

BEFORE THE
UNITED STATES ATOMIC ENERGY COMMISSION

In the Matter of

PHILADELPHIA ELECTRIC COMPANY

Docket No. 50-171

Journal File G.

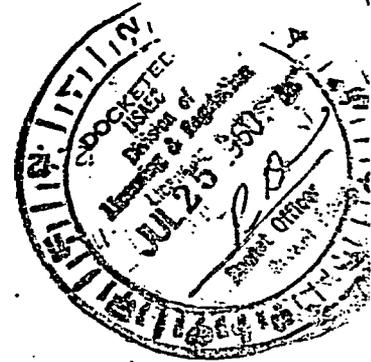
(Trans. of the 7-25-60)

APPLICATION OF
PHILADELPHIA ELECTRIC COMPANY
FOR
Construction Permit and Class 104 License

PART A

General Information

Peach Bottom Atomic Power Station



Vincent P. McDevitt
Eugene J. Bradley
Robert P. Garbarino

1000 Chestnut Street
Philadelphia 5, Pa.

Attorneys for
Philadelphia Electric Company

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 4, 6

25

2005-6018

BEI

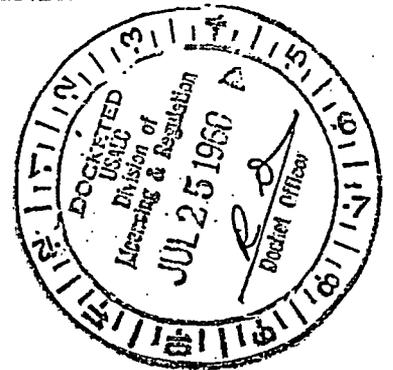
BEFORE THE
UNITED STATES ATOMIC ENERGY COMMISSION

In the Matter of :
: PHILADELPHIA ELECTRIC COMPANY :

Docket No. 50-171
Journal File 9

APPLICATION OF
PHILADELPHIA ELECTRIC COMPANY
FOR
CONSTRUCTION PERMIT AND CLASS 104 LICENSE

PART A
GENERAL INFORMATION



PEACH BOTTOM ATOMIC POWER STATION

Vincent P. McDevitt
Eugene J. Bradley
Robert P. Garbarino

1000 Chestnut Street
Philadelphia 5, Pa.

Attorneys for
Philadelphia Electric Company

BEFORE THE
UNITED STATES ATOMIC ENERGY COMMISSION

In the Matter of :
: Docket No.
PHILADELPHIA ELECTRIC COMPANY :

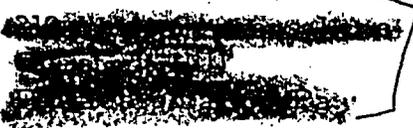
APPLICATION OF
PHILADELPHIA ELECTRIC COMPANY
FOR
CONSTRUCTION PERMIT AND CLASS 104 LICENSE

In accordance with the Atomic Energy Act of 1954, as amended, and the regulations thereunder, Philadelphia Electric Company (hereinafter called the Applicant) hereby applies to the United States Atomic Energy Commission (hereinafter called the Commission) for a Construction Permit and a Class 104 License authorizing the construction, acquisition, possession, use and operation by Applicant of a Utilization Facility (hereinafter called the Facility) to be located at Peach Bottom, York County, Pennsylvania. In support of this Application Applicant alleges and shows as follows:

1. Applicant, whose address is 1000 Chestnut Street, Philadelphia 5, Pennsylvania, is a public utility engaged in supplying electric, gas and steam service in Southeastern Pennsylvania.

2. Applicant is a corporation organized and existing under the laws of the Commonwealth of Pennsylvania. Applicant is not owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government. The names and addresses of Applicant's Directors and Principal Officers, all of whom are citizens of the United States, are as follows:

Directors

<u>Name</u>	<u>Address</u>
Gustave G. Amsterdam	Bankers Securities Corporation 1315 Walnut Street Philadelphia 7, Pa.
Charles E. Brinley	 EX 6
A. S. Corson	Philadelphia Electric Company 1000 Chestnut Street Philadelphia 5, Pa.
John A. Diemand	Insurance Company of North America 1600 Arch Street Philadelphia 1, Pa.
Walter D. Fuller	The Curtis Publishing Company Independence Square Philadelphia 5, Pa.
A. A. Garthwaite	Lee Rubber & Tire Corporation Conshohocken, Pa.

August, 1961

Vincent P. McDevitt	Philadelphia Electric Company 1000 Chestnut Street Philadelphia 5, Pa.
H. N. Ramsey	Philadelphia Electric Company 1000 Chestnut Street Philadelphia 5, Pa.
R. G. Rincliffe	Philadelphia Electric Company 1000 Chestnut Street Philadelphia 5, Pa.
Harold S. Schutt	430 Continental American Building Wilmington 1, Delaware
Philip T. Sharples	The Sharples Corporation 23rd and Westmoreland Streets Philadelphia 40, Pa.
G. Stockton Strawbridge	Strawbridge & Clothier 801 Market Street Philadelphia 5, Pa.

Principal Officers

<u>Name</u>	<u>Title</u>	<u>Address</u>
R. G. Rincliffe	President	1000 Chestnut Street Philadelphia 5, Pa.
H. N. Ramsey	Executive Vice President	1000 Chestnut Street Philadelphia 5, Pa.
G. R. Conover	Vice President	1000 Chestnut Street Philadelphia 5, Pa.
V. P. McDevitt	Vice President and General Counsel	1000 Chestnut Street Philadelphia 5, Pa.
R. P. Liversidge	Vice President	1000 Chestnut Street Philadelphia 5, Pa.

A. S. Corson	Vice President	1000 Chestnut Street Philadelphia 5, Pa.
W. H. Jones	Vice President	1000 Chestnut Street Philadelphia 5, Pa.
L. R. Gaty	Vice President	1000 Chestnut Street Philadelphia 5, Pa.
M. I. Allen	Vice President	1000 Chestnut Street Philadelphia 5, Pa.
J. H. Long	Vice President	1000 Chestnut Street Philadelphia 5, Pa.
V. J. Walsh	Secretary	1000 Chestnut Street Philadelphia 5, Pa.
W. F. Bergen	Assistant Secretary	1000 Chestnut Street Philadelphia 5, Pa.
G. W. Miller	Treasurer	1000 Chestnut Street Philadelphia 5, Pa.
D. W. Evans, Jr.	Assistant Treasurer	1000 Chestnut Street Philadelphia 5, Pa.
J. W. Schulze	Assistant Treasurer	1000 Chestnut Street Philadelphia 5, Pa.

3. In response to an invitation issued by the Commission under its Power Reactor Demonstration Program Applicant submitted to the Commission in November, 1958, a proposal to design, construct and operate a high temperature, gas-cooled, graphite-moderated nuclear power plant (hereinafter referred to as the Plant), to be located at Peach Bottom, York County, Pennsylvania. The proposal and other actions related thereto have been authorized by resolutions duly adopted

by Applicant's Board of Directors as shown by a copy of said resolutions attached hereto as Exhibit A-1 and A-2 and made a part hereof. Following acceptance of the proposal Applicant and the Commission entered into a contract under which Applicant has undertaken to design and construct the Plant and operate it thereafter for a period of five years. A copy of the contract between Applicant and the Commission (Contract No. AT(40-1) 2586, dated August 27, 1959) for the design, construction and operation of the Plant is attached hereto as Exhibit B and made a part hereof. The Facility for which a Construction Permit and License are sought by Applicant will be an integral part of the Plant, which is designated as the Peach Bottom Atomic Power Station.

4. Applicant applies for a Construction Permit and a Class 104 License authorizing it to construct, acquire, possess, use and operate the Facility, pursuant to the provisions of Sections 104(b) and 185 of the Atomic Energy Act of 1954, as amended. The Facility will be used for the generation of electric power as part of Applicant's interconnected system. The period for which the License is sought is 40 years. Applicant intends to apply for source, special nuclear and by-product material licenses necessary for the construction, acquisition, possession, use and operation of the Facility.

5. The Plant will be designed and constructed for Applicant by Bechtel Corporation (hereinafter referred to as Bechtel) pursuant to

a contract between Bechtel, Applicant and High Temperature Reactor Development Associates, Inc. (hereinafter referred to as HTRDA).

HTRDA is a nonprofit corporation financed by fifty-three utility companies interested in acquiring technical information, experience and training in the design, construction and operation of the Plant. The nuclear steam supply system for the Plant will be furnished by General Atomic Division of General Dynamics Corporation (hereinafter referred to as General Atomic) under a subcontract with Bechtel. The necessary research and development work leading to the design, construction and operation of the Plant will be performed by General Atomic under a contract with the Commission. General Atomic has also contracted to develop and sell to Applicant sufficient fuel elements for the first five years' operation of the Plant.

6. Bechtel will design and construct the Plant for a fixed price of \$24,500,000, of which amount Applicant will pay to Bechtel \$8,000,000 and HTRDA will pay to Bechtel \$16,500,000. The fifty-three companies financing HTRDA are obligated to make contributions to HTRDA totaling over \$16,500,000 as shown by Agreement dated November 18, 1958, between Applicant and HTRDA participating companies, a composite copy of which Agreement is attached hereto as Exhibit C and made a part hereof. Applicant's contribution to HTRDA under said Agreement will be \$1,290,000. Fuel elements for the first five years' operation of the Plant

August, 1961

(for which period it is estimated two core loadings will be sufficient) will be furnished to Applicant at a price not to exceed \$950,000 per core loading. During the period of five years from the issuance of a License to operate the Plant and the period of lead time required for fabrication of fuel elements prior to issuance of such a License the Commission, under its contract with Applicant, will waive its use charges up to a maximum of \$2,000,000 with respect to source and special nuclear materials used or acquired by or on behalf of Applicant for the purpose of operating the Plant. The site for the Plant is presently owned by Applicant. Additional expenditures by Applicant for equipment and services are estimated at \$3,527,000, including Interest During Construction and General Overhead.

7. Applicant is financially qualified to engage in the proposed activities, to assume responsibility for payment of Commission charges for special nuclear material and to undertake and carry out the proposed use of special nuclear material for a reasonable period of time, as shown by Applicant's Annual Report for the year 1960, a copy of which is attached hereto as Exhibit D and made a part hereof.

8. Applicant, Bechtel and General Atomic are technically qualified to engage in the proposed activities as shown by summaries of their respective technical qualifications attached hereto as Exhibit E and made a part hereof.

9. The earliest date for completion of construction of the Facility

August, 1961

is estimated to be March 1, 1964, and the latest date for completion of construction of the Facility is estimated to be December 31, 1964.

10. The technical information concerning the Facility required by Section 50.34 of the Commission's regulations is contained in Part B of this Application, entitled "Preliminary Hazards Summary Report" filed herewith and made a part hereof.

11. Applicant requests that the Commission incorporate in the Construction Permit and Class 104 License herein applied for provisions designating the quantities of special nuclear material available for use by the Facility. The estimated date on which Applicant desires to receive the first shipment of special nuclear material and an estimated schedule, by years, showing (1) subsequent receipts; (2) production, consumption and operating losses and (3) the transfer of special nuclear material to the Commission or other licensees, together with supporting data, are set forth in Exhibit F attached hereto and made a part hereof.

12. Applicant agrees that it will not permit any individual to have access to Restricted Data until the Civil Service Commission shall have made an investigation and report to the Commission on the character, associations and loyalty of such individual, and the Commission shall have determined that permitting such person to have access to Restricted Data will not endanger the common defense and security.

13. All communications from the Commission to Applicant per-

taining to this Application should be sent to:

Vincent P. McDevitt
Vice-President and General Counsel
Philadelphia Electric Company
1000 Chestnut Street
Philadelphia 5, Pa.

WHEREFORE, Applicant prays that the Commission issue to Applicant a Construction Permit and a Class 104 License authorizing Applicant to construct, acquire, possess, use and operate a Utilization Facility as a part of Applicant's Peach Bottom Atomic Power Station, incorporating therein provisions allocating to Applicant, for use in connection with the operation of the Facility, the quantity of special nuclear material requested herein.

Respectfully submitted,

PHILADELPHIA ELECTRIC COMPANY

By W. S. Ancliffe
President

EXHIBIT A-1

PHILADELPHIA ELECTRIC COMPANY

CERTIFIED COPY OF RESOLUTIONS

I, V. J. WALSH, Secretary of PHILADELPHIA ELECTRIC COMPANY, a corporation duly organized and existing under the laws of the Commonwealth of Pennsylvania, DO HEREBY CERTIFY that the following is a true and correct extract from the minutes of a meeting of the Board of Directors of said Company duly convened and held on the 13th day of November, 1958, at which a quorum was present and acting throughout, and that the following resolutions were duly adopted at said meeting:

RESOLVED, that the proper officers of the Company be and they hereby are authorized to make, on behalf of the Company, a proposal to the Atomic Energy Commission to sponsor a program for the development, design and construction of a high-temperature, gas-cooled, graphite-moderated nuclear power plant upon property to be provided by Philadelphia Electric Company and for its operation thereafter for a period of five (5) years.

RESOLVED FURTHER, that the proper officers of the Company be and they hereby are authorized to join with other interested utilities in the formation of a non-profit corporation to be known as High Temperature Reactor Development Associates, Inc., for the sharing of costs of research and development associated with the design and construction of said nuclear power plant.

RESOLVED FURTHER, that the proper officers of the Company be and they hereby are authorized to enter into a contract with Bechtel Corporation and High Temperature Reactor Development Associates, Inc., for the design and construction of such a nuclear power plant, designed to be capable of operating at a capacity of 40,000 Kw., under which contract General Atomic Division of General Dynamics Corporation will be the sub-contractor to supply nuclear plant equipment.

RESOLVED FURTHER, that the proper officers of the Company be and they hereby are authorized to commit the Company to pay an amount not to exceed Eight Million Dollars (\$8,000,000) toward the cost of construction of such nuclear power plant.

RESOLVED FURTHER, that the proper officers of the Company be and they hereby are authorized to make a commitment for the payment over a five-year period of One Million Dollars (\$1,000,000) as a contribution to High Temperature Reactor Development Associates, Inc., subject to increase to the extent of 18% thereof, in the event that the total commitments of the members of High Temperature Reactor Development Associates, Inc., are not sufficient to cover the entire construction costs.

RESOLVED FURTHER, that the proper officers of the Company be and they hereby are authorized to take any and all other action necessary to accomplish the purposes of the foregoing resolutions.

WITNESS my hand and the seal of Philadelphia Electric Company this 11th day of July, 1960.

(S E A L)

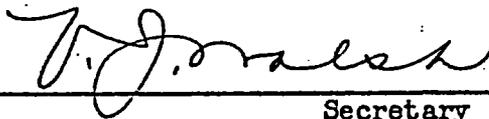

Secretary

EXHIBIT A-2

PHILADELPHIA ELECTRIC COMPANY

CERTIFIED COPY OF RESOLUTIONS

I, V. J. WALSH, Secretary of PHILADELPHIA ELECTRIC COMPANY, a corporation duly organized and existing under the laws of the Commonwealth of Pennsylvania, DO HEREBY CERTIFY that the following is a true and correct extract from the minutes of a meeting of the Board of Directors of said Company duly convened and held on the 24th day of November, 1958, at which a quorum was present and acting throughout, and that the following resolutions were duly adopted at said meeting:

RESOLVED, that the action of the officers of the Company in making a commitment for the payment to High Temperature Reactor Development Associates, Inc., over a five-year period, of One Million Two Hundred and Ninety Thousand Dollars (\$1,290,000), not subject to escalation, as a contribution by this Company for support of research and development associated with the design and construction of a high temperature, gas-cooled, graphite-moderated prototype nuclear power plant proposed to be located on this Company's System, be and the same hereby is ratified, approved and confirmed.

RESOLVED FURTHER, that the resolution adopted by this Board on November 13, 1958, authorizing a commitment for the payment over a five-year period of One Million Dollars (\$1,000,000) as a contribution to High Temperature Reactor Development Associates, Inc., subject to increase to the extent of 18% thereof, be and it hereby is rescinded.

WITNESS my hand and the seal of Philadelphia Electric Company this 11th day of July, 1960.

(S E A L)


Secretary

EXHIBIT B

UNITED STATES ATOMIC ENERGY COMMISSION

CONTRACT NO. AT(40-1) 2586

PHILADELPHIA ELECTRIC COMPANY

Article	Title	Page
I	UNDERTAKINGS OF THE PARTIES	2
II	TERM OF CONTRACT	5
III	TERMINATION	5
IV	PROJECT ORGANIZATION	10
V	INVENTIONS	10
VI	INSPECTION OF PROJECT	12
VII	HEALTH AND SAFETY	13
VIII	EXAMINATION OF RECORDS	13
IX	ASSIGNMENT	14
X	COVENANT AGAINST CONTINGENT FEES	14
XI	OFFICIALS NOT TO BENEFIT	15
XII	RENEGOTIATION	15
XIII	NOTICES	16
XIV	OPTION TO PURCHASE	16
XV	SUBCONTRACTS	18
XVI	DISPUTES	18
XVII	SECURITY	19
XVIII	DEFINITIONS	21
	APPENDIX A	23

THIS CONTRACT, entered into and effective this 27 day of Aug, 1959, by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), acting through the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission"), and PHILADELPHIA ELECTRIC COMPANY, a corporation organized and existing under the laws of the Commonwealth of Pennsylvania, and having its principal office in the City of Philadelphia, Commonwealth of Pennsylvania (hereinafter called the "Contractor"),

WITNESS THAT:

WHEREAS, it is the announced policy of the Commission to encourage private participation in the development of nuclear power technology and to accelerate the achievement of commercially feasible nuclear power; and

WHEREAS, the Contractor has submitted to the Commission a proposal whereunder, contingent upon the Commission's simultaneously entering into a contract with General Dynamics Corporation (hereinafter called the "Corporation") for the performance of a program of research and development directed towards the design, construction and operation of a Nuclear Power Plant, the Contractor will enter into a contract with the Commission for the design, construction and operation of said Plant and assume or provide for all capital costs as well as other costs incident to the design, construction and operation of the Nuclear Power Plant, which the Contractor will own; and

WHEREAS, the Commission is willing to enter into this contract with the Contractor under the terms herein provided, which include provisions for the waiver of certain of the Commission's established charges; and

WHEREAS, the Commission is willing to render certain financial and other assistance, including waiver of certain of the Commission's established charges, to the Corporation in the performance

of the necessary research and development effort leading to the design, construction and operation of said Nuclear Power Plant and in the performance of a program of post-operation research and development leading towards the further improvement and optimization of nuclear power plants of the type proposed; and

WHEREAS, it is anticipated by the parties to this contract that the design, development, construction and operation of the aforesaid Nuclear Power Plant will constitute a significant advance toward the attainment of commercially competitive nuclear power and that the information and experience so gained will be made available to the Commission for public use and will lead to further advances in subsequent nuclear power reactors; and

WHEREAS, the parties have agreed that the Contractor shall accomplish the work and perform the services necessary to place into operation and operate such a power plant, under the terms and conditions hereinafter recited; and

WHEREAS, this contract is authorized by, and has been negotiated under the Atomic Energy Act of 1954, as amended;

Now, THEREFORE, the parties hereto do mutually agree as follows:

ARTICLE I—UNDERTAKINGS OF THE PARTIES

1. The Contractor shall, as expeditiously as may be practicable, effect the accomplishment of the undertakings hereinafter set forth:

a. The Contractor shall design, construct and operate until the end of the term of this contract a Nuclear Power Plant to be located at a site to be provided by the Contractor and approved by the Commission. Said Plant will be powered by an advanced high-temperature, graphite-moderated, helium-cooled prototype power reactor, designed to be fueled with graphite-clad elements, to be constructed in accordance with the description set forth in Appendix A which is attached

hereto and hereby made a part hereof. Any change in said reactor description shall be subject to the mutual agreement of the parties hereto. The site to be provided by the Contractor and which is subject to the approval of the Commission is located at Peach Bottom, York County, Pennsylvania. The Plant shall be operated as a part of the interconnected system of the Contractor. The Plant shall be operated at or above the system load factor of the Contractor (if the nuclear steam supply system is capable of such operation), to the extent consistent with the requirements of the post-construction research and development program to be undertaken pursuant to the contract between the Commission and the Corporation. The Contractor shall bear or be responsible for all costs incurred in the design, construction and operation of the Nuclear Power Plant, except as hereinafter expressly provided.

b. The Contractor shall apply for and use its best efforts to obtain all necessary licenses from the Commission and such other necessary approvals from Federal, State and local regulatory authorities as are required to permit the construction and operation of the Plant for the generation of electricity and its connection to the Contractor's bulk power system. It is understood that neither the execution of this agreement nor any implementation thereof by the Commission shall constitute a representation by the Commission or the Government that any of the necessary licenses or approvals are or will be granted. Nothing contained in this contract shall be construed to limit or otherwise affect the provisions or effect of any license or permit which may be issued to the Contractor by the Commission.

c. To the extent requested by the Commission, the Contractor shall keep and make available for inspection and study by the Commission and its representatives or designees and, in accordance with procedures approved by the Commission, require subcontractors of any tier to so keep and make available such records of technical, economic, and financial data (including actual costs of performing such work) as will en-

able the Commission to carry out the purposes of the Power Demonstration Program. To the extent requested by the Commission, the Contractor also will supply, and will require its subcontractors of any tier to supply, to the Commission for such purposes such data as the Commission may reasonably request during the term of this contract. The Commission will consult with the Contractor with respect to the form, content and frequency of such reports. After expiration or termination of this contract, and for such period as the Contractor shall operate the Plant, the Contractor will supply the Commission annual reports in such form and containing such data as shall be mutually agreed upon, on the economic and technical aspects of operation of the Plant. All information and reports furnished to or acquired by the Commission pursuant to this paragraph "c" may be used as the Commission sees fit.

d. During the period of operation of the Nuclear Power Plant under this contract, the Contractor will cooperate with the Commission and the Corporation in the performance of post-construction research and development approved in accordance with the terms of the contract between the Commission and the Corporation referred to in paragraph 2. a. of this Article.

