder.

The Department does not cancel a lease for failure to bring to a producing status within the 5-year term of the lease. Rather, the lease terminates automatically by operation of law if a producible status is not reached. Since passage of the Outer Continental Shelf Lands Act there have been 802 leases that have terminated because production was not obtained.

Question. What will be the impact of massive lease offerings on competition and dollar return to the Treasury?

Answer. The steps being considered by the Department to insure that competition will not be adversely affected by the increase in leasing have already been described. To insure a fair market value return for the OCS lands, the Department has a system to evaluate the resource value of each of the offered tracts. At the time of the sale these evaluations play an important role in the decision as to accepting or rejecting the high bids on each tract. At the most recent OCS sale (No. 34), 17 percent of the high bids offered were rejected because a fair market value would not have been received for the tracts. At sale No. 33, 20 percent of the high bids were rejected for this reason. The tracts for which bids were rejected will be reoffered at a future sale. Under the accelerated program, this system will be used to insure a fair market value return to the Treasury.

Question. Under such massive leasing conditions, can the Department, in the absence of good geological and geophysical data, guarantee that there will be adequate competition to insure a fair market value return to the Treasury?

Answer. The Department does not rely solely on competition to insure a fair market value return to the Treasury. The purpose of the tract evaluation program is to independently establish a fair market value for each tract offered for leasing in the OCS. In order to establish fair market value the Department insures that it has adequate geophysical and/or geological data to arrive at a reasonable value. One of the criteria used in tract selection is the availability of data necessary to establish value. If the Department does not have or cannot get sufficient data to evaluate a tract, the tract is not offered for leasing. Personnel and funding requested in the fiscal year 1975 budget and fiscal year 1975 amendment will insure that the Department will be able to acquire and interpret sufficient data to arrive at an independent evaluation of each tract offered for leasing.

Question. The most recent sale off Texas under accelerated leasing brought a reduced number of bidders per tract and lower bids. Is this not the start of a trend which will result in lower returns to the Treasury?

Answer. As expected, the percentage of tracts receiving bids is declining as the number of sales and total acreage offered increases. This may be in part due to the fact that more marginal acreage is being offered in the Gulf of Mexico and that industry has the opportunity to be more selective. Average prices per acre received in the March 1974 and May 1974 OCS sales were \$4,163 and \$2,208 respectively. In comparison, the average price per acre received in the Gulf of Mexico from 1970 through 1973 ranged from \$1,535 per acre to \$3,108 per acre. The \$2,208 per acre received in the May 1974 OCS Texas sale may reflect the start of a trend toward lower bids in the Gulf of Mexico or it may only be an indication of the quality of acreage offered in that sale. In any event, the \$2,208 per acre is not a radical decline from the figures of the last 4 years. Total yearly returns to the Treasury should increase under accelerated leasing even though returns per sale may decrease.

Question. Can industry explore this acreage adequately before 1975 so that it can take the risk of high bids?

Answer. In developed areas of the OCS much of the basic exploratory work has already been done. In frontier areas of the OCS, as in all frontier areas, primary interest is in the large, relatively obvious structures. Assuming that sufficient notice of lease sale areas is given, industry should be able to identify these structures and do the detailed work on them necessary to justify high bids.

Question. What is the industry capital situation as it relates to its ability to sustain high bids?

Answer. Based on the latest available information, it is our position that the oil and gas industry's current capital posture will not cause a reduction in the magnitude of bids offered for OCS property. This does not mean that we are certain of realizing constant or increasing revenue levels for future OCS sales. Acreage quality, imposition of additional environmental safeguard measures, and the price of oil, will influence industry's bid determinations in future OCS auctions.

Question. Won't the effect be to diffuse industry interest among more tracts, with less exploration, and less competition, thus significantly forcing down the bids?

