

ISOTOPES PROGRAM-21-Education  
and Training

## TITLE

## ISOTOPE PROGRAM-21

	Date	To	From	Class	Pgs. No.	To	From	Class
1	2-13-59	AEC 158/8						
		Equipment Grant award for Radioisotope Technology Training Radioisotope Technology Training California, Univ. of						
			skw	u				
2	5-20-59	AEC 158/9						
			vee	u				
3	7-13-59	AEC 158/10						
			skw	u				
4	12-29-59	AEC 158/11						
			vee	u				
5	6-22-60	AEC 158/12						
			vee	u				

ISOTOPES-2 Education & Training

Date	To	From	Class	Pgs. No.	To	From	Class
1	9-21-61	Tuition Rates for Courses	on Industrial Applications	vee			



UNCLASSIFIED

AEC 158/12

June 22, 1960

COPY NO. 43

ATOMIC ENERGY COMMISSION

EQUIPMENT GRANT AWARD FOR RADIOISOTOPE TECHNOLOGY TRAINING

Note by the Secretary

The General Manager has requested that the attached memorandum from the Director of Isotopes Development be circulated for the information of the Commission.

W. B. McCool

Secretary

AEC  
158  
12

<u>DISTRIBUTION</u>	<u>COPY NO.</u>
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Asst. Gen. Mgr. R&ID	11
Asst. Gen. Mgr. Adm.	12
Asst. to the Gen. Mgr.	13
General Counsel	14 - 17
Biology & Medicine	18
Congr. Relations	19
Finance	20 - 22
Isotope Development	23
Public Information	24
Technical Information	25
Inspection	26
Licensing & Regulation	27 - 28
Operations Analysis	29
Production	30 - 31
Reactor Development	32 - 37
Research	38
Mr. Olson	39
D. C. Office	40 - 42
Secretariat	43 - 47

6-22-60

UNCLASSIFIED

Office Memorandum • UNITED STATES GOVERNMENT

TO : A. Tammaro, Assistant General Manager for Research and Industrial Development      DATE: June 7, 1960

FROM : Paul C. Aebersold, Director  
Office of Isotopes Development *Paul C. Aebersold*

SUBJECT: GRANTS FOR EQUIPMENT TO EDUCATIONAL INSTITUTIONS FOR ADVANCEMENT OF RADIOISOTOPE TECHNOLOGY TRAINING

SYMBOL: OI:IT:MHY

In accordance with AEC 994/2, dated May 19, 1958 and memorandum approved by the General Manager of December 11, 1958, your consideration and approval is requested for the following award of grants totaling \$139,998 as listed in the attachment. FY 1960 funds have been allocated and are available for these grants.

Information on the previous awards in this program was circulated as follows:

First Round	AEC 158/9	May 20, 1959
Second Round	AEC 158/10	July 13, 1959
Third Round	AEC 158/11	December 29, 1959

This is the fourth round of awards to be made under the Isotopes Development Program. With the limited funds available for training equipment this fiscal year it is believed that the most consistent and effective service can be rendered by selection of qualified institutions that have not received previous AEC assistance for establishment of training programs. We also believe that the total cumulative effect, of a number of awards to colleges that can effectively use a small equipment grant, will result in a broader dissemination of urgently needed basic radiation training.

This announcement, together with the third round of \$50,000 announced in December 1959, under the same basic criterion, will bring the amount granted under this program during FY 1960 to \$189,998.

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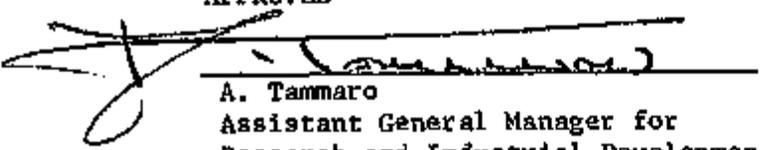
The proposed list has been coordinated with the Divisions of Reactor Development and Biology & Medicine. All proposals recommended for approval which meet the above criterion have been carefully examined to determine their appropriateness for support under the training objectives of the Isotopes Development Program.

Your approval for the award of these grants is requested. Attached for your concurrence is the draft letter to the JCAE, GAC, NSF and the press announcement. A copy of this memorandum with enclosures will be sent to the Secretary for circulation to the Commission as an information paper.

Attachments:

- "A" Financial Grants to Educational Institutions
- "B" Draft Press Release \*
- "C" Draft letter to JCAE, GAC, and NSF\*\*

APPROVED

  
A. Tammaro  
Assistant General Manager for  
Research and Industrial Development

6/7/60  
Date

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\* Secretariat Note: C-111 dated 6/13/60  
\*\*Dispatched - 6/9/60

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ATTACHMENT "A"

FINANCIAL GRANTS TO EDUCATIONAL INSTITUTIONS

Austin Junior College Austin, Minnesota	\$ 1,217
Carroll College Waukesha, Wisconsin	1,067
Central College Fayette, Missouri	4,000
Harvey Mudd College Claremont, California	5,500
Knoxville College Knoxville, Tennessee	4,800
Lawrence College Appleton, Wisconsin	8,146
Little Rock University Little Rock, Arkansas	6,500
MacMurray College Jacksonville, Illinois	2,472
Mundelein College Chicago, Illinois	7,500
Nebraska Wesleyan University Lincoln, Nebraska	6,500
Newark College of Engineering Newark, New Jersey	12,000
State University of New York Farmingdale, L. I., New York	11,000
University of Rhode Island Kingston, Rhode Island	1,036
Roanoke College Salem, Virginia	5,000
College of Saint Rose Albany, New York	4,000

UNCLASSIFIED

University of Santa Clara Santa Clara, California	\$ 9,500
Siena College Loudonville, New York	7,300
Tennessee Polytechnic Institute Cookeville, Tennessee	2,012
Trenton State College Trenton, New Jersey	6,000
Upsala College East Orange, New Jersey	4,000
Ursuline College Louisville, Kentucky	3,000
Valdosta State College Valdosta, Georgia	1,525
University of Vermont Burlington, Vermont	1,823
Western State College of Colorado Gunnison, Colorado	6,000
Wheaton College Wheaton, Illinois	14,000
Wittenberg University Springfield, Ohio	4,100
	<hr/>
TOTAL	\$139,998

AEC

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*Vitale*

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

PRESS RUN 10 am

No. C-111  
Tel. HAZELWOOD 7-7831  
Ext. 3446

FOR IMMEDIATE RELEASE  
(Monday, June 13, 1960)

AEC AWARDS FOR RADIOISOTOPE TECHNOLOGY TRAINING

Chairman John A. McCone of the Atomic Energy Commission announced today approval of grants totaling \$139,998 to 26 American colleges and universities. The grants are part of the Commission's program of assistance for isotope technology and health safety training as related to the physical and engineering sciences.

These grants, to establish or expand radioisotope training facilities, were selected from proposals received from qualified institutions that have not received previous AEC training assistance. The grants announced today bring to \$794,365 the total amount awarded to 66 institutions since the isotope training program was initiated in December 1958.

Colleges and universities may obtain additional information by writing the Director, Office of Isotopes Development, Washington 25, D. C.

The awards announced today are as follows:

- |   |          |
|---|----------|
| 1. Austin Junior College<br>Austin, Minnesota | \$ 1,217 |
| 2. Carroll College<br>Waukesha, Wisconsin     | 1,067    |

(more)

6-13-60

3.	Central College Fayette, Missouri	\$ 4,000
4.	Harvey Mudd College Claremont, California	5,500
5.	Knoxville College Knoxville, Tennessee	4,800
6.	Lawrence College Appleton, Wisconsin	8,146
7.	Little Rock University Little Rock, Arkansas	6,500
8.	MacMurray College Jacksonville, Illinois	2,472
9.	Mundelein College Chicago, Illinois	7,500
10.	Nebraska Wesleyan University Lincoln, Nebraska	6,500
11.	Newark College of Engineering Newark, New Jersey	12,000
12.	State University of New York Agricultural & Technical Institute Farmingdale, L. I., New York	11,000
13.	University of Rhode Island Kingston, Rhode Island	1,036
14.	Roanoke College Salem, Virginia	5,000
15.	College of Saint Rose Albany, New York	4,000

(more)

16.	University of Santa Clara Santa Clara, California	\$ 9,500
17.	Sienna College Loudonville, New York	7,300
18.	Tennessee Polytechnic Institute Cookeville, Tennessee	2,012
19.	Trenton State College Trenton, New Jersey	6,000
20.	Upsala College East Orange, New Jersey	4,000
21.	Ursuline College Louisville, Kentucky	3,000
22.	Valdosta State College Valdosta, Georgia	1,525
23.	University of Vermont Burlington, Vermont	1,823
24.	Western State College of Colorado Gunnison, Colorado	6,000
25.	Wheaton College Wheaton, Illinois	14,000
26.	Wittenberg College Springfield, Ohio	4,100
	TOTAL	<u>\$139,998</u>

AEC

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UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

PRESS RUN *10 a.m. Mon.*

No. C-71  
Tel. Hazelwood 7-7831  
Ext. 3446

FOR IMMEDIATE RELEASE  
(Monday, April 18, 1960)

AEC PARTICIPATES IN  
SUMMER INDUSTRIAL PROGRAMS IN NUCLEAR TECHNOLOGY

With the cooperation of the U.S. Atomic Energy Commission, the University of California at Berkeley will sponsor a series of courses on radioisotope principles and techniques for management and technical personnel. These summer programs were made possible by the first equipment assistance grant awarded under the Commission's Isotopes Development program. Industry and Atomic Energy Commission representatives will participate as guest lecturers.

A one-week survey course will be held July 18-22, 1960, to increase management understanding of the basic concepts in radioisotopes and radiation technology. The course is designed primarily to assist executives to support effectively their technical staffs in the application of isotopes and radiation to industrial advancement. Lectures and laboratory demonstration sessions will be included.

An intensive two-week course (June 6-June 17) on radioisotope theory applications and safe handling is designed to give a broad insight into the potentialities and problems of using radiation in industry and research. Reactors, accelerators, X-ray machines, etc., will be discussed, but major emphasis will be placed on handling, use and measurement of radiations from radioisotopes. The course would be of particular interest to personnel concerned with radiation control and safety programs.

A four-week course (June 20 - July 15) on advanced radioisotope principles and techniques will stress use of isotopes and

(more)

4-18-60

radiation in industry and research. Types of problems amenable to solution through use of radioisotopes will be considered in some detail. Principal emphasis will be on techniques, instrumentation, equipment and facilities for industrial applications with radiation safety a primary consideration throughout.

The two-week and four-week courses described above are directed to technical personnel who are present or potential users of isotopes and radiation in industry. The program is arranged so that a participant in the two-week course may continue on in the four-week course depending upon the extent of training desired.

Management and technical personnel wishing to attend any of the above programs may obtain application blanks and additional information from the Engineering and Sciences Extension, University of California, 2451 Bancroft Way, Berkeley 4, California.

DATE:

**INDEX:** ISOTOPES -21-Education and Training

~~ISOTOPES -21-Education and Training~~

~~ISOTOPES -21-Education and Training~~

TO:

FROM:

**SUMMARY:** AEC 267/58: DOMESTIC AND FOREIGN EDUCATIONAL PROGRAMS IN THE LIFE AND PHYSICAL SCIENCES AND ENGINEERING. To consider the need for continued AEC sponsorship of nuclear education and training activities in support of the AEC's research and development and international programs.

**FILED:**

**INDEXER:** REACTOR BEVEL.21-Reactor Technology

**REMARKS:** date of paper: 3-24-60

U. S. ATOMIC ENERGY COMMISSION  
**CORRESPONDENCE REFERENCE FORM**

07-48-2

AEC.

*San Diego 21*

*B 421*

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

No. C-1  
Tel. HAZELWOOD 7-7831  
Ext. 3446

FOR IMMEDIATE RELEASE  
(Friday, January 8, 1960)

AEC AWARDS 10 RESEARCH AND DEVELOPMENT CONTRACTS  
TO INVESTIGATE USES OF RADIOISOTOPES AND RADIATION

Chairman John A. McCone of the U. S. Atomic Energy Commission today announced the award of ten research and development contracts totaling \$447,834 to develop radioisotopes and radiation technology under the Commission's Isotopes Development Program.

The contracts, six of which are renewals of previously existing ones, were negotiated with educational institutions, industrial firms, and private research and development laboratories.

The new contracts bring to approximately \$3.5 million the total value of contracts awarded during the first year of this program.

The awards announced today were as follows:

<u>NAME AND ADDRESS OF ORGANIZATION</u>	<u>WORK UNDERTAKEN</u>	<u>AMOUNT</u>
NEW CONTRACTS		
United States Department of the Interior Bureau of Mines Washington 25, D. C.	To explore the use of radioisotope tracers for fluid dynamic studies.	\$ 15,000

(more)

*1-8-60*

<u>NAME AND ADDRESS OF ORGANIZATION</u>	<u>WORK UNDERTAKEN</u>	<u>AMOUNT</u>
Isotopes, Incorporated 123 Woodland Avenue Westwood, New Jersey	To determine the potential for using radioisotope technology in areas important to water resources including climatology, physical meteorology, geology, soil chemistry, and hydro-meteorology.	\$ 42,200
Jarrell-Ash Company 26 Farwell Street Newtonville, Massachusetts	To determine the feasibility of utilizing beta rays from radioisotopes to generate X-rays suitable for fluorescent spectroscopy.	32,600
The Texas Engineering Experiment Station for the Texas Agricultural & Mechanical College System College Station, Texas	To explore new concepts of radioisotope technology.	50,000

RENEWALS

William H. Johnston Laboratories, Inc. P. O. Box 626 Lafayette, Indiana	To continue basic studies in radiation technology including use of the coincidence mass spectrometer for the study of multiple ionization processes.	84,600
Radiation Applications, Incorporated 370 Lexington Avenue New York, New York	To continue research and development on foam separation techniques for isolating and concentrating fission products from nuclear reactor fuel residues.	36,000
Battelle Memorial Institute 505 King Avenue Columbus 1, Ohio	To continue research and development on principles of use of radioisotope tracer systems for process and quality control.	49,600

(more)

<u>NAME AND ADDRESS OF ORGANIZATION</u>	<u>WORK UNDERTAKEN</u>	<u>AMOUNT</u>
The Library of Congress Washington 25, D. C.	To continue monitorships of world literature on industrial radioisotopes applications.	\$ 30,734
Textile Research Center North Carolina State College Raleigh, N. C.	To continue experimental study of fiber modification by radiation induced <u>in situ</u> polymerization of monomers on fibers, yarns, or fabrics. Development of activation analysis techniques for textiles.	67,600
Tracerlab, Inc. 1601 Trapelo Road Waltham 54, Massachusetts	To continue development of radio-chemical methods for detecting and analyzing non-radioactive gases.	39,500

*Isotope 21*

UNCLASSIFIED

AEC 158/11

December 29, 1959

COPY NO. 38

ATOMIC ENERGY COMMISSION

EQUIPMENT GRANT AWARD FOR RADIOISOTOPE TECHNOLOGY TRAINING

Note by the Secretary

The General Manager has requested that the attached memorandum from the Director of Isotope Development be circulated for the information of the Commission.

