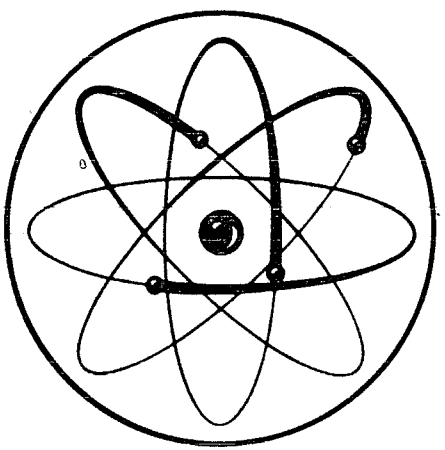
A STATISTICAL SUMMARY OF THE

PHYSICAL RESEARCH PROGRAM

JUNE 30, 1968



DIVISION of RESEARCH

UNITED STATES ATOMIC ENERGY COMMISSION

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A STATISTICAL SUMMARY OF THE PHYSICAL RESEARCH PROGRAM

AS OF JUNE 30, 1968

Prepared by:
Division of Research
October 1968

NOTE: The dollar amounts shown on the following pages reflect, for major research centers, actual AEC costs for operations, plus the costs of equipment acquisitions but excluding depreciation for plant and other capital items; for all other types of contracts, the dollar amounts shown are estimates based on budgets included in the proposals at time the contracts were approved or renewed.

TABLE OF CONTENTS

OTHER NON-PROFIT RESEARCH INSTITUTES

INDUSTRIAL LABORATORIES

FOREWORD

The Physical Research Program consists mostly of basic research investigations undertaken to discover new scientific knowledge, but also includes some applied investigations related to certain aspects of the practical utilization of nuclear energy. The research is in the fields of physics and mathematics, chemistry, metallurgy and materials, and controlled thermonuclear reactions. Approximately three-fourths of the costs are associated with the support of research conducted in AEC-owned contractor-operated major research centers and a little less than one-fourth of the costs are associated with the contract support of research carried out in other laboratories. The major portion of the research conducted at sites other than AEC-owned major research centers is conducted at educational institutions.

MAJOR RESEARCH CENTERS

There is no clear line of demarcation between major research centers and other laboratories. The AEC investment in facilities ranges from zero for some contractors to tens of millions of dollars for others, and the annual level of AEC support ranges from a few thousand dollars for some contractors, to tens of millions of dollars for others -- the spectrum is broad with no significant peaks or breaks. For purposes of this report the following are considered major research centers operated for the AEC:
(The listing is consistent with "major research centers" as defined for National Science Foundation reports.)

	Laboratory	Contractor
1.	Ames Laboratory	Iowa State University
2.	Argonne National Laboratory	Argonne Universities Association - University of Chicago
3.	Brookhaven National Laboratory	Associated Universities, Inc.
4.	Cambridge Electron Accelerator	Harvard University & Massachusetts Institute of Technology
5.	Lawrence Radiation Laboratory	University of California
6.	Los Alamos Scientific Laboratory	University of California
7.	National Accelerator Laboratory	Universities Research Association, Inc.
8.	Oak Ridge National Laboratory	Union Carbide Corporation
9.	Plasma Physics Laboratory	Princeton University
10.	Princeton-Pennsylvania Accelerator	Princeton University & University of Pennsylvania
11.	Stanford Linear Accelerator Center	Stanford University

Some of the major research centers are engaged in research and development activities other than the Physical Research Program; namely activities for the Production, Weapons, Biology and Medicine, Reactor Development, Isotopes Development, and Peaceful Nuclear Explosives Programs. The Physical Research Program at these multiprogram laboratories provides, in varying degrees, the basic investigations underlying the applied and development activities of the individual laboratories. The major research centers also include some laboratories that are engaged in research in a single, well defined area. Some are "National Laboratories", some are "weapons laboratories", others are "university laboratories". They all have the following common characteristics:

1. They are treated as national facilities.
2. They represent large investments (several millions of dollars) in AEC-owned capital facilities.
3. They have large annual levels (several millions of dollars) of AEC support.
4. It is implicit that they have continuing AEC support.
5. The guidance of smaller scientific efforts within each laboratory is usually vested in the laboratory management with only major overall research guidance supplied by the AEC.

CONTRACT-RESEARCH PROGRAM

In addition to the research conducted at the major research centers, the AEC supports by means of the contract-research program, research investigations at educational institutions, non-profit research institutes, and industrial laboratories. In the contract-research program, the Division of Research in AEC Headquarters is responsible for the approval of AEC support and for the review of the technical progress of research projects that fall within the fields of physics and mathematics, chemistry, metallurgy and materials, and controlled thermonuclear reactions. The AEC's field offices negotiate and administer the non-technical aspects of the contracts. Proposals for contracts in basic research are usually initiated by the scientist interested in performing the work.

As supplement to the AEC's program at the major research centers, the contract-research program has a number of distinct benefits:

1. When the amount provided by the AEC is added to the other funds available to the contractor, the effectiveness of the contractor's program, as well as the basic research effort of the AEC's program, is increased.

2. The AEC receives the services, in fields of science fundamental to the AEC's future capabilities, of highly qualified scientists who prefer employment at outside laboratories or who prefer to teach and to do research at educational institutions.

3. The contract-research program, by providing for the conduct of research at educational institutions, contributes to the training of scientists in fields relevant to the AEC's program.

In conducting this program, the AEC uses a special research support agreement (SRSA), a fixed-price contract, or cost-reimbursement contract. The total cost estimate is reflected in a budget, submitted by the prospective contractor, that includes such items as salaries, materials and supplies, equipment, travel, communications, publications, and indirect expenses.

Most AEC research projects with educational institutions that have an annual cost less than $250,000 to AEC are supported through a special research support agreement (SRSA). In consideration for the institution's performance of research activities described in the contract and in accordance with the provisions of the contract, the AEC will pay up to a specified amount, referred to as the "support ceiling." Adjustment of this amount will be made if total costs turn out to be less than expected.

When the special research support agreement is used for not-for-profit organizations other than educational institutions, AEC's commercial cost principles will be used in determining actual cost, or the contract provisions may be revised to provide for a lump-sum payment to the contractor in consideration for its commitment to perform particular research at a specified level of effort.

The fixed-price contract, which may be used to support work at industrial laboratories and non-profit institutes, is used primarily when the annual cost to the AEC is on the order of $250,000 or less and when the cost can be estimated in advance with reasonable accuracy. In consideration for the outside organization carrying out the agreed investigations, the AEC agrees to pay a lump sum based upon an agreed part of the estimated total cost of the project.