Answer. The Department is considering steps to maintain competition at OCS lease sales and to insure the receipt of fair market value through the resources evaluation program. Also as I mentioned previously, is the fact that developed areas of the OCS have been extensively explored and that exploration will be concentrated on the most promising structures in the frontier areas. Any reduction in accepted bids will be the result of offering lower quality acreage and of offering acreage in frontier areas where risks are higher. A reduction in bids from these causes would normally result under any level of leasing.

Question. Won't leasing this acreage in 1975 without the assurance of development, bring much less revenue than if it is leased over 3 or 4 years, particularly in a time of rising oil prices?

Doesn't leasing too early, for example at 1975 oil prices mean less return than leasing at, say, 1978 prices?

Answer. As I indicated previously, any major reduction in revenues from OCS sales in 1975 will probably result from the offering of less promising acreage in developed areas and relatively unknown acreage in frontier areas. Leasing this acreage 3 or 4 years from now rather than in 1975 would bring more revenue, in real dollar terms, only if the rate of increase in oil prices is greater than the rate of general inflation. Thus, while the nominal amount received from a tract in 1978 may be greater than that received in 1975, converting these amounts to real dollars will eliminate the effects of inflation and may reveal that the amounts are more nearly equal. In fact, if the rise in oil prices is less than the general rate of inflation, it is conceivable that the Government would receive less "real" revenues in 1978 than in 1975.

It should also be noted that one objective of increased leasing is to slow the increase in oil prices by increasing domestic supply and displacing more expensive foreign imports.

Question. What will be the total revenue loss of leasing 10 million acres in 1975 than leasing at the 1973 rate of 1 million acres per year? The projected National Petroleum Council rate of 1.5 million acres per year? The current rate?

Answer. There is not expected to be a significant "real" revenue loss in leasing 10 million acres in 1975 rather than at the 1 million, 1.5 million or the current

rate. The factors which will be most important in determining the revenues received, quality of acreage and knowledge about the areas, will have an impact under all leasing rates. It also seems likely that the most promising tracts, which bring in the bulk of revenues, will continue to receive high bids under an accelerated program. Any lower bids received as a result of the increases in leasing, will be for the less promising and marginal tracts which contribute only a small part of the total revenues.

Question. Even with your supplemental budget request, can the Department by 1975 acquire the manpower, geologic data, and economic evaluation capability to insure that this massive leasing program does not result in major revenue loss to the public treasury?

Answer. Yes, Mr. Yates, we feel that we will have adequate resources to assure a fair market value return for the public lands.

Question. Before deciding to increase tenfold the amount of acreage leased, what analysis did the Interior Department make of the environmental impact under NEPA?

Answer. The decision to accelerate OCS leasing to 10 million acres in 1975 was announced by President Nixon in his energy message of January 1974. The Department is presently preparing an environmental impact statement according to Section 102(2)(C) of the National Environmental Policy Act to assess the environmental impacts of accelerating leasing to 10 million acres. Attached is a Federal Register notice outlining the information to be contained in the impact statement.

MONDAY, MAY 20, 1974

WASHINGTON, D.C.

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DEPARTMENT OF STATE

[Public Notice 555-CT]

NATIONAL REVIEW BOARD FOR THE CENTER FOR CULTURAL AND TECHNICAL INTERCHANGE BETWEEN EAST AND WEST

Postponed Meeting

The meeting of the Executive Committee of the National Review Board for the Center for Cultural and Technical Interchange Between East and West (East-West Center), announced for June 3, 1974 (29 FR 16302) at the Department of State, Room 531, SA-2, has been canceled. The meeting site has been changed to Honolulu, Hawaii and scheduled for June 21, 1974.

The meeting is being postponed to take advantage of the fact that several participants will be in Honolulu at that time on other business.

Dated: May 13, 1974.

CAROL M. OWENS,

Executive Secretary.

[PR Doc 74-11469 Filed 5-17-74; 8:45 am]

DEPARTMENT OF THE TREASURY

Office of the Secretary

ADVISORY COMMITTEE ON REFORM OF THE INTERNATIONAL MONETARY SYSTEM

Notice of Meeting

Notice is hereby given that the Advisory Committee on Reform of the International Monetary System will meet at the Treasury Department in Washington, D.C., on June 3, 1974.