W. B. McCool

Secretary

DISTRIBUTION

COPY NO.

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Asst. Gen. Mgr. R&ID	10
Asst. Gen. Mgr. Adm.	11-12
General Counsel	13-16
Biology & Medicine	17
Congr. Relations	18
Finance	19-21
Isotope Development	22
Information	23-24
Inspection	25
Licensing & Regulation	26-27
Operations Analysis	28
Production	29-30
Reactor Development	31-33
Research	34
D. C. Office	35-37
Secretariat	38-42

AEC  
158  
11

*12-29-59  
65-60-21*

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*Office Memorandum* • UNITED STATES GOVERNMENT

TO : A. Tammaro, Assistant General Manager for Research and Industrial Development      DATE: December 15, 1959

FROM : Paul C. Aebersold, Director  
Office of Isotopes Development

SUBJECT: GRANTS FOR EQUIPMENT TO EDUCATIONAL INSTITUTIONS FOR ADVANCEMENT OF RADIOISOTOPE TECHNOLOGY TRAINING

SYMBOL: OID:IT:HHY

In accordance with AEC 994/2, dated May 19, 1958 and memorandum approved by the General Manager on December 11, 1958, your consideration and approval is requested for the following award of grants totaling \$50,000 as listed in the attachment. FY 1960 funds have been allocated and are available for these grants.

This is the third round of awards to be made under the Isotopes Development Program. Since announcement of the isotope technology assistance program last December 24th, 115 proposals have been received totaling over \$2.6 million dollars. During the last half of FY 1959 awards were made to 33 institutions totaling \$604,367.

With the limited funds available for training equipment this fiscal year it was, after thoughtful deliberation, determined that the most effective assistance could be rendered with these funds by selection of qualified institutions that have not received previous AEC assistance for nuclear training in the engineering and physical sciences.

The proposed list has been coordinated with the Divisions of Reactor Development and Biology & Medicine. All proposals recommended for approval which meet the above criterion have been carefully examined to determine their appropriateness for support under the training objectives of the Isotopes Development Program.

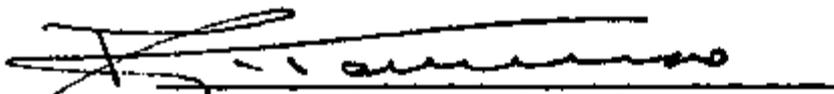
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Your approval for the award of these grants is requested. Attached for your concurrence is the draft letter to the JCAE, GAC, NSF and the press announcement.

Enclosures:

- "A" Financial Grants to Educational Institutions
- "B" Draft Press Release
- "C" Draft Letter to JCAE, GAC, and NSF

APPROVED:

  
A. Tammaro, Assistant General Manager  
for Research and Industrial Development

12/17/59  
Date

UNCLASSIFIED

ENCLOSURE "A"

FINANCIAL GRANTS TO EDUCATIONAL INSTITUTIONS  
FOR RADIOISOTOPE TECHNOLOGY TRAINING

<u>Institution and location</u>	<u>Amount</u>
Roosevelt University Chicago, Illinois	\$ 8,996
Dartmouth College Hanover, New Hampshire	6,000
Earlham College Richmond, Indiana	6,990
New York City Community College Brooklyn, New York	6,756
Davidson College Davidson, North Carolina	5,000
College of Puget Sound Tacoma, Washington	8,258
Providence College Providence, Rhode Island	<u>8,000</u>
	\$50,000

UNCLASSIFIED

ENCLOSURE "B"

DRAFT PRESS RELEASE

AEC AWARDS FOR RADIOISOTOPE TECHNOLOGY TRAINING

1. Chairman John A. McCone of the Atomic Energy Commission announced today Commission approval of grants totaling \$50,000 to 7 American colleges and universities. This is the third round of awards made for radioisotope technology training under the Commission's Isotopes Development Program.
2. Since announcement of this educational assistance program a year ago December 24th, approximately 115 proposals have been received totaling over \$2.6 million dollars for the purchase of radioisotope training equipment. Last fiscal year ending June 30, 1959 awards were made to 33 institutions totaling \$604,367.
3. These grants were selected from proposals received from qualified institutions that have not received previous AEC assistance for nuclear training in the engineering and physical sciences. Colleges and universities may obtain additional information by writing the Director, Office of Isotopes Development, Washington 25, D. C.
4. The awards announced today are as follows:

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ENCLOSURE "C"

DRAFT LETTER TO JCAB, GAC, AND NSF

1. The attached list will inform the (Committee or Foundation) of the third round of equipment grants to be made under the Commission's Isotopes Development Program. The purpose of these awards is to increase and create more training opportunities for instruction in radioisotope techniques and applications.
2. Since announcement of this educational assistance program a year ago December 24th, approximately 115 proposals have been received totaling over \$2.6 million dollars for the purchase of radioisotope training equipment. Last fiscal year ending June 30, 1959 awards were made to 33 institutions totaling \$604,367.
3. Selections were made from qualified proposals submitted by Institutions that have not received previous AEC assistance. Acceptable proposals that could not be supported at this time will be retained for consideration in the next review. It is anticipated that this will be in the early part of fiscal year 1961. You will be advised as future awards are approved.

*2*  
**AEC** ✓

*Isotopes 121*

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D.C.

No. B-236  
Tel. HAZELWOOD 7-7831  
Ext. 3446

FOR IMMEDIATE RELEASE  
(Thursday, December 24, 1959)

AEC AWARDS FOR RADIOISOTOPE TECHNOLOGY TRAINING

Chairman John A. McCone of the Atomic Energy Commission announced today Commission approval of grants totaling \$50,000 to 7 American colleges and universities. This is the third round of awards made for radioisotope technology training under the Commission's Isotopes Development Program. These will be the only awards made under this program during the current fiscal year.

Since announcement of this educational assistance program a year ago approximately 115 proposals have been received for the purchase of radioisotope training equipment. Last fiscal year ending June 30, 1959 awards were made to 33 institutions totaling \$604,367.

These grants were selected from proposals received from qualified institutions that have not received previous AEC assistance for nuclear training in the engineering and physical sciences. Colleges and universities may obtain additional information by writing the Director, Office of Isotopes Development, Washington 25, D. C.

The awards announced today are as follows:

(more)

*12-24-59*

FINANCIAL GRANTS TO EDUCATIONAL INSTITUTIONS  
FOR RADIOISOTOPE TECHNOLOGY TRAINING

1.	Dartmouth College Hanover, New Hampshire	\$ 6,000
2.	Davidson College Davidson, North Carolina	5,000
3.	Earlham College Richmond, Indiana	6,990
4.	New York City Community College Brooklyn, New York	6,756
5.	Providence College Providence, Rhode Island	8,000
6.	College of Puget Sound Tacoma, Washington	8,258
7.	Roosevelt University Chicago, Illinois	8,996

AEC

*Anticipate 21- Education & Training*  
*Secretary*  
*B-421*

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

No. B-171  
Tel. HAZELWOOD 7-7831  
Extension 3446

FOR IMMEDIATE RELEASE  
(Tuesday, Sept. 29, 1959)

AEC AND WEST VIRGINIA UNIVERSITY TO CONDUCT  
WORKSHOP ON INDUSTRIAL USES OF RADIOISOTOPES

The U. S. Atomic Energy Commission and West Virginia University will co-sponsor a two-day Workshop on Industrial Uses of Radioisotopes in Morgantown, West Virginia, on November 19-20, 1959. The meeting is designed to acquaint industry with the many industrial applications of radioisotopes and to increase awareness of the versatility of these nuclear tools and the industrial opportunities provided by them.

Industry representatives will review the economic implications of radioisotopes and discuss improvements in production and efficiency obtained by their use in gauging, radiography, and industrial tracing. Commission speakers will explain government programs of cooperation with industry and education in encouraging increased applications of radioisotope techniques. A series of brief experience reports by local industrial users will be included.

Management and technical personnel, educators and others wishing to attend the meeting may obtain additional information from Professor James A. Kent, Department of Chemical Engineering, West Virginia University, Morgantown, West Virginia.

U. S. ATOMIC ENERGY COMMISSION  
**CORRESPONDENCE REFERENCE FORM**

DATE:

~~ISOTOPES-3-Division Head of Isotopes~~

**INDEX: ISOTOPES-21-Education & Training**

~~ISOTOPES-3-Division Head of Isotopes~~

TO:

FROM:

**SUMMARY: AEC 994/5: ISOTOPES DEVELOPMENT CONTRACTS WITH INDUSTRY.** Memo from the Div. of Isotopes Development w/att. re a summary of FY 1959 program activities in the Office of Isotope Devel. Included in the attachments are the summaries of activities with colleges and universities for off-site and on-site contracts. Contracts with private industry.

**FILED:**

**INDEXER: Isotopes-3-Dist. and Transfer**

**REMARKS:** date of papers 9-18-59  
date of memo:

AEC

Isotopes 21

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

No. B-129  
Tel. HAZELWOOD 7-7831  
Ext. 3446

FOR IMMEDIATE RELEASE  
(Thursday, August 6, 1959)

AEC AWARDS 22 CONTRACTS TO DEVELOP AND ACCELERATE  
RADIOISOTOPES AND INDUSTRIAL RADIATION USES

The Atomic Energy Commission today announced the award of 22 contracts to develop new and improved industrial uses of radioisotopes and high level radiation. The contracts, totaling approximately \$800,000, are with 20 educational institutions, industrial firms, and private laboratories under the Commission's Isotopes Development Program.

The new contracts bring to more than \$3 million the total value of contracts awarded during the fiscal year ending June 30, 1959. An additional \$500,000 was devoted to basic developmental work at the Commission laboratories, and over \$600,000 was granted to 33 colleges and universities for the purchase of equipment to be used in training students in radioisotope technology.

The overall objectives of the program are to accelerate safe commercial uses of radiation and radioisotopes in the United States and to encourage the production of radioisotopes by private industry.

The awards announced today are as follows:

(more)

8-6-59

<u>NAME AND ADDRESS OF CONTRACTOR</u>	<u>WORK UNDERTAKEN</u>	<u>APPROX. AMOUNT</u>
Aerojet-General Nucleonics San Ramon, California	To perform work necessary to design, develop, fabricate and experimentally test radioactive, independent transducer-receiver systems for measuring temperature, pressure and strain in various industrial applications.	\$ 63,200
Armour Research Foundation 10 West 35th Street Chicago 16, Illinois	To perform experimental and theoretical studies on the radiation physics aspects of the design of Cesium <sup>137</sup> irradiators. The experimental work will be performed to the precision permitted by existing radiation physics measuring techniques and will be analyzed in detail.	45,500
Armour Research Foundation 10 West 35th Street Chicago 16, Illinois	To perform work to develop and demonstrate a radioisotope gauging system to measure mass and density as a function of gamma or X-ray attenuation.	29,856
Armour Research Foundation 10 West 35th Street Chicago 16, Illinois	To study, develop, and produce isotopic sources of X-radiation in the energy region of 5 to 200 kev from beta emitting radioisotopes, as described in the contract proposal from ARF, dated May 12, 1958.	29,900

(more)

<u>NAME AND ADDRESS OF CONTRACTOR</u>	<u>WORK UNDERTAKEN</u>	<u>APPROX. AMOUNT</u>
Bituminous Coal Research, Inc. 121 Meyran Avenue at Forbes Pittsburgh 13, Pennsylvania	To determine the potential for using radioisotope techniques in mining, transportation, storage, and utilization of coal, and the possible impact of the techniques on the industry. By investigating typical operations, the ultimate objective of this study will be to establish the feasibility of using radioisotopic methods by the coal industry and its major consumers and to provide a basis for future research and development.	\$ 40,000
CEM Group (Chemicals- Electronics-Metallurgy) (Under Emerson Radio & Phonograph Corp.) 905 Hill Bldg., 839 17th St. Washington 6, D. C.	Evaluate (1) the industrial significance of particular radiation products and processes and (2) identify immediate and long range industrial management planning involved in their integration into the national industrial complex.	50,000
Engelhard Industries 113 Astor Street Newark 2, New Jersey	A fundamental study on the effects of ionizing radiation on the catalytic activity of platinum will be performed.	50,000
Evans Research & Development Corporation 250 East 43rd Street New York 17, New York	To investigate the feasibility of and also to develop a particle analyzer based on a beta particle back-scattering principle.	25,500

(more)

<u>NAME AND ADDRESS OF CONTRACTOR</u>	<u>WORK UNDERTAKEN</u>	<u>APPROX. AMOUNT</u>
Georgia Technological Research Institute Research Building Georgia Institute of Technology Atlanta 13, Georgia	Performance of a variety of radioisotope research, development and related activities designed to lead to new or improved techniques or applications of radioisotopes to indus- trial problems.	\$100,000
Isotopes, Incorporated 123 Woodland Avenue Westwood, New Jersey	To determine the potential for using radioisotopes techniques in research, development, processing, transmission, storage and production of gas and related technical problems directly affecting the industry; and the possible impact of these techniques on the industry.	23,400
William H. Johnston Laboratories, Inc. P.O. Box 626 Lafayette, Indiana	To undertake theoretical and experimental research and development studies of high-level radiation phenomena to: (1) de- termine the nature and distribution of various ions produced by impact of high-energy radiation on gas phase molecules such as benzene, propane, carbon dioxide, and cyclohexane; and (2) analyze the infor- mation obtained and apply it to the extension of current theories of radia- tion phenomena.	45,200

(more)

<u>NAME AND ADDRESS OF CONTRACTOR</u>	<u>WORK UNDERTAKEN</u>	<u>APPROX. AMOUNT</u>
The Library of Congress Washington 25, D. C.	To undertake a monitoring-type survey of world literature on industrial radioisotopes applications.	\$ 9,000
Lockheed Aircraft Corp. Atlanta, Georgia	To perform work to develop and demonstrate a radioisotope gauging system for the detection of defects in boiler and heat exchanger tubes due to corrosion or erosion.	27,600
National Canners Association Western Research Laboratory 1950 Sixth Street Berkeley 10, California	The development of radioisotope techniques for use in evaluating commercial food product washing practices with regard to detergent carry-over, and in establishing washing procedures for complete removal of detergent from the washed and rinsed product.	38,800
Picker X-Ray Corporation Waite Manufacturing Div. 17325 Euclid Avenue Cleveland 12, Ohio	To develop and demonstrate the feasibility of a self-powered X-ray tube that is practical for meeting a variety of X-ray applications in nondestructive testing and possible medical diagnosis.	42,000

(more)

<u>NAME AND ADDRESS OF CONTRACTOR</u>	<u>WORK UNDERTAKEN</u>	<u>APPROX. AMOUNT</u>
Radiation Applications, Inc. 370 Lexington Avenue New York 17, New York	Examine existing procedures for the separation and purification of desirable source materials from gross fission products and similar mixtures. Define promising applications of foam separation to the isolation and purification of raw materials for radioactive source preparations.	\$ 7,000
Stanford Research Institute Menlo Park, California	To develop training programs for journeyman personnel in radioisotope-using industries.	40,000
Stanford Research Institute Menlo Park, California	Undertake and complete a comprehensive analysis of radioisotope applications in agriculture including: (1) both research and commercial applications; (2) the technological and economic impact of radioisotope use; and (3) a projection of the demand possibilities for radioisotopes in both commercial agriculture and agricultural research.	23,000
Technical Research Group 2 Aerial Way Syosset, L.I., N.Y.	Cobalt-60 irradiation of silane or other silicon compounds under a variety of experimental conditions will be investigated to determine the feasibility of producing pure silicon by the radiation-induced decomposition of these materials.	35,000

(more)

<u>NAME AND ADDRESS OF CONTRACTOR</u>	<u>WORK UNDERTAKEN</u>	<u>APPROX. AMOUNT</u>
The Texas Engineering Experiment Station for the Texas Agricultural and Mechanical College System College Station, Texas	To investigate the feasi- bility and develop computer coupled activation analysis techniques. Emphasis shall be placed upon the analysis of micro and macro consti- tuent elements in drill cuttings from oil fields.	\$ 26,400
Tracerlab, Inc. 1601 Trapelo Road Waltham 54, Massachusetts	To develop radiochemical methods for detecting and analyzing non-radioactive gases and study of clath- rate (cage-like) compounds.	44,800
Westinghouse Electric Corp. East Pittsburgh, Pennsylvania	The development of trans- parent polyethylene by nuclear radiation, to in- clude: the establishment of correlations between optical transmission, density and per cent crystallinity; optimum conditions of radiation usage; and, stability of state produced.	23,500

UNCLASSIFIED

July 13, 1959

AEC 158/10

COPY NO. 36

AEC  
158  
10

ATOMIC ENERGY COMMISSION

EQUIPMENT GRANT AWARD FOR RADIOISOTOPE TECHNOLOGY TRAINING

Note by the Secretary

The General Manager has requested that the attached memorandum from the Director, Office of Isotope Development, be circulated for the information of the Commission.