The cost-type contract provides for the reimbursement, to the extent prescribed in the agreement, of defined costs incurred in the performance of the contract. This type of contract is generally used for large projects with an annual AEC contribution exceeding $250,000 or for projects that do not lend themselves to accurate cost estimates. Under this agreement a total cost estimate is established to provide a base for obligation funds and to stipulate a ceiling that the contractor cannot exceed (except at his own expense) without the approval of additional funds by the AEC.

The total costs of the research may be shared by the contractor and the AEC under each of the three contractual arrangements.

Occasionally, no-fund contracts are used in the contract-research program when the AEC loans property to an outside organization as AEC's support to the research project or when the organization wishes to enter into a study contract in a certain area of research before it actually undertakes the research. In addition to these reasons, contracts are sometimes extended without additional funds being added to the contract because the research project is to be terminated and additional time is required to bring the project to an orderly close.

REPORTING RESULTS OF RESEARCH

Scientific reports on the research investigations undertaken under the Physical Research Program are reported in the open literature to the greatest extent practicable. The AEC recognizes open publication and wide dissemination as the normal and most desirable means for reporting the findings of fundamental research.

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In the following pages there is presented a statistical analysis of the Physical Research Program. Separate analyses are made for the physical research activities conducted at the AEC's major research centers, at educational institutions, at non-profit research institutes, and at industrial laboratories.

The analysis includes information on funds budgeted for salaries and wages, materials and supplies, travel, communications, publications, indirect expenses, and equipment.

AEC defines equipment as any item individually costing more than $100 and that is expected to have an extended period of service, generally one year or more, in its original form.

Publications refer to journal publications, contributions to books, notes and letters to journals (if they contain substantial scientific content) and laboratory reports that are available for sale. The publications are a result of AEC-supported work.

The categories of personnel shown in the analyses are broken down according to information provided in the proposals or other material supplied by contractors. For the educational institutions, Principal Investigators usually are professors who direct the project; Other Staff Members are generally professors or associate professors who work with the principal investigators (The principal investigator and other staff usually divide their time between teaching and the research project); Visiting Scientists are

generally at the faculty level but do not have a position on the faculty of the college or university where they are temporarily working; Research Associates are usually working full-time on the research work and may be junior post-doctoral investigators; and Research Assistants usually are graduate students working for their doctorate degree.

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This report does not include the portion of the Physical Research Program supported through agreements with other Government agencies. On June 30, 1968, there were four such agreements between the AEC and the following Government agencies amounting to a total project cost of $818,749 as follows:

Environmental Science Services Administration	$ 40,000
National Bureau of Standards	678,749
Navy -- Bureau of Ships	100,000
TOTAL	$ 818,749

SUMMARY OF PHYSICAL RESEARCH PROGRAM
(Dollars in Thousands)

Activity	TOTAL Scientific Man-Years	Major Research Centers Amount	Major Research Centers Man-Years	Educational Institutions Amount	Educational Institutions Man-Years	Research Institutes Amount	Research Institutes Man-Years	Industrial Laboratories Amount	Industrial Laboratories Man-Years
	a/			b/		b/		b/	
High Energy Physics	1,678	$118,172	1,344	$18,333	333	$ 33	1	$ 0	0
Medium Energy Physics	184	8,524	123	4,026	61	0	0	0	0
Low Energy Physics	689	16,909	323	15,341	351	113	9	256	6
Mathematics & Computer ...	163	2,554	74	3,507	88	30	1	0	0
Chemistry	1,012	44,333	805	10,665	296	120	5	304	6
Metallurgy & Materials ...	566	18,987	367	8,862	185	90	3	491	11
Controlled Thermonuclear .	360	24,508	299	2,427	56	0	0	670	5
Other c/.....	0	156	0	0	0	0	0	0	0
TOTAL	4,652	$234,143	3,335	$63,161	1,370	$386	19	$1,721	28

a/Does not include part time employment of 3,233 research assistants who are usually graduate students engaged in performing research.
b/Represents amount of AEC obligations included in the latest extension of contracts in effect as of 6/30/68. (Contracts are usually written for one year and extended annually if necessary.)
c/Multi-purpose support equipment.

MAJOR RESEARCH CENTERS

Costs and Manpower
As of June 30, 1968

Laboratory	Total Cost	Scientific Man-Years Permanent	Scientific Man-Years Visiting	Number of Graduate Students Engaged in Research	Number of Publications
Ames	$ 8,386,000	119	0	203	193
Argonne National Laboratory . .	42,558,000	685	54	263	575
Brookhaven National Laboratory .	40,105,000	456	44	258	297
Cambridge Electron Accelerator .	10,262,000	130	6	125	115
Lawrence Radiation Laboratory .	47,793,000	551	81	298	492
Los Alamos Scientific Laboratory	6,449,000	85	6	13	53
National Accelerator Laboratory	1,551,000	30	0	0	2
Oak Ridge National Laboratory .	34,190,000	593	9	43	513
Plasma Physics Lab., Princeton U	7,319,000	80	11	13	30
Princeton-Pennsylvania Accelerator	9,029,000	122	1	55	100
Stanford Linear Accelerator Center	26,501,000	261	11	37	38
TOTAL	$234,143,000	3,112	223	1,308	2,408

AMES LABORATORY

Activity	Total Cost	Scientific Man-Years		Number of Graduate Students Engaged in Research	Number of Publications
		Permanent	Visiting		
High Energy Physics	$ 740,000	7	0	6	19
Medium Energy Physics	458,000	6	0	12	6
Low Energy Physics	686,000	9	0	11	7
Mathematics & Computer	123,000	2	0	5	2
Chemistry	3,469,000	47	0	113	85
Metallurgy & Materials	2,796,000	48	0	56	74
Other 1/	114,000	0	0	0	0
TOTAL	$8,386,000	119	0	203	193

1/ Multi-purpose equipment.

ARGONNE NATIONAL LABORATORY

Activity	Total Cost	Scientific Man-Years Permanent	Visiting	Number of Graduate Students Engaged in Research	Number of Publications
High Energy Physics	$20,777,000	198	25	210	98
Medium Energy Physics	133,000	2	0	0	1
Low Energy Physics	4,990,000	96	3	32	101
Mathematics & Computer	1,283,000	32	4	7	45
Chemistry	9,377,000	226	12	11	184
Metallurgy & Materials	5,998,000	131	10	3	156
Other 1/	0	0	0	0	0
TOTAL	$42,558,000	685	54	263 2/	585 3/

1/ Multi-purpose support equipment.
2/ Includes 232 students engaged in research activities but whose salaries are not paid by ANL.
3/ Actual publications totaled only 575. The above of 585 includes publications which were credited to two programs.