The meeting is called for the purpose of considering the basic issues involved in the current international negotiations for the reform of the international monetary system.

A determination as required by section 10(d) of the Federal Advisory Committee Act (Pub. L. 92-462) has been made that this meeting is for the purpose of considering matters falling within one or more of the exemptions to public disclosure set forth in 5 U.S.C. 552(b) and that the public interest requires such meeting be closed to public participation.

Dated: May 16, 1974.

(SEAL) PAUL A. VOLCKER
Under Secretary for
Monetary Affairs.

[PR Doc 74-11666 Filed 5-17-74; 9:57 am]

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

OUTER CONTINENTAL SHELF: POTENTIAL FUTURE OIL AND GAS LEASING

Preparation of Environmental Impact Statement

In order to ensure that adequate consideration is given to the environmental impacts of and alternatives to implementation of the program announced by

President Nixon for an increase in potential future Outer Continental Shelf (OCS) oil and gas leasing to ten million acres in 1975, the Bureau of Land Management of the Department of the Interior will prepare an environmental impact statement for the proposed action pursuant to the provisions of section 102 (2)(C) of the National Environmental Policy Act (42 U.S.C. 4332(2)(C)). OCS areas which may be affected by the proposed program include the following:

Atlantic Coast OCS areas:	Approximate location
1. North Atlantic.....	Bay of Fundy to Cape Cod north of 40° N. latitude and south of 41° N. latitude.
2. Mid-Atlantic.....	Cape Cod to Cape Hatteras between 40° N. to 35° N. latitude.
3. South Atlantic.....	Cape Hatteras to Key West south of 35° N. latitude.
Gulf of Mexico OCS areas:	
4. East Gulf.....	East of 88° W. longitude.
5. Central Gulf.....	Between 88° W. to 93° W. longitude.
6. West Gulf.....	West of 93° W. longitude to Mexican border.
Pacific OCS areas:	
7. Southern California Borderland.....	South of 34° N. latitude to Mexican border (except Santa Barbara Channel).
8. Santa Barbara.....	Santa Barbara Channel.
9. North and Central California.....	North of 34° N. latitude to California-Oregon border (except Santa Barbara Channel).
10. Washington-Oregon.....	Between California-Oregon border and Canadian border.
Alaska OCS areas:	
11. Cook Inlet.....	South of 60° N. latitude.
12. Southern Aleutian Shelf.....	West of 152° W. longitude.
13. Gulf of Alaska.....	North of 56° N. latitude, east of 153° W. longitude.
14. Bristol Bay.....	South of 53° N. latitude, east of 165° W. longitude.
15. Bering Sea Shelf.....	U.S. waters south of 66° N. latitude.
16. Beaufort Sea.....	Between 142° W. and 160° W. longitude.
17. Chukchi Sea.....	U.S. waters north of 66° N. latitude, west of 160° W. longitude.

¹ The line drawn from a point at: 42°19.9' N. latitude, 67°48.9' W. longitude, thence to 42° 9.3' N. latitude, 67°40.0' W. longitude, thence 41°42.4' N. latitude, 67°28.8' W. longitude, and ending at 41°15.3' N. latitude, 66°24.9' W. longitude.

It is the intention of the Bureau of Land Management to prepare an environmental statement which, in general, will describe the following topics: The proposed leasing action; the management system pertaining to the proposed action, including leasing procedures, supervision, inspection, and regulation of lease operations, and monitoring of actual and threatened environmental effects of lease operations; OCS oil and gas resource potential; energy supply

and demand; technology for developing oil and gas offshore; environmental settings; natural phenomena that exist or occur in particular OCS regions, and which have the potential to cause or contribute to environmental impacts arising from the proposed action; the potential environmental impacts of the proposed action, offshore and onshore, including without limitation matters such as the cumulative impact of oil and gas operations under the proposed leasing action.

impacts on competing uses of OCS resources, the effect of the proposed action on the level of environmental study prior to leasing and on the level of supervision of lease operations after leasing, and the degree to which environmental effects might be reduced as a result of improvements in methods of lease supervision; and the alternatives to the proposed action and their potential environmental impacts.