2. The Commission will perform the undertakings hereinafter set forth:

a. The Commission, simultaneously with the execution of this contract, will enter into a contract with the Corporation for the performance of the necessary research and development effort leading to the design, construction and operation of the Reactor Plant, and for the performance of a program of post-construction research and development leading towards the further improvement and optimization of nuclear power plants of the type proposed; and in accordance with the terms of the said contract between the Commission and the Corporation, reimburse the Corporation for costs incurred in its performance of such research and development.

b. During the period of five (5) years from the issuance of the license to operate the Nuclear Power Plant and the period of lead time required for fabrication of fuel elements prior to the issuance of such license, the Commission will waive its use charges up to a maximum of Two Million Dollars (\$2,000,000) with respect to source and special nuclear materials used or acquired by or on behalf of the Contractor for the purpose of operating the Nuclear Power Plant, including reasonable inventories of material in process during such periods.

c. The Commission will furnish the Contractor monthly reports of the accumulated charges waived pursuant to paragraph 2. b. of this Article.

d. In accordance with the Commission's announced policy concerning chemical processing of spent fuels from licensed reactors contained in 22 Fed. Reg. 1591, dated March 12, 1957, as it may be revised from time to time, the Commission agrees to enter into a separate contract with the Contractor to provide for processing of irradiated fuels from the Reactor Plant.

ARTICLE II—TERM OF CONTRACT

1. The term of this contract shall commence on the date of execution hereof and shall end five (5) years after issuance of a Commission license to operate the Nuclear Power Plant for the production of power.

2. The Contractor agrees to use its best efforts to perform its obligations under this contract on a time schedule which will permit completion of construction of the Nuclear Power Plant on or before October 1, 1963, and attainment of zero-power criticality on or before December 31, 1963.

ARTICLE III—TERMINATION

1. This contract may be terminated at any time by written mutual agreement of the parties. Any such termination shall be

effective in the manner and upon the date specified in said agreement.

2. The Contractor agrees that it will exert its best efforts to apply for and obtain all necessary licenses and permits from the Commission and such other necessary approvals from Federal, State and local regulatory authorities as are required in connection with the performance of its obligation hereunder to construct and operate the Plant. In making said "best efforts" commitment the Contractor agrees to take such action as is reasonable to place itself and the Project in a posture which would permit the Contractor to obtain appropriate regulatory licenses and approvals. In determining the reasonableness of any action so required, there shall be taken into consideration (i) the extent to which such action would increase the cost to the Contractor of constructing the Nuclear Power Plant; (ii) the fact that the Commission has agreed to contribute a maximum of \$17,000,000 to the Project for the purpose of demonstrating the technical and economic feasibility of the Nuclear Power Plant; (iii) the fact that said purpose cannot be effectively accomplished without construction and operation of the Plant by the Contractor; and (iv) the fact that the Plant is being constructed as a prototype of future plants which are intended to be capable of achieving economic nuclear power, although the prototype is not expected to do so. If the Contractor, after considering the above criteria is of the opinion that it cannot reasonably be required to take the necessary action, and the performance of its obligations to construct and operate the Plant as contemplated under this contract cannot be carried out as a result of the Contractor's failure to take such action and to obtain the necessary regulatory approvals, the Contractor may terminate this contract subject to the following conditions:

(a) The Contractor shall notify the Commission in writing of the basis for its opinion that to take the action necessary to obtain appropriate regulatory approvals would impose an unreasonable burden upon the Contractor.

(b) If, within thirty (30) days after receipt of the said notice of the Contractor, the Commission does not inform the Contractor in writing of any Commission exception thereto, the Contractor may terminate the contract by written notice to the Commission.

(c) If the Commission takes exception within the manner and time period described in paragraph 2. b. of this Article and the parties are unable to agree upon a mutually satisfactory course of action within fifteen (15) days after receipt by the Contractor of notice of the Commission's exception, the question of whether or not the Contractor can reasonably be required to take such steps as may be necessary to obtain appropriate regulatory approvals shall be referred for final determination to a panel composed of three (3) individuals with wide experience and capacity in dealing with problems associated with atomic energy and its utilization for the production of electric energy, selected by mutual agreement of the parties. Failing mutual agreement of the parties upon selection of the panel within thirty (30) days after receipt by the Contractor of notice of the Commission's exception, the parties shall each select one individual with the required qualifications to serve as members of the panel. The two members so designated shall select a third individual with the required qualifications and the three shall constitute the panel. The cost of the services of the panel shall be borne equally by the Contractor and the Commission.

(d) The panel in reaching its decision as to whether or not the Contractor can reasonably be required to take the necessary action shall be guided by the criteria specified in paragraph 2 above and shall consult with the Commission and the Contractor and obtain such other information as it deems appropriate. The decision of the panel shall be reached as expeditiously as possible and the decision of the majority of the panel shall be binding upon the parties. If the panel decides that the Contractor can reasonably be required to take the action necessary to obtain the appropriate licenses and approvals, the Con-

tractor must so proceed or be in default of its obligations under this Contract. If the panel decides that the Contractor cannot reasonably be required to take such action the Contractor may terminate the contract by written notice to the Commission within fifteen (15) days after the date of said decision of the panel.

(e) Pending final decision of the panel, the Contractor shall proceed diligently with the performance of the contract unless otherwise authorized in writing by the Commission, provided, however, that the Contractor shall not be required to proceed with those steps which are necessary to obtain appropriate regulatory approvals and which are in issue under paragraph 2 of this Article pending the decision of the panel.

3. Without otherwise limiting or affecting the rights of the parties hereto,

(a) Either party may, at its election and upon written notice to the other party, be excused from further performance of its obligations under this contract in the event the other party is in default because of a material breach of its obligations hereunder and fails to cure such default within thirty (30) days after receiving said written notice.

(b) The Commission may, at its election and upon written notice to the other party, be excused from further performance of its obligations under this contract in the event the Corporation is in default because of a material breach of its obligations under Contract No. AT (04-3) 314 between the Commission and the Corporation, and the Corporation fails to cure such default within thirty (30) days after receipt of said written notice from the Commission.

(c) The Contractor may, at its election and upon written notice to the Commission, be excused from further performance of its obligations under this contract in the event the Commission is in default because of a material breach of its obligations under the contract between the Commission and the Cor-

poration referred to in paragraph 3 (b) above, and fails to cure such default within thirty (30) days after receipt of written notice from the Corporation, or in the event of the termination of said contract by mutual agreement.

(d) The Contractor agrees that, if it shall unilaterally abandon the construction of the Nuclear Power Plant under this contract for reasons other than (a) a contract amendment under which the Commission approves such abandonment, or (b) a cause beyond the control of the Contractor and without its fault or negligence (including inability to obtain necessary licenses or regulatory approvals or adequate liability insurance coverage), the Contractor shall reimburse the Commission for the Commission's expenditures under Contract No. AT(04-3) 314 between the Commission and the Corporation except to the extent that the Commission determines that any such expenditures have resulted in the acquisition by the Government of property, patents or other value. The provisions of this paragraph (d) are not intended to establish any right on the part of the Contractor to abandon the construction of the Plant under this contract.

4. The Contractor agrees to exert its best efforts to obtain adequate indemnity and liability insurance coverage in connection with the performance of its obligations hereunder, but the Contractor shall have the right to terminate this contract, without further expense to the Commission and upon written notice to the Commission, if the performance of any of its obligations as contemplated under this contract cannot be carried out because of the Contractor's inability to obtain adequate indemnity or liability insurance coverage.

5. Neither the Government nor the Contractor shall be required to reimburse the other or pay directly for any costs or expenses by reason of the termination of this contract, under the provisions of paragraph 2, subparagraph 3. b. and c., or paragraph 4 of this Article III.

ARTICLE IV—PROJECT ORGANIZATION

1. The Contractor has entered into an agreement dated November 19, 1958, with High Temperature Reactor Development Associates, Inc. (hereinafter called "HTRDA"), a non-profit, non-stock, Delaware corporation composed of fifty-two (52) Member Companies, and an agreement dated November 18, 1958, with said Member Companies, whereby in consideration for specified financial contributions aggregating \$16,500,000 by the Member Companies toward research and development associated with the design and construction of the Nuclear Power Plant, HTRDA and its Member Companies will receive such technical knowledge, information and experience as will assist them in future years to design, construct and operate larger nuclear plants of improved efficiency. The Contractor agrees to maintain said agreements in effect until the termination or expiration of this contract and all new agreements and modifications to the said existing agreements wherein Member Companies obligate themselves to participate in and support the work which the Contractor is performing pursuant to the terms of this contract, shall be subject to review and approval by the Commission prior to execution.

2. Nothing contained in the agreements referred to in paragraph 1 of this Article shall in any way relieve the Contractor of its obligation under this contract to design, construct and operate the Nuclear Power Plant; nor shall the failure of HTRDA or any of its Member Companies to meet their obligations under the said agreements relieve the Contractor of its obligations under this contract.

ARTICLE V—INVENTIONS

1. Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of, or in connection with, any work for which the Commission has provided funds under the contract between the Commission and the Corporation or under this contract, or by employees of the Contractor while assigned to another Commission contractor, to a Commission facility,

or during utilization of the services of the Commission or Commission contractor personnel, or whenever any invention or discovery useful in the production or utilization of special nuclear material or atomic energy, as defined in the Atomic Energy Act of 1954, as amended, is made or conceived by the Contractor or its employees in the course of, in connection with or under this contract, the Contractor shall furnish the Commission with complete information thereon; and the Commission shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title to and the rights under any application or patent that may result; provided, however, that the Contractor, in any event, shall retain at least a non-exclusive, irrevocable, royalty-free license, with the right to grant sublicenses to Member Companies of HTRDA, under said invention, discovery, application or patent. Subject to the license and licensing rights retained by the Contractor, the judgment of the Commission on these matters shall be accepted as final; and the Contractor for itself and its employees, agrees that the inventor or inventors will execute all documents and do all things necessary or proper to carry out the judgment of the Commission.

2. Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of, in connection with, or under this contract, other than as provided for in paragraph 1 of this Article, the Contractor shall promptly furnish the Commission with complete information thereon and shall specify at the time of such disclosure whether or not the Contractor desires to file a patent application, subject to Commission security restrictions and requirements. The Contractor shall have the rights and title to any such invention or discovery and agrees to grant a non-exclusive, irrevocable, royalty-free license to the Government for governmental purposes under said invention, discovery, application or patent; provided, however, that if the Contractor advises that it does not desire to file a patent application, the Commission may file such application, in which event the rights under said invention, discovery, application or patent shall be determined in accordance with paragraph 1 of this Article.

3. No claim for pecuniary award or compensation under the provisions of the Atomic Energy Act of 1954, as amended, shall be asserted by the Contractor or its employees with respect to any invention or discovery made or conceived in the course of, in connection with, or under the terms of this contract.

4. Except as otherwise authorized in writing by the Commission, the Contractor will obtain patent agreements to effectuate the purposes of paragraphs 1 and 2 of this Article from all persons who perform any part of the work under this contract, except such clerical and manual labor personnel as will not have access to technical data.

5. Except as otherwise authorized in writing by the Commission, the Contractor will insert in all subcontracts provisions relating to inventions and discoveries prescribed or approved by the Commission.

6. As respects any invention or discovery owned by the Commission or in which the Commission has the right to grant a royalty-free license, the Commission herewith grants to the Contractor a non-exclusive, royalty-free license to make and use any such invention or discovery in the construction or operation of the Nuclear Power Plant and similar plants. However, the Commission makes no representation or warranty that the exercise of this license will not result in infringement of any patents owned by third parties, nor does the Commission assume any liability or responsibility to the Contractor or the Corporation for infringement of other patents owned by third parties resulting from the exercise of the foregoing license or from the manufacture, construction, use or operation of the Nuclear Power Plant, or any associated equipment or apparatus, or the use of any method or process by the Contractor or the Corporation.

ARTICLE VI—INSPECTION OF PROJECT

The Commission and its duly authorized representatives and designees shall have the right to inspect the work, records, reports,

information, data and activities of the Contractor, its subcontractors and suppliers of any tier under this contract at such time and in such manner as it shall deem appropriate. The Contractor agrees upon appropriate notice from the Commission to permit visits to the site of the project by persons designated by the Commission.

ARTICLE VII—HEALTH AND SAFETY

1. In its operation of the Nuclear Power Plant, the Contractor shall comply with the conditions of its license to operate the Plant and shall comply with and be responsible for safety under all applicable rules, regulations and orders of the Commission. Further, the Contractor shall, to the extent it participates in research and development work undertaken pursuant to the contract between the Commission and the Corporation at the Plant, and to the extent such work is not covered by applicable Commission rules, regulations and orders governing operation of the Plant, exercise jointly with the Corporation the same responsibilities for work at the Plant as are assumed by the Corporation under its contract with the Commission. The Contractor shall make no claim for compensation or damages by reason of or in connection with any interruption of Plant operation resulting from the failure of the Contractor to comply with its operating license or the applicable rules, regulations and orders of the Commission, or by reason of the failure of the Contractor or the Corporation to carry out its said joint responsibility in connection with research and development work at the Plant.

2. Nothing contained in this Article shall be construed to grant, vest, or create any rights in a person not a party to this contract, provided, however, that this provision shall not be construed to limit or impair any rights which any person may have under applicable Federal or State statutes.

ARTICLE VIII—EXAMINATION OF RECORDS

1. The Contractor agrees that the Commission and the Comptroller General of the United States or any of their duly authorized

representatives shall have access to and the right to examine any of its directly pertinent books, documents, papers and records involving transactions related to this contract until the expiration of three (3) years after the termination or expiration date of this contract unless the Commission authorizes their prior disposition.

2. The Contractor further agrees to include in all its subcontracts hereunder a provision to the effect that the subcontractor agrees that the Commission and the Comptroller General of the United States or any of their duly authorized representatives shall have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor involving transactions related to the subcontract until the expiration of three (3) years after final payment under such subcontract unless the Commission authorizes their prior disposition. The term "subcontract" as used herein means any purchase order or agreement to perform all or any part of the work or to make or furnish any materials required for the performance of this contract, but does not include (a) purchase orders not exceeding \$1,000.00, (b) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public, or (c) subcontracts or purchase orders for general inventory items not specifically identifiable with the work under this contract.

3. Nothing in this contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this contract.

ARTICLE IX—ASSIGNMENT

Neither this contract nor any interest therein or claim thereunder shall be assigned or transferred by the Contractor, except as expressly authorized in writing by the Contracting Officer.

ARTICLE X—COVENANT AGAINST CONTINGENT FEES

1. The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract

upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration the full amount of such commission, percentage, brokerage, or contingent fee.

2. Unless otherwise authorized by the Contracting Officer in writing the Contractor shall cause provisions similar to the foregoing to be inserted in all subcontracts and purchase orders entered into under this contract.

ARTICLE XI—OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress, or Resident Commissioner, shall be admitted to any share or part of this contract or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE XII—RENEGOTIATION

1. Unless and except to the extent that exemption may be granted by or pursuant to section 106 of the Renegotiation Act of 1951, as amended, or to the extent that said Act, as amended, may be determined by the Renegotiation Board to be inapplicable to this contract, this contract is subject to said Act of 1951, as amended, and shall be deemed to contain all the provisions required by section 104 of said Act.

2. Subject to the provisions of paragraph 1 of this Article, the Contractor agrees to insert the provisions of this Article including this paragraph 2, in all subcontracts made by it specified in section 103 (g) of the Renegotiation Act of 1951; provided, that the Contractor shall not be required to insert the provisions of this Article

in any subcontract exempted by or pursuant to section 106 of the Renegotiation Act of 1951, as amended.

ARTICLE XIII—NOTICES

1. Whenever under this contract either party is required or permitted to give notice or to furnish any report, information, estimate, statement or other document to the other party, such notice or document may either be delivered or mailed by regular mail. The giving or furnishing of such notice or other document shall be deemed to occur for all purposes under this contract (1) in the case of delivery of such notice or document on the date of such delivery, or (2) in the case of mailing of such notice or document on the second business day following the date of post-mark of such mailing, provided, that notices or other documents furnished pursuant to paragraph 2 of Article III shall be given or furnished by delivery or by registered mail, and the giving or furnishing of such notice or other documents shall be deemed to occur for all purposes under this contract on the date of such delivery or such receipt of registered mail.

2. Notices or other documents to be given or furnished to the Commission shall be delivered or mailed to the Manager of Operations, Oak Ridge Operations Office, Atomic Energy Commission, Oak Ridge, Tennessee. Notices or other documents to be given or furnished to the Contractor shall be delivered or mailed to L. R. Gaty, Vice President, Philadelphia Electric Company, 1000 Chestnut Street, Philadelphia 5, Pennsylvania.

3. Either party may at any time change a previous designation of individual or address to which notices or other documents are to be sent by giving notice in writing of such change of designation to the other party.

ARTICLE XIV—OPTION TO PURCHASE

1. Without prejudice to any other rights the Commission may have in the event of a default by the Contractor, the Commission shall have the right and option to purchase the Reactor Plant and

related facilities if, at any time after the initial pouring of concrete for the foundation of the reactor portion of the proposed Plant, the Contractor fails to continue with the construction or operation of the proposed reactor during the period required by this contract for any reason other than causes beyond the control and without the fault or negligence of the Contractor, including (i) acts of God, strikes, Governmental authority, fire or the public enemy, (ii) the inability of the Contractor to obtain the necessary licenses and permits, or adequate liability insurance coverage, (iii) the termination of the contract between the Commission and the Corporation, or the termination of this contract by mutual agreement. For the purposes of this section "Reactor Plant and related facilities" shall not be construed to include the Contractor's power generating plant and equipment. Upon the Contractor's failure to proceed with construction or operation of the Plant, the Commission shall, within six (6) months after such failure has continued for a period of three (3) months, inform the Contractor in writing whether or not the Commission desires to exercise its option to purchase the Reactor Plant and related facilities; provided, however, that in computing such six (6) months period, there shall be excluded any period during which either House of the Congress of the United States is not in session by reason of adjournment of more than three (3) days. In the event that this purchase option is exercised by the Commission, the Contractor will then sell to the Commission the Reactor Plant and its related facilities, including all parts, components, and equipment in their then existing status and condition, and in addition make arrangements as may be appropriate to lease to the Commission for a period sufficient to permit ten (10) years of operation of the Reactor Plant and related facilities, necessary real estate and related rights owned by the Contractor, including water rights, and rights to access, adequate for the Commission's intended operation.

2. Upon the expiration of such lease, the Government shall continue to exercise control over and remove as expeditiously as possible all radioactive facilities, parts and materials from the

leased premises or decontaminate as expeditiously as possible all radioactive facilities, parts and materials, and notify the Contractor of its intention to either remove other facilities, parts and materials from the leased premises or abandon them. If the Government notifies the Contractor of its intention to remove such other facilities, parts and materials from the leased premises, it shall remove them within a reasonable time after the termination of the lease. In any event, the Government shall leave the leased premises in a reasonably safe and orderly condition. Title to all facilities, parts and materials abandoned by the Government shall pass to the Contractor.

3. The property and rights to be sold and leased to the Commission, and the price to be paid therefor, will be mutually agreed upon by the parties. If the parties are unable to agree, such disagreement shall be considered a dispute concerning a question of fact within the provisions of Article XVI of this contract, but in no event will such price exceed the Contractor's original acquisition, engineering, fabrication, and construction costs, less depreciation applicable during the operating period, nor will it include research, development, or other costs incurred in anticipation of such fabrication, engineering, construction, or acquisition of tangible property.