BROOKHAVEN NATIONAL LABORATORY

Activity	Total Cost	Scientific Man-Years		Number of Graduate Students Engaged in Research	Number of Publications
		Permanent	Visiting		
High Energy Physics	$24,468,000	230	20	198	62
Medium Energy Physics	59,000	1	0	0	3
Low Energy Physics	4,710,000	60	9	18	61
Mathematics & Computer	665,000	18	1	0	30
Chemistry	5,825,000	106	7	19	83
Metallurgy & Materials	2,928,000	41	7	23	58
Other 1/	1,450,000	0	0	0	0
TOTAL	$40,105,000	456	44	258 2/	297 3/

1/ Multi-purpose support equipment.
2/ Includes 223 students engaged in research activities but whose salaries are not paid by BNL.
3/ Publications by visiting and guest scientists not included.

MAJOR RESEARCH CENTERS

LAWRENCE RADIATION LABORATORY

Activity	Total Cost	Scientific Man-Years Permanent	Scientific Man-Years Visiting	Number of Graduate Students Engaged in Research	Number of Publications
High Energy Physics	$24,418,000	247	45	98	155
Medium Energy Physics	1,993,000	24	4	10	17
Low Energy Physics	393,000	8	1	8	28
Mathematics & Computer	110,000	6	2	0	11
Chemistry	10,892,000	155	21	111	222
Metallurgy & Materials	1,978,000	24	2	59	47
Controlled Thermonuclear	7,853,000	87	6	12	12
Other 1/	156,000	0	0	0	0
TOTAL	$47,793,000	551	81	298	492

1/ Multi-purpose equipment.

OAK RIDGE NATIONAL LABORATORY

Activity	Total Cost	Scientific Man-Years Permanent	Scientific Man-Years Visiting	Number of Graduate Students Engaged in Research	Number of Publications
High Energy Physics	$ 426,000	11	0	3	17
Medium Energy Physics	2,448,000	43	0	4	52
Low Energy Physics	6,130,000	133	4	10	94
Mathematics & Computer	373,000	9	0	2	24
Chemistry	14,770,000	227	4	12	150
Metallurgy & Materials	5,287,000	103	1	7	133
Controlled Thermonuclear	4,756,000	67	0	5	43
TOTAL	$34,190,000	593	9	43	513

MAJOR RESEARCH CENTERS

MAJOR RESEARCH CENTERS	Total Cost	Scientific Man-Years Permanent	Scientific Man-Years Visiting	No. of Grad. Res. Students	Number of Publications
CAMBRIDGE ELECTRON ACCELERATOR					
High Energy Physics	$10,262,000	130	6	125	115
LOS ALAMOS SCIENTIFIC LABORATORY					
Medium Energy Physics	3,433,000	41	2	5	20
Controlled Thermonuclear	3,016,000	44	4	8	33
NATIONAL ACCELERATOR LABORATORY					
High Energy Physics	1,551,000	30	0	0	2
PLASMA PHYSICS LABORATORY					
Controlled Thermonuclear	7,319,000	80	11	13	30
PRINCETON-PENNSYLVANIA ACCELERATOR					
High Energy Physics	9,029,000	122	1	55	100
STANFORD LINEAR ACCELERATOR CENTER					
High Energy Physics	26,501,000	261	11	37	38

Breakdown of the number of agreements, total costs and the Contractor and AEC contributions in the Program by Activity
As of June 30, 1968

Activity	Number of Agreements	Total Project Cost	Contractor Contribution	Percent of Total	AEC Contribution	Percent of Total
High Energy Physics	36	$21,566,287	$ 3,232,600	15	$18,333,687	85
Medium Energy Physics	13	5,012,415	986,574	20	4,025,841	80
Low Energy Physics	55	18,176,871	2,835,956	16	15,340,915	84
Mathematics & Computer	21	3,904,374	397,359	10	3,507,015	90
Chemistry	226	12,869,487	2,204,047	17	10,665,440	83
Metallurgy & Materials	160	10,515,426	1,653,984	16	8,861,442	84
Controlled Thermonuclear	40	2,768,018	341,652	12	2,426,366	88
TOTAL	551	$74,812,878	$11,652,172	16	$63,160,706	84

EDUCATIONAL INSTITUTIONS

CONSOLIDATED BUDGET OF THE 551 PROJECTS
INCLUDED IN THE PHYSICAL RESEARCH PROGRAM
As of June 30, 1968
(Dollars in Thousands)

	Items of Expense	Total Amount	%	High Energy Physics	%	Medium Energy Physics	%
	Breakdown of SRSA Projects						
(1)	Salaries and Wages	$13,983	52.6	$ 1,193	48.0	$ 253	55.5
(2)	Equipment	2,085	7.9	283	11.4	24	5.3
(3)	Materials and Supplies	3,463	13.0	378	15.2	67	14.7
(4)	Travel	476	1.8	75	3.0	11	2.4
(5)	Communications	57	.2	7	.3	0	0
(6)	Publication Costs	315	1.2	24	1.0	3	.6
(7)	Indirect Expenses	6,195	23.3	524	21.1	98	21.5
(8)	TOTAL	$26,574	100.0	$ 2,484	100.0	$ 456	100.0
(9)	Contributed by Universities	5,627	21.1	651	26.2	126	27.6
(10)	Supported by AEC	20,947	78.9	1,833	73.8	330	72.4
(11)	Including Unexpended Balance of.	697		0		0	
	Breakdown of Cost-Type Projects						
(12)	Salaries and Wages	$22,029	45.4	$ 8,558	44.9	$ 1,915	42.0
(13)	Equipment	5,715	12.0	1,374	7.2	920	20.2
(14)	Materials and Supplies	8,853	18.2	4,345	22.8	753	16.5
(15)	Travel	981	2.0	596	3.1	68	1.5
(16)	Communications	193	.4	85	.4	28	.6
(17)	Publication Costs	285	.6	124	.6	11	.3
(18)	Indirect Expenses	10,183	21.4	4,000	21.0	862	18.9
(19)	TOTAL	$48,239	100.0	$19,082	100.0	$ 4,557	100.0
(20)	Contributed by Universities	6,025	12.6	2,582	13.5	861	18.9
(21)	Supported by AEC	42,214	87.4	16,500	86.5	3,696	81.1
(22)	Including Unexpended Balance of.	299		128		0	