In due course, the Bureau of Land Management will prepare and disseminate a draft environmental statement and solicit comments on the statement from other Federal agencies, State and local governments, and interested members of the public. Moreover, it is the intention of the Bureau of Land Management to schedule public hearings, the location of which will be designated in a future notice published in the *Federal Register*, to consider the proposed action and the draft environmental statement.

The Bureau of Land Management will prepare individual environmental statements pursuant to section 102(2)(C) of the National Environmental Policy Act, supra, for each potential lease sale involved in the proposed action. This will provide a detailed environmental analysis on a tract-by-tract basis.¹

The reasoning behind the proposed program and the determination to prepare a formal assessment of the environmental impacts of the proposal to increase OCS oil and gas leasing is as follows:

(a) Energy consumption in the United States will continue to rise. Despite conservation measures which have been instituted as a result of the recent oil embargo, all predictions indicate that there will be further increases in demand. Should domestic oil production continue to decline and demand continue to grow as in the past, imports would necessarily increase from 35 percent of U.S. consumption in 1973 to roughly half of U.S. consumption by 1990.

(b) The substantial rise in foreign oil prices in recent months also has created difficulties. If foreign oil purchases are increased, there would be a chronic balance of payments outflow which would create critical problems in international monetary affairs.

(c) An increase in domestic oil and gas production offers the greatest chance among available alternatives of avoiding increasing dependence upon potentially insecure foreign supplies of energy. While the mix between energy forms may change somewhat with rapid growth of other forms of energy such as increases in coal production and development of nuclear energy, the U.S. must continue to be heavily dependent on oil and gas through the next two decades.

(d) The Outer Continental Shelf represents a large and promising area for

oil and gas exploration. The Department's Geological Survey estimates undiscovered recoverable oil resources offshore totalling 65 to 129 billion barrels of petroleum (7-14 State and 56-116 Federal) and 393 to 799 trillion cubic feet of gas (40-63 State and 336-710 Federal). Production from those resources, in addition to production from known OCS resources, would greatly help in attaining the goal of avoiding dependence on insecure foreign sources of oil and gas.

(e) The proposed action to increase OCS oil and gas leasing to 10 million acres in 1973 is a major Federal action significantly affecting the quality of the human environment.

(f) The environmental statement process articulated in the National Environmental Policy Act provides a formalized method for evaluating the environmental impact of OCS development. For example, the view—that the considerable OCS development which has occurred to date has not resulted in long lasting unacceptable marine or shoreline environmental or socio-economic impacts—would be evaluated.

The viability of the program, and the bases therefor, will be evaluated in the decision-making processes of which the environmental statements concerning the increases in OCS leasing from approximately 3 million acres in 1974 to 10 million acres in 1973, and the individual environmental statements on the 1973 sales, are a part. Studies and views that will be considered in these decision-making processes include more than the preparation of the environmental statements referred to. The following steps have already been taken:

(a) On April 18, 1973, the President directed the Council on Environmental Quality to study the potential environmental impacts of OCS oil and gas exploration and development along the Atlantic Coast and the Gulf of Alaska. The Report of the Council on Environmental Quality, OCS Oil and Gas—An Environmental Assessment, which was submitted to the President on April 12, 1974, is undergoing a thorough review within the Department.