W. B. McCool  
Secretary

DISTRIBUTION

COPY NO.

Secretary	1
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General Manager	7
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Asst. Gen. Mgr. R&D	10
Asst. Gen. Mgr. Adm.	11-12
General Counsel	13-16
Biology & Medicine	17
Congr. Relations	18
Finance	19-21
Isotope Development	22
Information	23-24
Inspection	25
Licensing & Regulation	26-27
Operations Analysis	28
Production	29-30
Reactor Development	31-33
Research	34
D. C. Office	35
Secretariat	36-40

7-13-59

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STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : A. Tammaro, Assistant General Manager for Research and Industrial Development      DATE: June 4, 1959

FROM : Paul C. Aebersold, Director  
Office of Isotopes Development *Paul C. Aebersold*

SUBJECT: GRANTS FOR EQUIPMENT TO EDUCATION INSTITUTIONS FOR ADVANCEMENT OF RADIOISOTOPES TECHNOLOGY TRAINING

SYMBOL: OI:IT:HHY

In accordance with AEC 994/2 dated May 19, 1958, and memorandum approved by the General Manager on December 11, 1958, your consideration and approval is requested for the following award of grants totaling \$272,712 as listed in the attachment. FY 1959 funds have been allocated and are available for these grants. Also attached is a list of the proposals deferred for reasons indicated in the listing.

This is the second round of awards to be made under the Isotopes Development Program. The grants have been reviewed by an internal committee on training and education comprised of staff members of the Office of Isotopes Development. Evaluations were made in accordance with published criteria for radioisotope technology training. Proposals recommended for awards have been coordinated with the Divisions of Reactor Development and Biology and Medicine. Of the twenty recommended grants nine have not received previous AEC assistance. Three have received awards from both DRD and DEM. Eight have received grants from either DRD or DEM. Each of these previous grants have been made to further specific program interests or objectives of the granting division.

All those proposals recommended for approval have been carefully examined to determine their appropriateness for support under training objectives of the Isotopes Development Program.

Your approval for the award of these grants is requested. Attached for your concurrence is the draft letter to the JCAE, GAC and NSF, and the press announcement. A copy of this memorandum with

(continued)

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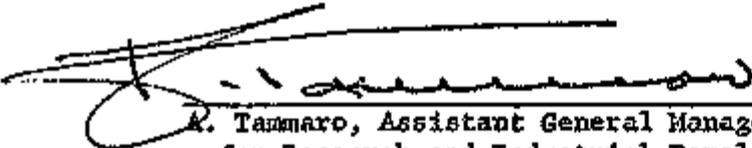
Mr. A. Tammaro

enclosures will be sent to the Secretary for circulation to the Commission as an information paper.

Enclosures:

- "A" Financial Grants to Educational Institutions
- "B" Proposals Deferred
- "C" Draft Press Release\*
- "D" Draft Letter to JCAE, GAC, AND NSF

APPROVED:

  
A. Tammaro, Assistant General Manager  
for Research and Industrial Development

6/16/59

Date

\* Not Attached  
Release date: Friday, June 19, 1959

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ENCLOSURE "A"

FINANCIAL GRANTS TO EDUCATIONAL INSTITUTIONS  
FOR RADIOISOTOPE TECHNOLOGY TRAINING

<u>Institution and Location</u>		<u>Amount</u>
1. Western Michigan University Kalamazoo, Michigan		
Dept. of Chemistry	\$1,377	
Dept. of Physics	\$3,897	\$5,274
2. St. Olaf College Northfield, Minn.		\$6,892
3. University of Oklahoma Norman, Oklahoma		\$21,262
4. University of Oregon Eugene, Oregon		\$8,670
5. Penn State University University Park, Pennsylvania		
Dept. of Chemical Eng.	\$8,980	
Dept. of Civil Eng.	\$4,973	\$13,953
6. University of Florida Gainesville, Florida		\$8,838
7. Texas College of Arts & Industries Kingsville, Texas		\$9,119
8. Stevens Institute of Technology Hoboken, New Jersey		\$12,139
9. University of Kentucky Lexington, Kentucky		\$15,677
10. University of Cincinnati Cincinnati, Ohio		\$9,888
11. Loyola University of Los Angeles Los Angeles, California		\$9,572
12. University of Idaho Moscow, Idaho		\$19,658
13. University of Louisville Louisville, Kentucky		\$15,814

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14. Drake University Des Moines, Iowa	\$7,275
15. University of Missouri Columbia, Missouri	\$35,358
16. College of Notre Dame of Md. Baltimore, Maryland	\$2,798
17. Colorado School of Mines and Colorado School of Mines Research Foundation Inc. Golden, Colorado	\$38,505
18. Bellarmine College Louisville, Kentucky	\$5,332
19. Rutgers University New Brunswick, New Jersey	\$4,314
20. Massachusetts Institute of Technology Cambridge, Mass.	\$22,374
	<hr/>
	\$272,712

## UNCLASSIFIED

ENCLOSURE "B"PROPOSALS DEFERRED

<u>Institution</u>		<u>Amount</u>
1. Virginia Polytechnic Institute Blacksburg, Virginia	<u>1/</u>	\$73,446.48
2. University of Arizona Tucson, Arizona	<u>1/</u>	\$64,703
3. Oregon State College Corvallis, Oregon	<u>2/</u>	\$83,491
4. Colorado State University Fort Collins, Colorado	<u>2/</u>	\$67,752.95
5. Davidson College Davidson, N.C.	<u>2/</u>	\$30,462.45
6. University of Santa Clara Santa Clara, Calif.	<u>2/</u>	\$24,510.51
7. University of Tenn. Knoxville, Tenn.	<u>1/</u>	\$10,834
8. North Dakota Agricultural College Fargo, North Dakota	<u>3/</u>	\$68,566.42
9. Ohio State University Columbus, Ohio	<u>2/</u>	\$18,539
10. Pan American College Edinburg, Texas	<u>4/</u>	\$11,473
11. Univ. of Missouri School of Mines & Met. Rolla, Missouri	<u>4/</u>	\$79,701.95
12. University of North Dakota Grand Forks, North Dakota	<u>3/</u>	\$45,411.10
13. Texas A & M College Station, Texas	<u>2/</u>	\$97,919.29
14. Tufts University Medford, Mass.	<u>4/</u>	\$3,107.50

UNCLASSIFIED

	<u>Institution</u>	<u>Amount</u>
15.	Univ. of Louisville, Chem. Dept. Louisville, Kentucky <u>4/</u>	\$63,180.47
16.	University of Washington Seattle, Washington <u>2/</u>	\$6,817
17.	Valdosta State College Valdosta, Georgia <u>2/</u>	\$1,524.50
18.	The City College New York, N.Y. <u>2/</u>	\$19,815

1/ Additional information required or to be resubmitted

2/ Acceptable proposal, but of lower priority than those recommended at this time. To be reconsidered in next round

3/ Appropriate for joint review and support by OIG, DRD and DBM. To be considered in fall review

4/ To be rejected

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APPENDIX "C"

DRAFT PRESS RELEASE NOT ATTACHED TO THIS  
REPORT.

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ENCLOSURE "D"

June 19, 1959

ADDRESSEES

Dr. Warren C. Johnson, Chrm.  
Gen. Adv. Com., USAEC

Dr. Alan T. Waterman, Dir.  
Ntl. Science Foundation

Honorable Clinton P. Anderson  
Chairman, Joint Committee on Atomic Energy  
Congress of the United States

Dear Senator Anderson:

The attached list will inform the Committee of the second round of equipment grants to be made under the Commission's Isotopes Development Program. The purpose of these awards is to increase training opportunities in radioisotope techniques and applications, for the industrial scientist, and technical graduate or undergraduate student.

The first round of grants announced under this Program was made on May 18, 1959.

To date, 58 proposals for assistance have been received since announcement of the Program, totaling \$1,710,191. The present announcement brings the total amount awarded to \$604,416 to 33 institutions in 25 states during the last half of FY 1959. Acceptable proposals deferred due to lower priority and need for additional information will be considered along with new proposals for the third round to be announced next fall. You will be advised as future awards are approved.

Sincerely yours,

/s/ A. Tammaro, Assistant General  
Manager for Research and  
Industrial Development

AEC

*Isotopes Program 21*

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

No. B-97  
Tel. HAZelwood 7-7831  
Ext. 3446

FOR IMMEDIATE RELEASE  
(Friday, June 19, 1959)

AEC MAKES AWARDS TO 20 COLLEGES  
FOR RADIOISOTOPE TECHNOLOGY TRAINING

Chairman John A. McCone of the Atomic Energy Commission announced today the approval of grants totaling \$272,712 to 20 American colleges and universities. This is the second round of awards made for education and training in radioisotopes technology under the Commission's Isotopes Development Program.

Encouragement is provided by these grants for the training of physical science and engineering students in the use of radioisotopes and radiation. Special emphasis is placed in this training upon the potential industrial uses of radioisotopes. In many cases, the awards will make possible increased training opportunities for practicing industrial scientists and engineers, through university sponsored evening, extension, or summer programs.

A total of \$604,416 has been awarded by the Commission to 33 institutions since the inception of the program six months ago. Colleges and universities wishing to participate in this program may obtain additional information by writing the Director, Office of Isotopes Development, U. S. Atomic Energy Commission, Washington 25, D. C.

The awards announced today are as follows:

(more)

*62-8107*

FINANCIAL GRANTS TO EDUCATIONAL INSTITUTIONS  
FOR RADIOISOTOPE TECHNOLOGY TRAINING

INSTITUTION AND LOCATION	AMOUNT
1. Bellarmine College Louisville, Kentucky	\$ 5,332
2. University of Cincinnati Cincinnati, Ohio	9,888
3. Colorado School of Mines and Colorado School of Mines Research Foundation Inc. Golden, Colorado	38,505
4. Drake University Des Moines, Iowa	7,275
5. University of Florida Gainesville, Florida	8,838
6. University of Idaho Moscow, Idaho	19,658
7. University of Kentucky Lexington, Kentucky	15,677
8. University of Louisville Louisville, Kentucky	15,814
9. Loyola University of Los Angeles Los Angeles, California	9,572
10. Massachusetts Institute of Technology Cambridge, Massachusetts	22,374
11. University of Missouri Columbia, Missouri	35,358
12. College of Notre Dame of Md. Baltimore, Maryland	2,798
13. University of Oklahoma Norman, Oklahoma	21,262

(more)

INSTITUTION AND LOCATION		AMOUNT
14.	University of Oregon Eugene, Oregon	\$ 8,670
15.	Penn State University University Park, Pennsylvania	13,953
	Department of Chemical Engineering	\$8,980
	Department of Civil Engineering	4,973
16.	Rutgers University New Brunswick, New Jersey	4,314
17.	St. Olaf College Northfield, Minnesota	6,892
18.	Stevens Institute of Technology Hoboken, New Jersey	12,139
19.	Texas College of Arts & Industries Kingsville, Texas	9,119
20.	Western Michigan University Kalamazoo, Michigan	5,274
	Department of Chemistry	\$1,377
	Department of Physics	3,897
	TOTAL	<u>\$272,712</u>

AEC

*Section 21*

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

No. B-95  
Tel. Hazelwood 7-7831  
Ext. 3446

FOR IMMEDIATE RELEASE  
(Monday, June 15, 1959)

AEC ANNOUNCES AWARD OF RESEARCH AND DEVELOPMENT CONTRACTS TO  
ENCOURAGE INDUSTRIAL USES OF RADIOISOTOPES AND RADIATION

Award of 25 unclassified research and development contracts, totaling approximately 1.5 million dollars, to 20 colleges, universities, private research institutions and industrial firms, was announced today by the Atomic Energy Commission.

The awards represent contracts negotiated during the first quarter of 1959 in support of the development of industrial uses of radioisotopes and radiation. The purposes of the Commission's Isotopes Development Program are to accelerate safe commercial uses of radioisotopes and radiation in the United States and to encourage the production of radioisotopes by private industry.

The contracts announced today bring the total amount awarded, in the 15 months following establishment of the program in December, 1957, to more than \$2,800,000. This amount is carried in 50 contracts to 34 different organizations. More than 130 additional proposals have been received from other industrial firms, colleges and universities since the last announcement made under this program.

Following is a list of contracts negotiated during the current fiscal year. The 25 awards announced for the first time today are identified by asterisks (\*\*\*) .