Low Energy Physics	%	Math. and Computer	%	Chemistry	%	Metallurgy and Materials	%	Controlled Thermo-nuclear	%	
$ 1,531	53.4	$ 651	58.2	$ 5,183	52.7	$ 4,247	53.0	$ 925	52.0	(1)
292	10.2	45	4.0	692	7.0	583	7.2	166	9.3	(2)
288	10.1	86	7.7	1,364	13.9	1,088	13.6	192	10.8	(3)
59	2.1	21	1.9	168	1.7	95	1.2	47	2.6	(4)
9	.3	2	.2	17	.2	16	.2	6	.3	(5)
34	1.2	15	1.3	113	1.1	100	1.2	26	1.5	(6)
652	22.7	299	26.7	2,306	23.4	1,897	23.6	419	23.5	(7)
$ 2,865	100.0	$ 1,119	100.0	$ 9,843	100.0	$ 8,026	100.0	$ 1,781	100.0	(8)
672	23.5	119	10.6	2,144	21.8	1,654	20.6	261	14.7	(9)
2,193	76.5	1,000	89.4	7,699	78.2	6,372	79.4	1,520	85.3	(10)
36		57		283		274		47		(11)
$ 7,121	46.5	$ 1,464	52.6	$ 1,366	45.1	$ 1,082	43.5	$ 523	53.0	(12)
2,350	15.3	269	9.7	447	14.8	281	11.3	74	7.6	(13)
2,407	15.7	226	8.1	483	16.0	530	21.3	109	11.0	(14)
193	1.3	35	1.2	39	1.3	25	1.0	25	2.5	(15)
43	.3	9	.3	13	.4	13	.5	2	.2	(16)
90	.6	19	.7	19	.6	18	.7	4	.4	(17)
3,108	20.3	763	27.4	659	21.8	541	21.7	250	25.3	(18)
$15,312	100.0	$ 2,785	100.0	$ 3,026	100.0	$ 2,490	100.0	$ 987	100.0	(19)
2,164	14.1	278	10.0	60	2.0	0	0.0	80	8.0	(20)
13,148	85.9	2,507	90.0	2,966	98.0	2,490	100.0	907	92.0	(21)
89		20		1		24		37		(22)

EDUCATIONAL INSTITUTIONS

NUMBER OF SCIENTIFIC EMPLOYEES, RESEARCH ASSISTANTS & PUBLICATIONS UNDER THE PHYSICAL RESEARCH PROGRAM

Activity	Principal Investigators		Other Staff Members		Visiting Scientists		Research Associates		Research Assistants	Publications
	No.	MY's	No.	MY's	No.	MY's	No.	MY's		
High Energy Physics	86	37	214	132	11	8	187	156	472	534
Medium Energy Physics ...	20	10	52	28	0	0	32	23	92	66
Low Energy Physics	112	49	225	132	25	12	197	158	512	579
Mathematics & Computer ..	26	8	93	68	10	5	9	7	81	43
Chemistry	274	85	63	26	8	3	213	182	581	622
Metallurgy & Materials ..	202	70	72	28	7	3	108	84	519	410
Controlled Thermonuclear.	53	17	54	23	4	2	22	14	116	92
TOTAL	773	276	773	437	65	33	768	624	2,373	2,346

TYPE OF ORGANIZATIONS

Projects with:	Division Total	High Energy Physics	Medium Energy Physics	Low Energy Physics	Math	Chemistry	Metallurgy & Materials	Controlled Thermonuclear
State Institutions	296	22	8	32	9	123	84	18
Private Institutions ..	251	14	5	23	11	101	75	22
Municipal Institutions.	4	0	0	0	1	2	1	0
TOTAL	551	36	13	55	21	226	160	40

OPERATIONS OFFICES ADMINISTERING THE BUSINESS ASPECTS OF THE AGREEMENTS

Operations Offices	Division Total	High Energy Physics	Medium Energy Physics	Low Energy Physics	Math	Chemistry	Metallurgy & Materials	Controlled Thermonuclear
Chicago	169	11	1	19	5	76	52	5
Idaho	1	0	0	0	0	1	0	0
New York	178	13	5	14	4	69	60	13
Oak Ridge	121	3	5	9	5	52	34	13
Richland	19	1	0	3	1	9	4	1
San Francisco	62	8	2	9	6	19	10	8
Savannah River	1	0	0	1	0	0	0	0
TOTAL	551	36	13	55	21	226	160	40

EDUCATIONAL INSTITUTIONS

TYPE OF AGREEMENTS

Type	Division Total	High Energy Physics	Medium Energy Physics	Low Energy Physics	Math	Chemistry	Metallurgy & Materials	Controlled Thermonuclear
Cost Contracts	82	21	11	26	5	8	6	5
SRSA	469	15	2	29	16	218	154	35
TOTAL	551	36	13	55	21	226	160	40

AGREEMENTS BY AEC DOLLAR LEVEL

Dollar Level	Division Total	High Energy Physics	Medium Energy Physics	Low Energy Physics	Math	Chemistry	Metallurgy & Materials	Controlled Thermonuclear
0	15	0	2	4	1	5	1	2
1 - 9,999	21	0	0	0	0	11	6	4
10,000 - 19,999	63	1	0	0	0	42	15	5
20,000 - 29,999	96	0	0	1	3	50	40	2
30,000 - 39,999	90	1	1	3	1	41	39	4
40,000 - 49,999	51	0	0	3	2	23	18	5
50,000 - 49,999	33	2	0	1	4	14	9	3
60,000 - 69,999	25	1	0	2	0	10	6	6
70,000 - 79,999	23	1	0	5	1	7	8	1
80,000 - 89,999	13	0	0	6	0	3	2	2
90,999 - 99,999	10	0	0	0	2	5	2	1
100,000 - 249,999	51	8	3	10	2	12	12	4
250,000 - 499,999	30	10	4	8	4	2	1	1
500,000 + ...	30	12	3	12	1	1	1	0
TOTAL	551	36	13	55	21	226	160	40

PERCENT OF AEC CONTRIBUTION TO THE TOTAL COST OF THE RESEARCH

Percentage	Division Total	High Energy Physics	Medium Energy Physics	Low Energy Physics	Math	Chemistry	Metallurgy & Materials	Controlled Thermonuclear
0 - 9	14	0	2	3	1	5	1	2
10 - 19	0	0	0	0	0	0	0	0
20 - 29	0	0	0	0	0	0	0	0
30 - 39	4	2	0	1	0	1	0	0
40 - 49	9	1	0	0	0	5	3	0
50 - 59	22	2	1	2	0	12	4	1
60 - 69	62	4	0	7	1	33	14	3
70 - 79	126	6	2	11	3	54	44	6
80 - 89	156	5	2	13	4	64	59	9
90 - 99	62	5	1	6	4	18	20	8
100*	96	11	5	12	8	34	15	11
	551	36	13	55	21	226	160	40

*Includes those educational institutions that as a matter of policy do not list their contribution.