(b) On February 23, 1974, the Bureau of Land Management published in the *Federal Register* (39 FR 6311), a "Request for Comments" inviting and encouraging all concerned parties representing the oil and gas industry and the general public to submit information concerning areas of interest for oil and gas resource potential and areas of environmental concern. Comments received to date in response to this request are now being studied and analyzed within the Department of the Interior, and a report will be released in the near future. This is one action taken during the first tier of a new two-tier system for selecting potential OCS leasing areas and individual tracts within those areas. The Bureau of Land Management will use these rankings of areas, and its own evaluations of resource potential and need to protect environmental values, the CEQ report, and views of other Fed-

eral agencies to identify areas for potential lease sales. In the second tier of the system, industry and other groups will be asked to provide their views on individual tracts within areas as in the past. Thereafter, an environmental statement for the individual lease sale would be prepared, as mentioned above, and if the sale is determined to be environmentally acceptable, the terms of the leases would be established, and the sale held.

(c) The Department is conducting an inventory and analysis of existing environmental and socio-economic data. The CEQ report represents a significant contribution to this level of effort. Contracts have been entered into with universities for more specific analyses of frontier areas such as the North Atlantic from the Bay of Fundy to Sandy Hook, New Jersey; the mid-Atlantic, from Sandy Hook to Cape Hatteras; the South Atlantic, from Cape Hatteras to Cape Canaveral; and the Gulf of Alaska, from Cook Inlet to Unimak Island. The Department has also contracted for studies of southern California and is broadening and updating our information concerning the Gulf of Mexico.

(d) The Secretary of the Interior has created a Federal-State Research Advisory Board which will advise on the scope and conduct of baseline studies and monitoring programs for potential leasing in frontier areas of the Atlantic and Alaska. We expect to issue a number of contracts for base-line studies after receiving advice from the advisory board. Representatives of seaboard States have been invited to participate on the Board and others will be so invited.

In this connection, the Department has decided to proceed in nearly simultaneous time frames with environment base-line studies on the Outer Continental Shelves of the Atlantic Ocean and the Gulf of Alaska in order to explore further the feasibility of oil and gas leasing in those areas. These base-line studies will consider weather, sea state, biota, populations and natural hazards. This design will draw upon the National Oceanic and Atmospheric Administration (NOAA), Bureaus in the Department, States, and the private sector. NOAA and the USGS have been asked to design appropriate studies for the Gulf of Alaska for early consideration by the Advisory Board. Because legal issues may delay OCS development in the Atlantic, the Gulf of Alaska may be the first frontier area in which an OCS sale could be held.

The Gulf of Alaska was identified in the CEQ in its recent report as one of the frontier OCS areas with the greatest environmental risk. The studies to be undertaken are necessary to determine the acceptability of leasing in this area. The Department believes steps should now be taken to protect the option of a sale in that area near the end of 1974 if the difficult environmental and biological problems identified in the CEQ report can be satisfactorily dealt with. The Department has no intention of leasing anywhere on the OCS if it cannot

¹Decisions to prepare environmental impact statements for potential lease sales would take into account the status of pending litigation, including *U.S. v. Maine et al.* and *U.S. v. Florida*.

accomplished in an environmentally acceptable way.

(e) The Department is now evaluating the feasibility of requiring permits and leases to furnish the Secretary with copies of all data obtained during offshore exploration and development for oil and gas. Notice of proposed rule-making will be published in the *Federal Register* for public comment soon.

(f) Officials of the Department of the Interior have been involved in a continuing dialogue with environmental organizations, representatives of industry and other concerned individuals in an effort to obtain the benefits of their views relative to the environmental aspects and the oil and gas potential of the proposed action. Discussions have been held on the advisability of an OCS exploratory program that would further help to pinpoint the areas of the greatest potential production of oil and gas. These discussions have involved a number of alternative plans which include: special limited lease sales in frontier areas with a requirement for prompt exploration; leases for exploration only; a Federal exploratory drilling program; and off-structure stratigraphic drilling by both private and public entities.

Persons wishing to express their views concerning the preparation of an environmental impact statement for the proposed program to increase OCS oil and gas leasing and the other undertakings referred to may submit comments to Director, Attention T33, Bureau of Land Management, Washington, D.C. 20240.

GEORGE C. TREYCOIT,
Associate Director,
Bureau of Land Management.