- 30 -

ATTACHMENT

6-15-59

## ATTACHMENT

<u>NAME AND ADDRESS OF ORGANIZATION</u>	<u>WORK UNDERTAKEN</u>	<u>AMOUNT</u>
***Air Reduction Co., Inc. Murray Hill, N. J.	To develop a technique for handling gaseous beta sources, the chemical effect of Krypton 85 on various substances and investigations into the physical behavior of Krypton 85.	\$87,700
***Alloyd Research Corp. Watertown 72, Mass.	To develop and demonstrate a device and technique utilizing Carbon-14 for measuring very low concentrations of oxygen in high purity metals. The technique is directed at measurement of oxygen from levels of one percent or more down to parts per ten millions with considerable accuracy.	49,700
***Army Pictorial Service Long Island City, N.Y.	To produce a training film portraying the industrial applications of radioisotopes.	88,000
***Associated Nucleonics, Inc. Garden City, Long Island, N.Y.	To evaluate the types and amounts of various materials that might be processed in an irradiator designed as an industrial sterilization unit for the pharmaceutical industry. The research will also include similar studies regarding a hospital sterilization unit.	79,000
Associated Nucleonics, Inc. Garden City, Long Island, N.Y.	Study of phosphor stability to high intensity compounding beta radiation. This contract will involve studies to improve the fabrication of stable, efficient, high intensity Promethium 147 light sources for the photoelectric conversion of beta ray energy into electricity in tiny batteries yielding milliamperes of current.	56,600

(more)

<u>NAME AND ADDRESS OF ORGANIZATION</u>	<u>WORK UNDERTAKEN</u>	<u>AMOUNT</u>
Battelle Memorial Institute Columbus, Ohio	Evaluation and development of radioisotope tracer techniques for controlling product or impurity concentrations by detecting and measuring isotopes in process streams. The practicality of the technique will be demonstrated in an actual industrial process which will be selected during the study.	\$49,705
***Battelle Memorial Institute Columbus, Ohio	To research, develop, and demonstrate radioactive tracer systems for process and quality control. The work will also include a study of the effects of radiation on hydrocarbons trapped in inclusion compounds to obtain specific isomers.	31,650
***Battelle Memorial Institute Columbus, Ohio	To determine the effects on cyclohexane-nitric acid systems of radiation in both the liquid and vapor phases. Pressure, temperature, nitric acid concentration, integrated radiation dose and dose rate will be the chief variables studied.	35,900
***Battelle Memorial Institute Columbus, Ohio	To perform an experimental study of structural and compositional factors influencing, first, radiation effects in polymeric systems; second, mechanisms of polymerization reactions; and third, the products of polymerization reactions.	63,000
***Booz-Allen Applied Research Inc. Kenilworth, Illinois	To evaluate the economics and feasibility of producing radioisotopes in power reactors. These studies will include three types of power reactors (boiling water, sodium graphite and pressurized water reactors) as well as the radioisotopes Phosphorus 32, tritium, Carbon 14, Cobalt 60, Potassium 42, and Sodium 24.	33,200

(more)

<u>NAME AND ADDRESS OF ORGANIZATION</u>	<u>WORK UNDERTAKEN</u>	<u>AMOUNT</u>
Chicago Midway Laboratory University of Chicago Chicago, Illinois	Establishment of a University Isotope Research Center. The Center will engage in fundamental research and development activities aimed at solving industrial problems by improving existing and developing new radioisotope and radiation techniques.	\$133,000
***Consolidation Coal Co. Pittsburgh 19, Pa.	To perform research and development of techniques for labeling relatively high molecular weight coal product hydrocarbon mixtures with tritium. The research will also include investigation of applications of radio-tracer techniques to studies of particle mechanics in industrial slurry processes.	74,700
Crucible Steel Company Pittsburgh, Pa.	The first phase of the contract will involve research with radioisotopes to determine fundamental wear phenomena of hardened iron base alloys and the effect of metallurgical factors in wear behavior. The second phase will utilize Calcium 45 to identify the source of undesirable foreign compounds entrapped in low-carbon bearing steels during solidification.	56,200
***General Motors Indianapolis, Indiana	To prepare a Radioisotopes in Industry Training Program, to consist of lectures demonstrations, and experiments.	15,000
General Nuclear Engineering Company Dunedin, Florida	To provide data required by AEC and industry for evaluation of opportunities for private radioisotope production and future commercial radioisotope prices, this contract covers a technical and economic feasibility study of optimum reactor systems for joint production of Cobalt 60 and tritium.	33,654

(more)

<u>NAME AND ADDRESS OF ORGANIZATION</u>	<u>WORK UNDERTAKEN</u>	<u>AMOUNT</u>
***Goodyear Tire and Rubber Co. Akron 16, Ohio	To develop and demonstrate a practical system for determining the age of a wide variety of industrial products, such as those produced from rubber, plastics, paper, metal and glass, on which serial number dating is impractical or cumbersome.	\$46,600
***Isotopes, Inc. Westwood, N.J	To develop and demonstrate a gas injector system for introducing radioactive tracers homogeneously in natural gas under varying conditions of flow under pressure. Tracers to be considered are tritium, tritiated methane, tritiated ethane, krypton-85, and several others.	45,000
***William H. Johnston Laboratories, Inc. Lafayette, Indiana	For the development of a series of simulated or mock-up industrial training systems, together with operating instructions, for undergraduate or graduate instruction in applied radioisotope technology.	49,400
***William H. Johnston Laboratories, Inc. Lafayette, Indiana	To define and develop specific examples of <u>in situ</u> industrial tracer applications, design, low-level soft beta counters for "on-stream" process control and design low-level gamma equipment necessary to meet other applications.	67,300
Martin Company Baltimore, Maryland	To study and develop compact power producing devices of 100 electrical watts utilizing the conversion of heat of decay of Strontium 90 to electrical power. This investigation will include studies of properties of strontium compounds and the fabrication of safe, reliable, corrosion resistant strontium heat elements. Conceptual designs of land and sea applications such as ocean buoys, emergency markers, remote weather telemetering equipment, etc. will be developed.	220,000

(more)

<u>NAME AND ADDRESS OF ORGANIZATION</u>	<u>WORK UNDERTAKEN</u>	<u>AMOUNT</u>
Massachusetts Institute of Technology Cambridge, Massachusetts	This contract could determine the feasibility of using radioisotope tracer techniques for proof testing against toxicity of food additives. More sensitive, less time consuming, and cheaper radioisotope tracer techniques could have a tremendous impact on the food industry.	\$38,500
***Massachusetts Institute of Technology Cambridge, Massachusetts	To perform radioisotope research, development and related activities in applied science that are calculated to lead to new or improved techniques and methods for using radioisotopes and radiation in industrial problems. The work will encompass, first, feasibility studies; second, laboratory and field demonstrations, third, evaluation of such applications; and fourth, appropriate projections.	115,000
***Midwest Research Institute Kansas City 10, Missouri	To determine the potential for using radioisotope techniques in research development and manufacturing problems in the synthetic detergent and soap industries, as well as the possible impact of these techniques on the industry.	14,900
National Industrial Confer- ence Board, Inc. New York, New York	To assess economic value to the national economy of the industrial uses of radioisotopes to analyze factors such as intangible benefits, percentage of total product output using radioisotopes and identifying difficulties companies encounter in undertaking radioisotope applications.	34,000

(more)

<u>NAME AND ADDRESS OF ORGANIZATION</u>	<u>WORK UNDERTAKEN</u>	<u>AMOUNT</u>
***Nuclear-Chicago Corporation Chicago, Illinois	To prepare a basic manuscript for teaching applied uses of radioisotopes in industry to students at the college level.	\$37,000
***Nuclear-Chicago Corporation Chicago, Illinois	To study and develop methods using radioisotope tracers to control industrial processes such as the regulation of calcium and magnesium in boiler feed water to prevent scaling.	47,000
Nuclear Research Corp. Southampton, Pa.	To develop and design a radioisotope gage to measure individual thickness of base metal and plated metal coating. This gage will use radioisotopes having two separate and distinct gamma energies. The detector signal is divided into separate photopeak energies so that individual material thickness or density may be determined.	30,200
***Nuclear Science and Engineering Corporation Pittsburgh, Pennsylvania	To develop a radioisotope method for assaying the growth hormone; to develop radioisotope methods for assaying androgenic and estrogenic activities; to develop isotopic dilution analysis principles and techniques for practical applications of medicinal substances occurring in complex mixtures.	122,000
***Purdue Research Foundation University of Purdue Lafayette, Indiana	To determine the potential for using radioisotope techniques in research, development and manufacturing problems in the pharmaceutical industry as well as the possible impact of these techniques on the industry.	40,000

(more)

<u>NAME AND ADDRESS OF ORGANIZATION</u>	<u>WORK UNDERTAKEN</u>	<u>AMOUNT</u>
***Radiation Applications, Inc. New York, N.Y.	For several studies in the area of the technology and application of large fission product beta sources. The first phase will include beta source technology studies; the second phase, radiation application studies, with particular reference to determining the optimum chemical systems for the graft copolymerization of synthetic and natural fibers and fabrics; and a third phase consisting of a radiation engineering study directed at bench scale and demonstration pilot plant beta irradiators.	\$73,000
***Radiation Applications, Inc. New York, N. Y.	To establish theoretical and experimental factors important for understanding how radiation can be gainfully employed in chemical manufacture and specifically to investigate radiation production of an industrially promising new class of organo-metallic compounds.	43,500
***Rensselaer Polytechnic Institute Troy, N.Y.	To explore the technical feasibility of utilizing reactors for chemical manufacturing, studies will be undertaken on the use of the kinetic energy of reactor fission fragments for nitrogen fixation.	100,000
***Research Triangle Institute of North Carolina Durham, N.C.	Combines research efforts of the University of North Carolina, North Carolina State College and Duke University, and emphasis will be placed on low-level tracer studies, fission product uses, soil moisture studies and quality control techniques.	160,400

(more)

<u>NAME AND ADDRESS OF ORGANIZATION</u>	<u>WORK UNDERTAKEN</u>	<u>AMOUNT</u>
Textile Research Center North Carolina State College Raleigh, N.C.	Experimental investigation of fiber modification by radiation induced <u>in situ</u> polymerization of monomers on fibers, yarns, or fabrics. Potential nuclear gaging applications in the textile industry will also be studied.	\$66,000
**Textile Research Institute Princeton, N.J.	To determine the potential for using radioisotope techniques in research, development and manufacturing of textiles and related technical problems directly affecting the industry, as well as the possible impact of these techniques on the industry.	14,200
U.S. Radium Corporation Morristown, N.J.	To develop and design a Krypton-85 static eliminator aimed at extending the technique to a wider range of industrial applications. The inherent safety of Krypton-85 will permit the technique to be used in new applications.	37,500

UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON 25, D. C.

June 2, 1959

MEMORANDUM FOR ALL HOLDERS OF AEC 994/5

1. Copy (ies) 39 of AEC 994/5 was (were)  
*Done* distributed to your office on May 20, 1959.

2. Please change the number of this paper from AEC 994/5  
to AEC 158/9.

W. B. McCool  
Secretary

*6-2-59*

UNCLASSIFIED  
May 20, 1959

158/9  
ARC ~~954/9~~  
COPY NO. 39

ARC  
158  
9

ATOMIC ENERGY COMMISSION

ISOTOPE EQUIPMENT TRAINING GRANTS - FIRST ROUND

Note by the Secretary

1. The General Manager has requested that the attached memorandum from the Director of Isotope Development be circulated for the information of the Commission.

2. The Assistant General Manager for Research and Industrial Development has appended the following comments to the attached memorandum:

"I have recently approved the first round of equipment training grants under the recently established program of the Office of Isotopes Development. The basis for my approval is set forth in the attached memorandum from Dr. Aebersold."

"At the present time, equipment training grants of DRD, DEM and OID are separately approved and announced. Commencing in FY 1960 we plan to arrange for the approval of equipment grants in each of the three programs on the same time schedule. This would simplify coordination, enable the preparation of one approving document, and permit simultaneous announcement of awards."

W. B. McCool  
Secretary

<u>DISTRIBUTION</u>	<u>COPY NO.</u>	<u>DISTRIBUTION</u>	<u>COPY NO.</u>
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Deputy Gen. Mgr.	8	Inspection	30
Asst. Gen. Mgr.	9	Licensing & Regulation	31-32
Asst. Gen. Mgr. R&ID	10	Operations Analysis	33
Asst. Gen. Mgr. Adm.	11-12	Reactor Development	34-36
General Counsel	13-16	Research	37
Biology & Medicine	17	D. C. Office	38
Congr. Relations	18	Secretariat	39-43

5-20-59

UNCLASSIFIED

UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON 25, D. C.

May 12, 1959

MEMORANDUM

TO : A. Tammaro, Assistant General Manager  
for Research and Industrial Development

FROM : Paul C. Aebersold, Director  
Office of Isotopes Development

SUBJECT: GRANTS FOR EQUIPMENT TO EDUCATIONAL INSTITUTIONS FOR  
ADVANCEMENT OF RADIOISOTOPE TECHNOLOGY TRAINING

SYMBOL : OID:IT:HHY

In accordance with AEC 994/2, dated May 19, 1958, and memorandum approved by the General Manager on December 11, 1958 your consideration and approval is requested for the following award of grants totaling \$251,704 as listed in the attachment.

FY 1959 funds have been allocated and are available for these grants. Proposals being recommended herein, have specifically been submitted under the Atomic Energy Commission's isotope educational assistance program, announced December 24, 1958, for grants in equipment to be used in radioisotope technology education.

The grants have been reviewed by an internal committee on training and education comprised of staff members of the Office of Isotopes Development. Evaluations were made in accordance with criteria outlined in the "Guide" as approved by the Office of the General Manager for submission of proposals and consistent with the objectives and funds available for the program. All proposals considered in this round provide technical students with the type of training essential to the industrial use and application of radioisotopes. As described below some institutions are in a position to offer immediately, in addition to undergraduate and graduate instruction, training to practicing industrial scientists and engineers. Others, with the assistance of these equipment grants, will be in a position to offer similar training opportunities after their courses are established.

Consideration has been given to two types of proposals. One type is from engineering schools that have an established and active program in nuclear education, and the other is from the smaller liberal arts colleges, most of whose technical graduates are eventually absorbed by local industry. Ability of a school to offer diversified radioisotope and radiation training to practicing industrial scientists and engineers is a prime factor in selecting the former. In the latter cases a small grant

UNCLASSIFIED

enables these schools to materially strengthen their science programs and the resultant contribution their graduates can make to expanding the industrial utilization of radioisotopes.

Another most important consideration particularly, in these initial grants, is the opportunity for early introduction of this equipment into existing curricula or implementation of new courses for the fall semester of this year.

This is the first round of a series of future awards to be made within the limits of funds available, and consistent with the policy and criteria established by the Commission. Approximately \$298,000 will be available for a second round of awards to be made early in June. To date over 550 inquiries have been answered on the Commission's new program of assistance to educational institutions. Formal proposals are being received at an increasing rate, however, due to the recent announcement of the program a large backlog is not expected until next fiscal year.

Each of the proposed grants has been coordinated with the Divisions of Reactor Development and Biology and Medicine. In this review it was recognized that there are basic lectures, experiments and instrumentation common to the training programs of the three divisions. Instruction in the principles of radiation and radioactivity such as the decay laws, and measurement techniques are essential to any applied use of atomic energy. This mutual interest, however, does not mean that course emphasis and objectives are identical. Proposals which we support will train technical students to use isotopes and radiation.

Specifically, I would like to call to your attention two proposed grants, from the University of Virginia and Stanford University. Both institutions have previously submitted equipment grant proposals under the Reactor Development Program. Awards were made by Reactor Development with certain disallowances for equipment due to minor program interests and lack of sufficient funds. Both the University of Virginia and Stanford University have submitted new proposals under the Isotopes Development equipment grant program. These proposals set forth a program of training in isotope applications technology and are of direct and major interest to our objectives of accelerating widespread industrial use of radioisotopes.