EDUCATIONAL INSTITUTIONS

NUMBER OF AGREEMENTS BY STATES AND CONTRACTORS

State and Contractor	Division Total	High Energy Physics	Medium Energy Physics	Low Energy Physics	Math and Computer	Chemistry	Metallurgy & Materials	Controlled Thermo-nuclear
Alabama	1	0	0	0	0	0	1	0
Tuskegee Institute	1	0	0	0	0	0	1	0
Arizona	9	0	0	2	0	5	2	0
Arizona State University . . .	1	0	0	0	0	1	0	0
Arizona, University of	8	0	0	2	0	4	2	0
Arkansas	3	0	0	0	0	3	0	0
Arkansas, University of . . .	3	0	0	0	0	3	0	0
California	60	7	2	9	6	19	9	8
California Inst. of Tech. . .	9	1	0	1	0	4	2	1
California, University of . .	34	6	2	7	2	9	4	4
Harvey Mudd College	1	0	0	0	0	1	0	0
Southern California, U. of . .	4	0	0	1	1	2	0	0
Stanford University	12	0	0	0	3	3	3	3
Colorado	6	1	0	1	0	3	0	1
Colorado State University . .	1	0	0	0	0	1	0	0
Colorado, University of . . .	5	1	0	1	0	2	0	1
Connecticut	13	1	1	3	0	3	4	1
Connecticut, University of . .	2	0	0	0	0	0	2	0
Yale University	11	1	1	3	0	3	2	1
Delaware	1	0	0	0	0	0	1	0
Delaware, University of . . .	1	0	0	0	0	0	1	0
District of Columbia	5	0	0	1	0	3	1	0
Catholic University	1	0	0	0	0	1	0	0
Georgetown University	3	0	0	1	0	1	1	0
George Washington University .	1	0	0	0	0	1	0	0

State and Contractor	Division Total	High Energy Physics	Medium Energy Physics	Low Energy Physics	Math and Computer	Chemistry	Metallurgy & Materials	Controlled Thermo-nuclear
Florida	15	1	0	0	0	10	2	2
Florida State University . . .	6	1	0	0	0	5	0	0
Florida, University of	6	0	0	0	0	4	2	0
Miami, University of	3	0	0	0	0	1	0	2
Georgia	9	0	0	0	0	5	2	2
Georgia Inst. of Tech.	6	0	0	0	0	2	2	2
Georgia, University of	3	0	0	0	0	3	0	0
Hawaii	1	1	0	0	0	0	0	0
Hawaii, University of	1	1	0	0	0	0	0	0
Idaho	1	0	0	0	0	1	0	0
Idaho State University	1	0	0	0	0	1	0	0
Illinois	28	3	0	0	3	14	8	0
Chicago, University of	9	2	0	0	1	5	1	0
Illinois Inst. of Tech. . . .	5	0	0	0	0	2	3	0
Illinois, University of . . .	7	1	0	0	2	3	1	0
Northwestern University . . .	7	0	0	0	0	4	3	0
Indiana	19	1	0	3	0	10	5	0
Indiana University	3	0	0	0	0	3	0	0
Notre Dame, University of . .	4	0	0	2	0	1	1	0
Purdue University	12	1	0	1	0	6	4	0
Iowa	3	0	0	0	0	3	0	0
Dordt College	1	0	0	0	0	1	0	0
Iowa, State University of . .	1	0	0	0	0	1	0	0
Iowa, University of	1	0	0	0	0	1	0	0
Kansas	10	0	0	4	0	4	2	0
Kansas State University . . .	4	0	0	3	0	1	0	0
Kansas, University of	6	0	0	1	0	3	2	0

EDUCATIONAL INSTITUTIONS — NUMBER OF AGREEMENTS BY STATES AND CONTRACTORS

State and Contractor	Division Total	High Energy Physics	Medium Energy Physics	Low Energy Physics	Math and Computer	Chemistry	Metallurgy & Materials	Controlled Thermo-nuclear
Kentucky	6	0	0	0	0	4	2	0
Kentucky, University of . . .	5	0	0	0	0	4	1	0
Murray State University . . .	1	0	0	0	0	0	1	0
Louisiana	2	0	0	0	0	1	1	0
Louisiana State University	2	0	0	0	0	1	1	0
Maryland	22	1	3	3	2	5	5	3
Johns Hopkins University	5	0	0	2	0	2	1	0
Maryland, University of	17	1	3	1	2	3	4	3
Massachusetts	32	4	1	2	1	13	8	3
Boston University	1	0	0	0	0	0	1	0
Brandeis University	5	1	0	0	0	2	2	0
Clark University	2	0	0	0	0	2	0	0
Harvard University	4	0	0	0	1	3	0	0
Massachusetts Inst. of Tech. .	14	1	1	2	0	3	4	3
Massachusetts, University of .	1	1	0	0	0	0	0	0
Northeastern University . . .	1	0	0	0	0	0	1	0
Tufts University	3	1	0	0	0	2	0	0
Worcester Polytechnic Inst. .	1	0	0	0	0	1	0	0
Michigan	25	2	0	2	0	11	9	1
Andrews University	1	0	0	0	0	0	1	0
Michigan State University . .	10	1	0	1	0	5	3	0
Michigan Technological Univ. .	3	0	0	0	0	1	2	0
Michigan, University of . . .	7	1	0	1	0	3	1	1
Wayne State University	4	0	0	0	0	2	2	0

NUMBER OF AGREEMENTS BY STATES AND CONTRACTORS

EDUCATIONAL INSTITUTIONS

State and Contractor	Division Total	High Energy Physics	Medium Energy Physics	Low Energy Physics	Math and Computer	Chemistry	Metallurgy & Materials	Controlled Thermo-nuclear
Minnesota	10	1	1	1	0	1	6	0
Minnesota, University of . . .	9	1	1	1	0	1	5	0
St. Mary's College	1	0	0	0	0	0	1	0
Mississippi	2	0	0	0	0	1	1	0
Mississippi, University of . .	2	0	0	0	0	1	1	0
Missouri	8	0	0	0	1	5	2	0
Missouri, University of . . .	2	0	0	0	0	0	2	0
Washington University	6	0	0	0	1	5	0	0
Montana	1	0	0	0	0	0	1	0
Montana State University . . .	1	0	0	0	0	0	1	0
Nebraska	2	0	0	0	0	1	1	0
Nebraska, University of . . .	2	0	0	0	0	1	1	0
Nevada	1	0	0	0	0	1	0	0
Nevada, University of	1	0	0	0	0	1	0	0
New Hampshire	1	0	0	0	0	1	0	0
New Hampshire, University of .	1	0	0	0	0	1	0	0
New Jersey	12	0	0	1	0	6	1	4
Inst. for Advanced Studies . .	1	0	0	0	0	0	0	1
Princeton University	5	0	0	1	0	4	0	0
Rutgers University	3	0	0	0	0	2	1	0
Stevens Inst. of Tech.	3	0	0	0	0	0	0	3
New Mexico	2	0	0	0	0	2	0	0
New Mexico Highlands University	1	0	0	0	0	1	0	0
New Mexico, University of . .	1	0	0	0	0	1	0	0