Approved: May 12, 1974.

JOHN C. WHITAKER,

Under Secretary of the Interior.

[FR Doc. 74-11447 Filed 5-17-74; 8:45 am]

Office of Hearings and Appeals
[Docket No. 3574-113]

BIMBO COAL COMPANY, INC.

Petition for Modification of Application of
Mandatory Safety Standard

Notice is hereby given that in accordance with the provisions of section 301(c) of the Federal Coal Mine Health and Safety Act of 1969, 30 U.S.C. 861(c) (1970), Bimbo Coal Company, Inc. has filed a petition to modify the application of 30 CFR 77.1605(k) to its No. 2 Mine located at Hall Hollow, Buchanan County, Virginia.

30 CFR 77.1605(k) provides as follows:
Berms or guards shall be provided on the outer bank of the elevated roadway.

The alternate method which Petitioner proposes to establish in lieu of the mandatory standard is as follows:

1. A daily inspection of all coal-hauling vehicles shall be made and any defects detected shall be corrected before the vehicle is put into service. A record of the inspection

and repair on each vehicle shall be kept and maintained by a supervisory employee.

2. Roadway surfaces shall be kept free of debris, excessive water and ruts and kept maintained as free as practicable of small debris (manhole board effects).

3. A traffic system should be put into use for these roads requiring that the loaded vehicles have the right-of-way on the north side of roads regardless of their direction of travel.

4. Warning signals shall be posted designated curves, steep grades where trucks should shift to a lower gear, and where roadways are required to cross the tracks. Stop signs shall be posted where one road intersects another, giving main haulage road traffic the right-of-way. Signs should also be posted designating passing points.

5. All equipment operators should be trained in the use of haulage equipment and the safety of vehicles on haulage roads.

6. All haulage vehicles shall have:

(a) Original manufacturers brakes.

(b) Engine or Jacobs brakes.

(c) Emergency (parking) braking system.

7. Adequate supplies of crushed stone or other suitable materials shall be stored at strategic locations along the haulage roads for use when the road surface becomes slippery.

8. A minimum width of 30 feet shall be provided and maintained along two-lane roads, and where widths of less than 30 feet are provided and maintained, the roads shall be designated as single-lane roads.

9. On roads that afford only one traffic lane, a minimum width of 16 feet shall be maintained, with passing points provided at intervals of not more than 1,000 feet if visibility is obscured by brush or other material, passing points shall not be more than 500 feet apart.

10. Where abrupt drop-offs are present along the outer banks, super-elevation shall be provided to cause the vehicles to gravitate toward the high side of the road.

11. All rules of the road (traffic system) shall be posted on the bulletin boards throughout the mine area, and such rules of the road shall be made part of the training and retraining programs.

Petitioner further states that the alternative method outlined above will, at all times guarantee no less than the same measure of protection afforded the miners at the Petitioner's mine by the mandatory standard.

Persons interested in this petition may request a hearing on the petition or furnish comments on or before June 19, 1974. Such requests or comments must be filed with the Office of Hearings and Appeals, Hearings Division, U.S. Department of the Interior, 4915 Wilson Boulevard, Arlington, Virginia 22203. Copies of the petition are available for inspection at that address.

JAMES R. RICHARDS,

Director.

Office of Hearings and Appeals.

MAY 13, 1974.

[FR Doc. 74-11463 Filed 5-17-74; 8:45 am]

[Docket No. M 74-101]

O. C. COAL MINE #2

Petition for Modification of Application of
Mandatory Safety Standard

Notice is hereby given that in accordance with the provisions of section 301

(c) of the Federal Coal Mine Health and Safety Act of 1969, 30 U.S.C. 861(c) (1970), H. W. Weaver, d.b.a. O. C. Coal Mine #2 has filed a petition to modify the application of 30 CFR 75.1405 to its O. C. Coal Mine #2 located at Gunnison, Colorado.