ARTICLE XV—SUBCONTRACTS

The Contractor will incorporate or cause to be incorporated in each purchase order and subcontract for the performance of any of the work under this contract such provisions as are required by Article I, subparagraph 1. c. and Articles V, VI, VIII, X, XII and XVII of this contract.

ARTICLE XVI—DISPUTES

1. Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. Within thirty (30) days from

the date of receipt of such copy, the Contractor may appeal by mailing or otherwise furnishing to the Contracting Officer a written appeal addressed to the Commission, and the decision of the Commission shall, unless determined by a court of competent jurisdiction to have been fraudulent, arbitrary, capricious, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence, be final and conclusive; provided, that if no such appeal to the Commission is taken, the decision of the Contracting Officer shall be final and conclusive. In connection with any appeal proceeding under this Article, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the contract in accordance with the Contracting Officer's decision.

2. This "Disputes" clause does not preclude consideration of law questions in connection with decisions provided for in paragraph 1, above; provided that nothing in this contract shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

ARTICLE XVII—SECURITY

1. In the performance of the work under this contract the Contractor shall, in accordance with the Commission's security regulations and requirements, be responsible for safeguarding restricted data and other classified matter and protecting against sabotage, espionage, loss and theft, the classified documents, materials, equipment, processes, etc., as well as such other material of high intrinsic or strategic value as may be in the Contractor's possession in connection with performance of work under this contract. Except as otherwise expressly authorized by the Commission the Contractor shall upon completion or termination of this contract transmit to the Commission any classified matter in the possession of the Contractor or any person under the Contractor's control in connection with performance of this contract, not including, however, any classified matter received by the Contractor under an access permit issued by the Commission.

2. The Contractor agrees to conform to all security regulations and requirements of the Commission.

3. The term "Restricted Data," as used in this Article, means all data concerning (a) design, manufacture, or utilization of atomic weapons; (b) the production of special nuclear material; or (c) the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to section 142 of the Atomic Energy Act of 1954, as amended.

4. Except as the Commission may authorize, in accordance with the Atomic Energy Act of 1954, as amended, the Contractor shall not permit any individual to have access to Restricted Data until the designated investigating agency shall have made an investigation and report to the Commission on the character, associations, and loyalty of such individual and the Commission shall have determined that permitting such person to have access to Restricted Data will not endanger the common defense and security. As used in this paragraph, the term "designated investigating agency" means the United States Civil Service Commission or the Federal Bureau of Investigation, or both, as determined pursuant to the provisions of the Atomic Energy Act of 1954, as amended.

5. It is understood that disclosure of information relating to the work or services ordered hereunder to any person not entitled to receive it, or failure to safeguard any Restricted Data or any top secret, secret, or confidential matter that may come to the Contractor or any person under the Contractor's control in connection with work under this contract, may subject the Contractor, its agents, employees, and subcontractors to criminal liability under the laws of the United States. (See the Atomic Energy Act of 1954, as amended, 68 Stat. 919. See also Executive Order 10104 of February 1, 1950, 15 F. R. 597.)

6. Except as otherwise authorized in writing by the Contracting Officer, the Contractor shall insert where applicable, provisions similar to the foregoing in all subcontracts and purchase orders under this contract.

ARTICLE XVIII—DEFINITIONS

1. As used in this contract:

a. The term "Contracting Officer" means the person executing this contract on behalf of the Government and includes his successors or any duly authorized representative of any such person.

b. The term "Commission" means the United States Atomic Energy Commission or any duly authorized representative thereof, including the Contracting Officer, except for the purpose of appeals under Article XVI.

c. The term "Nuclear Power Plant" or "Plant" means the prototype nuclear power reactor referred to in paragraph 1. a. of Article I and includes the site and all conventional and reactor facilities on the site, pertaining to this project.

d. The term "Reactor Plant" means the prototype nuclear power reactor referred to in paragraph 1. a. of Article I and includes the necessary fuel elements and heat exchangers for said reactor.

e. The term "Project" means the "Nuclear Power Plant," and all supporting work including research, development, and engineering performed on and off-site.

IN WITNESS WHEREOF, the parties hereto have executed this contract as of the day and year first above written.

UNITED STATES OF AMERICA

/s/ By FRANK K. PITTMAN
Director, Division of Reactor
Development, U. S. Atomic
Energy Commission

PHILADELPHIA ELECTRIC COMPANY

/s/ By R. G. RINCLIFFE
President

I, V. J. WALSH, certify that I am the Secretary of the corporation named as Contractor herein; that R. G. RINCLIFFE who signed this contract on behalf of the Contractor was then President of said corporation; that said contract was duly signed for and on behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation this 27 day of Aug, 1959.

/s/ V. J. WALSH.

(Corporate Seal)

Contract No. AT(40-1) 2586

APPENDIX A

The Nuclear Power Plant will include a helium-cooled, graphite-moderated, nuclear reactor, designated as HTGR, gas circulation system, steam generator, turbine generator, and other necessary auxiliary systems and components. The reactor will be designed to be fueled with graphite-clad fuel elements containing thorium and highly enriched uranium. The plant will be designed to be capable of a heat power level of 115 megawatts and electrical output of approximately 40 megawatts when fueled with graphite-clad fuel elements and cooled by helium gas at about 300 psi pressure, and with a reactor coolant outlet temperature of approximately 1380° F. The steam generation rate will be designed to be approximately 367,000 lbs. per hour at 1450 psig and 1000° F. at the turbine.

The fuel elements will consist of uranium and thorium dispersed in graphite in the form of fuel compacts contained in graphite. The reflector will be graphite. It is anticipated that the fuel elements in the first core will be metal-clad, resulting in a somewhat lower operating temperature and an approximate heat power level of 90 megawatts. If metal-clad elements are used, they will be replaced by and the plant will be operated with graphite-clad elements after sufficient information is available to establish the feasibility of operation of the plant with a graphite-clad core. Any metal-clad elements which are used to fuel the reactor may be so used until it is operationally desirable to remove them and the graphite-clad elements may be introduced gradually into the core in replacement of the metal-clad elements as they are removed.

Materials of construction, design criteria, and specifications, provision for shield containment, components associated with the reactor plant, and the turbo generator plant will, as indicated by a continuous survey of the best technology known and an active research and development program, be such as to provide a safe, useful, economical operating life of said plant with due consideration for the scheduled completion date.

EXHIBIT C

PHILADELPHIA ELECTRIC COMPANY - HIGH TEMPERATURE REACTOR
DEVELOPMENT ASSOCIATES, INC. PARTICIPATING COMPANIES AGREEMENT
dated November 18, 1958 among

Alabama Power Company ,
Arizona Public Service Company ,
Arkansas Power & Light Co. ,
Atlantic City Electric Company ,
Baltimore Gas and Electric Company ,
California Electric Power Company ,
Central Illinois Electric and Gas Co. ,
Central Illinois Light Company ,
Central Illinois Public Service Co. ,
Central Louisiana Electric Co. ,
Central Power and Light Company ,
The Cincinnati Gas & Electric Company ,
Cleveland Electric Illuminating Co. ,
Delaware Power & Light Company ,
Detroit Edison Company ,
Gulf Power Company ,
Gulf States Utilities Co. ,
The Hawaiian Electric Company, Ltd. ,
Idaho Power Company ,

Illinois Power Company ,
Iowa Public Service Co. ,
Kansas City Power & Light Company ,
The Kansas Power and Light Company ,
Kentucky Utilities Company ,
Louisiana Power & Light Co. ,
Mississippi Power Company ,
Mississippi Power & Light Co. ,
Missouri Public Service Company ,
The Montana Power Company ,
New Orleans Public Service, Inc. ,
New York State Electric & Gas Corporation ,
Niagara Mohawk Power Corporation ,
Pacific Gas and Electric Company ,
Pacific Power & Light Company ,
Pennsylvania Power & Light Company ,
Philadelphia Electric Company ,
Portland General Electric Company ,
Public Service Company of Colorado ,
Public Service Company of New Mexico ,

Public Service Company of Oklahoma ,
Public Service Electric and Gas Company ,
Puget Sound Power & Light Company ,
Rochester Gas and Electric Corporation ,
St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

hereinafter collectively called the "Participating Companies" and Philadelphia Electric Company.

Although there is as yet no indication that any type of nuclear power reactor, with the attendant developmental and construction costs, can be built to produce power in competition with a conventional steam generating plant, the Participating Companies are of the opinion that the ultimate prospects for competitive operation by some future reactor of the gas-cooled type are now such as to warrant, in the interests of the Participating Companies and the electric utility industry generally, and in the national interest, the construction of a prototype electric generating plant

powered by a gas-cooled, graphite-moderated reactor.

Believing that further research and development in the application of nuclear power to electric generation can best be advanced by the actual design, construction, and operation of such a plant, the Participating Companies now propose to contribute funds towards the research and development costs associated with the design and construction of an electric generating plant powered by a reactor of the gas-cooled type (the Plant), and in turn, that the Participating Companies acquire technical knowledge, information, experience and training in the design, construction, maintenance and operation of a nuclear-power plant, all as hereinafter set forth.

1. The Participating Companies have organized and are members of a corporation not for pecuniary profit, the name of which is "High Temperature Reactor Development Associates, Inc." (such corporation being hereinafter called HTRDA) and the corporate purposes of which are the study of electric generation by atomic or nuclear power, the receipt from the Participating Companies and others of research contributions and the disbursement thereof, and in general, the conduct of research and developmental study and work, not only with respect to the design, construction, and operation of the Plant but also, on a continuing basis, with respect to future developments in the nuclear power field.

2. Each of the Participating Companies agrees, severally and not jointly, to pay to HTRDA, as a contribution toward research and development, the amount and at the time set forth in Exhibits 1 through 53 annexed hereto; provided, however,

that HTRDA may at any time receive research and development contributions from others than the Participating Companies.

3. Subject to the conditions that the Atomic Energy Commission (AEC) enters into an Agreement with Philadelphia Electric Company (PE) providing, among other things, for the design, construction and operation of the Plant, on the PE system; that the AEC enters into a Contract with General Atomic Division of General Dynamics Corporation (GA) for the performance of a program of research and development for the Plant on the basis of cost reimbursement by the AEC to a stated maximum amount; and subject to the termination provisions of paragraph 5; PE and HTRDA will enter into a Contract with Bechtel Corporation (Bechtel) for the design and construction of the Plant, all in accordance with the design study entitled "40 MW Helium Graphite Prototype Nuclear Power Plant" heretofore prepared jointly by Bechtel Corporation and General Atomic Division of General Dynamics Corporation, dated November 17, 1958, which design study is incorporated herein by this reference, under which Contract, in consideration of Bechtel's Agreement to design and construct the Plant, PE will agree to pay to Bechtel the sum of Eight Million Dollars (\$8,000,000), representing capital expenditures to be made by it, and HTRDA will agree to pay to Bechtel the sum of Sixteen Million, Five Hundred Thousand Dollars (\$16,500,000), [which includes a fixed amount of Four Million Dollars (\$4,000,000), to cover escalation during the Contract period], toward research and development associated with the design and construction of the Plant.

It is expressly understood and agreed that the responsibilities and liabilities of PE and HTRDA in respect to the payment of the Contract price are several and not joint, PE's liability to Bechtel in respect to the Contract price is limited to the sum of Eight Million Dollars (\$8,000,000) and HTRDA's liability to Bechtel in respect to the Contract price is limited to Sixteen Million Five Hundred Thousand Dollars (\$16,500,000). It is further understood and agreed that if changes in the scope of the work or in the specifications are requested by PE, which involve an increase in the Contract price, such increase shall be assumed and paid by PE.

4. Bechtel will agree in its Contract with PE and HTRDA to submit periodically, but not more often than monthly, billings to PE and HTRDA in accordance with a schedule of expenditures for research, design, procurement and construction to be agreed upon among the parties thereto at a later date. The amounts periodically due will be billed by Bechtel to PE and HTRDA in the following manner:

(a) one-third (1/3) of each of said amounts periodically due will be billed to PE; and

(b) two-thirds (2/3) of each of such amounts periodically due will be billed to HTRDA, until such time as PE has paid a total of Eight Million Dollars (\$8,000,000), after which time PE will no longer be billed by Bechtel but Bechtel will bill HTRDA for each of such periodic amounts due.

5. The Philadelphia Electric Company - Atomic Energy Commission Contract mentioned in paragraph 3 hereof will contain provisions with respect to termination as follows:

(a) Said Contract may be terminated at any time by written agreement of the parties and concurrence of HTRDA. Any such termination shall be effective in the manner and upon the date specified in such termination agreement.

(b) Philadelphia Electric Company may terminate said Contract at any time by written notice to the Atomic Energy Commission, if

- (i) The Contract between AEC and GA is terminated; or
- (ii) Construction or operation of the Plant is made impossible by its inability to obtain necessary licenses or regulatory agency approvals; or
- (iii) PE is unable to obtain definitive policies of private insurance companies providing satisfactory liability insurance coverage against public liability for nuclear incidents.

In case of termination under subparagraph (a) or (b) above, the payments theretofore made by PE and HTRDA to Bechtel shall be used as a payment to Bechtel for costs incurred on research, design, procurement and construction of the Plant, and any excess of payments over said costs shall be repaid by Bechtel to PE and HTRDA, and no amount shall thereafter be payable by HTRDA and PE to Bechtel.

6. The Participating Companies, in entering into this Agreement and making their respective commitments hereunder, have as a major objective, the obtaining of such technical knowledge information, experience and training of personnel as will enable them in future years to design, construct and operate larger nuclear power plants of improved efficiency.

Although Bechtel will be responsible under its Contract with PE and HTRDA for all matters pertaining to the design and construction of the Plant, and GA will be responsible under the AEC/GA Contract for all matters pertaining to the research and development program, PE will arrange for appropriate provisions in the Bechtel Contract and AEC/GA Contract and by instructions to its own organization, whereby:

(a) The Participating Companies during the period of design and construction of the Plant, will be given the opportunity to discuss problems relating to such design and construction with Philadelphia Electric Company, Bechtel Corporation and General Atomic Division; and to the extent reasonable will be given notice of, and an opportunity to attend important meetings between Philadelphia Electric Company, Bechtel Corporation, General Atomic Division and governmental agencies and between any of them;

(b) Each Participating Company, during such period, will be supplied material, information and data pertinent to the development of nuclear power by this reactor project by Bechtel or General Atomic or, to the extent not supplied directly by Bechtel or General Atomic, by Philadelphia Electric Company, on as current a basis as practicable, with copies of reports, drawings, specifications, governmental certificates, permits and licenses, and applications therefor, and other material, information and data pertinent to the development of nuclear power by this reactor project, including in any event, all such material, information and data furnished by Bechtel and General Atomic to Philadelphia Electric Company under or in connection with their Contracts; it being the intent hereof that

efforts be made to distribute the maximum amount of such material, information and data toward the end of achieving the objective of the Participating Companies expressed at the beginning of this paragraph 6, all consistent with applicable security regulations governing restricted data and other classified information;

(c) Bechtel and General Atomic will furnish the Participating Companies with copies of periodic progress reports on the research and development associated with the design and construction of the Plant, not less often than quarterly, beginning with the effective date of their respective commitment contracts;

(d) Meetings will be held, at reasonable intervals, between representatives of Philadelphia Electric Company, the other Participating Companies, Bechtel and General Atomic for the purpose of discussing and reviewing the procedures, and the sufficiency thereof, as carried on with respect to the several matters referred to in the foregoing subparagraphs (a), (b) and (c);

(e) Within six months after the Plant shall be ready for initial operation, Bechtel will furnish a report showing a breakdown of the total contract price, which includes escalation, for the Plant in accordance with the Uniform System of Accounts of the Federal Power Commission;

(f) During the period of design and construction of the Plant HTRDA may assign a reasonable number of employees selected from the Participating Companies to the project, for appropriate periods, for the purposes of observation and education, and in order to participate in carrying forward the program; this will aid in the

training of employees of the Participating Companies in the nuclear energy field. All of such employees shall remain on the payroll of their respective employers. Each of the Participating Companies shall assume responsibilities with respect to injury to its own employees which may be assigned as aforesaid. Bechtel shall, however, indemnify each Participating Company against liability for injury to others and damage to property arising out of work in connection with the design and construction of the Plant, including any injury or damage caused by the action or failure to act of any of such Participating Company's employees whose services are utilized in such work; provided, however, that such indemnification shall cover such liability only to the extent that Bechtel is protected by insurance against similar liability caused by the action or failure to act of its own employees.

If the services of employees of Participating Companies are utilized by General Atomic under the circumstances outlined in subparagraph (f) above, each of the Participating Companies shall assume responsibility with respect to injury to its own employees. General Atomic shall, however, indemnify each Participating Company against liability for injury to others and damage to property arising out of work in General Atomic premises and in connection with the construction of the Plant, including any injury or damage caused by the action or failure to act of any such Participating Company's employees, whose services are utilized in such work; provided, however, that such indemnification shall cover such liability only to the extent that General Atomic is protected by insurance against similar liability caused by the action or failure

to act of its own employees.

7. Philadelphia Electric Company shall furnish land located on the Philadelphia Electric Company system for the construction of the Plant. The entire Plant, including the land comprising the site for the Plant, shall be owned by Philadelphia Electric Company. Upon its completion, the Plant will be integrated with Philadelphia Electric Company's electric transmission and distribution system.

8. Philadelphia Electric Company shall be responsible for the operation of the Plant following its completion. During the operation of the Plant, Philadelphia Electric Company will permit HTRDA to assign a reasonable number of employees selected from the Participating Companies to observe operations of the Plant, will give such Companies the opportunity to discuss problems of operation and maintenance with representatives of Philadelphia Electric Company, will supply such Companies with copies of operation and maintenance reports and other pertinent material relating to the operation and maintenance of the Plant and in general will keep such Companies informed as to all important details of such operation and maintenance. In order that the other Participating Companies may acquire direct experience in the operation and maintenance of the Plant each such company may, during the first five years of the Plant's operation, assign selected employees to the Plant to assist in such operation and maintenance. The number of such employees so assigned at any one time shall be limited, however, to a number consistent, in the judgment of Philadelphia Electric Company, with safe and efficient operation. All of such employees shall remain on the payroll of their respective employers.

In the operation of the Plant, each of the Participating Companies shall assume responsibility with respect to injury to its own employees. Philadelphia Electric Company, however, shall indemnify each Participating Company against liability for injury to others and damage to property, arising out of Philadelphia Electric Company's operation of the Plant, including any injury or damage caused by the action or failure to act of any of such Participating Company's employees assigned to the Plant; provided, however, that such indemnification shall cover such liability only to the extent that Philadelphia Electric Company is protected by insurance against similar liability caused by the action or failure to act of its own employees.

9. The Plant shall be constructed, operated and maintained for the period of the Contract so as to comply at all times with applicable laws and with the regulations of governmental agencies and public authorities having jurisdiction over any phase of such construction, operation and maintenance.

10. This Document shall consist of 53 counterparts each to be executed by Philadelphia Electric Company and one Participating Company, such counterparts constituting the Contract.

ATTEST: PHILADELPHIA ELECTRIC COMPANY
(SEAL) /s/ V. J. Walsh BY: /s/ R. G. Rincliffe
Secretary President

PARTICIPATING COMPANIES

ATTEST: ALABAMA POWER COMPANY
(SEAL) /s/ Charles P. Jackson BY: /s/ Walter Bouldin
Secretary President

ATTEST:

(SEAL) /s/ F. W. Smith
Secretary

ARIZONA PUBLIC SERVICE COMPANY

BY: /s/ Geo. H. Groh
Vice-President

ATTEST:

(SEAL) /s/ M. E. Nichols
Ass't Secretary

ARKANSAS POWER & LIGHT CO.

BY: /s/ R. E. Ritchie
President

ATTEST:

(SEAL) /s/ A. C. Vence
Secretary

ATLANTIC CITY ELECTRIC COMPANY

BY: /s/ C. M. Hagan
Executive Vice-President

ATTEST:

(SEAL) /s/ O. E. Smith
Secretary

BALTIMORE GAS AND ELECTRIC COMPANY

BY: /s/ J. Wolfe
President

ATTEST:

(SEAL) /s/ O. E. Thomas
Ass't Secretary

CALIFORNIA ELECTRIC POWER COMPANY

BY: /s/ Carl C. Ernst
President

ATTEST:

(SEAL) /s/ Alex Pryhoda
Secretary

CENTRAL ILLINOIS ELECTRIC AND GAS CO.

BY: /s/ J. Murray
President

ATTEST:

(SEAL) /s/ H. A. Blair
Secretary

CENTRAL ILLINOIS LIGHT COMPANY

BY: /s/ O. W. Wellington
Vice-President - Operations

ATTEST:

(SEAL) /s/ O. H. White
Ass't Secretary

CENTRAL ILLINOIS PUBLIC SERVICE CO.

BY: /s/ M. S. Luthringer
President

ATTEST:

(SEAL) /s/ T. P. Street
Secretary

CENTRAL LOUISIANA ELECTRIC CO.