Plans are underway for FY 60 to make joint announcements of equipment grants and joint assistance for proposals of mutual interest. Since the other Divisions are not funded presently for mutual support of common portions of course proposals or equipment, we wish to proceed with proposals of immediate interest to us.

I recommend that you approve the proposed grants listed in Appendix "A". These proposals meet our published criteria and are consistent within proposed program objectives for the integration of radioisotope technology training, in the engineering and physical science curricula of accredited colleges and universities.

UNCLASSIFIED

Copies of a draft press release and draft letter to the JCAE, GAC, and NSF are attached as Enclosures "B" and "C".

APPROVED:

/s/ A. Tammaro  
A. Tammaro, Assistant General Manager  
for Research & Industrial Development

5/12/59  
Date

Enclosures:

- "A" - Financial Grants to Educational Institutions  
Annex 1 to Encl. "A" Proposals not Acted Upon
- "B" - Draft Press Release
- "C" - Draft Letter to JCAE, GAC, and NSF.

UNCLASSIFIED

ENCLOSURE "A"

FINANCIAL GRANTS TO EDUCATIONAL INSTITUTIONS  
FOR RADIOISOTOPE TECHNOLOGY TRAINING

<u>Institution &amp; Location</u>	<u>Amount</u>
University of North Carolina Chapel Hill, North Carolina	\$ 13,282
University of Virginia Charlottesville, Virginia	18,850
Stanford University Stanford, California	20,488
St. Joseph's College Philadelphia, Pennsylvania	20,000
North Georgia College Dahlonega, Georgia	4,926
West Virginia University Morgantown, West Virginia	26,857
Walla Walla College College Place, Washington	3,535
Kansas State University Manhattan, Kansas	44,453
Louisiana State University Baton Rouge, Louisiana	39,382
Xavier University of Louisiana New Orleans, Louisiana	2,755
Purdue University Lafayette, Indiana	52,353
Gustavus Adolphus College St. Peter, Minnesota	4,823
Total	<u>\$251,704</u>

UNCLASSIFIED

ANNEX 1 TO ENCLOSURE "A"

The following proposals have been deferred pending additional information and further evaluation. All will be considered for selection in the next round.

Oregon State College Corvallis, Oregon	\$83,491
Colorado School of Mines & Research Foundation Golden, Colorado	69,315
Virginia Polytechnic Institute Blacksburg, Virginia	73,446
St. Olaf College Northfield, Minnesota	7,105
University of Arizona Tucson, Arizona	64,703
Colorado State University Fort Collins, Colorado	67,752

In addition, the following proposals were not received in time for consideration in the first round.

Georgia Institute of Technology Atlanta, Georgia	69,025
Fordham University New York, New York	50,044
Western Michigan University Kalamazoo, Michigan	4,073
University of Oregon Eugene, Oregon	10,980
University of Oklahoma Norman, Oklahoma	24,193
Davidson College Davidson, North Carolina	18,993

UNCLASSIFIED

ENCLOSURE "B"

DRAFT PRESS RELEASE

AEC AWARDS 12 GRANTS TOTALING \$251,704 TO ENCOURAGE  
RADIOISOTOPE TECHNOLOGY TRAINING

1. Chairman John A. McCone of the Atomic Energy Commission announced today Commission approval of grants totaling \$251,704 to 12 American colleges and universities. The grants are a part of AEC's new program of assistance announced last December, for education and training in radioisotope principles and technology.

2. These awards are for the purpose of initiating and expanding college and university training programs in radioisotope technology. An increase in the number of technical graduates with the capability of utilizing radiation as an industrial tool, is expected to contribute significantly to the expanding uses of radioisotopes and radiation.

3. These grants are the first of a series of awards to be made under the Commission's new radioisotope technology training program.

4. Also considered as part of the first series is a grant to the University of California, announced on February 13, 1959, for the purchase of equipment to be used in three radioisotope training courses to be offered this summer at the Berkeley campus. The laboratory equipment and instrumentation will also be used in connection with the regular undergraduate curricula in science and engineering.

5. A second round of awards will be announced in June, 1959.

UNCLASSIFIED

6. Detailed information on the program and instructions for the submission of proposals may be obtained by writing the Director, Office of Isotopes Development, U.S. Atomic Energy Commission, Washington 25, D. C.

7. The awards announced today are as follows: (As shown in Enclosure "A".)

UNCLASSIFIED

ENCLOSURE "C"

DRAFT LETTER TO JCAE, GAC, AND NSF

1. On December 24, 1958, the Atomic Energy Commission announced a new program of assistance to colleges and universities for advancing education and training in radioisotope technology. Information on the first award made under this program to the University of California was transmitted to you in letter dated February 19, 1959.

2. The enclosed listing gives the name of the educational institutions and the amount of the grant to be awarded to each in this first series to be made under this new program administered by the Office of Isotopes Development. The purpose of these grants is to stimulate graduate and undergraduate training in the principles and techniques of radioisotope applications as they are applied to industry.

3. Approximately 550 inquiries have been received from 390 educational institutions since announcement of the program last December. To date 25 formal proposals for assistance have been received. Continuous evaluation is being made of all new proposals for awards to be made at a future date.

*Anthony Bergeson 21*

**AEC**

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

No. B-74  
Tel. HAZELWOOD 7-7831  
Ext. 3446

FOR IMMEDIATE RELEASE  
(Monday, May 18, 1959)

**AEC AWARDS 12 GRANTS TOTALING \$251,704 TO ENCOURAGE  
RADIOISOTOPE TECHNOLOGY TRAINING**

Chairman John A. McCone of the Atomic Energy Commission announced today Commission approval of grants totaling \$251,704 to 12 American colleges and universities. The grants are a part of the Commission's new program of assistance, announced last December, for education and training in radioisotope principles and technology.

These awards are for the purpose of initiating and expanding college and university training programs in radioisotope technology. An increase in the number of technical graduates who are able to use radiation as an industrial tool is expected to contribute significantly to the expanding uses of radioisotopes and radiation.

The grants are the first of a series of awards to be made under the Commission's new radioisotope technology training program. The first series also includes a grant to the University of California, announced in February, for the purchase of equipment to be used in three industrial radioisotope training courses this summer at Berkeley. The laboratory equipment and instrumentation will also be used in connection with the regular undergraduate curricula in science and engineering.

A second round of awards will be announced in June, 1959

Detailed information on the program and instructions for the submission of proposals may be obtained by writing the Director, Office of Isotopes Development, U. S. Atomic Energy Commission, Washington 25, D. C.

The awards announced today are as follows:

(more)

*5-18-59*

FINANCIAL GRANTS TO EDUCATIONAL INSTITUTIONS  
FOR RADIOISOTOPE TECHNOLOGY TRAINING

INSTITUTION AND LOCATION	AMOUNT
University of North Carolina Chapel Hill, North Carolina	\$ 13,282
University of Virginia Charlottesville, Virginia	18,850
Stanford University Stanford, California	20,488
St. Joseph's College Philadelphia, Pennsylvania	20,000
North Georgia College Dahlonega, Georgia	4,926
West Virginia University Morgantown, West Virginia	26,857
Walla Walla College College Place, Washington	3,535
Kansas State University Manhattan, Kansas	44,453
Louisiana State University Baton Rouge, Louisiana	39,382
Xavier University of Louisiana New Orleans, Louisiana	2,755
Purdue University Lafayette, Indiana	52,353
Gustavus Adolphus College St. Peter, Minnesota	4,823
	<hr/>
Total	\$ 251,704

*Handwritten notes at top of page.*

**ADDRESSES**

Dr. Warren C. Johnson, Chm.  
Gen. Adv. Div., NEAC

Dr. Alan T. Wetmore, Dir.  
Natl. Science Foundation

MAY 15 1950

Honorable Clinton F. Anderson  
Chairman, Joint Committee on Atomic Energy  
Congress of the United States

Dear Senator Anderson:

On November 24, 1949, the Atomic Energy Commission announced a new program of assistance to colleges and universities for advancing education and training in radioisotope technology. Information on the first award made under this program to the University of California was transmitted to you in letter dated February 19, 1950.

The enclosed listing gives the name of the educational institutions and the amount of the grant to be awarded to each in this first series to be made under this new program administered by the Office of Isotopes Development. The purpose of these grants is to stimulate graduate and undergraduate training in the principles and techniques of radioisotope applications as they are applied to industry.

Approximately 200 inquiries have been received from 400 educational institutions since announcement of the program last December. To date, 45 formal proposals for assistance have been received. Continuous evaluation is being made of all new proposals for awards to be made at a future date.

Sincerely yours,

*15/ A. Lawrence*

*Assistant General Manager  
for Research & Industrial Dev.*

*9.422 150/9*

Enclosure

200: A. Lawrence (1)  
Gang, L.A. (1)

OSD:EE	OSD:IT	OSD:DO	OSD:AD	OSD:GSA
NEYoungman	NEYoung	NEYounger	NEYounger	
5/13/50	5/13/50	5/13/50	5/13/50	5/13/50

**FINANCIAL GRANTS TO EDUCATIONAL INSTITUTIONS FOR  
DEVELOPING ENGLISH TRAINING**

<b>Institution &amp; Location</b>	<b>Amount</b>
University of North Carolina Chapel Hill, North Carolina	\$13,800
University of Virginia Charlottesville, Virginia	18,800
Stanford University Stanford, California	20,488
St. Joseph's College Philadelphia, Pennsylvania	20,000
North Georgia College Dahlonega, Georgia	4,906
West Virginia University Martinsburg, West Virginia	25,877
Walla Walla College College Place, Washington	3,535
Massachusetts State University Northampton, Massachusetts	14,493
Louisiana State University Baton Rouge, Louisiana	28,328
McLaurin University of Louisiana New Orleans, Louisiana	8,777
Purdue University Lafayette, Indiana	22,323
Mississippi State College St. Peter, Mississippi	4,800
<b>Total.....</b>	<b>\$231,794</b>

RECEIVED  
 RECEIVED FROM THE BUREAU OF  
 EDUCATION

OFFICE OF THE  
 COMMISSIONER OF EDUCATION

DATE:

INDEX: Isotopes 21

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TO:

FROM:

SUMMARY: AEC 267/53 - REPORT OF EDUCATION AND TRAINING ACTIVITIES OF  
DIVISIONS OF REACTOR DEVELOPMENT, BIOLOGY AND MEDICINE,  
AND ISOTOPE DEVELOPMENT  
Memo in paper presents a brief review of the history and  
a report of the current status of the Education and  
Training program.

FILED: Reactor Devel, 21 Reactor Tech,

INDEXER: date of paper: 4-16-59  
date of memo: 3-6-59

REMARKS:

**CONFIRMED TO BE UNCLASSIFIED**  
DOE NSI DECLASSIFICATION REVIEW E.O. 12958  
BY JOI S. BUCKNER DOE/NN-523

U. S. ATOMIC ENERGY COMMISSION  
**CORRESPONDENCE REFERENCE FORM**

4-16-59

FEB 19 1959

Honorable William F. Anderson  
Chairman, Joint Committee on Atomic Energy  
Congress of the United States

Dear Director Anderson:

On December 23, 1957, the Atomic Energy Commission announced a new program of assistance to colleges and universities for education and training in nuclear science principles and technology. The program is part of the broad Commission effort to increase the number of scientists, engineers and technicians qualified to contribute to and support the growing industrial use of nuclear science and technology.

The first program, which will award funds under this program is to the University Extension, University of California at Berkeley, in the amount of \$20,000. Several special industrial training courses will be scheduled for this amount. The equipment will also be used in regular curriculum study for undergraduates and graduate nuclear science teaching.

Sincerely yours,

SIGNED, A. R. LUEDECKE

General Manager

Cong. Com. (2)  
Secretary (1)  
Gen. Mgr. (1)  
A. Tamargo (1)

RECEIVED  
U.S. Atomic Energy Commission  
MAR 1 1959  
MAR 1 1959

65-112

Isotopes 21

FEB 19 1958

Dr. Warren C. Johnson, Chairman  
General Advisory Committee to the  
U. S. Atomic Energy Commission

Dear Dr. Johnson:

On December 24, 1957, the Atomic Energy Commission announced a new program of assistance to colleges and universities for education and training in radiology principles and technology. The purpose of the program is one phase of a Commission effort to increase the number of scientists, engineers and technicians qualified to contribute to and support the growing industrial use of radiology and radiation.

The first proposal received and award made under this program is to the University Extension, University of California at Berkeley, in the amount of \$50,000. Several special industrial training courses will be scheduled for this summer. The equipment will also be used in regular curriculum study for undergraduate and graduate nuclear science teaching.

At the present time no other proposals have been received under the new equipment grant program of the Office of Isotopes Development although over 100 inquiries concerning the program have been made. Continuous evaluation will be made as new proposals are received for awards to be made at a future date.

Sincerely yours,

SIGNED, A. R. LUEDECKE

General Manager

Secretariat (1)  
General Manager (1)  
A. Tammaro (1)

2-19-58

FEB 19 1959

Dr. Alan R. Natanson, Director  
National Science Foundation

Dear Dr. Natanson:

On December 24, 1958, the Atomic Energy Commission announced a new program of assistance to colleges and universities for education and training in radiological principles and technology. The purpose of the program is one phase of a Commission effort to increase the number of scientists, engineers and technicians qualified to contribute to and support the growing industrial use of radiological and radiation.

The first proposal received and award made under this program is to the University Extension, University of California at Berkeley, in the amount of \$50,000. Several special industrial training courses will be scheduled for this summer. The equipment will also be used in regular curriculum study for undergraduates and graduate nuclear science teaching.

At the present time no other proposals have been received under the new equipment grant program of the Office of Isotopes Development although over 100 inquiries concerning the program have been made. Continuous evaluation will be made as more proposals are received for awards to be made at a future date.

Sincerely yours,

SIGNED, A. R. LUEDECKE

General Manager

Secretariat (1)  
General Manager (1)  
A. Tammaro (1)

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2-11-59

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*110-5-21*

A. Tammaro, Assistant General Manager for  
Research and Industrial Development

February 15, 1959

C. L. Dumas, M. D., Director  
Division of Biology and Medicine

**AWARD OF ISOTOPE EQUIPMENT GRANTS - APPROVAL FOR**

**SYMBOL: BI:RD:RME**

In accordance with the recommendations of the General Manager in AEC 761/2, dated August 12, 1957, your approval is requested for the award of grants in total sum of \$316,717, as listed in the attachment. Also attached is a list of the proposals rejected as not appropriate to the program, or deferred for re-submission.

These awards will constitute the sixth series made through the program of financial assistance to colleges and universities for the purpose of purchasing special equipment to be used in laboratory instruction in nuclear technology as applied to the life sciences.

Information on the previous awards in this program was circulated as follows:

First Series	AEC 761/5	October 14, 1957
Second Series	AEC 761/6	November 25, 1957
Third Series	AEC 761/7	February 27, 1958
Fourth Series	AEC 761/8	June 3, 1958
Fifth Series	AEC 761/9	November 12, 1958

The grants proposed in this sixth request meet the criteria as outlined in AEC 761/2 and are within the funding limitations set forth in the same paper. The total amount of these grants is within the amount available at this time from Division funds set aside for this program. These grants have been reviewed by educators prominently engaged in the scientific areas indicated by these grants and by the technical representatives of the Division of Biology and Medicine.