EDUCATIONAL INSTITUTIONS

NUMBER OF AGREEMENTS BY STATES AND CONTRACTORS

State and Contractor	Division Total	High Energy Physics	Medium Energy Physics	Low Energy Physics	Math and Computer	Chemistry	Metallurgy & Materials	Controlled Thermo-nuclear
New York	79	5	2	4	3	30	30	5
Brooklyn, Poly. Inst. of	2	0	0	0	0	1	1	0
Clarkson College of Tech.	3	0	0	0	0	2	1	0
Columbia University	12	1	1	1	0	5	3	1
Cornell University	19	1	0	1	0	1	14	2
Fordham University	2	0	0	0	0	2	0	0
Long Island University	1	0	0	0	0	1	0	0
New York, City University of ...	4	0	0	0	1	2	1	0
New York, State University of ..	8	1	0	0	1	6	0	0
New York University	3	0	0	0	1	0	1	1
Rensselaer Polytechnic Inst. ...	9	0	0	0	0	4	5	0
Rochester, University of	9	1	1	1	0	3	2	1
Syracuse University	3	1	0	0	0	0	2	0
Yeshiva University	4	0	0	1	0	3	0	0
North Carolina	15	1	0	4	2	2	6	0
Duke University	5	1	0	2	1	1	0	0
North Carolina A&T State Univ...	1	0	0	0	0	1	0	0
North Carolina State of the University of North Carolina .	3	0	0	1	0	0	2	0
North Carolina, University of ..	5	0	0	1	1	0	3	0
Wake Forest College	1	0	0	0	0	0	1	0
North Dakota	2	0	0	0	0	0	2	0
North Dakota, University of	2	0	0	0	0	0	2	0
Ohio	18	2	0	2	1	8	5	0
Case-Western Reserve	8	1	0	1	1	2	3	0
Kent State University	1	0	0	0	0	0	1	0
Ohio State University	6	1	0	0	0	4	1	0
Ohio University	2	0	0	1	0	1	0	0
Toledo, University of	1	0	0	0	0	1	0	0

State and Contractor	Division Total	High Energy Physics	Medium Energy Physics	Low Energy Physics	Math and Computer	Chemistry	Metallurgy & Materials	Controlled Thermo-nuclear
Oklahoma	6	0	0	0	0	2	4	0
Oklahoma State University	2	0	0	0	0	2	0	0
Oklahoma, University of	4	0	0	0	0	0	4	0
Oregon	9	1	0	2	1	4	1	0
Oregon State University	5	0	0	1	1	2	1	0
Oregon, University of	3	1	0	1	0	1	0	0
Reed College	1	0	0	0	0	1	0	0
Pennsylvania	29	2	1	1	0	13	12	0
Carnegie-Mellon University ...	9	1	1	0	0	4	3	0
Duquesne University	1	0	0	0	0	1	0	0
Lehigh University	2	0	0	0	0	1	1	0
Pennsylvania State University.	6	0	0	0	0	2	4	0
Pennsylvania, University of ..	4	0	0	1	0	3	0	0
Pittsburgh, University of.....	5	1	0	0	0	1	3	0
Temple University	2	0	0	0	0	1	1	0
Puerto Rico	3	0	0	0	0	1	2	0
Puerto Rico, University of ...	3	0	0	0	0	1	2	0
Rhode Island	6	1	0	1	0	1	3	0
Brown University	5	1	0	1	0	1	2	0
Rhode Island, University of ..	1	0	0	0	0	0	1	0
South Carolina	4	0	0	1	0	2	1	0
Clemson University	1	0	0	0	0	0	1	0
South Carolina, University of.	3	0	0	1	0	2	0	0

EDUCATIONAL INSTITUTIONS

NUMBER OF AGREEMENTS BY STATES AND CONTRACTORS

State and Contractor	Division Total	High Energy Physics	Medium Energy Physics	Low Energy Physics	Math and Computer	Chemistry	Metallurgy & Materials	Controlled Thermo-nuclear
Tennessee	7	0	0	0	0	4	2	1
Tennessee, University of	4	0	0	0	0	2	1	1
Vandervilt University	3	0	0	0	0	2	1	0
Texas	21	0	2	2	1	11	1	4
Houston, University of	2	0	0	0	0	1	0	1
Rice University	5	0	0	1	1	3	0	0
Texas A&M University	7	0	2	0	0	5	0	0
Texas Christian University ...	1	0	0	0	0	0	1	0
Texas Technological College ..	1	0	0	0	0	0	0	1
Texas, University of	5	0	0	1	0	2	0	2
Utah	10	0	0	1	0	2	7	0
Brigham Young University	3	0	0	1	0	1	1	0
Utah, University of	7	0	0	0	0	1	6	0
Vermont	1	0	0	0	0	0	1	0
Vermont, University of	1	0	0	0	0	0	1	0
Virginia	8	0	0	1	0	2	4	1
Roanoke College	1	0	0	0	0	0	0	1
Virginia Polytechnic Inst. ...	2	0	0	0	0	2	0	0
Virginia, University of	5	0	0	1	0	0	4	0
Washington	9	0	0	1	0	5	2	1
Washington State University ..	4	0	0	0	0	3	0	1
Washington, University of	4	0	0	1	0	1	2	0
Western Washington State C. ..	1	0	0	0	0	1	0	0

NUMBER OF AGREEMENTS BY STATES AND CONTRACTORS — EDUCATIONAL INSTITUTIONS

State and Contractor	Division Total	High Energy Physics	Medium Energy Physics	Low Energy Physics	Math and Computer	Chemistry	Metallurgy & Materials	Controlled Thermo-nuclear
Wisconsin	13	1	0	2	0	4	3	3
Marquette University	1	0	0	0	0	0	1	0
Wisconsin, University of	12	1	0	2	0	4	2	3
Wyoming	1	0	0	1	0	0	0	0
Wyoming, University of	1	0	0	1	0	0	0	0
TOTAL	551	36	13	55	21	226	160	40

Breakdown of the number of contracts, total costs and the contractor and AEC contribution in the Program by Activity
As of June 30, 1968