BY: /s/ C. J. Schexnayder
Vice-President

ATTEST:

(SEAL) /s/ W. Boone
Secretary

CENTRAL POWER AND LIGHT COMPANY

BY: /s/ J. L. Bates
President

ATTEST:

(SEAL) /s/ M. J. Doan
Secretary

THE CINCINNATI GAS & ELECTRIC COMPANY

BY: /s/ E. S. Fields
President

ATTEST:

(SEAL) /s/ Donald E. Williams
Secretary

CLEVELAND ELECTRIC ILLUMINATING CO.

BY: /s/ Elmer L. Lindseth
President

ATTEST:

(SEAL) /s/ A. T. Gardner
Secretary

DELAWARE POWER & LIGHT COMPANY

BY: /s/ H. H. Plank
President

ATTEST:

(SEAL) /s/ H. E. Blackford
Ass't Secretary 12/19/58

DETROIT EDISON COMPANY

BY: /s/ C. R. Landrigen
Executive Vice-President

ATTEST:

(SEAL) /s/ R. P. Welsh
Secretary

GULF POWER COMPANY

BY: /s/ L. T. Smith, Jr.
President

ATTEST:

(SEAL) /s/ W. H. Gieseke
Vice-President - Secretary

GULF STATES UTILITIES CO.

BY: /s/ Roy S. Nelson
President

ATTEST:

(SEAL) /s/ R. L. Summers
Secretary

THE HAWAIIAN ELECTRIC COMPANY, LTD.

BY: /s/ L. A. Hicks
President

ATTEST:

(SEAL) /s/ A. C. Inman
Secretary

IDAHO POWER COMPANY

BY: /s/ T. E. Roach
President

ATTEST:

(SEAL) /s/ K. F. Bader
Secretary

ATTEST:

(SEAL) /s/ R. B. Searing
Secretary

ATTEST:

(SEAL) /s/ Robert A. Olson
Secretary

ATTEST:

(SEAL) /s/ C. E. Dailey
Secretary

ATTEST:

(SEAL) /s/ E. D. Adams
Ass't Secretary

ATTEST:

(SEAL) /s/ L. E. Didier
Secretary

ATTEST:

(SEAL) /s/ R. W. Richardson
Secretary

ATTEST:

(SEAL) /s/ Alex Rogers
Secretary

ATTEST:

(SEAL) /s/ R. A. Delaney
Secretary

ILLINOIS POWER COMPANY

BY: /s/ Allen Van Wyck
President

IOWA PUBLIC SERVICE CO.

BY: /s/ G. A. Neal
Chairman of Board

KANSAS CITY POWER & LIGHT COMPANY

BY: /s/ H. B. Munsell
President

THE KANSAS POWER AND LIGHT COMPANY

BY: /s/ D. E. Ackers
Chairman of Board

KENTUCKY UTILITIES COMPANY

BY: /s/ Floyd I. Fairman
President

LOUISIANA POWER & LIGHT CO.

BY: /s/ W. O. Turner
President

MISSISSIPPI POWER COMPANY

BY: /s/ A. J. Watson, Jr.
President

MISSISSIPPI POWER & LIGHT CO.

BY: /s/ R. B. Wilson
President

MISSOURI PUBLIC SERVICE COMPANY

BY: /s/ Richard G. Green
President

ATTEST:

(SEAL) /s/ D. J. McCaig
Secretary

THE MONTANA POWER COMPANY

BY: /s/ J. E. Corette
President

ATTEST:

(SEAL) /s/ E. T. Colton
Secretary

NEW ORLEANS PUBLIC SERVICE, INC.

BY: /s/ Gerald L. Andrus
Vice-President

ATTEST:

(SEAL) /s/ O. C. Vieweg
Ass't Secretary

NEW YORK STATE ELECTRIC & GAS CORPORATION

BY: /s/ A. W. Milliken
Vice-President - Gen'l Manager

ATTEST:

(SEAL) /s/ John G. Bennack
Secretary

NIAGARA MOHAWK POWER CORPORATION

BY: /s/ Earl J. Machold
President

ATTEST:

(SEAL) /s/ E. E. Manhard
Secretary

PACIFIC GAS AND ELECTRIC COMPANY

BY: /s/ N. R. Sutherland
President

ATTEST:

(SEAL) /s/ H. W. Millay
Secretary

PACIFIC POWER & LIGHT COMPANY

BY: /s/ E. Robt. deLuccia
Vice-President

ATTEST:

(SEAL) /s/ R. Merritt Knoll
Ass't Secretary

PENNSYLVANIA POWER & LIGHT COMPANY

BY: /s/ Jack K. Busby
President

ATTEST:

(SEAL) /s/ V. J. Walsh
Secretary

PHILADELPHIA ELECTRIC COMPANY

BY: /s/ R. G. Rinchliffe
President

ATTEST:

(SEAL) /s/ Clarence D. Phillips
Secretary

PORTLAND GENERAL ELECTRIC COMPANY

BY: /s/ Thos. W. Delzell
Chairman of Board

ATTEST:

PUBLIC SERVICE COMPANY OF COLORADO

(SEAL) /s/ E. T. Nussbaum
Ass't Secretary

BY: /s/ J. E. Loiseau
President

ATTEST:

PUBLIC SERVICE COMPANY OF NEW MEXICO

(SEAL) /s/ R. T. MacBain
Secretary-Treasurer

BY: /s/ D. W. Reeves
President

ATTEST:

PUBLIC SERVICE COMPANY OF OKLAHOMA

(SEAL) /s/ J. W. Smith
Secretary

BY: /s/ D. J. Tuepker
President

ATTEST:

PUBLIC SERVICE ELECTRIC AND GAS
COMPANY

(SEAL) /s/ F. M. Ludlow
Secretary

BY: /s/ Edwin H. Snyder
Vice-President in Charge of Electric
Operations

ATTEST:

PUGET SOUND POWER & LIGHT COMPANY

(SEAL) /s/ George R. Rice
Ass't Secretary

BY: /s/ Frank McLaughlin
President

ATTEST:

ROCHESTER GAS AND ELECTRIC CORPORATION

(SEAL) /s/ H. S. Weatherby
Secretary and Controller

BY: /s/ Ernest J. Howe
President

ATTEST:

ST. JOSEPH LIGHT & POWER COMPANY

(SEAL) /s/ H. A. McClelland
Secretary

BY: /s/ G. A. Semrad

ATTEST:

SAN DIEGO GAS & ELECTRIC COMPANY

(SEAL) /s/ H. O. Craghead
Secretary

BY: /s/ E. D. Sherwin
President

ATTEST:

SIERRA PACIFIC POWER COMPANY

(SEAL) /s/ Roy Torvinen
Secretary

BY: /s/ F. A. Tracy
President

ATTEST:

(SEAL) /s/ Elaine Botensten
Ass't Secretary

ATTEST:

(SEAL) /s/ J. N. Watts
Secretary-Treasurer

ATTEST:

(SEAL) /s/ D. L. Broussard
Secretary

ATTEST:

(SEAL) /s/ J. W. Willis
Ass't Secretary

ATTEST:

(SEAL) /s/ Arthur S. Harker
Secretary

ATTEST:

(SEAL) /s/ C. N. Griswold
Ass't Secretary

ATTEST:

(SEAL) /s/ H. M. Martell
Assistant Secretary

SOUTHERN CALIFORNIA EDISON COMPANY

BY: /s/ Harold Quinton
President

SOUTHWESTERN ELECTRIC POWER COMPANY

BY: /s/ J. Robert Welch
President

UTAH POWER & LIGHT COMPANY

BY: /s/ E. M. Naughton
President

THE WASHINGTON WATER POWER COMPANY

BY: /s/ G. M. Brunzell
Executive Vice-President

WEST TEXAS UTILITIES CO.

BY: /s/ C. L. Young
President

THE UNITED ILLUMINATING COMPANY

BY: /s/ William J. Cooper
President

POTOMAC ELECTRIC POWER CO.

BY: /s/ R. Roy Dunn
President

EXHIBIT 1

EXHIBIT 1 of the Agreement dated November 18, 1958, among

Alabama Power Company ,
Arizona Public Service Company ,
Arkansas Power & Light Co. ,
Atlantic City Electric Company ,
Baltimore Gas and Electric Company ,
California Electric Power Company ,
Central Illinois Electric and Gas Co. ,
Central Illinois Light Company ,
Central Illinois Public Service Co. ,
Central Louisiana Electric Co. ,
Central Power and Light Company ,
The Cincinnati Gas & Electric Company ,
Cleveland Electric Illuminating Co. ,
Delaware Power & Light Company ,
Detroit Edison Company ,
Gulf Power Company ,
Gulf States Utilities Co. ,
The Hawaiian Electric Company, Ltd. ,
Idaho Power Company ,
Illinois Power Company ,
Iowa Public Service Co. ,
Kansas City Power & Light Company ,

EXHIBIT 1

The Kansas Power and Light Company ,
Kentucky Utilities Company ,
Louisiana Power & Light Co. ,
Mississippi Power Company ,
Mississippi Power & Light Co. ,
Missouri Public Service Company ,
The Montana Power Company ,
New Orleans Public Service, Inc. ,
New York State Electric & Gas Corporation ,
Niagara Mohawk Power Corporation ,
Pacific Gas and Electric Company ,
Pacific Power & Light Company ,
Pennsylvania Power & Light Company ,
Philadelphia Electric Company ,
Portland General Electric Company ,
Public Service Company of Colorado ,
Public Service Company of New Mexico ,
Public Service Company of Oklahoma ,
Public Service Electric and Gas Company ,
Puget Sound Power & Light Company ,
Rochester Gas and Electric Corporation ,

EXHIBIT 1

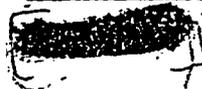
St. Joseph Light & Power Company,
San Diego Gas & Electric Company,
Sierra Pacific Power Company,
Southern California Edison Company,
Southwestern Electric Power Company,
Utah Power & Light Company,
The Washington Water Power Company,
West Texas Utilities Co.,
The United Illuminating Company,
Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Alabama Power Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made

Amount of
Contribution

Over the period January, 1959
through December, 1963



ATTEST:

ALABAMA POWER COMPANY

(SEAL) /s/ Charles P. Jackson
Secretary

BY: /s/ Walter Bouldin
President

Dated: December 18, 1958

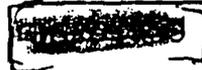
EXHIBIT 2

St. Joseph Light & Power Company,
San Diego Gas & Electric Company,
Sierra Pacific Power Company,
Southern California Edison Company,
Southwestern Electric Power Company,
Utah Power & Light Company,
The Washington Water Power Company,
West Texas Utilities Co.,
The United Illuminating Company,
Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Arizona Public Service Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made
Over the period January, 1959
through December, 1963

Amount of
Contribution



244

ATTEST:

ARIZONA PUBLIC SERVICE COMPANY

(SEAL) /s/ F. W. Smith
Secretary

BY: /s/ Geo. H. Groh
Vice-President

Dated: December 3, 1958

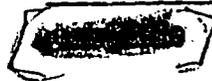
EXHIBIT 3

- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Arkansas Power & Light Co. hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1959 through December, 1963

Amount of Contribution



ATTEST:

ARKANSAS POWER & LIGHT CO.

(SEAL) /s/ M. E. Nichols
Ass't Secretary

BY: /s/ R. E. Ritchie
President

Dated: December 11, 1958

EXHIBIT 4

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Atlantic City Electric Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made

Over the period January, 1959
through December, 1963

Amount of
Contribution

[REDACTED] 6x4

ATTEST:

ATLANTIC CITY ELECTRIC COMPANY

(SEAL) /s/ A. G. Vence
Secretary

BY: /s/ G. M. Hagan
Executive Vice-President

Dated: December 15, 1958

EXHIBIT 5

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Baltimore Gas and Electric Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made

Amount of
Contribution

EJY

Over the period January, 1959
through December, 1963



ATTEST:

BALTIMORE GAS AND ELECTRIC COMPANY

(SEAL) /s/ O. E. Smith
Secretary

BY: /s/ J. Wolfe
President

Dated: December 5, 1958

EXHIBIT 6

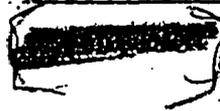
St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, California Electric Power Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made

Over the period January, 1959
through December, 1963

Amount of
Contribution



ATTEST:

CALIFORNIA ELECTRIC POWER COMPANY

(SEAL) /s/ O. E. Thomas
Ass't Secretary

BY: /s/ Carl C. Ernst
President

Dated: December 18, 1958

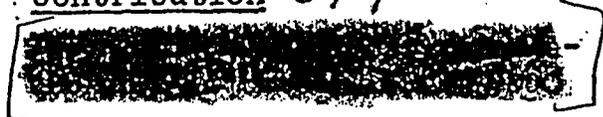
EXHIBIT 7

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Central Illinois Electric and Gas Co. hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1959 through December, 1963

Amount of Contribution *247*



ATTEST:

CENTRAL ILLINOIS ELECTRIC AND GAS CO

(SEAL) /s/ Alex Pryhoda
Secretary

BY: /s/ J. Murray
President

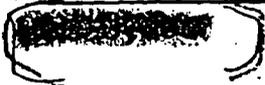
Dated: December 8, 1958

EXHIBIT 8

St. Joseph Light & Power Company,
San Diego Gas & Electric Company,
Sierra Pacific Power Company,
Southern California Edison Company,
Southwestern Electric Power Company,
Utah Power & Light Company,
The Washington Water Power Company,
West Texas Utilities Co.,
The United Illuminating Company,
Potomac Electric Power Co.

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Central Illinois Light Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1961 through December, 1963

Amount of Contribution
 44 Y

ATTEST:

CENTRAL ILLINOIS LIGHT COMPANY

(SEAL) /s/ H. A. Blair
Secretary

BY: /s/ O. W. Wellington
Vice-President-Operations

Dated: November 28, 1958

EXHIBIT 9

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Central Illinois Public Service Co. hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made
Over the period January, 1959
through December, 1963

Amount of
Contribution

[REDACTED] EHY

ATTEST:

CENTRAL ILLINOIS PUBLIC SERVICE CO.

(SEAL) /s/ O. H. White
Ass't Secretary

BY: /s/ M. S. Luthringer
President

Dated: January 2, 1959

EXHIBIT 10

- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Central Louisiana Electric Co. hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made

Amount of Contribution

Over the period January, 1959 through December, 1963



ATTEST:

CENTRAL LOUISIANA ELECTRIC CO.

(SEAL) /s/ T. P. Street
Secretary

BY: /s/ G. J. Schexnayder
Vice-President

Dated: December 18, 1958

EXHIBIT 11

St. Joseph Light & Power Company,
San Diego Gas & Electric Company,
Sierra Pacific Power Company,
Southern California Edison Company,
Southwestern Electric Power Company,
Utah Power & Light Company,
The Washington Water Power Company,
West Texas Utilities Co.,
The United Illuminating Company,
Potomac Electric Power Co.

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Central Power and Light Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made

Over the period January, 1959
through December, 1963

Amount of
Contribution

 244

ATTEST:

CENTRAL POWER AND LIGHT COMPANY

(SEAL) /s/ W. Boone
Secretary

BY: /s/ J. L. Bates
President

Dated: December 2, 1958

EXHIBIT 12

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, The Cincinnati Gas & Electric Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made
Over the period January, 1962
through December, 1963

Amount of
Contribution
[REDACTED] 1004

ATTEST:

THE CINCINNATI GAS & ELECTRIC COMPANY

(SEAL) /s/ M. J. Doan
Secretary

BY: /s/ E. S. Fields
President

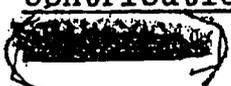
Dated: November 18, 1958

EXHIBIT 13

- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Cleveland Electric Illuminating Co. hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Payable equal installments 1961, 1962 and 1963

Amount of Contribution
 1/1

ATTEST:

CLEVELAND ELECTRIC ILLUMINATING CO.

(SEAL) /s/ Donald E. Williams
Secretary

BY: /s/ Elmer L. Lindseth
President

Dated: November 18, 1958

EXHIBIT 14

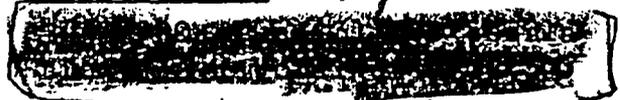
St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Delaware Power & Light Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made

Over the period January, 1959
through December, 1963

Amount of
Contribution *ENY*



ATTEST:

DELAWARE POWER & LIGHT COMPANY

(SEAL) /s/ A. T. Gardner
Secretary

BY: /s/ H. H. Plank
President

Dated: December 2, 1958

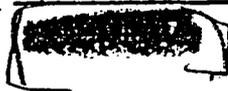
EXHIBIT 15

St. Joseph Light & Power Company,
San Diego Gas & Electric Company,
Sierra Pacific Power Company,
Southern California Edison Company,
Southwestern Electric Power Company,
Utah Power & Light Company,
The Washington Water Power Company,
West Texas Utilities Co.,
The United Illuminating Company,
Potomac Electric Power Co.

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Detroit Edison Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made
Payable \$250,000 in 1961 and
\$250,000 in 1962

Amount of
Contribution



ATTEST:

DETROIT EDISON COMPANY

(SEAL) /s/ H. E. Blackford
Ass't Secretary

BY: /s/ C. R. Landrigen
Executive Vice-President

Dated: December 19, 1958

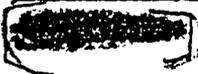
EXHIBIT 16

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Gulf Power Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made
Over the period January, 1959
through December, 1963

Amount of
Contribution

 244

ATTEST:

GULF POWER COMPANY

(SEAL) /s/ R. P. Welsh
Secretary

BY: /s/ L. T. Smith, Jr.
President

Dated: December 19, 1958

EXHIBIT 17

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Gulf States Utilities Co. hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made
Over the period January, 1959
through December, 1963

Amount of
Contribution
[REDACTED] ENY

ATTEST:

GULF STATES UTILITIES CO.

(SEAL) /s/ R. W. Jackson
Ass't Secretary

BY: /s/ Roy S. Nelson
President

Dated: December 8, 1958

EXHIBIT 18

- St. Joseph Light & Power Company ,
- San Diego Gas & Electric Company ,
- Sierra Pacific Power Company ,
- Southern California Edison Company ,
- Southwestern Electric Power Company ,
- Utah Power & Light Company ,
- The Washington Water Power Company ,
- West Texas Utilities Co. ,
- The United Illuminating Company ,
- Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, The Hawaiian Electric Company, Ltd. hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
 Over the period January, 1959 through December, 1963

Amount of Contribution



ATTEST:

THE HAWAIIAN ELECTRIC COMPANY, Ltd.

(SEAL) /s/ R. L. Summers
 Secretary

BY: /s/ L. A. Hicks
 President

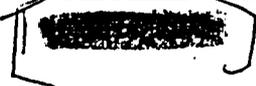
Dated: December 4, 1958

EXHIBIT 19

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Idaho Power Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1959 through December, 1963

Amount of Contribution
 ENY

ATTEST:

IDAHO POWER COMPANY

(SEAL) /s/ A. C. Inman
Secretary

BY: /s/ T. E. Roach
President

Dated: December 5, 1958

EXHIBIT 20

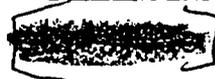
- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Illinois Power Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made

Amount of Contribution

Over the period January, 1959 through December, 1963



247

ATTEST:

ILLINOIS POWER COMPANY

(SEAL) /s/ K. F. Bader
Secretary

BY: /s/ Allen Van Wyck
President

Dated: December 1, 1958

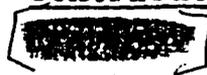
EXHIBIT 21

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Iowa Public Service Co. hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made
To be paid \$30,000 in 1959 and
\$55,000 in each of the years 1960,
1961, 1962 and 1963

Amount of
Contribution

 8.14

ATTEST:

IOWA PUBLIC SERVICE CO.

(SEAL) /s/ R. B. Searing
Secretary

BY: /s/ G. A. Neal
Chairman of Board

Dated: December 5, 1958

EXHIBIT 22

- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Kansas City Power & Light Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1959 through December, 1963

Amount of Contribution

[REDACTED] 244

ATTEST:

KANSAS CITY POWER & LIGHT COMPANY

(SEAL) /s/ Robert A. Olson
Secretary

BY: /s/ H. B. Munsell
President

Dated: December 11, 1958

EXHIBIT 23

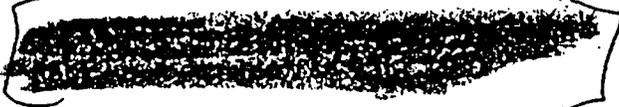
- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, The Kansas Power and Light Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made

Amount of Contribution

Over the period January, 1959 through December, 1963



ATTEST:

THE KANSAS POWER & LIGHT COMPANY

(SEAL) /s/ C. E. Dailey
Secretary

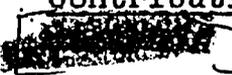
BY: /s/ D. E. Ackers
Chairman of the Board

Dated: November 18, 1958

EXHIBIT 24

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Kentucky Utilities Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

<u>Date Contribution is to be Made</u>	<u>Amount of Contribution</u>
Over the period January, 1959 through December, 1963	 <i>et al</i>

ATTEST:

KENTUCKY UTILITIES COMPANY

(SEAL) /s/ E. D. Adams
Ass't Secretary

BY: /s/ Floyd I. Fairman
President

Dated: December 3, 1958

EXHIBIT 25

- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Louisiana Power & Light Co. hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made

Over the period January, 1959
through December, 1963

Amount of
Contribution

 244

ATTEST:

LOUISIANA POWER & LIGHT CO.