*RECEIVED*

*AWD AEC 761/10 TH H-2A-21*

*2-18-59*

FEB 18 1959

Your approval for the award of these grants is requested. Attached for your concurrence are drafts of letters to the JC&E and GAG, and a press announcement. Appropriate staff compartments have been obtained. A copy of this memorandum with attachments will be sent to the Secretary for circulation to the Commission for information.

Attachments:

- "A" - A List of awards
- "B" - Draft Letter, JC&E \*
- "C" - Draft Letter, GAG \*
- "D" - Draft Press Release \*

Approved: 1st A. Tamayo MAR 2 1959  
 A. TAMAYO DATE

- cc: J.C. Whitnah/DBM  
 H.A. Starwood/DEM  
 Secretariat ←  
 J.R. Wolf/OGC  
 G. Packard/DEM

\* circ in ACC 3/6/59 MIN + A-21

BM:DD:MMN:NUTTELL  
 BM:DD:VME:ROLTON

BM:PC	ADA	DEP DIRECTOR	DIRECTOR	OGC	AGM/RID
Whitnah	Starwood	Shilling	Dunham	JRWolf	
2-16-59	2- -59	2- -59	2- -59n	2- -59	2- -59

ATTACHMENT #A\*

Financial Grants to Educational Institutions

Division of Biology and Medicine

February 1959

<u>Institution</u>	<u>Previous Grants</u>	<u>Sixth Series</u>
1. Adelphi College Garden City, New York	-0-	\$ 7,500
2. University of Alabama Medical Center Birmingham 3, Alabama	-0-	8,000
3. Ashbury College Wilmore, Kentucky	-0-	6,000
4. University of California University Extension, and Donner Laboratory Berkeley, California	-0-	19,617
5. University of Cincinnati Institute of Industrial Health of the Kettering Laboratory Cincinnati, Ohio	-0-	14,058
6. University of Dayton Dayton 9, Ohio	-0-	6,252
7. University of Delaware Newark, Delaware	-0-	11,500
8. University of Denver Denver, Colorado	\$ 3,403	4,454
9. Duke University School of Medicine..... Durham, North Carolina		20,000
Department of Zoology.....	18,925	
10. Emmanuel Missionary College Berrien Springs, Michigan	-0-	3,694
11. Georgetown University..... Washington, D. C.		16,133
School of Medicine	20,000	

	<u>Institution</u>	<u>Previous Grants</u>	<u>Sixth Series</u>
12.	University of Illinois Urbana, Illinois College of Veterinary Medicine.....		\$ 11,850
	College of Veterinary Medicine.....	\$ 5,521	
	College of Pharmacy (Chicago).....	9,000	
	College of Medicine (Chicago).....	30,000	
13.	University of Illinois Radiocarbon Laboratory Urbana, Illinois	-0-	3,570
14.	Immaculate College Immaculate, Pennsylvania	-0-	3,640
15.	Kansas State College Manhattan, Kansas	-0-	30,278
16.	Loretto Heights College Loretto, Colorado	-0-	2,500
17.	Manchester College North Manchester, Indiana	-0-	1,463
18.	University of Maryland School of Medicine.....		11,910
	Baltimore 1, Maryland School of Medicine.....	8,000	
	Department of Chemistry.....	20,000	
19.	Michigan State University East Lansing, Michigan	-0-	10,000
20.	University of Mississippi Medical Center Jackson, Mississippi	-0-	13,500
21.	University of New Hampshire Durham, New Hampshire	-0-	13,775
22.	New York University Bellevue Medical Center New York, New York	18,000	1,025
23.	Notre Dame College St. Louis, Missouri	5,000	3,500
24.	Oklahoma State University Stillwater, Oklahoma	19,500	23,185

	<u>Institution</u>	<u>Previous Grants</u>	<u>Sixth Series</u>
25.	Purdue University Lafayette, Indiana	\$25,000	\$15,000
26.	Burgers, The State University Newark 4, New Jersey	-0-	10,055
27.	Saint Joseph College West Hartford 7, Connecticut	-0-	3,500
28.	University of Texas M. D. Anderson Hospital and Tumor Institute Houston, Texas	16,267	8,935
29.	University of Texas - Main University..... Austin 12, Texas		9,753
	Medical Branch, Galveston, Texas.....	5,035	
30.	University of Texas - Southwestern Medical School Dallas 19, Texas	7,000	8,830
31.	University of Vermont Burlington, Vermont	12,678	2,200
32.	University of Wisconsin - College of Agriculture..... Madison 6, Wisconsin		8,810
	College of Letters & Sciences.....	11,000	
	School of Medicine.....	20,000	
	Department of Biochemistry.....	4,300	

Total, Sixth Series - \$316,717

~~OFFICIAL USE ONLY~~

FINANCIAL GRANTS TO EDUCATIONAL INSTITUTIONS  
DIVISION OF BIOLOGY AND MEDICINE

Rejected Proposals

University of Alabama Medical Center  
School of Dentistry  
Birmingham 5, Alabama \$11,750

Proposals Deferred for Reconsideration

Ball State Teachers College  
Muncie, Indiana 8,465

Chicago College of Osteopathy  
Chicago 15, Illinois 13,728

Ohio State University  
College of Agriculture and Home Economics  
Columbus 10, Ohio 17,580

Ohio State University  
Research Institute of Nutrition and  
Food Technology  
Columbus 10, Ohio 86,585

Saint Mary's College  
Winona, Minnesota 28,574

University of Virginia School of Medicine  
Charlottesville, Virginia 20,742

The Worcester Foundation for Experimental Biology  
Shrewsbury, Massachusetts 11,200

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AEC

*See tapes 21*

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

No. B-21  
Tel. Hazelwood 7-7831  
Ext. 3446

FOR IMMEDIATE RELEASE  
(Friday, February 13, 1959)

AEC MAKES GRANT FOR REGIONAL COURSES  
IN INDUSTRIAL RADIOISOTOPE TECHNIQUES

Chairman John A. McCone of the Atomic Energy Commission today announced a grant of \$80,000 to the University of California for the purchase of equipment for use in industrial radioisotope training courses. The grant is the first to be made under a recently announced program of assistance to colleges and universities for education and training in radioisotope principles and technology.

Increased opportunities for industrial personnel to learn the technology of using radioactive materials are considered essential for wider application of radioisotopes in industry. As the demand for training in radioisotope techniques increases, the Commission will consider the establishment of regional courses at other locations.

The award to the University of California is for the purchase of laboratory equipment and instrumentation for three special training courses to be offered this summer, and for later use in connection with the regular undergraduate curricula in science and engineering. The three summer courses, designed for industrial scientists and engineers, management executives, and government representatives, are:

(a) A 10-week radioisotope technology study program for practicing industrial scientists and engineers. Applicants will be selected on a nationwide basis to provide for the most qualified group representing a wide range of industrial activity. Through lecture and laboratory experiments, persons experienced in their own specialties also will be equipped with skills in nuclear physics, instrumentation equipment application and designing and handling techniques to guide and supervise new activities using radioisotopes and radiation.

(more)

2-13-59

(b) A one-week nuclear technology survey course for management to assist executives in understanding and effectively supporting their technical people in the application of isotopes and radiation to industrial advancement. A series of laboratory demonstration sessions as well as lectures will be included to acquaint management with radiation equipment and procedures.

(c) A two-week course in radiological regulation and use for local, state, and federal representatives concerned with regulatory and administrative responsibilities in the atomic energy field.

UNCLASSIFIED

AEC 158/8

February 13, 1959

COPY NO. 37

AEC  
158  
8

ATOMIC ENERGY COMMISSION

EQUIPMENT GRANT AWARD FOR RADIOISOTOPE TECHNOLOGY TRAINING

Note by the Secretary

The attached memorandum, and enclosures, from the Office of Isotope Development, is circulated for the information of the Commission. The attachment was approved by the Assistant General Manager for Research and Industrial Development on February 10, 1959.

W. B. McCool  
Secretary

DISTRIBUTION

COPY NO.

Secretary	1
Commissioners	2 - 6
General Manager	7
Deputy Gen. Mgr.	8
Asst. Gen. Mgr.	9
Asst. Gen. Mgr. R&ID	10
Asst. Gen. Mgr. Adm.	11
General Counsel	12 - 15
Biology & Medicine	16
Congr. Relations	17
Finance	18 - 20
Isotope Development	21 - 26
Information	27 - 28
Inspection	29
Licensing & Regulation	30 - 31
Operations Analysis	32
Reactor Development	33 - 35
Research	36
Secretariat	37 - 42

UNCLASSIFIED

UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON 25, D. C.

February 10, 1959

MEMORANDUM

TO : A. Tammaro, Assistant General Manager  
for Research and Industrial Development

FROM : Paul C. Aebersold, Director  
Office of Isotopes Development

SUBJECT: EQUIPMENT GRANT AWARD FOR RADIOISOTOPE TECHNOLOGY  
TRAINING

SYMBOL : OID:IT:HHY

In accordance with AEC Staff Paper 994/2, dated May 19, 1958, and memorandum approved by the General Manager on December 18, 1958, your approval is requested for an award of \$80,000 to

University Extension  
University of California  
2441 Bancroft Way  
Berkeley 4, California

for the purchase of equipment to be used for radioisotope technology training.

Funds have been allocated and are available for this grant. The proposal submitted by the University of California meets the approval criteria for equipment grants under the Isotope Development Program. The equipment will be utilized in three special study programs to be initiated this summer as part of the University Nuclear Engineering Extension Program and in regular science and engineering curricula.

A statement of justification for this equipment grant is attached. A draft press release and draft letters to the JCAE, GAC and NSF are attached for your approval.

Appropriate staff concurrences have been obtained.

APPROVED:

/s/ A. Tammaro 2/10/59  
A. Tammaro, Assistant  
General Manager for  
Research and Industrial Development

Attachments:

- "A" Statement of Justification
- "B" Draft Letter to JCAE, GAC and NSF
- "C" Draft Press Release

UNCLASSIFIED

ENCLOSURE "A"

STATEMENT OF JUSTIFICATION

1. The equipment grant proposal of the University of California meets our immediate needs in industrial training and will permit scheduling the following special industrial training programs during the summer of 1959:

a. Nuclear Technology Study Program

This course is accredited and is directed to the needs of practicing industrial scientists and engineers. Selection will be made from applicants on a nation-wide basis for the most qualified group providing a wide industrial range of activity. The course will provide industry and research groups with persons experienced in their own fields and simultaneously equipped with skills in nuclear physics, instrumentation, equipment application and design, and handling techniques to guide and supervise activities involving radiation.

b. Nuclear Technology Survey

This course is directed to the needs of management to assist executives in understanding and effectively supporting their technical people in the application of isotopes and radiation to industrial advancement. A series of laboratory sessions will be provided to demonstrate equipment and procedures in the nuclear field. Lectures are directed at the executive level that will guide an organization's basic policies and activities as they are affected by radioisotope and radiation applications.

c. Radiological Regulation and Use

This course is to provide basic training in nuclear science, isotope applications, and radiological safety and control for those concerned with regulatory and administrative aspects of the atomic energy field. Appropriate lecture and laboratory demonstrations will be provided to acquaint the student with the basic technical information necessary to cope with problems arising from commercial activities using radioisotopes. Since many of the participants will ultimately serve in an inspection capacity, an extensive program of laboratory experiments will be covered illustrating proper techniques, shielding systems, monitoring equipment, transportation, containment and manipulation of radioactive materials.

At the present time the special training courses described above are not scheduled to be conducted elsewhere in the United States.

UNCLASSIFIED

2. The equipment provided by this grant will become part of a "university equipment pool," thereby permitting maximum utilization throughout the University nuclear education curriculum. The University of California Engineering and Sciences Extension offers approximately 400 evening classes of a technical and scientific nature. Basic experiments and demonstrations will be set up for use in several courses with an average class size of about 25 students. Many of these classes will benefit directly from the opportunity to schedule laboratory work made possible by the availability of the equipment in this proposal. During those periods when the equipment is not in use through specialized training or extension class programs, it will be utilized by other departments such as Public Health, Chemistry, Medical Physics, etc.

3. The equipment grant program of the Office of Isotopes Development has been in effect approximately one month and there are no other formal proposals on file or processed for approval at this time. Since we are in the second half of the fiscal period and we have no experience under this grant program to demonstrate level of interest, proposals submitted will be acted on as they are received. Delayed action on this specific proposal or others of immediate interest pending receipt of a sufficient number of proposals to warrant a round evaluation would effectively curtail training objectives established for FY 1959. As the equipment grant program progresses, a level of interest may be established which will dictate that awards be made under a round system.

4. In view of the time limitation on the University of California for adequate program planning, equipment purchase and course development for the summer offering, it is considered necessary to proceed with this grant as a separate action.

UNCLASSIFIED

5. The equipment grant requested from the University of California has been reduced from \$99,285 to \$80,000 by disallowing certain items not considered essential to implementation of the teaching program proposed.

6. In summary, critical evaluation of this proposal indicates that the award represents an efficient expenditure of funds through maximum equipment utilization as evidenced by the three special industrial courses offered and use in regular class or extension programs.

UNCLASSIFIED

ENCLOSURE "B"

DRAFT LETTER TO JOAE, NSF, AND GAC

1. On December 24, 1958, the Atomic Energy Commission announced a new program of assistance to colleges and universities for education and training in radioisotope principles and technology. The purpose of the program is one phase of a Commission effort to increase the number of scientists, engineers and technicians qualified to contribute to and support the growing industrial use of radioisotope and radiation.

2. The first proposal received and award made under this program is to the University Extension, University of California at Berkeley, in the amount of \$80,000. Several special industrial training courses will be scheduled for this summer. The equipment will also be used in regular curriculum study for undergraduate and graduate nuclear science teaching.

3. At the present time no other proposals have been received under the new equipment grant program of the Office of Isotopes Development although over 100 inquiries concerning the program have been made. Continuous evaluation will be made as new proposals are received for awards to be made at a future date.

UNCLASSIFIED

ENCLOSURE "C"

DRAFT PRESS RELEASE

AEC MAKES GRANT FOR REGIONAL COURSES IN INDUSTRIAL  
RADIOISOTOPE TECHNIQUES

1. Chairman John A. McCone of the Atomic Energy Commission today announced a grant of \$80,000 to the University of California for the purchase of equipment for use in industrial radioisotope training courses. The grant is the first to be made under a recently announced program of assistance to colleges and universities for education and training in radioisotope principles and technology.

2. Increased opportunities for industrial personnel to learn the technology of using radioactive materials are considered essential for wider application of radioisotopes in industry. As the demand for training in radioisotope techniques increases, the Commission will consider the establishment of regional courses at other locations.