Activity	Number of Contracts	Total Cost	Contractor Contribution	Percent of Total	AEC Contribution	Percent of Total
High Energy Physics	1	$ 33,000	$ 0	0	$ 33,000	100
Low Energy Physics	4	155,050	42,020	27	113,030	73
Mathematics & Computer	1	29,985	0	0	29,985	100
Chemistry	2	215,960	95,960	44	120,000	56
Metallurgy & Materials	4	90,028	0	0	90,028	100
TOTAL	12	$524,023	$137,980	26	$386,043	74

CONSOLIDATED BUDGET OF THE 12 CONTRACTS INCLUDED IN THE PHYSICAL RESEARCH PROGRAM

As of June 30, 1968

(Dollars in Thousands)

Items of Expense	Total Amount	%	High Energy Physics	%	Low Energy Physics	%	Math	%	Chemistry	%	Met. & Mat'ls	%
Breakdown of Fixed-Price Contracts												
Salaries and Wages	$ 190	44.7	$ 0		$ 78	54.2	$13	43.3	$ 82	38.0	$ 17	48.5
Equipment	44	10.4	0		0	.0	0	.0	44	20.4	0	.0
Materials and Supplies ...	53	12.5	0		19	13.2	2	6.7	31	14.3	1	3.0
Travel	4	.9	0		2	1.4	1	3.3	1	.5	0	.0
Communications	1	.2	0		1	.7	0	.0	0	.0	0	.0
Publication Costs	3	.7	0		1	.7	0	.0	2	.9	0	.0
Indirect Expenses	130	30.6	0		43	29.8	14	46.7	56	25.9	17	48.5
TOTAL	$ 425	100.0	$ 0		$ 144	100.0	$30	100.0	$216	100.0	$ 35	100.0
Contributed by Institutes.	138	32.5	0		42	29.2	0	.0	96	44.4	0	.0
Supported by AEC	287	67.5	0		102	70.8	30	100.0	120	55.6	35	100.0
Including Unexpended Balance of	0		0		0		0		0		0	
Breakdown of Cost-Type Contracts												
Salaries and Wages	$ 51	52.0	$ 20	60.6	$ 3	27.2	0		0		28	51.0
Equipment	0	.0	0	.0	0	.0	0		0		0	.0
Materials and Supplies ...	17	17.0	0	.0	0	.0	0		0		17	31.0
Travel	12	12.0	7	21.2	5	45.6	0		0		0	.0
Communications	0	.0	0	.0	0	.0	0		0		0	.0
Publication Costs	1	1.0	0	.0	0	.0	0		0		1	1.8
Indirect Expenses	18	18.0	6	18.2	3	27.2	0		0		9	16.2
TOTAL	$ 99	100.0	$ 33	100.0	$ 11	100.0	$ 0		$ 0		$ 55	100.0
Contributed by Institutes.	0	.0	0	.0	0	.0	0		0		0	.0
Supported by AEC	99	100.0	33	100.0	11	100.0	0		0		55	100.0
Including Unexpended Balance of	0		0		0		0		0		0	

NUMBER OF SCIENTIFIC EMPLOYEES, GRADUATE STUDENTS AND PUBLICATIONS UNDER THE PHYSICAL RESEARCH PROGRAM

Activity	Scientific Employees		Graduate Students	Publications
	Number	Man-Years		
High Energy Physics	2	1	0	0
Low Energy Physics	13	9	0	10
Mathematics & Computer	3	1	0	0
Chemistry	8	5	1	7
Metallurgy and Materials	29	3	0	2
TOTAL	55	19	1	19

OPERATIONS OFFICES ADMINISTERING THE BUSINESS ASPECTS OF THE CONTRACTS

Operations Offices	Division Total	High Energy Physics	Low Energy Physics	Math	Chemistry	Metallurgy & Materials
Chicago	5	1	0	1	0	3
New York	3	0	1	0	1	1
San Francisco	1	0	0	0	1	0
Oak Ridge	1	0	1	0	0	0
Washington	2	0	2	0	0	0
TOTAL	12	1	4	1	2	4

TYPE OF CONTRACTS

Type	Division Total	High Energy Physics	Low Energy Physics	Math	Chemistry	Metallurgy & Materials
Cost	6	1	2	0	0	3
Lump-Sum	6	0	2	1	2	1
TOTAL	12	1	4	1	2	4

RESEARCH INSTITUTIONS

CONTRACTS BY AEC DOLLAR LEVEL

Dollar Level	Division Total	High Energy Physics	Low Energy Physics	Math	Chemistry	Metallurgy & Materials
0	0	0	0	0	0	0
1 - 9,999	4	0	3	0	0	1
10,000 - 19,999	1	0	0	0	0	1
20,000 - 29,999	2	0	0	1	0	1
30,000 - 39,999	2	1	0	0	0	1
40,000 - 49,999	0	0	0	0	0	0
50,000 - 59,999	0	0	0	0	0	0
60,000 - 69,999	0	0	0	0	0	0
70,000 - 79,999	1	0	0	0	1	0
80,000 - 89,999	0	0	0	0	0	0
90,000 - 99,999	0	0	0	0	0	0
100,000 - 249,999	2	0	1	0	1	0
250,000 - 499,999	0	0	0	0	0	0
500,000 +	0	0	0	0	0	0
TOTAL	12	1	4	1	2	4

PERCENTAGE OF AEC CONTRIBUTION TO THE TOTAL COST OF THE RESEARCH

Percentage	Division Total	High Energy Physics	Low Energy Physics	Math	Chemistry	Metallurgy & Materials
0 - 9	0	0	0	0	0	0
10 - 19	0	0	0	0	0	0
20 - 29	0	0	0	0	0	0
30 - 39	1	0	0	0	1	0
40 - 49	0	0	0	0	0	0
50 - 59	0	0	0	0	0	0
60 - 69	0	0	0	0	0	0
70 - 79	2	0	1	0	1	0
80 - 89	0	0	0	0	0	0
90 - 99	0	0	0	0	0	0
100	9	1	3	1	0	4
TOTAL	12	1	4	1	2	4

State and Contractor	Division Total	High Energy Physics	Low Energy Physics	Math	Chemistry	Metallurgy & Materials
California	1	0	0	0	1	0
Stanford Research Institute.....	1	0	0	0	1	0
Connecticut	1	0	0	0	1	0
New England Institute for Medical Research	1	0	0	0	1	0
District of Columbia	2	0	2	0	0	0
National Academy of Sciences ...	2	0	2	0	0	0
Illinois	1	1	0	0	0	0
Associated Midwest Universities	1	1	0	0	0	0
Missouri	1	0	0	1	0	0
Midwest Research Institute	1	0	0	1	0	0
Ohio	3	0	0	0	0	3
Battelle Memorial Institute ...	3	0	0	0	0	3
Pennsylvania	2	0	1	0	0	1
Franklin Institute	2	0	1	0	0	1
Texas	1	0	1	0	0	0
Southwest Center for Advanced Studies	1	0	1	0	0	0
TOTAL	12	1	4	1	2	4