(SEAL) /s/ L. E. Didier
Secretary

BY: /s/ W. O. Turner
President

Dated: December 15, 1958

EXHIBIT 26

St. Joseph Light & Power Company,
San Diego Gas & Electric Company,
Sierra Pacific Power Company,
Southern California Edison Company,
Southwestern Electric Power Company,
Utah Power & Light Company,
The Washington Water Power Company,
West Texas Utilities Co.,
The United Illuminating Company,
Potomac Electric Power Co.

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Mississippi Power Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made
Over the period January, 1959
through December, 1963

Amount of
Contribution
 644

ATTEST:

MISSISSIPPI POWER COMPANY

(SEAL) /s/ R. W. Richardson
Secretary

BY: /s/ A. J. Watson, Jr.
President

Dated: December 10, 1958

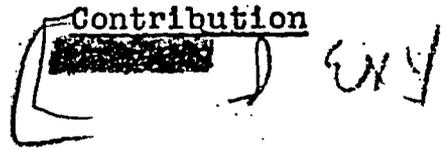
EXHIBIT 27

St. Joseph Light & Power Company,
San Diego Gas & Electric Company,
Sierra Pacific Power Company,
Southern California Edison Company,
Southwestern Electric Power Company,
Utah Power & Light Company,
The Washington Water Power Company,
West Texas Utilities Co.,
The United Illuminating Company,
Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Mississippi Power & Light Co. hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made
Over the period January, 1959
through December, 1963

Amount of
Contribution



ATTEST:

MISSISSIPPI POWER & LIGHT CO.

(SEAL) /s/ Alex Rogers
Secretary

BY: /s/ R. B. Wilson
President

Dated: December 11, 1958

EXHIBIT 28

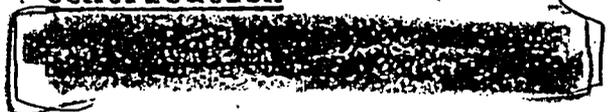
- St. Joseph Light & Power Company ,
- San Diego Gas & Electric Company ,
- Sierra Pacific Power Company ,
- Southern California Edison Company ,
- Southwestern Electric Power Company ,
- Utah Power & Light Company ,
- The Washington Water Power Company ,
- West Texas Utilities Co. ,
- The United Illuminating Company ,
- Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Missouri Public Service Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made

Over the period January, 1959
through December, 1963

Amount of
Contribution *847*



ATTEST: .

MISSOURI PUBLIC SERVICE COMPANY

(SEAL) /s/ R. A. Delaney
Secretary

BY: /s/ Richard G. Green
President

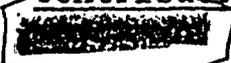
Dated: January 2, 1959

EXHIBIT 29

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, The Montana Power Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made
Over the period January, 1959
through December, 1963

Amount of
Contribution
 E-14

ATTEST:

THE MONTANA POWER COMPANY

(SEAL) /s/ D. J. McCaig
Secretary

BY: /s/ J. E. Corette
President

Dated: December 1, 1958

EXHIBIT 30

- St. Joseph Light & Power Company ,
- San Diego Gas & Electric Company ,
- Sierra Pacific Power Company ,
- Southern California Edison Company ,
- Southwestern Electric Power Company ,
- Utah Power & Light Company ,
- The Washington Water Power Company ,
- West Texas Utilities Co. ,
- The United Illuminating Company ,
- Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, New Orleans Public Service, Inc. hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

<u>Date Contribution is to be Made</u>	<u>Amount of Contribution</u>
Over the period January, 1959 through December, 1963	<div style="border: 1px solid black; display: inline-block; width: 100px; height: 15px; background-color: black;"></div> 644
ATTEST:	NEW ORLEANS PUBLIC SERVICE, INC.
(SEAL) <u>/s/ E. T. Colton</u> Secretary	BY: <u>/s/ Gerald L. Andrus</u> Vice-President

Dated: December 12, 1958

EXHIBIT 31

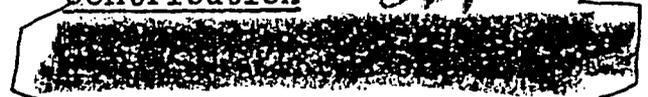
St. Joseph Light & Power Company,
San Diego Gas & Electric Company,
Sierra Pacific Power Company,
Southern California Edison Company,
Southwestern Electric Power Company,
Utah Power & Light Company,
The Washington Water Power Company,
West Texas Utilities Co.,
The United Illuminating Company,
Potomac Electric Power Co.

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, New York State Electric & Gas Corporation hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made

Over the period January, 1959
through December, 1963

Amount of
Contribution *EVY*



ATTEST:

NEW YORK STATE ELECTRIC & GAS CORPORATION

(SEAL) /s/ O. C. Vieweg
Ass't Secretary

BY: /s/ A. W. Milliken
Vice-President - Gen'l Manager

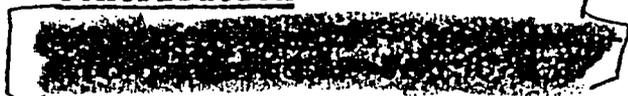
Dated: November 18, 1958

EXHIBIT 32

- St. Joseph Light & Power Company ,
- San Diego Gas & Electric Company ,
- Sierra Pacific Power Company ,
- Southern California Edison Company ,
- Southwestern Electric Power Company ,
- Utah Power & Light Company ,
- The Washington Water Power Company ,
- West Texas Utilities Co. ,
- The United Illuminating Company ,
- Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Niagara Mohawk Power Corporation hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1959 through December, 1963

Amount of Contribution


ATTEST:

NIAGARA MOHAWK POWER CORPORATION

(SEAL) /s/ John G. Bennack
Secretary

BY: /s/ Earl J. Machold
President

Dated: December 18, 1958

EXHIBIT 33

- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Pacific Gas and Electric Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1961 through December, 1963

Amount of Contribution E-44


ATTEST:

PACIFIC GAS AND ELECTRIC COMPANY

(SEAL) /s/ E. E. Manhard
Secretary

BY: /s/ N. R. Sutherland
President

Dated: December 22, 1958

EXHIBIT 34

- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

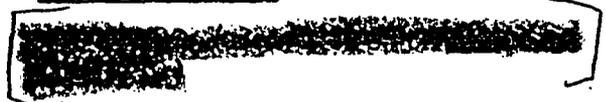
Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Pacific Power & Light Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made

Amount of Contribution

EVY

Over the period January, 1959 through December, 1963



ATTEST:

PACIFIC POWER & LIGHT COMPANY

(SEAL) /s/ H. W. Millay
Secretary

BY: /s/ E. Robt. deLuccia
Vice-President

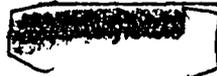
Dated: November 18, 1958

EXHIBIT 35

- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Pennsylvania Power & Light Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1959 through December, 1963

Amount of Contribution
 844

ATTEST:

PENNSYLVANIA POWER & LIGHT COMPANY

(SEAL) /s/ R. Merritt Knoll
Ass't Secretary

BY: /s/ Jack K. Busby
President

Dated: December 1, 1958

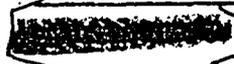
EXHIBIT 36

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Philadelphia Electric Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made
Over the period January, 1959
through December, 1963

Amount of
Contribution



EMV

ATTEST:

PHILADELPHIA ELECTRIC COMPANY

(SEAL) /s/ V. J. Walsh
Secretary

BY: /s/ R. G. Rincliffe
President

Dated: November 18, 1958

EXHIBIT 37

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Portland General Electric Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

<u>Date Contribution is to be Made</u>	<u>Amount of Contribution</u>
Over the period January, 1959 through December, 1963	 4%

ATTEST: .

PORTLAND GENERAL ELECTRIC COMPANY

(SEAL) /s/ Clarence D. Phillips
Secretary

BY: /s/ Thos. W. Delzell
Chairman of the Board

Dated: December 18, 1958

EXHIBIT 38

- St. Joseph Light & Power Company ,
- San Diego Gas & Electric Company ,
- Sierra Pacific Power Company ,
- Southern California Edison Company ,
- Southwestern Electric Power Company ,
- Utah Power & Light Company ,
- The Washington Water Power Company ,
- West Texas Utilities Co. ,
- The United Illuminating Company ,
- Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Public Service Company of Colorado hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

<u>Date Contribution is to be Made</u>	<u>Amount of Contribution</u>
Over the period January, 1959 through December, 1963	<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div> E44

ATTEST:

PUBLIC SERVICE COMPANY OF COLORADO

(SEAL) /s/ E. T. Nussbaum
Ass't Secretary

BY: /s/ J. E. Loiseau
President

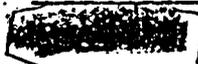
Dated: December 4, 1958

EXHIBIT 39

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Public Service Company of New Mexico hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1959 through December, 1963

Amount of Contribution
 844

ATTEST:

PUBLIC SERVICE COMPANY OF NEW MEXICO

(SEAL) /s/ R. T. MacBain
Secretary-Treasurer

BY: /s/ D. W. Reeves
President

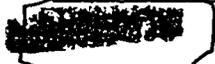
Dated: December 4, 1958

EXHIBIT 40

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Public Service Company of Oklahoma hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1959 through December, 1963

Amount of Contribution
 844

ATTEST:

PUBLIC SERVICE COMPANY OF OKLAHOMA

(SEAL) /s/ J. W. Smith
Secretary

BY: /s/ D. J. Tuepker
President

Dated: December 2, 1958

EXHIBIT 41

- St. Joseph Light & Power Company ,
- San Diego Gas & Electric Company ,
- Sierra Pacific Power Company ,
- Southern California Edison Company ,
- Southwestern Electric Power Company ,
- Utah Power & Light Company ,
- The Washington Water Power Company ,
- West Texas Utilities Co. ,
- The United Illuminating Company ,
- Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Public Service Electric and Gas Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

<u>Date Contribution is to be Made</u>	<u>Amount of Contribution</u>
Over the period January, 1959 through December, 1963	[REDACTED]

ATTEST:

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

(SEAL) /s/ F. M. Ludlow
Secretary

BY: /s/ Edwin H. Snyder
Vice-President in charge
of Electric Operation

Dated: December 18, 1958

EXHIBIT 42

- St. Joseph Light & Power Company ,
- San Diego Gas & Electric Company ,
- Sierra Pacific Power Company ,
- Southern California Edison Company ,
- Southwestern Electric Power Company ,
- Utah Power & Light Company ,
- The Washington Water Power Company ,
- West Texas Utilities Co. ,
- The United Illuminating Company ,
- Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Puget Sound Power & Light Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

<u>Date Contribution is to be Made</u>	<u>Amount of Contribution</u>
Over the period January, 1959 through December, 1963	[REDACTED] Ex 4

ATTEST:

PUGET SOUND POWER & LIGHT COMPANY

(SEAL) /s/ George R. Rice
Ass't Secretary

BY: /s/ Frank McLaughlin
President

Dated: December 2, 1958

EXHIBIT 43

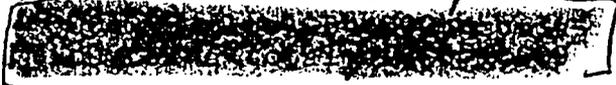
- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Rochester Gas and Electric Corporation hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made

Amount of Contribution

Over the period January, 1959 through December, 1963

Ext 7


ATTEST:

ROCHESTER GAS AND ELECTRIC CORPORATION

(SEAL) /s/ H. S. Weatherby
 Secretary and Controller

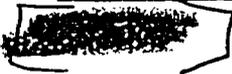
BY: /s/ Ernest J. Howe
 President

Dated: December 2, 1958

EXHIBIT 44

- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, St. Joseph Light & Power Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

<u>Date Contribution is to be Made</u>	<u>Amount of Contribution</u>
Over the period January, 1959 through December, 1963	 EXY

ATTEST:

ST. JOSEPH LIGHT & POWER COMPANY

(SEAL) /s/ H. A. McClelland
Secretary

BY: /s/ G. A. Semrad

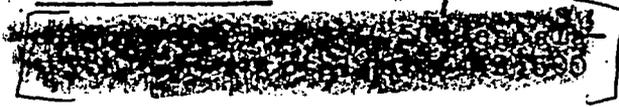
Dated: December 8, 1958

EXHIBIT 45

- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, San Diego Gas & Electric Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1959 through December, 1963

Amount of Contribution *Ex 4*


ATTEST:

SAN DIEGO GAS & ELECTRIC COMPANY

(SEAL) /s/ H. O. Craghead
Secretary

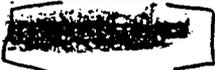
BY: /s/ E. D. Sherwin
President

Dated: December 3, 1958

EXHIBIT 46

- St. Joseph Light & Power Company,
- San Diego Gas & Electric Company,
- Sierra Pacific Power Company,
- Southern California Edison Company,
- Southwestern Electric Power Company,
- Utah Power & Light Company,
- The Washington Water Power Company,
- West Texas Utilities Co.,
- The United Illuminating Company,
- Potomac Electric Power Co.,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Sierra Pacific Power Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

<u>Date Contribution is to be Made</u>	<u>Amount of Contribution</u>
Over the period January, 1959 through December, 1963	 EY4

ATTEST:

SIERRA PACIFIC POWER COMPANY

(SEAL) /s/ Roy Torvinen
Secretary

BY: /s/ F. A. Tracy
President

Dated: November 28, 1958

EXHIBIT 47

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Southern California Edison Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1959 through December, 1963

Amount of Contribution

[REDACTED] ey

ATTEST:

SOUTHERN CALIFORNIA EDISON COMPANY

(SEAL) /s/ Elaine Botensten
Ass't Secretary

BY: /s/ Harold Quinton
President

Dated: December 16, 1958

EXHIBIT 48

- St. Joseph Light & Power Company ,
- San Diego Gas & Electric Company ,
- Sierra Pacific Power Company ,
- Southern California Edison Company ,
- Southwestern Electric Power Company ,
- Utah Power & Light Company ,
- The Washington Water Power Company ,
- West Texas Utilities Co. ,
- The United Illuminating Company ,
- Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Southwestern Electric Power Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1959 through December, 1963

Amount of Contribution
[REDACTED] 1.00

ATTEST:

SOUTHWESTERN ELECTRIC POWER COMPANY

(SEAL) /s/ J. N. Watts
Secretary-Treasurer

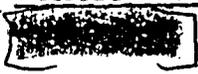
BY: /s/ J. Robert Welch
President

Dated: December 3, 1958

EXHIBIT 49

- St. Joseph Light & Power Company ,
- San Diego Gas & Electric Company ,
- Sierra Pacific Power Company ,
- Southern California Edison Company ,
- Southwestern Electric Power Company ,
- Utah Power & Light Company ,
- The Washington Water Power Company ,
- West Texas Utilities Co. ,
- The United Illuminating Company ,
- Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Utah Power & Light Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

<u>Date Contribution is to be Made</u>	<u>Amount of Contribution</u>
Over the period January, 1959 through December, 1963	 244

ATTEST:

UTAH POWER & LIGHT COMPANY

(SEAL) /s/ D. L. Broussard
Secretary

BY: /s/ E. M. Naughton
President

Dated: December 4, 1958

EXHIBIT 50

- St. Joseph Light & Power Company
- San Diego Gas & Electric Company
- Sierra Pacific Power Company
- Southern California Edison Company
- Southwestern Electric Power Company
- Utah Power & Light Company
- The Washington Water Power Company
- West Texas Utilities Co.
- The United Illuminating Company
- Potomac Electric Power Co.

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, The Washington Water Power Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
 To be paid 10% in 1959, 15% in 1960, and 25% in each of the years 1961, 1962 and 1963

Amount of Contribution
~~_____~~ EX 4

ATTEST:

THE WASHINGTON WATER POWER COMPANY

(SEAL) /s/ J. W. Willis
 Ass't Secretary

BY: /s/ G. M. Brunzell
 Executive Vice-President

Dated: December 5, 1958

EXHIBIT 51

St. Joseph Light & Power Company ,
San Diego Gas & Electric Company ,
Sierra Pacific Power Company ,
Southern California Edison Company ,
Southwestern Electric Power Company ,
Utah Power & Light Company ,
The Washington Water Power Company ,
West Texas Utilities Co. ,
The United Illuminating Company ,
Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, West Texas Utilities Co. hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution is to be Made
Over the period January, 1959 through December, 1963

Amount of Contribution
[REDACTED] E.V. 4

ATTEST:

WEST TEXAS UTILITIES CO.

(SEAL) /s/ Arthur S. Harker
Secretary

BY: /s/ C. L. Young
President

Dated: November 18, 1958

EXHIBIT 52

St. Joseph Light & Power Company,
San Diego Gas & Electric Company,
Sierra Pacific Power Company,
Southern California Edison Company,
Southwestern Electric Power Company,
Utah Power & Light Company,
The Washington Water Power Company,
West Texas Utilities Co.,
The United Illuminating Company,
Potomac Electric Power Co.

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, The United Illuminating Company hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

Date Contribution
is to be Made

Amount of
Contribution

Over the period January, 1959
through December, 1963

~~REDACTED~~ 2/9

ATTEST:

THE UNITED ILLUMINATING COMPANY

(SEAL) /s/ C. N. Griswold
Ass't Secretary

BY: /s/ William J. Cooper
President

Dated: January 7, 1959

EXHIBIT 53

- St. Joseph Light & Power Company ,
- San Diego Gas & Electric Company ,
- Sierra Pacific Power Company ,
- Southern California Edison Company ,
- Southwestern Electric Power Company ,
- Utah Power & Light Company ,
- The Washington Water Power Company ,
- West Texas Utilities Co. ,
- The United Illuminating Company ,
- Potomac Electric Power Co. ,

Participating Companies, and Philadelphia Electric Company. Subject to the terms and conditions of said Agreement, Potomac Electric Power Co. hereby agrees to pay to High Temperature Reactor Development Associates, Inc. the following contribution for research and development in the amount and at the time set forth below:

<u>Date Contribution is to be Made</u>	<u>Amount of Contribution</u>
Over the period January, 1959 through December, 1963	[REDACTED] 874

ATTEST:

POTOMAC ELECTRIC POWER CO.

(SEAL) /s/ H. M. Martell
Ass't Secretary

BY: /s/ R. Roy Dunn
President

Dated: October 2, 1959

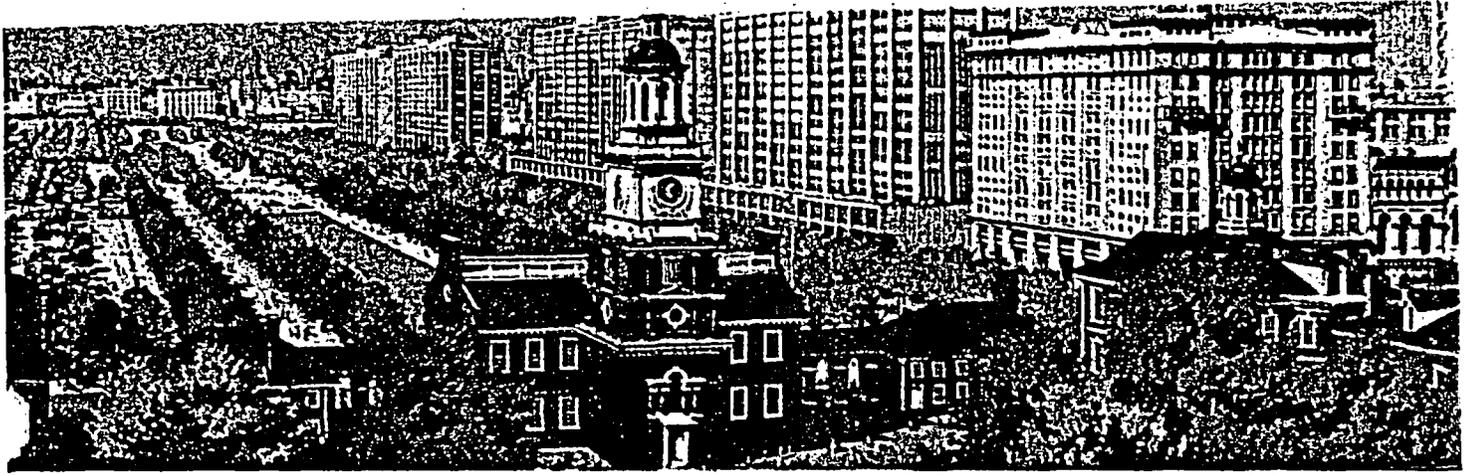


EXHIBIT D

ANNUAL REPORT

FOR THE YEAR 1960

PHILADELPHIA ELECTRIC COMPANY



THE ILLUSTRATIONS ON THE COVER of this report portray the renaissance and development of Philadelphia, the nation's birthplace, where a new city is rising to blend with the old. They were featured in a recent P. E. national advertisement. Upper panel: Independence Hall Mall. Lower panel: Expressway to Downtown Philadelphia.