3. The award to the University of California is for the purpose of laboratory equipment and instrumentation for three special training courses to be offered this summer, and for later use in connection with the regular undergraduate curricula in science and engineering. The three summer courses, designed for industrial scientists and engineers, management executives, and government representatives are:

(a) A 10-week radioisotope technology study program for practicing industrial scientists and engineers. Applicants will be selected on a nationwide basis to provide for the most qualified group representing a wide range of industrial activity. Through lecture and laboratory experiments, persons experienced in their own specialties also will be equipped with skills in nuclear physics, instrumentation, equipment application and designing, and handling techniques to guide and supervise new activities using radioisotopes and radiation.

UNCLASSIFIED

(b) A one-week nuclear technology survey course for management to assist executives in understanding and effectively supporting their technical people in the application of isotopes and radiation to industrial advancement. A series of laboratory demonstration sessions as well as lectures will be included to provide management with some degree of "feel" for radiation equipment and procedures.

(c) A two-week course in radiological regulation and use for local, state, and federal representatives concerned with regulatory and administrative responsibilities in the atomic energy field.

*Isotope 21*

*3405*

*Office Memorandum* • UNITED STATES GOVERNMENT

TO : W. B. McCool, Secretary

DATE: February 11, 1959

FROM : *B. C. Andersson*  
Baul C. Andersson, Director  
Office of Isotopes Development

SUBJECT: EQUIPMENT GRANT AWARD FOR RADIOISOTOPE TECHNOLOGY TRAINING

SYMBOL: OI:IT:HHY

It is suggested that the attached memorandum, and enclosures, on the above entitled subject be circulated to the Commission as an information paper.

Enclosures-

*Reproduced as  
AEC 158/8  
2/13/59*

*8-11-59*

*Isotopes 21*

**AEC**

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

No. A-340  
Tel. Hazelwood 7-7831  
Ext. 3446

FOR IMMEDIATE RELEASE  
(Wednesday, December 24, 1958)

**AEC LAUNCHES NEW PROGRAM TO ASSIST IN RADIOISOTOPE TRAINING**

John A. McCone, Chairman of the Atomic Energy Commission, today announced establishment by the Commission of a new program of assistance to colleges and universities for education and training in radioisotope principles and technology.

The purpose of the program, which is one phase of a Commission effort to foster widespread use of radioisotopes, is to increase the number of scientists, engineers and technicians qualified to contribute to and support the growing industrial use of radioisotopes and nuclear radiation.

The new program provides for direct financial assistance to colleges and universities in obtaining demonstration apparatus, student laboratory equipment and training aids needed to offer adequate laboratory course work in radioisotope technology. Examples of apparatus and equipment available under the program are:

- ionization chambers;                      Geiger-Mueller counters;
- scintillation counters;                    gas flow counters;
- scalers and ratemeters;                   pulse analyzers;
- radioactivity standards;                   radiation sources;
- training aids illustrating industrial applications of isotopes; and equipment for the safe storage, proper handling and disposal of radioactive materials.

(more)

*cy filed Boston Dec. 21*

*AS 10-21*

Requirements for submission of proposals for equipment grants under this program and the criteria used in evaluating proposals may be obtained from the Director, Office of Isotopes Development, U.S. Atomic Energy Commission, Washington 25, D. C., to whom proposals should be addressed.

This new program is offered in addition to the Commission's present assistance under its training, education and information programs. The Commission presently makes available to educational institutions without charge fuel elements for research reactors and subcritical assemblies, lends radioactive source and special nuclear materials, and makes equipment grants to be used in nuclear engineering technology and life sciences courses. In addition, the Commission awards yearly a number of fellowships in nuclear science and engineering, radiological physics, industrial hygiene and industrial medicine, and operates a number of training programs in atomic energy technology for students and teachers. These training programs are conducted at the Oak Ridge Institute of Nuclear Studies, the International School of Nuclear Science and Engineering at the Argonne National Laboratory, and the Summer Institutes for Engineering College Faculty at Brookhaven and Argonne National Laboratories. The Commission also assists in the sponsorship of special summer courses for high school science teachers.

*Isotope-21*

DEC-11 1958

Alvin A. Lindsko, General Manager  
(TDB) A. Yonano, Assistant General Manager for  
Research and Industrial Development  
Paul C. Ashcroft, Director, Office of Isotope Development

**EDUCATION AND TRAINING IN RADIOISOTOPIC PRINCIPLES AND INDUSTRIAL TECHNOLOGY**

**SUBJECT: SID:72B**

AEC staff paper 394/2 "Implementation of the Isotope Development Program," approved by the Commission at Meeting 1375 on May 21, identified the requirement for increased training in industrial isotope technology if the use of isotopes and radiation by industry is to be substantially accelerated. The paper also set forth means for overcoming the present education deficiencies in this area.

The Office of Isotope Development is now ready to implement the isotope technology program through (a) assistance to colleges and universities in the form of equipment grants for the establishment or integration of radioisotope technology training in the engineering and physical sciences curricula and (b) establishment of summer institutes at selected colleges and universities to provide training in the principles and techniques of radioisotopes and for practicing industrial scientists and engineers. The proposed support of undergraduates and graduate training programs bridges the present gap between radioisotope technology training in the life sciences, as supported by the Division of Biology and Medicine, and such incidental radioisotope technology training as is incorporated in the nuclear engineering program supported by the Division of Reactor Development. The proposed summer institute program of industrial isotope training will provide necessary additional training resources to supplement the limited capacity of the Oak Ridge Institute of Nuclear Studies in meeting current industrial training needs.

Funds for the isotope technology activity are approved in the FY 1959 budget.

The attached press release "AEC Launches New Program to Assist in Radioisotope Training" has been approved for release by Division of Information Services. The bulletin "Grants in Equipment to be Used in Radioisotope Technology Education -- Submission of Proposals" has been approved by the Office of the General Council and the Division of Finance and has been discussed with the Division of Biology and Medicine and the Division of Reactor Development to

*cf. Isotope-3*

*12-11-58*

Alvin A. Ladd

-2-

ensure that OIA assistance efforts will not impinge on or duplicate existing support programs. Both the press release and the bulletin reflect the scope of the educational and training program as being within the recently announced Foreign Development Program.

We plan to release the announcement of this activity immediately upon receipt of your approval.

Enclosures:  
Proposed Press Release  
Draft in Spanish...

RECEIVED  
U.S. DEPARTMENT OF STATE  
OFFICE OF THE ASSISTANT SECRETARY  
FOR PUBLIC AFFAIRS

DEC 11 1958  
U.S. DEPARTMENT OF STATE  
OFFICE OF THE ASSISTANT SECRETARY  
FOR PUBLIC AFFAIRS

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12/ /58

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ASST. S. TO

ASST.

ASST.

ASST.

FDI Director: Mr. F. C. ...

12/5/58

12/5/58

UNITED STATES GOVERNMENT

Reference Section

# Memorandum

TO : Spofford G. English, Asst. Gen. Mgr.  
for Research and Development

DATE: February 1, 1962  
(Revised) February 12, 1962

FROM : W. B. McCool, Secretary <sup>Original signed</sup>  
W. B. McCool

SUBJECT: TUITION RATES FOR COURSES ON INDUSTRIAL APPLICATIONS

SYMBOL: SECY:JCH

1. In your memorandum dated January 16, 1962, subject: Tuition Rates for Courses on Industrial Applications, you have requested clarification of certain questions raised in the implementation of the action contained in my memorandum of September 21, 1961, to J. C. Cera on the same subject. I have reviewed the matter as discussed at Meeting 1776 on September 18, 1961, and as recorded in the Minutes of the Meeting. In the light of that review, I make the following observations:

a. The discussion at Meeting 1776 was specifically directed to item 2d - Industrial Applications, on page 143 of ABC 1070/S, which is more specifically described in the policy considerations on page 147;

b. During discussion of item 2d, there was no reference made to tuition rates for applicants from non-profit institutions (other than universities);

c. By interpretation it would seem that the term "university students" could be considered to mean students in the course on Industrial Applications who are attending from a University. Since the attendance is limited, as you have outlined in your memorandum, such an interpretation seems to be proper;

d. Guidance on the foreign industrial tuition rate was not specifically given or requested during discussion of the course on Industrial Applications; and

e. Special items and projects of the nature you have specified in your memorandum were not included in the discussion at the Meeting.

Copy files. Bud 8-62

2/26/62

~~OFFICIAL USE ONLY~~  
~~OFFICIAL USE ONLY~~

Spofford G. English

-2-

February 1, 1962  
(Revised) February 12, 1962

2. Interpretation of Commission guidance on decisions at Commission Meetings is necessarily limited by the record of discussion and decision as set forth in the minutes of the Meeting. There is a notable absence of specific direction in the Commission minutes on the matters you have raised since they were not included in the staff paper under consideration (AEC 1070/8) and were not a matter of discussion. It is my recommendation that you refer this to the General Manager for decision as to the appropriate way to take it up with the Commission.

cc:

Coordinator, Nuclear, Education & Training  
Director, Radiation Standards  
Director, Biology & Medicine  
Director, Isotopes Development

~~OFFICIAL USE ONLY~~  
~~OFFICIAL USE ONLY~~

UNITED STATES GOVERNMENT

# Memorandum

TO : W. B. McCool, Secretary

DATE: SEP 26 1961

FROM: *JCC* J. C. Cera, Coordinator of  
Nuclear Education & Training

SUBJECT: TUITION RATES FOR COURSES ON INDUSTRIAL APPLICATIONS

Reference is made to your memo of September 21, 1961  
subject as above.

A copy of your memo was furnished to E. E. Fowler,  
Acting Director, Division of Isotopes Development  
for appropriate action. The course on Industrial  
Applications is administered by the DID.

9-26-61

*Intopia 57*  
~~OFFICIAL USE ONLY~~

*Ref Sec*

UNITED STATES GOVERNMENT

# Memorandum

TO : J. C. DeFa, Coordinator of Nuclear  
Education and Training

DATE: September 21, 1961

FROM : W. B. McCool, Secretary

SUBJECT: TUITION RATES FOR COURSES ON INDUSTRIAL APPLICATIONS

SYMBOL: SECY:JCH

1. We informed your office on September 19, 1961, that at Meeting 1776 on September 18, during the discussion of the FY 1963 Budget Estimates for the Training, Education and Information Program, the Commission requested that participants in courses on Industrial Applications be charged the following tuition rates:

Industrial .....	\$100 per week
Foreign and Government .....	50 per week
University students .....	waiver

2. The General Manager has directed you to take the action required by the above request. Any pertinent correspondence should be provided the Office of the Secretary.

cc: General Manager  
Deputy General Manager  
Assistant General Manager  
General Counsel  
Controller (3)

*[Faint, illegible stamp or handwritten notes]*

~~OFFICIAL USE ONLY~~

*Copy filed: Bud st. 63*

*9-21-61*

AEC

Prototypes - 21  
ANN

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

No. IN-252  
Tel. Hazelwood 7-7831  
Ext. 4463

FOR IMMEDIATE RELEASE  
(Thursday, September 7, 1961)

TRAINING SYSTEMS IN RADIOCHEMISTRY  
AND RADIOISOTOPE ENGINEERING

The Atomic Energy Commission has made available the first of a series of engineering drawings related to training in radioisotope engineering for colleges and universities. Twelve prototype instruments have been developed to demonstrate a variety of principles and uses of radioisotopes and radiation. Working models of these instruments may be built from the drawings for laboratory use. These demonstrate such things as low level counting, gamma ray spectrometry, leak detection, tracer studies and other useful research and industrial radiation techniques.

The project is part of a continuing educational program in isotope technology conducted by the Office of Isotopes Development. The objectives of these training systems are to increase training value, decrease cost of construction, and optimize general usefulness in the training laboratory.

These training systems have greater student access and flexibility for demonstration purposes than the corresponding commercial counterpart whose stringent specifications, cost and size limit their availability, and usefulness in the classroom. Another motivation of the development of these systems is the simple economics of equipping the many educational institutions and training laboratories which are seeking to include laboratory isotope training in their curricula.

These training systems can be divided into three separate groups for the following demonstrations:

(more)

9-7-61

I. Radiochemical Instrumentation Group

- A. Liquid scintillation counting of carbon-14 and tritium - CAPE-812
- B. Low-level beta counting - CAPE-814
- C. Health physics monitoring of natural radon - CAPE-815
- D. Tracer leak detection - CAPE-816
- E. Gamma ray spectrometry - CAPE-817
- F. Solid state alpha detectors - CAPE-818

Much of the equipment in this group is interchangeable for the various demonstrations, thus resulting in a substantial savings in construction cost.

II. Industrial Gauging Group

- A. Beta thickness gauging - CAPE-811
- B. Density and level gauging - CAPE-813
- C. Tracer flow rates - CAPE 819
- D. Tracer wear studies - CAPE-820

III. Research and Process Analyses

- A. Gas chromatography and radiotracer system - CAPE-821
- B. Carbon-hydrogen analyzer - CAPE-822

At the present time, the instruments developed under the project are being tested and evaluated at several universities and training laboratories.

The engineering materials will be organized into packages and announced in TID-4100, Engineering Materials List, Supplements 13 and 14. This catalog is available without charge through the Office of Technical Information Extension, P. O. Box 62, Oak Ridge, Tenn. Code numbers assigned to the

(more)

drawings are CAPE-811 through CAPE-822. The first three packages CAPE-811, 812 and 813 are now available to the public. The remaining packages will be reproduced and announced, through the catalog TID-4100, as they become available. Full-sized, blueline prints can be purchased from the Cooper-Trent Blueprint & Microfilm Corp., 2701 Wilson Boulevard, Arlington 1, Va. These prints will be sold at \$0.17 per square foot, f.o.b. contractor's plant.

The Office of Technical Information Extension will continue to prepare and distribute, free of charge, Supplements to the Engineering Materials List to announce new materials that are available.



UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON 25, D.C.

AUG 15 1961

MEMORANDUM FOR CHAIRMAN SEABORG

THROUGH GENERAL MANAGER

SUBJECT: FOREWORD FOR SPANISH VERSION OF RADIOISOTOPE MANUAL

We have arranged for the International Cooperation Administration to have the attached instructors and students manuals entitled "Radioisotope Experiments for the Chemistry Curriculum" translated into Spanish, printed and distributed throughout Latin America. Since this is the first publication in the field of nuclear energy which will be widely disseminated to students and instructors throughout Latin America, we believe it would be appropriate for it to contain a foreword over your signature.

The Office of Isotopes Development has prepared the attached draft foreword for your possible use. If you approve it, we would appreciate your signing and returning it to us so that we, in turn, may transmit it to ICA for inclusion in the Spanish versions of the manuals.

Signed by:  
Myron B. Kratzer

A. A. Wells, Director  
Division of International Affairs

Attachments:

1. Instructors and Students Manuals
2. Draft Foreword

cc: Chairman Seaborg (2)      Commissioner Wilson  
    Commissioner Graham      General Manager  
    Commissioner Heworth      AECIA  
    Commissioner Olson      Secretariat

X-IA-5-Latin America  
AD-21

8-15-61

**RADIOISOTOPE EXPERIMENTS FOR THE CHEMISTRY CURRICULUM**  
Spanish Edition

**Foreword**

Radioisotopes have amply demonstrated, in thousands of applications throughout the world, their enormous value and benefit to human welfare. In medicine, they are contributing to better health through their use in improved diagnostic procedures, research on metabolism and disease, and radiation therapy. In agriculture, radioisotopes are increasing production through better understanding of growth processes, fertilizer action, and insect control methods. In industry, they have found outstanding success as tracers in research and as sources of penetrating radiation in many types of sensitive gauges and radiography equipment. Tangible benefits from these industrial applications include increased efficiency of process operations, improved quality of consumer products, reduced scrap, important savings in raw materials, and improved safety of operating personnel.