Breakdown of the number of contracts, total cost and the Contractor and AEC contribution in the Program by Activity
As of June 30, 1968

	Number of Contracts	Total Cost	Contractor Contribution	Percent of Total	AEC Contribution	Percent of Total
Low Energy Physics	2	$ 386,548	$129,900	34	$ 256,648	66
Chemistry	2	303,600	0	0	303,600	100
Metallurgy & Materials	1	491,600	0	0	491,600	100
Controlled Thermonuclear	3	819,994	150,000	18	669,994	82
TOTAL	8	$2,001,742	$279,900	14	$1,721,842	86

CONSOLIDATED BUDGET OF THE 8 CONTRACTS
INCLUDED IN THE PHYSICAL RESEARCH PROGRAM
As of June 30, 1968
(Dollars in Thousands)

Items of Expense	Total Amount	%	Low Energy Physics	%	Chemistry	%	Metallurgy & Materials	%	Controlled Thermonuclear	%
Breakdown of Fixed-Price Contracts										
Salaries and Wages	$ 75	21.4	$ 35	14.0	$ 0		$ 0		$ 40	40.0
Equipment	45	12.6	45	17.6	0		0		0	.0
Materials and Supplies	127	36.3	112	44.8	0		0		15	15.0
Travel	2	.6	2	.8	0		0		0	.0
Communications	0	.0	0	.0	0		0		0	.0
Publication Costs	0	.0	0	.0	0		0		0	.0
Indirect Expenses	102	29.1	57	22.8	0		0		45	45.0
TOTAL	$ 351	100.0	$251	100.0	$ 0		$ 0		$100	100.0
Contributed by Laboratories	130	37.1	130	52.0	0		0		0	.0
Supported by AEC	221	62.9	121	48.0	0		0		100	100.0
Including Unexpended Balance of	0		0		0		0		0	
Breakdown of Cost-Type Contracts										
Salaries and Wages	$ 555	33.6	$ 42	30.9	$100	32.9	$194	39.5	$219	30.4
Equipment	166	10.1	0	.0	4	1.3	12	2.4	150	20.8
Materials and Supplies	181	11.0	40	29.4	64	21.1	13	2.7	64	8.9
Travel	9	.5	0	.0	1	.3	3	.6	5	.7
Communications	2	.1	0	.0	0	.0	0	.0	2	.3
Publication Costs	8	.5	0	.0	3	1.0	5	1.0	0	.0
Indirect Expenses	730	44.2	54	39.7	132	43.4	264	53.8	280	38.9
TOTAL	$1,651	100.0	$136	100.0	$304	100.0	$491	100.0	$720	100.0
Contributed by Laboratories	150	9.1	0	.0	0	.0	0	.0	150	20.8
Supported by AEC	1,501	90.9	136	100.0	304	100.0	491	100.0	570	79.2
Including Unexpended Balance of	0		0		0		0		0	

NUMBER OF SCIENTIFIC EMPLOYEES, GRADUATE STUDENTS AND PUBLICATIONS UNDER THE PHYSICAL RESEARCH PROGRAM

Activity	Scientific Employees		Graduate Students	Publications
	Number	Man-Years		
Low Energy Physics	12	6	3	7
Chemistry	8	6	0	12
Metallurgy & Materials	11	11	0	23
Controlled Thermonuclear	10	5	3	9
TOTAL	41	28	6	51

OPERATIONS OFFICES ADMINISTERING THE BUSINESS ASPECTS OF THE CONTRACTS

Operations Offices	Division Total	Low Energy Physics	Chemistry	Metallurgy & Materials	Controlled Thermonuclear
New York	3	0	1	0	2
Oak Ridge	1	1	0	0	0
San Francisco	4	1	1	1	1
TOTAL	8	2	2	1	3

TYPE OF CONTRACTS

Type	Division Total	Low Energy Physics	Chemistry	Metallurgy & Materials	Controlled Thermonuclear
Cost	6	1	2	1	2
Lump-Sum	2	1	0	0	1
TOTAL	8	2	2	1	3

INDUSTRIAL LABORATORIES

CONTRACTS BY AEC DOLLAR LEVEL

Dollar Level	Division Total	Low Energy Physics	Chemistry	Metallurgy & Materials	Controlled Thermonuclear
0	0	0	0	0	0
1 - 9,999	0	0	0	0	0
10,000 - 19,999	0	0	0	0	0
20,000 - 29,999	0	0	0	0	0
30,000 - 39,999	0	0	0	0	0
40,000 - 49,999	0	0	0	0	0
50,000 - 59,999	0	0	0	0	0
60,000 - 69,999	0	0	0	0	0
70,000 - 79,999	1	0	0	0	1
80,000 - 89,999	1	0	1	0	0
90,000 - 99,999	1	0	0	0	1
100,000 - 249,999	2	1	1	0	0
250,000 - 499,999	3	1	0	1	1
500,000+	0	0	0	0	0
TOTAL	8	2	2	1	3

PERCENTAGE OF AEC CONTRIBUTION TO THE TOTAL COST OF THE RESEARCH

Percentage	Division Total	Low Energy Physics	Chemistry	Metallurgy & Materials	Controlled Thermonuclear
0 - 9	0	0	0	0	0
10 - 19	0	0	0	0	0
20 - 29	0	0	0	0	0
30 - 39	0	0	0	0	0
40 - 49	1	1	0	0	0
50 - 59	0	0	0	0	0
60 - 69	0	0	0	0	0
70 - 79	1	0	0	0	1
80 - 89	0	0	0	0	0
90 - 99	0	0	0	0	0
100	6	1	2	1	2
TOTAL	8	2	2	1	3

NUMBER OF CONTRACTS BY STATES AND CONTRACTORS

State and Contractor	Division Total	Low Energy Physics	Chemistry	Metallurgy & Materials	Controlled Thermonuclear
California	4	1	1	1	1
Atomics International	2	0	1	1	0
Gulf General Atomic	2	1	0	0	1
Connecticut	1	0	0	0	1
United Aircraft Corporation ...	1	0	1	0	0
Massachusetts	1	0	1	0	0
Avco-Everett Research Lab	1	0	0	0	1
Pennsylvania	1	0	0	0	1
Westinghouse Electric Corp. ...	1	0	0	0	1
Texas	1	1	0	0	0
Texas Nuclear Corporation	1	1	0	0	0
TOTAL	8	2	2	1	3

GPO 864-808