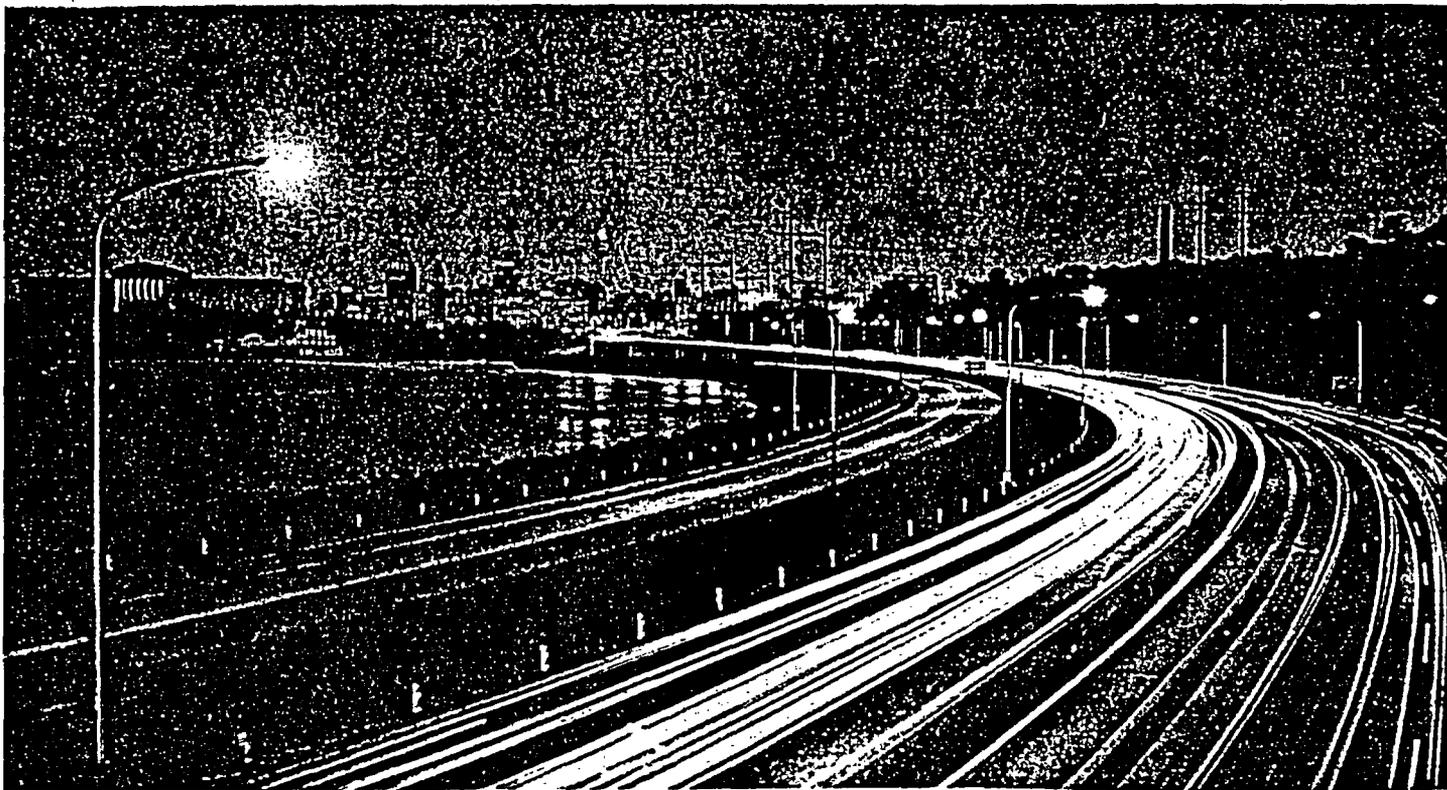
ANNUAL MEETING

The annual meeting of the stockholders of the Company will be held on April 12 at twelve o'clock noon at the office of the Company, Edison Building, Ninth and Sansom Streets, Philadelphia.

Holders of the Common Stock and \$1 Dividend Preference Common Stock of record at the close of business on March 3 are entitled to vote at this meeting.

Notice of the meeting, proxy statement, and form of proxy are being sent with this report to the holders of both classes of common stock. Prompt return of the proxies will be appreciated.

Automobile lights trace interesting pattern on Schuylkill Expressway.



ANNUAL REPORT 1960

CONTENTS

	PAGE
Directors and Officers	2
President's Letter	3
Highlights	4
Condensed Statement of Income	5
Revenue Increases	6
Sales Promotion	8
Operating Costs Rise	9
Load Growth Continues	10
Efficiency Improves	10
Gas Operations	12
Atomic Power	12
Research and Development	14
Construction Program	14
Eddystone Station	16
Financing	18
Stock Ownership	19
Public Relations	19
Management and Personnel	20
Area Development	22
Financial Statements	25
Report of Accountants	28
Financial Statistics	31
Operating Statistics	32
Map of Area Served	33

PHILADELPHIA ELECTRIC COMPANY



Modern Penn Center office buildings flank City Hall.

BOARD OF DIRECTORS

GUSTAVE G. AMSTERDAM	<i>President, Bankers Securities Corporation</i>
*CHARLES E. BRINLEY	<i>Trustee, The Penn Mutual Life Insurance Company</i>
A. S. CORSON	<i>Vice-President of the Company</i>
*JOHN A. DIEMAND	<i>President, Insurance Company of North America</i>
WALTER D. FULLER	<i>Director, The Curtis Publishing Company</i>
A. A. GARTHWAITE	<i>Chairman of the Board, Lee Rubber & Tire Corporation</i>
V. P. McDEVITT	<i>Vice-President and General Counsel of the Company</i>
*H. N. RAMSEY	<i>Executive Vice-President of the Company</i>
*R. G. RINCLIFFE	<i>President of the Company</i>
*HAROLD S. SCHUTT	<i>Director, Philadelphia Suburban Water Company</i>
PHILIP T. SHARPLES	<i>Chairman of the Board, The Sharples Corporation</i>
G. STOCKTON STRAWBRIDGE	<i>President and General Manager, Strawbridge & Clothier</i>

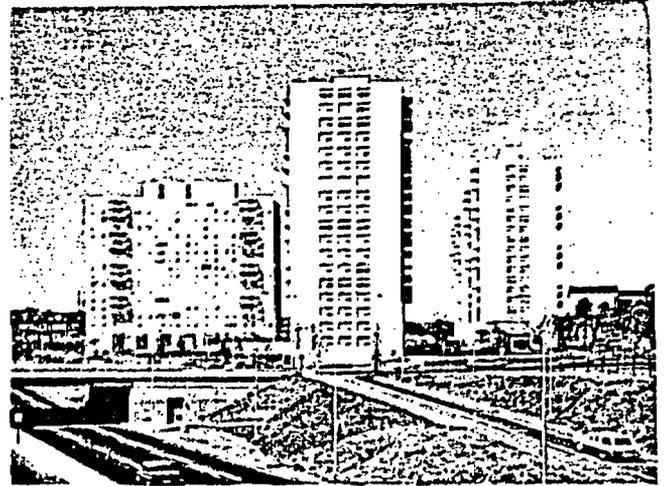
*Member of Executive Committee, of which Mr. Schutt is chairman.

OFFICERS

R. G. RINCLIFFE	<i>President</i>
H. N. RAMSEY	<i>Executive Vice-President</i>
G. R. CONOVER	<i>Vice-President—Personnel and Public Relations</i>
V. P. McDEVITT	<i>Vice-President and General Counsel</i>
R. P. LIVERSIDGE	<i>Vice-President—Electric Operations</i>
A. S. CORSON	<i>Vice-President—Finance and Accounting</i>
W. H. JONES	<i>Vice-President—Purchasing and Service Operations</i>
L. R. GATY	<i>Vice-President—Engineering and Research</i>
M. I. ALLEN	<i>Vice-President—Sales</i>
J. H. LONG	<i>Vice-President—Gas Operations</i>
C. W. WATSON	<i>Vice-President—General Administration</i>
V. J. WALSH	<i>Secretary</i>
G. W. MILLER	<i>Treasurer</i>
W. F. BERGAN	<i>Assistant Secretary</i>
D. W. EVANS, JR.	<i>Assistant Treasurer</i>
J. W. SCHULZE	<i>Assistant Treasurer</i>

GENERAL OFFICE: 1000 CHESTNUT STREET, PHILADELPHIA 5, PA.
FISCAL AGENTS ARE SHOWN ON PAGE 30

*Center-city apartment living
is attractive in Philadelphia.*



March 6, 1961

TO THE STOCKHOLDERS:

Despite a slackening in business generally, the year 1960 saw continued growth in sales of electricity, gas, and steam, as well as significant accomplishments in other phases of your Company's operations.

Revenue increased 3.5 per cent over 1959, while operating expenses were maintained in satisfactory ratio with revenue. The construction program advanced on a broad scale, highlighted by the completion of Eddystone generating station, the world's most efficient power plant. The cost of progress made itself felt in increased depreciation and a \$2,621,000 reduction in the credit for interest charged to construction because of substantial additions to plant in service. The benefit of this progress was not completely realized, however, since the additions were in operation for less than the full year and sales were not up to expectations. Consequently, earnings for Common Stock decreased to \$2.84 a share, compared with \$2.90 in 1959, when fewer shares were outstanding.

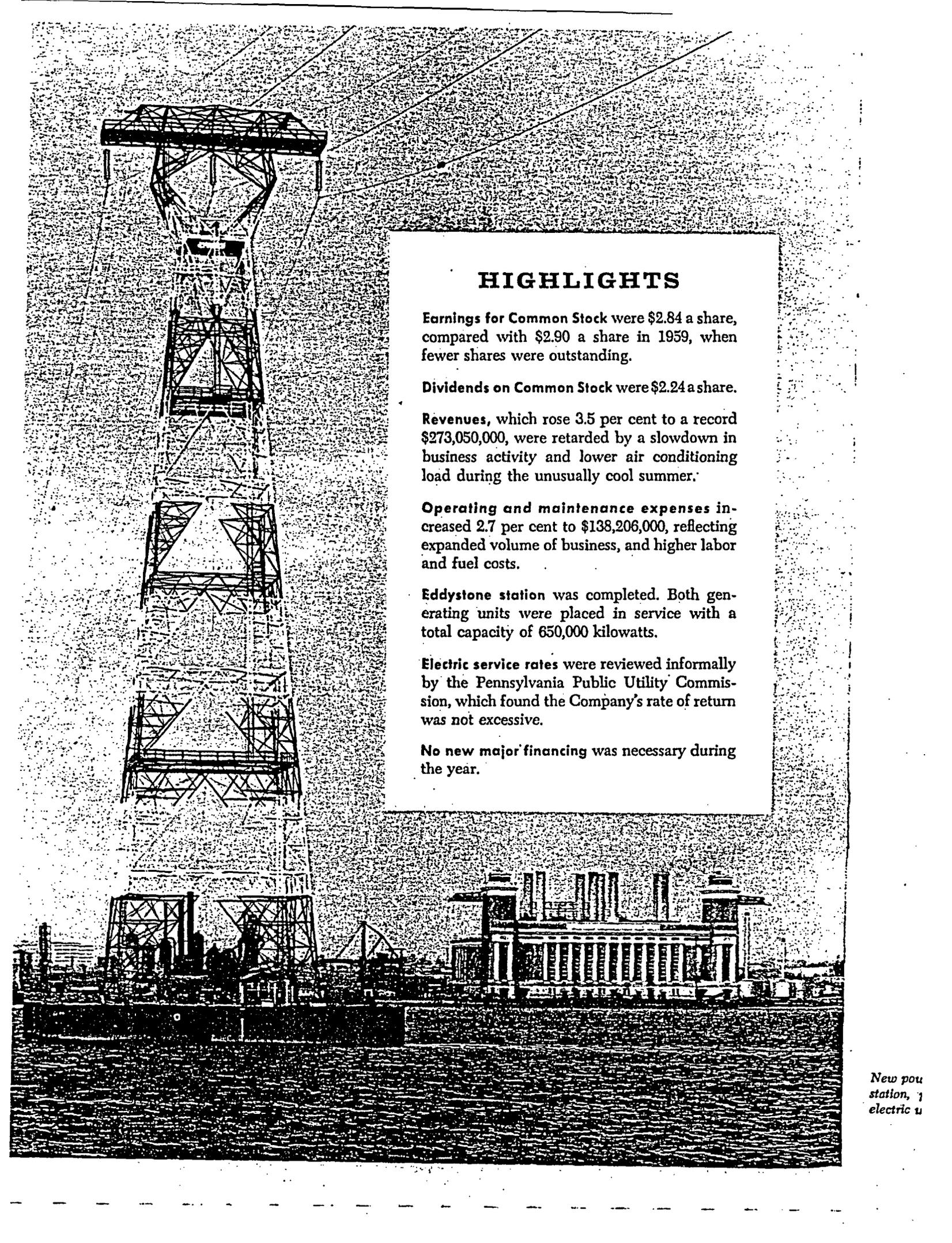
The Pennsylvania Public Utility Commission informally reviewed the Company's electric rates in the fall of 1960 and determined that its rate of return was not excessive. Residential rates have remained unchanged since 1949, notwithstanding appreciable increases in operating expenses. The maintenance of a stable rate structure in the face of rising costs has been achieved only through continuous effort to improve operations.

Philadelphia Electric is soundly situated for future growth in an area recognized as a leading commercial, industrial, and cultural center. While the City of Philadelphia is the core of the Company's territory, the surrounding counties, comprising 95 per cent of the area we serve, experienced a 48 per cent growth in population over the past decade—far above the national average of 18 per cent.

We enter the decade of the Sixties with the most efficient plant in the history of the Company. Eddystone station marks a significant step forward in electric power generation. The Peach Bottom atomic project gives promise of hastening the day when nuclear power can be produced economically. These advances in technology, both at Eddystone and Peach Bottom, point the way to continuing improvement in operating performance.

The outlook for Philadelphia Electric is for steady expansion and progress.


R. G. RINCLIFFE
President



HIGHLIGHTS

Earnings for Common Stock were \$2.84 a share, compared with \$2.90 a share in 1959, when fewer shares were outstanding.

Dividends on Common Stock were \$2.24 a share.

Revenues, which rose 3.5 per cent to a record \$273,050,000, were retarded by a slowdown in business activity and lower air conditioning load during the unusually cool summer.

Operating and maintenance expenses increased 2.7 per cent to \$138,206,000, reflecting expanded volume of business, and higher labor and fuel costs.

Eddystone station was completed. Both generating units were placed in service with a total capacity of 650,000 kilowatts.

Electric service rates were reviewed informally by the Pennsylvania Public Utility Commission, which found the Company's rate of return was not excessive.

No new major financing was necessary during the year.

New power station, electric utility

A REPORT OF PROGRESS

Reflected in the pages of this report are important aspects of the progress of Philadelphia Electric Company, a tax-paying, investor-owned utility, financed by the savings of thousands of people.

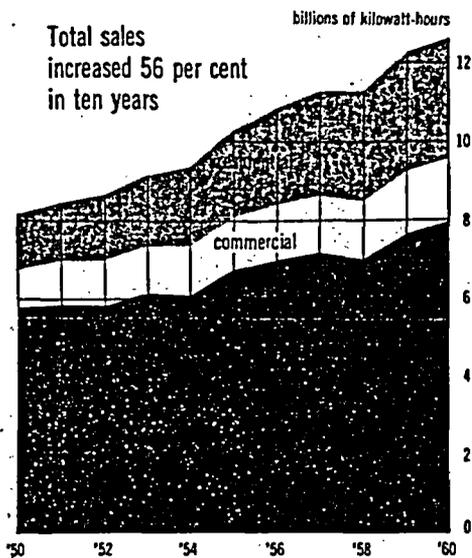
The Company's growth is determined by the increasing needs for electricity, gas, and steam in Greater Philadelphia. The renaissance and development of this dynamic area have required the constant expansion of Company facilities.

FINANCIAL FACTS IN BRIEF

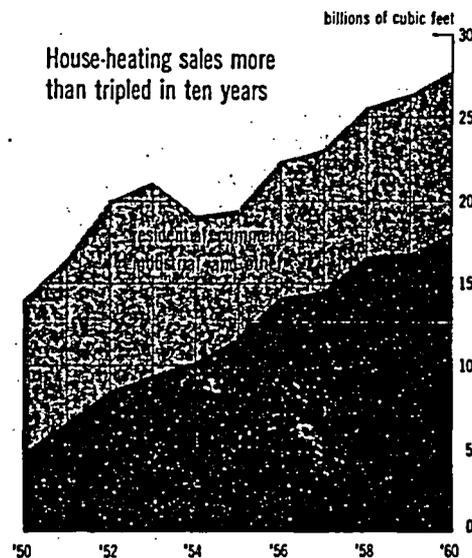
	1960	1959	Increase or (Decrease)	Per Cent Increase or (Decrease)
REVENUE				
Operating Revenue.....	\$273,049,696	\$263,884,520	\$9,165,176	3.5
Other Income	886,077	903,182	(17,105)	(1.9)
	<u>273,935,773</u>	<u>264,787,702</u>	<u>9,148,071</u>	<u>3.5</u>
REVENUE DEDUCTIONS including Operating and Maintenance Expenses, Taxes, and Depreciation.....				
	<u>217,023,695</u>	<u>212,033,158</u>	<u>4,990,537</u>	<u>2.4</u>
GROSS INCOME	56,912,078	52,754,544	4,157,534	7.9
INCOME DEDUCTIONS including interest on bonds and other charges against income, net after credit for interest charged to construction.....				
	<u>14,641,638</u>	<u>9,828,283</u>	<u>4,813,355</u>	<u>49.0</u>
NET INCOME	42,270,440	42,926,261	(655,821)	(1.5)
DIVIDENDS ON PREFERRED STOCKS and \$1 Dividend Preference Common Stock.....				
	<u>3,927,119</u>	<u>3,927,119</u>	—	—
EARNINGS AVAILABLE FOR COMMON STOCK	38,343,321	38,999,142	(655,821)	(1.7)
DIVIDENDS ON COMMON STOCK	<u>30,155,073</u>	<u>29,402,863</u>	<u>752,210</u>	<u>2.6</u>
EARNINGS RETAINED FOR USE IN THE BUSINESS	<u>\$ 8,188,248</u>	<u>\$ 9,596,279</u>	<u>(\$1,408,031)</u>	<u>(14.7)</u>
SHARES OF COMMON STOCK				
OUTSTANDING—December 31.....	13,509,051	13,446,431	62,620	0.5
EARNINGS PER SHARE —December 31.	\$2.84	\$2.90	(\$0.06)	(2.1)
DIVIDENDS PAID PER SHARE	\$2.24	\$2.24	—	—

New power line spanning Delaware River near Chester generating station, providing additional interconnection with New Jersey electric utilities.