World-wide recognition of the benefits to be derived from the powerful uses of radioisotopes provides a strong incentive for further rapid growth in the number and variety of radioisotope applications. A prerequisite for the expansion of these applications, however, is availability of trained personnel. The assurance that the necessary scientific personnel can become available can only be achieved by broadening the opportunities for education and training in radioisotope handling principles and applications.

In the U. S., the Atomic Energy Commission has recognized this need and has established a broad program of educational assistance. These program efforts include the sponsorship of courses designed to enrich faculty education, the development of radioisotope training devices and course manuals, and equipment grants to U. S. educational institutions to enable them to establish radioisotope sources.

This laboratory manual, which was developed by Nuclear-Chicago Corporation under contract with the UNAC's Office of Isotope Development, is among the most widely useful of the educational material developed under the Commission's program. It is designed to introduce the undergraduate student to the role that radioisotopes are playing as valuable tools in chemistry and research in general. The experiments serve to demonstrate the simplicity and availability of the basic principles involved without requiring the advanced detection techniques used in the research laboratory. One single counting system can handle the normal equipment requirements of a ten-student laboratory section. The chemistry involved in each

Many colleges and universities in which Spanish is the language of instruction have already initiated training programs in radioisotope techniques, while their graduates have contributed to world advances in the medical, agricultural and scientific benefits of these new atomic tools. It is hoped that the broader availability of this manual will assist the growth and diversification of these programs.

15) Glenn T. Seaborg

SEP 7 1961



U. S. ATOMIC ENERGY COMMISSION  
**CORRESPONDENCE REFERENCE FORM**

DATE:

**INDEX:** ISOTOPES-21-Education & Training

~~ISOTOPES-21~~  
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~~ISOTOPES-21~~  
~~ISOTOPES-21~~

TO:

FROM:

**SUMMARY:** AEC 267/63: ANALYSIS OF THE SCOPE AND EFFECTIVENESS OF THE EDUCATIONAL AND TRAINING EFFORTS OF DID. Attached letter from the Subcommittee on Education and Training, Advisory Committee on Isotope and Radiation Development. The Director of Isotopes Development believes that the Committee's views on the desired educational and training efforts of the Isotopes Development Program are germane to AEC 267/58 and 267/59 - Domestic and Foreign Educational Programs in the Life and Physical Sciences and Engineering.

**FILED:**

**INDEXER:** ED-21-Reactor Technology

*Edwards*  
*7-13-60*

**REMARKS:** date of paper: 7-13-60  
date of letter: 5-2-60

*7/13/60*

**CONFIRMED TO BE UNCLASSIFIED**  
DOE NSI DECLASSIFICATION REVIEW E.O. 12958  
BY JOI B. BUCKNER DOE/NN-823

DATE:

[REDACTED]

**INDEX:** Budget Isotopes 21

TO:

FROM:

**SUMMARY:** AEC 994/1 - IMPLEMENTATION OF THE ISOTOPE DEVELOPMENT PROGRAM  
To consider a plan for implementation of the Isotope Development Program consisting of devel. of isotopes applications, industrial isotope tech. training, isotope production, and industrial process radiation activities; and to authorize funds to initiate selected activities in FY 58 so that the program may become fully operating in FY 59.

**FILED:** Res. & Devel. 13 Irradiations

**INDEXER:** date of paper: 4-29-58

**REMARKS:**

**DETERMINED TO BE UNCLASSIFIED**  
DOE NSI DECLASSIFICATION REVIEW E.O. 12958  
BY JOY S. BUCKNER DOENR-823

U. S. ATOMIC ENERGY COMMISSION  
**CORRESPONDENCE REFERENCE FORM**

45-68-h

DATE:

INDEX: ISOTOPE-21

TO:

FROM:

SUMMARY: AEC-761/6 AWARD OF ISOTOPE EQUIPMENT GRANT:  
Awards of grants to 11 different colleges & universities  
for the purpose of introducing nuclear technology into  
educational programs. These are the second group of such  
grants, amounting to \$160,443.

**FILED:**

MHS-21 Education & Training

INDEXER:

date of paper: 11-25-57

REMARKS:

CONFIRMED TO BE UNCLASSIFIED  
DOE NSI DECLASSIFICATION REVIEW E.O. 12958  
BY JOY S. BUCKNER DOE/MN-623

U. S. ATOMIC ENERGY COMMISSION  
CORRESPONDENCE REFERENCE FORM

*Isatops-21*

UNCLASSIFIED

AEC 158/7

August 13, 1957

COPY NO. 36

AEC  
158  
7

ATOMIC ENERGY COMMISSION

ALIEN ATTENDANCE AT ORINS COURSES FOR CY-1958

Note by the Secretary

The General Manager has requested that the attached memorandum from the Director of International Affairs be circulated for the information of the Commission.

W. B. McCool  
Secretary

<u>DISTRIBUTION</u>	<u>COPY NO.</u>
Secretary	1
Commissioners	2 - 5
General Manager	6
Deputy Gen. Mgr.	7
Asst. Gen. Mgr.	8
Asst. Gen. Mgr. IA	9
Asst. Gen. Mgr. Mfg.	10
Asst. Gen. Mgr. R&ID	11
Asst. Gen. Mgr. Adm.	12
General Counsel	13-14
Biology & Medicine	15
Civilian Application	16
Congr. Relations	17
Finance	18
Information	19-21
Inspection	22
Intelligence	23
International Affairs	24-25
Operations Analysis	26
Production	27
Reactor Development	28-30
Research	31
Security	32
Oak Ridge Operations	33-35
Secretariat	36-38

*Adm  
8-23-57*

*8-13-57*

UNCLASSIFIED

UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON 25, D.C.

July 29, 1957

MEMORANDUM FOR THE GENERAL MANAGER

THROUGH: Assistant General Manager for International Activities

SUBJECT: ALIEN ATTENDANCE AT ORINS COURSES FOR CY 1958

At Meeting 1027 on September 2, 1954 (AEC 158/5) the Commission approved offering special four-week courses for aliens in radioisotope techniques at ORINS, the first to be held in early 1955 with subsequent special courses to be established as necessary. The Commission also approved admitting aliens to the regularly scheduled courses in calendar year 1955 up to 15 percent of the total enrollment. On April 14, 1956, you approved an alien quota of 25 percent for calendar year 1956. In January of this year you approved an alien quota of 30 percent for calendar year 1957.

From our discussions with ICA and interested divisions and offices within AEC, it appears appropriate that we now promptly establish an alien quota for calendar year 1958, and the quota again be set at 30 percent. This would permit 57 or 58 foreign students to attend the course, of an estimated total of 192 students. Your approval of this quota is recommended.

The demand among foreigners for attendance at the ORINS radioisotope techniques course would actually warrant a higher quota. It is our feeling, however, that the quota could not be increased to the full extent indicated without causing serious disruption to the domestic phase of the isotopes course program. We are looking to studies now being conducted by the Oak Ridge Operations Office to suggest means by which additional training of foreigners can be accomplished.

This memorandum has the concurrence of the Divisions of Research, Biology and Medicine, and of Production. The Oak Ridge Operations Office has advised that the proposed quota of 30 percent alien attendance at the isotopes course for calendar year 1958 is agreeable to them.

/s/

John A. Hall, Director  
Division of International Affairs

Approved: K. E. Fields  
8/5/57

DATE

INDEX: Isotopes 21

~~INDEX: Isotopes 21~~

~~Research and Devel. 21~~

~~Research and Devel. 21~~

TO:

FROM:

SUMMARY: AEC 267/29 - EDUCATIONAL AND TRAINING ACTIVITIES  
 These programs are under the direction of the Divisions of Reactor Devel. & Biology and Medicine and include: Eng. School at Argonne; Oak Ridge School of Reactor Tech.; & Radioisotope School at Oak Ridge & fellowships in B&M; faculty training; high school programs; and assistance to educational institutions to acquire facilities.

FILED: Reactor Devel. 21 Reactor Technology

INDEXER: date of paper: 9-17-56

REMARKS:

**APPROVED TO BE UNCLASSIFIED**  
**DOE NSI DECLASSIFICATION REVIEW (D.O. 1998)**  
**BY JOI S. BUCKNER DOEN-623**

U. S. ATOMIC ENERGY COMMISSION  
**CORRESPONDENCE REFERENCE FORM**

9-17-56

*Sanlo 21*

A. Tommro, Assistant General Manager for  
Research and Industrial Development

April 12, 1956

W. J. Hughes  
Office of the Secretary

**ATTENDANCE OF ALIENS AT CRIBS COURSES - APPROVAL AUTHORITY**

Frank Smallwood asked whether, as a matter of policy, you have authority to approve the proposal from the Director, Research Division, or whether approval authority is limited to the General Manager. The proposal is to admit, to the CRIBS courses in radioisotope techniques, aliens up to 25% of the total enrollment for calendar year 1956.

I believe our first consideration should be whether approval authority for this proposal is within the power of the General Manager. In Meeting 1027, September 2, 1954, the Commission authorized alien attendance up to 15% of the total enrollment for calendar year 1955, although the General Manager had recommended (AEC 158/3) that the Commission approve "admitting a number of aliens, the quotas be fixed by the General Manager at a later date, to each future regular course during CY 1955."

Later, on March 31, 1955, (AEC 158/6), the Commission was informed of an additional special course which would accommodate foreign applicants who could not be accepted during the regularly scheduled courses in the summer months of 1955. An increase in the 15% quota was not considered advisable for that purpose. This action was approved by the Acting General Manager.

The current proposal, as I understand it, would raise the quota to 25% of the total enrollment for 1956. You may wish to consider the following line of reasoning: The Commission had approved the establishment of the courses, with subsequent special courses to be established as necessary, and the basic criteria governing attendance by aliens. Meetings 212, October 27, 1948, and 1027, September 22, 1954. Continuing the courses through 1956 is in conformity with the Atoms-for-Peace Program and the basic criteria established by the Commission. There is no indication in our records as to the circumstances surrounding the recorded decision (1027) to establish the 15% quota. It may have been suggested by a Commissioner or by the General Manager. Paul McDaniel, who attended the meeting, could recall no indication of any strong feeling on the part of the Commission as to who should determine the quota, but he has the impression that the 15% figure was proposed at the meeting and the Commissioners agreed it was proper.

*Copy filed: Dec 21 - 2 - Sec. Insp. Op. (Continued)*

OFFICE ▶					
SURNAME ▶					
DATE ▶					

*4-12-56*

April 12, 1956

I suggest that the proposal be approved by the General Manager, under his general delegation, as within the general policy established by the Commission in prior meetings. However, I would urge that the Commission be advised, by information paper, of the action because of the international aspects and as further evidence of AEC pursuing the Atoms-for-Peace Program which is of great public interest. This would also serve to advise divisions of interest, viz., Production, Security, and International of the action taken. While approval authority in this case is an internal matter, we have no record of any delegation of authority to you which could cover such a matter.

In AEC 283/37, Appendix B, the duties of the Assistant General Manager for Research and Industrial Development were quite fully spelled out and, presumably, were approved by the then General Manager. However, no action was ever taken on this paper by the Commission, as originally intended, because of the action it took at Meeting 965, on March 3, 1954, approving the establishment of a long list of executive positions of which the Assistant General Manager for Research and Industrial Development was one. Therefore, although the job was established, its duties are not a matter of record.

I understand that action is to be taken to delegate authority to the Assistant General Managers in the field of contracts, and I would assume program activities would also be included in such the same manner as the delegations to Division Directors.

I would be pleased to discuss this with you and, at your convenience, show you the Commission files having a bearing on the subject.

OFFICE ▶	SECY				
SURNAME ▶	Hughes; ngh				
DATE ▶	4-12-56				

*Antelope - 21*

*McCool*  
*Km. 313*

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D. C.

No. 708  
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FOR RELEASE IN AFTERNOON NEWSPAPERS,  
MONDAY, OCTOBER 10, 1955

SECOND RADIOISOTOPE COURSE FOR FOREIGN  
STUDENTS TO OPEN OCTOBER 17

Oak Ridge, Tenn., Oct. 7 -- A second special course in radioisotope techniques for foreign scientists and technicians will open in Oak Ridge October 17 with 30 students from 20 countries participating, S. R. Sapirie, Manager of the Atomic Energy Commission's Oak Ridge Operations, announced today.

The course is one of several supporting projects launched by AEC in furtherance of the President's "Atoms for Peace" program. So many applications were received from interested foreign candidates for enrollment in the first special course, held here in May for 32 students from 21 countries, that another session was set aside for those who applied but could not be accommodated earlier.

The purpose of the training is to permit qualified research workers and technicians to gain sufficient facility in the use of radioisotopes, or "tracer atoms," to apply this technique in their own work.

The special course is identical with the training given six times a year by the Oak Ridge Institute of Nuclear Studies at Oak Ridge. A limited number of foreign applicants have been accepted for the regular courses at Oak Ridge.

During the four-weeks' intensive training, fundamentals in radioisotope use are taught. The participants learn how to use and calibrate radiation detection instruments, how to purify and separate radioactive materials from inert or other radioactive materials, and how to apply them to a variety of chemical and biological research problems.

More than 2,000 men and women have received this training, under ORINS, since it began in 1948.

(more)

10-10-55

Students accepted for the special course and countries represented are:

ARGENTINA

Hector Carminatti  
Jose Antonio Olarte

BRAZIL

Rafael Gianella

CANADA

Ralph Z. Levene  
John C.F. McDonald  
Robert J. Slater

COLOMBIA

Jaime Gomez

CUBA

Julio Jane Jane

DOMINICAN REPUBLIC

Rafael B. Gonzalez

GERMANY

Gottfried V. Droste

GREECE

Theo. G. Kouyoumzelis

GUATEMALA

Guillermo Arroyave Borjes

INDIA

Shanta V. Iyengar  
K. T. Jacob  
Ramesh C. Kapoor

ITALY

Gian Luigi Turco

KOREA

Yun Tong Suk  
Kuick Lee  
*Jong* John Il Lee  
Choon G. Sam Cho

MEXICO

Fernando Alba-Andrade

PERU

Alfonso Pajuelo

PHILIPPINES

Vincente M. Belizario

SPAIN

Javier Bunuel Tallada  
Godafredo Crespo

THAILAND

Sippanondha Ketudat

TURKEY

Ali Riza Berken

VENEZUELA

Reclus Roca Vila

PAKISTAN

Saiyid Rizvi  
Abdur Rahman.

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(NOTE TO EDITORS AND CORRESPONDENTS: This information is being made available simultaneously by the Atomic Energy Commission's Oak Ridge Operations Office, Oak Ridge, Tenn.)