30 CFR 75.1405 provides as follows:

All haulage equipment acquired by an operator of a coal mine on or after March 29, 1971, shall be equipped with automatic couplers which couple by impact and uncouple without the necessity of persons going between the ends of such equipment. All haulage equipment without automatic couplers in use in a mine on March 29, 1970, shall also be so equipped within 4 years after March 29, 1970.

Petitioner seeks a waiver of the foregoing safety standard for the following reasons:

(1) Petitioner utilizes forty inch wide, engine wooden cars in its mine. These cars comprise two three-car trips which are hauled by one-half inch rope cable. The cars are maneuvered by hand on the surface, and they are pulled inside by a hauler.

(2) The subject cars are not uncoupled in the mine. The uncoupling takes place aboveground on a flat surface when the cars are at rest.

(3) The size and awkwardness of automatic couplers would create a safety hazard. In addition, the installation of said couplers would prove impractical because:

(a) The cars are too small to accommodate the couplers.

(b) Petitioner's personnel would be unable to maneuver the cars by hand on the surface.

(c) It would not be possible to maneuver the cars underground by hand.

(d) The mine will continue to produce coal for only three more years.

(e) The alternate method will at all times guarantee no less than the same measure of protection as afforded by the application of the mandatory standard.

Persons interested in this petition may request a hearing on the petition or furnish comments on or before June 19, 1974. Such requests or comments must be filed with the Office of Hearings and Appeals, Hearings Division, U.S. Department of the Interior, 4915 Wilson Boulevard, Arlington, Virginia 22203. Copies of the petition are available for inspection at that address.

JAMES R. RICHARDS,

Director, Office of

Hearings and Appeals.

MAY 13, 1974.

[FR Doc. 74-11466 Filed 5-17-74; 8:45 am]

[Docket No. M 74-102]

O. C. COAL MINE #2

Petition for Modification of Application of
Mandatory Safety Standard

Notice is hereby given that in accordance with the provisions of section 301(c) of the Federal Coal Mine Health and Safety Act of 1969, 30 U.S.C. 861(c) (1970), H. W. Weaver, d.b.a. O. C. Coal Mine #2 has filed a petition to modify the application of 30 CFR 75.313 to its O. C. Coal Mine #2 located in Gunnison, Colorado.

30 CFR 75.313 provides in pertinent part as follows:

Question. The Council on Environmental Quality recently completed an assessment of leasing on the Gulf of Alaska and Atlantic OCS areas. How will the Department implement the CEQ recommendations?

Answer. The Department will comment soon on the CEQ recommendations. We will provide a copy of our statement to the Committee as soon as it is available.

Question. CEQ found that baseline environmental data and other data to assess environmental impacts in new areas was non-existent. Is it possible to acquire and analyze such data before 1975? If not, how long will it take?

Answer. The Department has initiated an environmental baseline and monitoring study in the area of the December 1973 OCS Lease Sale Offshore Mississippi, Alabama and Florida. In fiscal year 1975 baseline studies will be initiated offshore S. Texas, S. California, in the Gulf of Alaska, in the Atlantic, and will continue in the offshore Mississippi, Alabama, Florida area. The gathering of baseline data such as geologic, oceanographic, and biological data, will be conducted over a 2-year period. Monitoring of actual oil and gas operations will take place to determine the effects of these activities on the surrounding marine environment. These environmental studies are long term. Definitive results in terms of requiring changes in operations and procedures are not expected to be forthcoming for the next 5 to 10 years; some changes can be made within a shorter timeframe; however, the discovery of trends in any changes in the environment will require a number of years of monitoring to assess adequately. The data to be collected in the baseline studies will be of use in environmental impact statements for any proposed leasing actions in these areas.

Question. CEQ found that the Gulf of Alaska was the riskiest environmental area for OCS development, yet the Department recently announced it would lease there first. What is the basis for this decision? What studies or other assurance does the Department have that development in the Gulf of Alaska can be environmentally acceptable? Can these be documented?