ELECTRIC SALES RISE



GAS SALES INCREASE



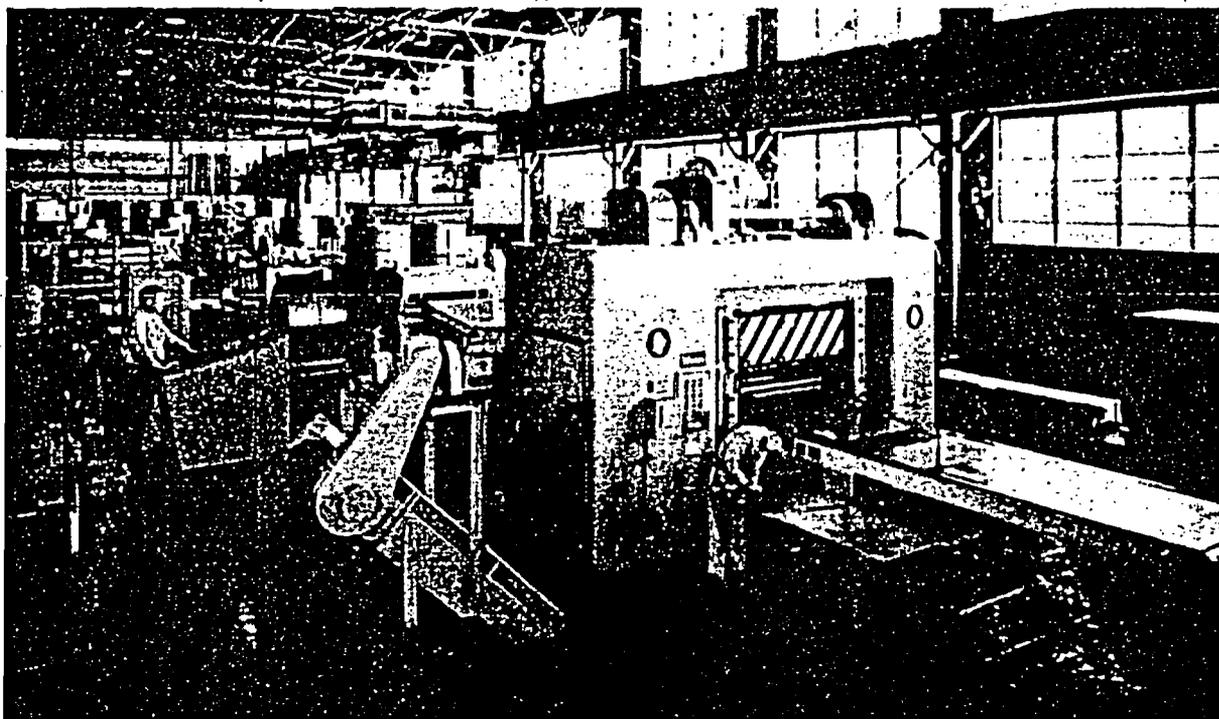
REVENUE INCREASES Total revenue from the sale of electricity, gas, and steam was \$273,050,000, an increase of \$9,165,000, or 3.5 per cent over 1959. This increase was depressed by cool summer weather and a slowdown in business during the year. Nevertheless, gains were reflected in all major classes of service.

Electric revenue was \$224,382,000, an increase of \$5,857,000, or 2.7 per cent. Most of this growth resulted from increased sales of electricity to industry, which rose over 300 million kilowatt-hours, or 4.8 per cent. Steady revenue growth is supported by the diversity of industry in the area, and continued expansion in home use of electricity. Air conditioning loads were adversely affected by the coolest summer in fifteen years, which contrasted strongly with the very warm summer of 1959. As a consequence, air conditioning revenue was almost \$3,000,000 less than the year be-

fore. Residential sales generally increased 3.1 per cent and now account for 35 per cent of all electric revenue. Average annual use of electricity by the Company's residential customers rose to 3373 kilowatt-hours in 1960. In the suburban areas, where population growth and the application of electricity are greater, annual home use of electricity averaged 4577 kilowatt-hours.

Gas revenue increased \$2,996,000, or 7.7 per cent, to \$42,022,000 for the year. Commercial sales showed the largest proportionate gain, increasing 16.6 per cent over 1959. Residential gas house-heating sales, which rose 7.1 per cent, now account for almost two-thirds of total gas sales and have more than tripled in the past ten years.

Steam revenue of \$6,646,000 reflected a 4.9 per cent increase over 1959, partly as a result of full-year service to large customers added in the latter part of 1959.



Modern metal-working plant. Power for industry is plentiful in Greater Philadelphia.

SALE OF ELECTRICITY TO LARGE INDUSTRIAL CUSTOMERS IS DIVERSIFIED

Durable Goods Manufacturing

Primary Metals.....	9.3%
Electrical Machinery.....	3.9
Transportation Equipment.....	3.3
Metal Fabrication.....	3.3
Non-Electrical Machinery.....	3.1
Stone, Clay, and Glass.....	2.9
Miscellaneous.....	1.5
Total Durable Goods.....	27.3%

Non-Durable Goods Manufacturing

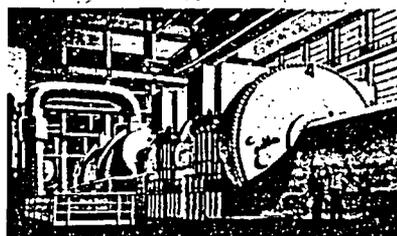
Petroleum.....	12.5%
Chemicals.....	8.0
Paper and Products.....	5.0
Food.....	4.8
Rubber Products.....	3.7
Printing and Publishing.....	2.4
Textiles.....	1.9
Miscellaneous.....	1.0
Total Non-Durable Goods.....	39.3%

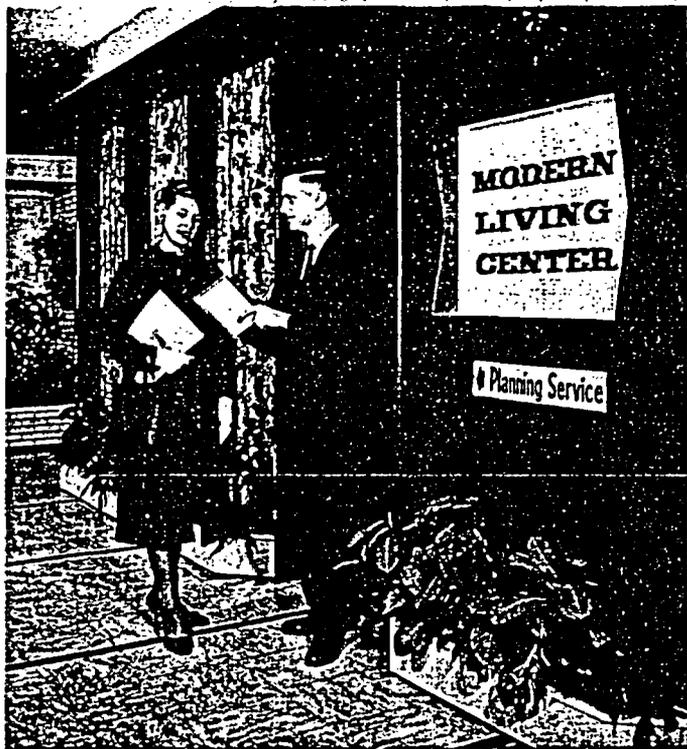
Non-Manufacturing Industries

Municipal.....	3.1%
U. S. Government.....	2.6
Department Stores.....	1.6
Office Buildings.....	1.4
Utilities.....	1.3
Hospitals and Schools.....	1.1
Oil Pumping.....	0.4
Total Non-Manufacturing.....	11.5%

All Other Large Industrial..... 21.9%

Total Large Commercial and Industrial Sales..... 100.0%

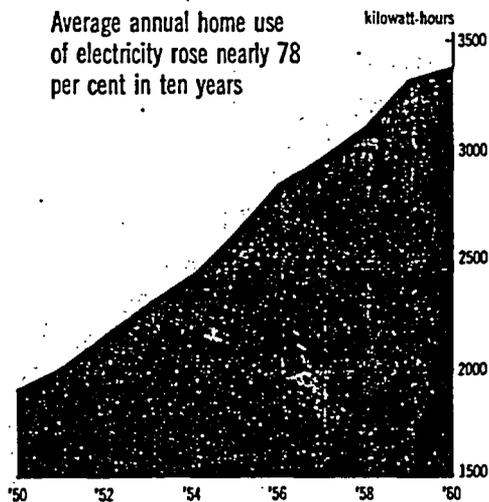




Company's Modern Living Center attracts many visitors.

USE OF ELECTRICITY UP

Average annual home use of electricity rose nearly 78 per cent in ten years



SALES PROMOTION All-electric living is attractively exemplified in the Company's Modern Living Center at 211 South Broad Street, Philadelphia. Thousands of customers, stockholders, appliance dealers, builders, and others visit the center to see effective demonstrations of the advantages of good wiring, better lighting, and greater use of electrical appliances.

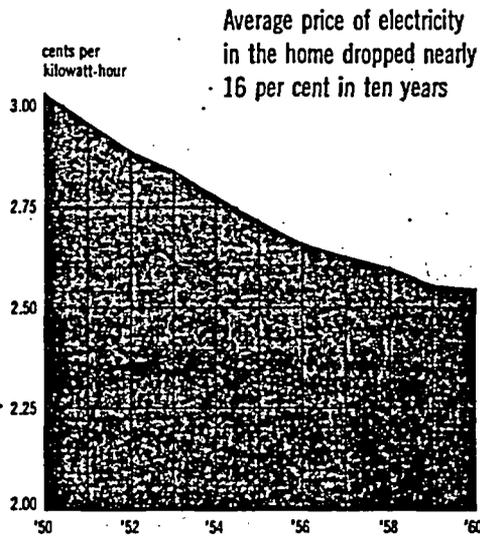
As a direct result of the intensive promotion of all-electric living, a multistoried apartment building recently opened in Penn Center is completely equipped with all-electric kitchens. In addition, plans for other large apartment developments, soon to be built, call for complete electric space heating, air conditioning, snow-melting devices, and other conveniences to assure the best in electric living. During 1960, a new rate for residential electric space heating was put into effect. Two home builders have already adopted this application and it is expected the new rate will

induce builders to offer a growing number of all-electric homes.

Philadelphia Electric's broad sales promotion program embraces a variety of activities designed to promote better living, to increase Company revenues, and to stimulate profitable business for local appliance distributors, dealers, and contractors. Largely because of the Company's leadership in the promotional field, appliance sales in metropolitan Philadelphia show an increase, in contrast with declines elsewhere.

Inadequate home wiring has been one of the greatest deterrents to the sale of major electric appliances. To overcome this handicap, "100-A housepower" has been vigorously promoted by the Company since 1955. To-day nearly all new homes are wired for at least 100-ampere service, and nearly all customers making wiring changes in existing homes specify this standard. In 1960, the adequate wiring program was expanded to include commercial establishments as well as private homes

PRICE OF ELECTRICITY DOWN



Future homemakers are taught in an all-electric school kitchen.

in the Company's service area.

More and more families are discovering the cleanliness, convenience, and economy of gas as a fuel for house heating. Pointing up the steady trend to this type of automatic heat were the 5052 installations added during the year to the Company's mains in the four suburban counties outside Philadelphia. Half of all residential gas customers now use gas to heat their homes.

OPERATING COSTS RISE Total operating revenue deductions, including depreciation and taxes, were \$217,024,000, an increase of \$4,991,000, or 2.4 per cent, compared with 1959. However, the operating ratio, which measures operating expenses as a percentage of revenue, decreased to 50.6 per cent from 51 per cent.

Total operating and maintenance costs increased \$3,672,000, reflecting higher labor and fuel costs which were in part offset by less

expense for interchange power and other supplies and services.

Depreciation increased \$4,815,000 as a result of substantial additions to plant in service, chiefly the new Eddystone station. Taxes were \$2,762,000 lower, reflecting lower taxable income, mainly because of a full year's interest on new bonds issued late in 1959 and higher depreciation, including liberalized depreciation on the plant additions.

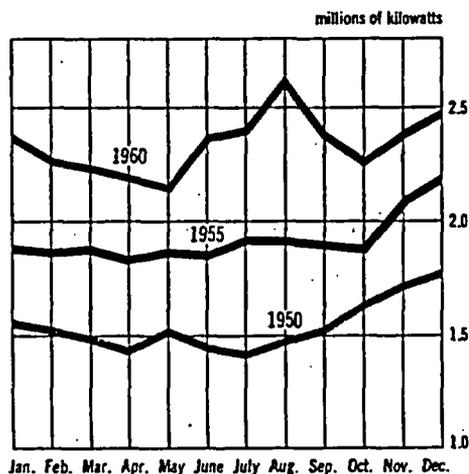
The five-year storm-proofing program is progressing on schedule. Initiated by the Company in 1958 to reinforce the electric transmission and distribution system against severe storm damage, the program was about 45 per cent accomplished with the investment of \$10,428,000 in system improvements by the end of 1960. The effectiveness of this storm-proofing program was demonstrated during Hurricane Donna last September when the amount of damage was considerably less than in past storms of comparable intensity.

OPERATING REVENUE DEDUCTIONS

	<u>1960</u>	<u>1959</u>	<u>Increase or (Decrease)</u>	<u>Per Cent Increase or (Decrease)</u>
Operating Labor, including Costs of Annuity Plan and Group Insurance..	\$ 56,326,122	\$ 52,265,534	\$4,060,588	7.8
Fuel used in all Operations, including Natural Gas and other Gas Manufacturing Materials.....	61,285,099	59,302,009	1,983,090	3.3
Electricity Interchanged and Steam Purchased.....	251,831	1,951,973	(1,700,142)	(87.1)
Other Materials, Supplies, and Services.....	<u>20,342,879</u>	<u>21,014,075</u>	<u>(671,196)</u>	<u>(3.2)</u>
Total Operating and Maintenance Costs.....	138,205,931	134,533,591	3,672,340	2.7
Depreciation.....	34,919,745	30,105,101	4,814,644	16.0
Amortization of Plant Acquisition Adjustments.....	—	734,836	(734,836)	—
Taxes.....	<u>43,898,019</u>	<u>46,659,630</u>	<u>(2,761,611)</u>	<u>(5.9)</u>
Total Operating Revenue Deductions	<u>\$217,023,695</u>	<u>\$212,033,158</u>	<u>\$ 4,990,537</u>	<u>2.4</u>

CHANGING PEAK LOAD PATTERN

Air conditioning has shifted annual peak load from winter to summer



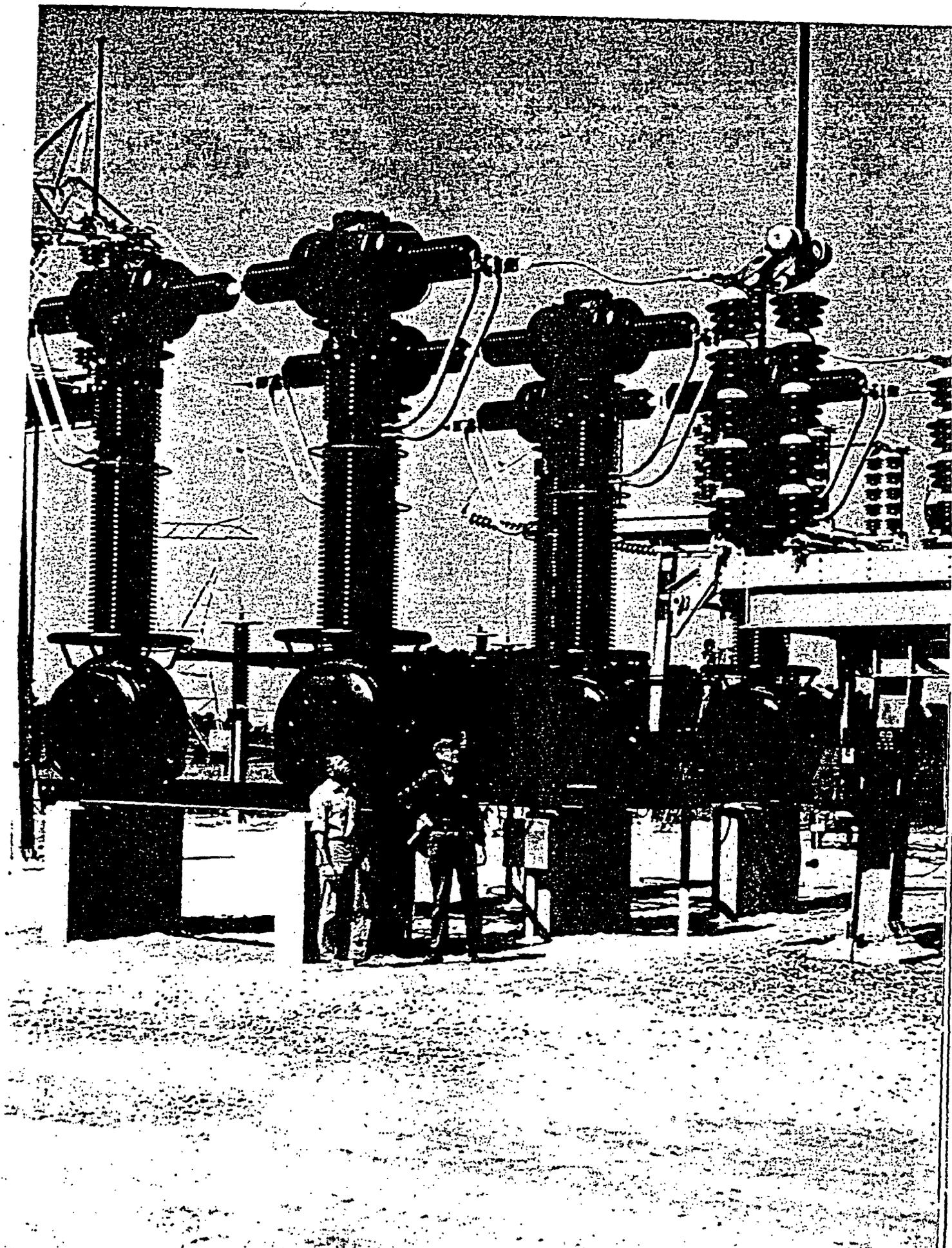
LOAD GROWTH CONTINUES

Electric output rose to 13.6 billion kilowatt-hours, an increase of 2.8 per cent over 1959. While most of this power was produced in steam generating stations, 10 per cent originated at the Conowingo hydro-electric plant.

As a result of the increased use of air conditioning, system peak loads have occurred in summer months during the past two years, in contrast with the former pattern of winter peak loads. An all-time peak demand of 2,628,000 kilowatts was recorded on August 30 during an extremely hot and humid period. This demand was 3.3 per cent above the previous high established in June, 1959.

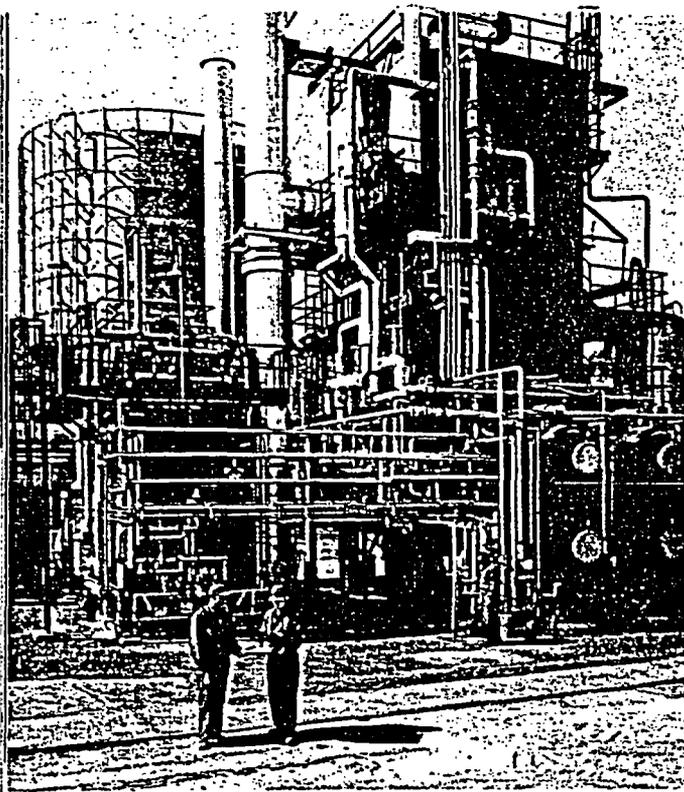
EFFICIENCY IMPROVES The system coal rate, which is the amount of fuel required to produce one kilowatt-hour of electricity, has been reduced 21 per cent since 1950

Ultramodern, high-voltage circuit breaker in Chester County.



U.S. DEPARTMENT OF ENERGY

rcuit
nty.



Gas production unit at West Conshohocken.

to to-day's rate of 0.78 of a pound. This improved efficiency has resulted from the addition of eight major generating units in the past decade which now constitute half of the Company's total generating capacity.

The new Eddystone electric generating station, with its two 325,000-kilowatt supercritical pressure units, was the most efficient station in 1960. Its coal rate of 0.63 of a pound, 19 per cent better than the present system average, is expected to improve system efficiency still further after a full year of operation.

Small and relatively inexpensive "peak-shaving" generating units are being tested to demonstrate economies to be derived from their use. A 6000-kilowatt, diesel-powered unit has been in operation at Plymouth Meeting substation since February, 1959. Two gas turbine units, with a combined capacity of 42,500 kilowatts, will go into service early in 1961 at Barbadoes generating station. Peak-shaving

equipment provides relatively low-cost reserve capacity to meet peak demands.

Philadelphia Electric continues to realize substantial operating economies from the Pennsylvania-New Jersey-Maryland Interconnection. The twelve investor-owned electric companies which now comprise this power pool share the benefits of co-ordinated use of their most efficient generating facilities. These advantages include not only operating economies, but also the assurance of greater reliability of service throughout the Middle Atlantic area.