Answer. The Department has no intention of leasing anywhere on the OCS if it cannot be accomplished in an environmentally acceptable way. Our recent announcement concerning the preparation of an environmental impact statement on the accelerated leasing program indicated that the Gulf of Alaska may be the first frontier area in which an OCS sale could be held. Environmental baseline studies will be initiated in the area. We believe steps should now be taken to protect the option of a sale in that area near the end of 1975 if the difficult environmental and technological problems identified in the CEQ report can be satisfactorily dealt with.

Question. What is the existing inspection force for regulation of the OCS? Is it presently adequate? How is it trained? Can it be increased tenfold by 1975-78 to thoroughly inspect increased operations?

Answer. The existing inspection force, which is composed of technicians who make daily inspections of OCS drilling and production operations, numbers 43. The adequacy of this number can only be determined when compared to a desired goal. This number should be adequate for the current required inspection frequency outlined for both the Gulf of Mexico and the Santa Barbara Channel.

The inspection force is trained in a three-phase program. First, the technicians are familiarized with these duties through on-the-job training by accompanying experienced technicians on regular inspections. After obtaining background in the equipment and procedures, the technicians will take a 40-hour course in OCS orders and regulations presented by engineering specialists and senior technicians. This course presents the theory and rationale behind the orders and regulations and presents the technicians with insight as to the importance of various safety and antipollution components. The technicians keep up to date with new equipment and procedures by attending industry, university, and manufacturer sponsored schools.

The inspection force has been increased sixfold since 1969. However, it may not be necessary for an additional tenfold increase by 1978. Although a tenfold increase in leasing may take place during this time period, a tenfold increase in the number of production platforms, is not anticipated. An increase in drilling operations is expected and a gradual increase in the number of production platforms.

Question. Can each tract prior to leasing be given adequate environmental evaluation, including drafting of environmental protection stipulations for each lease? Can this capability be increased tenfold by 1975?

Answer. At the present time, an environmental evaluation is conducted for each tract in a proposed lease sale and is contained in an environmental matrix in each individual sale statement. If the analysis indicates that the leasing of specific tracts poses high hazards, special stipulations are recommended to be included in the leases. At such time as the Secretary decides to hold a lease sale, such stipulations may be and have in the past been included in the leases. In conjunction with the accelerated program, our staffing is increasing to accommodate the necessary environmental analyses which must be conducted.

Question. The present management system is designed and staffed for leasing 1 million acres per year, primarily in a relatively well known region—the Gulf of Mexico. Is it realistic to assume that within 1 year you can gear up to lease 10 million acres, much in undeveloped regions?

Answer. In order to carry out the increased leasing program, the Geological Survey as well as other involved bureaus will draw upon the experiences of its offices in the Gulf of Mexico area and in Washington to train new personnel and form the cadres for leasing in frontier areas. While we realize it will be a difficult job, we believe we can gear up to cope with the problems.

Mr. YATES. Suppose we call this the end of the meeting. Thank you very much.

Mr. McKELVEY. Thank you, sir.

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1. The first part of the paper discusses the general principles of the theory of the firm, which is based on the assumption of profit maximization. It then proceeds to a detailed analysis of the various factors that influence the firm's decision-making process, such as the availability of resources, the state of technology, and the nature of the market. The second part of the paper is devoted to a critical examination of the traditional view of the firm as a single entity, and it argues that a more realistic approach would be to consider the firm as a collection of interacting sub-units. Finally, the paper concludes by suggesting some policy implications of the findings.

2. The second part of the paper discusses the general principles of the theory of the firm, which is based on the assumption of profit maximization. It then proceeds to a detailed analysis of the various factors that influence the firm's decision-making process, such as the availability of resources, the state of technology, and the nature of the market. The third part of the paper is devoted to a critical examination of the traditional view of the firm as a single entity, and it argues that a more realistic approach would be to consider the firm as a collection of interacting sub-units. Finally, the paper concludes by suggesting some policy implications of the findings.

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