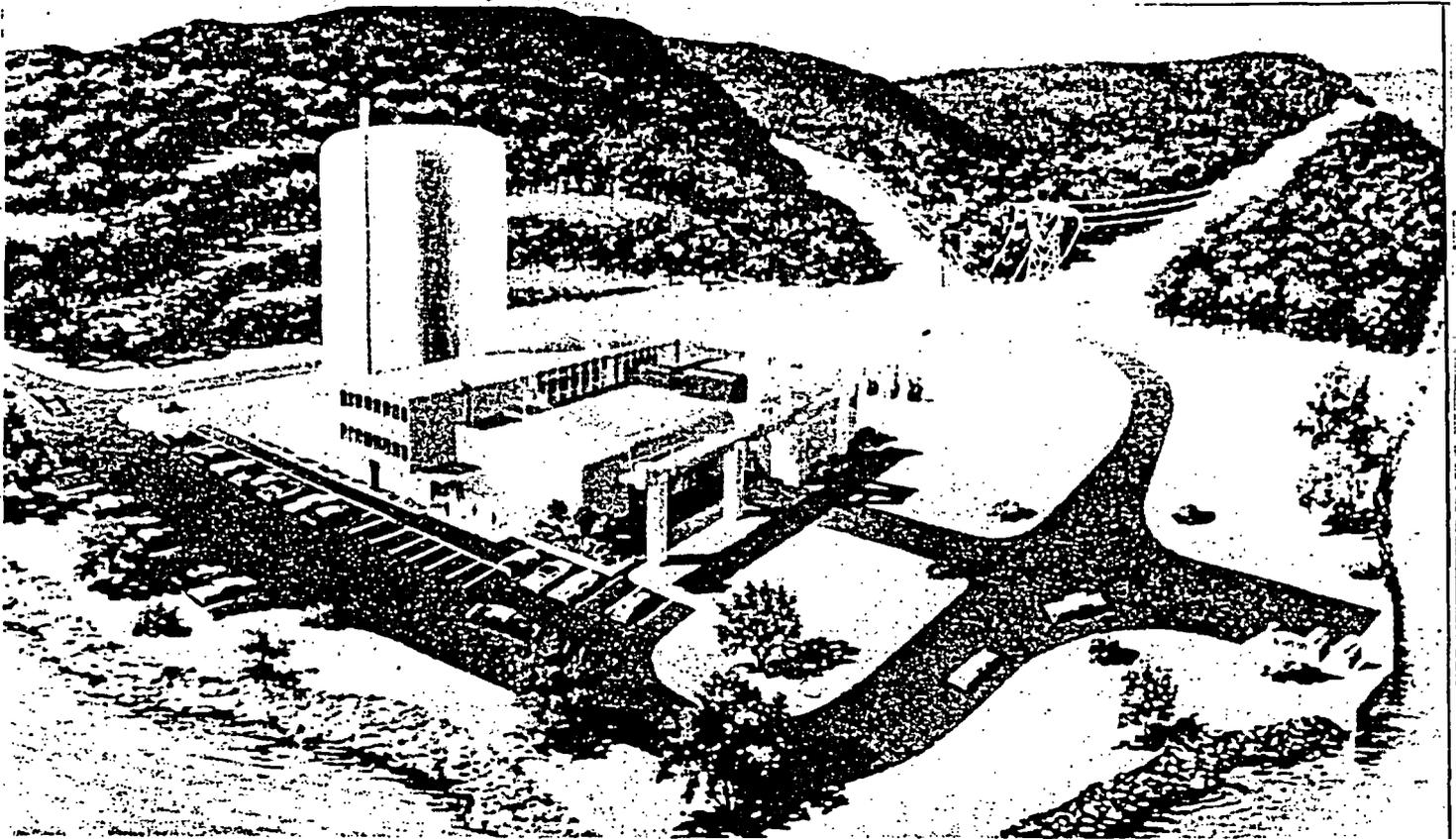
GAS OPERATIONS Largely as a result of the installation of new house heaters, gas sales rose 5.9 per cent to a record 27.9 billion cubic feet. The maximum daily output for the year occurred on December 13 and amounted to 208.3 million cubic feet.

Natural gas is available under long-term contracts with Texas Eastern Transmission Corporation and Transcontinental Gas Pipe Line Corporation. Additional quantities can be purchased when required.

A recent agreement with Sun Oil Company provides for the storage of liquid propane in an underground cavern for use as needed during peak-load periods. Injection of propane into the storage facility will start in the spring of 1961 for availability during the next heating season.

ATOMIC POWER Philadelphia Electric is playing an important role in the peaceful development of atomic energy, looking to the day when splitting the atom may become an economical source of electric power.

As sponsor of one of the nation's major projects for the development of commercial atomic



Artist's conception of Peach Bottom atomic power station.

power, the Company's chief effort is directed toward the construction and operation of a high-temperature, gas-cooled reactor to be built on the Philadelphia Electric System at Peach Bottom, Pennsylvania. Fifty-two other investor-owned utilities are teamed together with Philadelphia Electric in a nonprofit organization known as High Temperature Reactor Development Associates, Inc., which is providing funds for research and development associated with the design and construction of the plant.

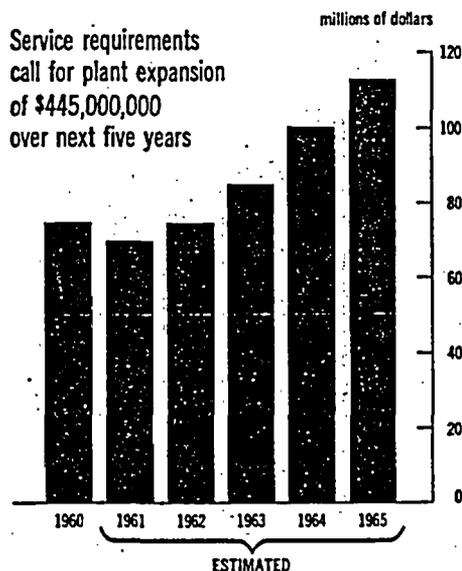
The Peach Bottom station will serve as a prototype in demonstrating the feasibility of its reactor system in producing electricity at competitive cost. It will generate steam at high pressure and temperature in conformity with modern-day practice, and will have an initial capacity of 40,000 kilowatts. Estimated operating efficiency will be equivalent to obtaining one kilowatt-hour of electricity from three-

quarters of a pound of coal, slightly better than the present system average.

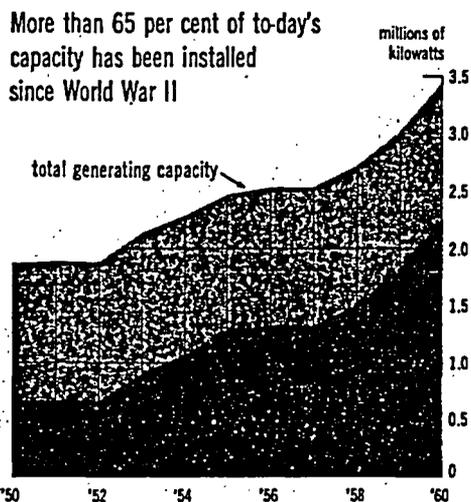
The Company has applied to the Atomic Energy Commission for a construction permit and is presently conferring with the Commission on the requirements of the licensing procedure. Bechtel Corporation is the engineer-constructor of the plant and General Dynamics Corporation is responsible for the reactor and nuclear steam supply system. Both companies have made significant progress with preliminary research and development. Environmental studies of the plant site area are advancing.

As a member of both Atomic Power Development Associates, Inc., and Power Reactor Development Company, Philadelphia Electric also has been an active participant in the design and construction of the Enrico Fermi atomic power plant at Lagoona Beach, Michigan. This plant, of the fast breeder type, is expected to be ready for operation in 1961.

LONG-RANGE CONSTRUCTION PROGRAM CONTINUES



GENERATING EQUIPMENT IS MODERN



RESEARCH AND DEVELOPMENT The Company is conducting many research and development studies designed to increase operating efficiencies, to lower costs, and to develop new procedures to keep pace with rapidly changing technology.

Electronic computers are valuable tools for probing the future. The Company is using these devices to develop orderly and economical plans for expanding its services and improving its facilities. An electronic computer may be used to simulate the complex control system of an electric generating station and thereby permit various methods of control to be investigated quickly and inexpensively. Thus, many different methods of control may be evaluated at minimum cost. A study of the automatic control of a power plant is well advanced and is developing valuable knowledge in a new field of technology very important to the Company's progress.

Another computer application is being used to facilitate long-range system planning. By

simulating the operation of generating equipment in the light of future power requirements, the most economical schedule for installing additional generating capacity can be determined.

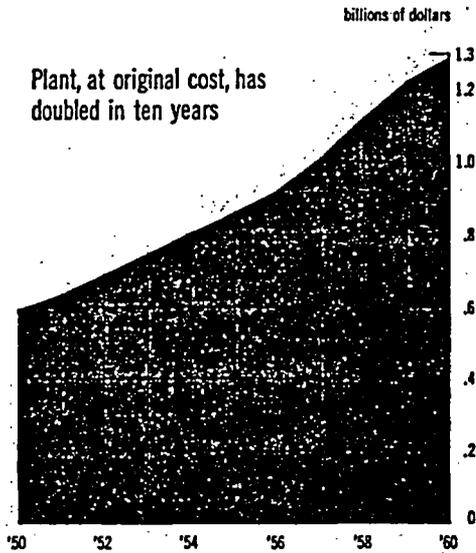
Joint research with other utilities and cable manufacturers is continuing in the development of underground cable systems capable of carrying large amounts of electricity at extra-high voltage. Forecasts of load growth underscore the urgent need for perfecting such equipment.

These projects are but a few of the many in which the Company is engaged to-day in order to insure better operations to-morrow.

CONSTRUCTION PROGRAM

Only long-range planning and a continuing construction program can assure adequate capacity to meet future demands for electricity, gas, and steam. A large part of the \$75,104,000 of gross additions during 1960 was related to construction projects already

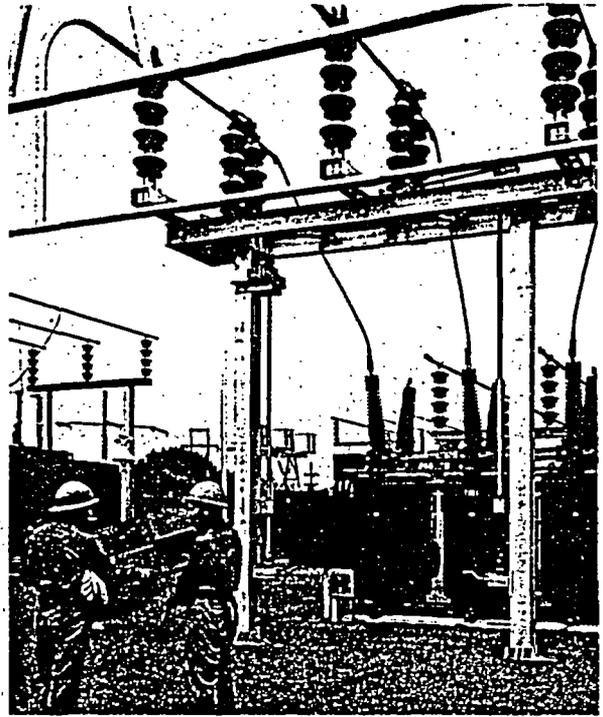
INVESTMENT IN PLANT



under way at the beginning of the year.

Additions for electric generating, transmission, and distribution facilities totaled \$64,309,000. Of this amount, \$19,100,000 related to the completion of Eddystone station, and \$1,326,000 pertained to the installation of two gas turbine units at Barbadoes station.

Transmission additions included the cost of completing the program to tie Eddystone into the bulk power system. A 132,000-volt transmission line, spanning the Delaware River to New Jersey, was completed to furnish additional interconnection with Public Service Electric and Gas Company and Atlantic City Electric Company. A 220,000-volt power line was placed in service to interconnect Philadelphia Electric Company with Baltimore Gas and Electric Company. Provision was made for later connection with the Peach Bottom atomic power station on the Susquehanna River. Both tie lines incorporate many innovations. The Delaware River crossing for the



New substations have important part in power distribution.

New Jersey line is particularly noteworthy because of the challenging air and river navigation requirements which necessitated the use of special towers, conductors, foundations, lighting, and warning signals. Nottingham substation, a major transmission installation in Chester County, was completed for service in September. Other substations were built or enlarged to serve rapidly growing areas north and west of the City of Philadelphia.

Gas system additions, which totaled \$8,420,000, included the completion of twenty-one miles of high-pressure gas mains to provide for system load growth and extension into areas not previously served.

Steam construction, including the conversion of a coal-burning boiler at Willow steam heating plant to oil-fired operation, totaled \$541,000.

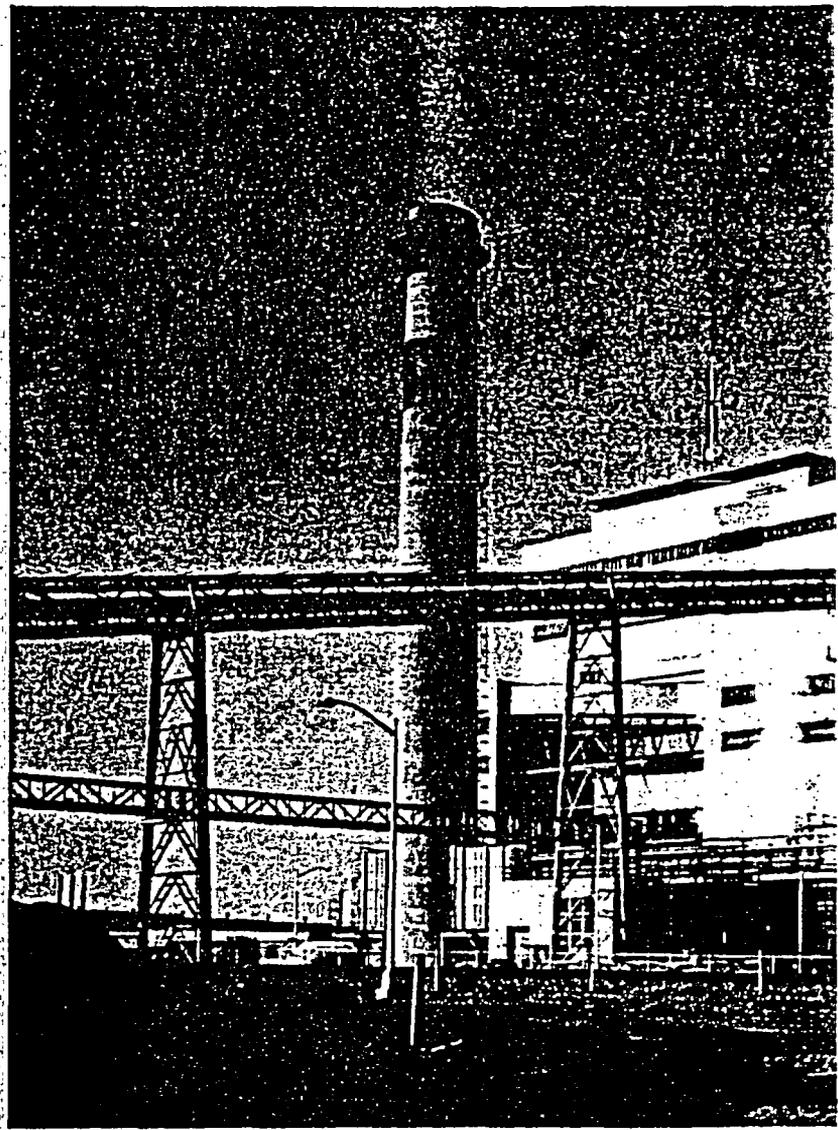
Additions to buildings and equipment for general Company use amounted to \$1,834,000.

EDDYSTONE ELECTRIC GENERATING STATION

This giant station, completed in 1960, houses two 325,000-kilowatt turbine-generators capable of producing enough power to supply the residential electric needs of a city of five million people.

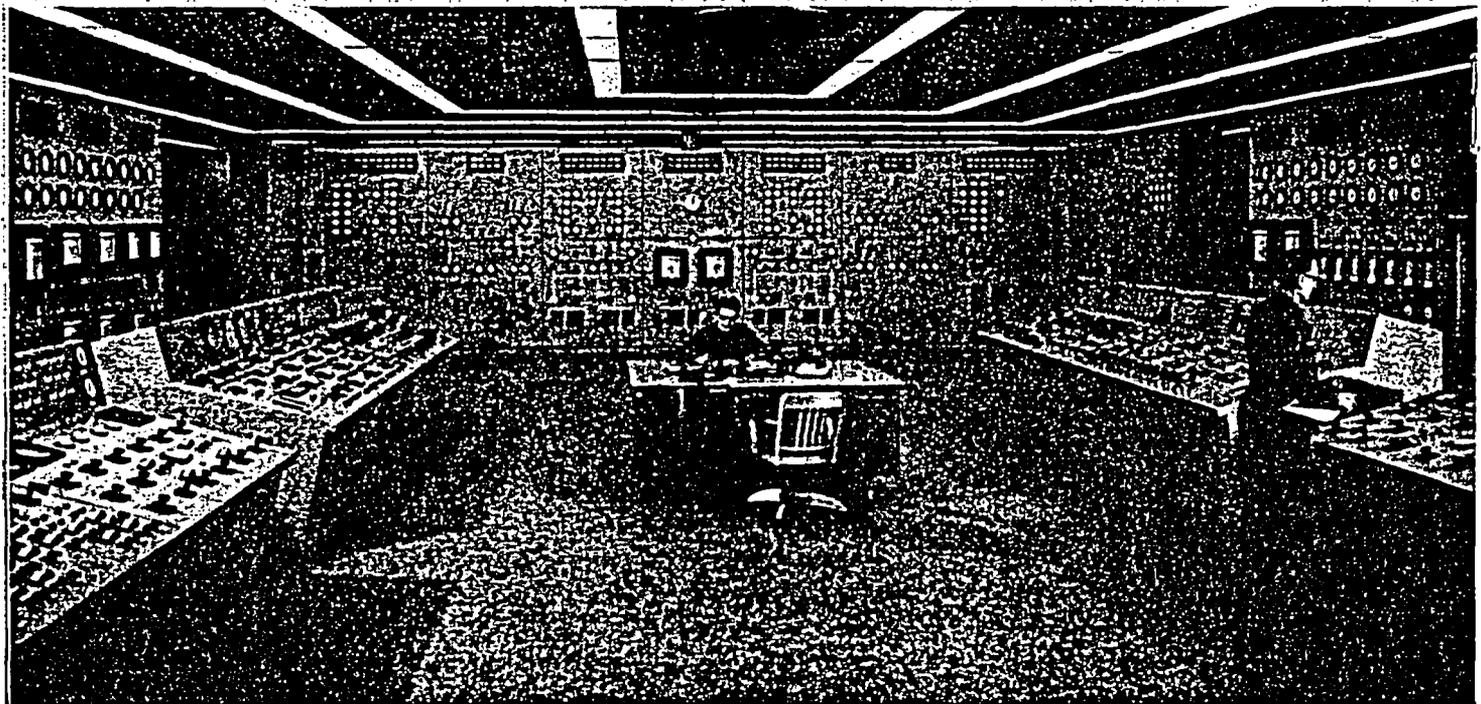
Steam, harnessed and compressed to the record supercritical pressure of 5000 pounds per square inch, is used to spin Eddystone's No. 1 turbine-generator. The steam is supplied by a boiler which, in addition to operating at the world's highest pressure, is designed to produce steam at a record-breaking 1200 degrees Fahrenheit.

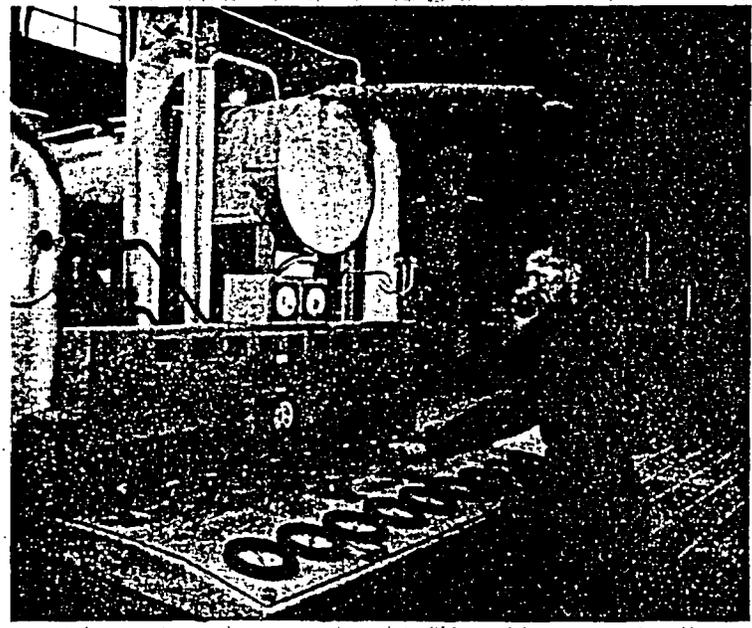
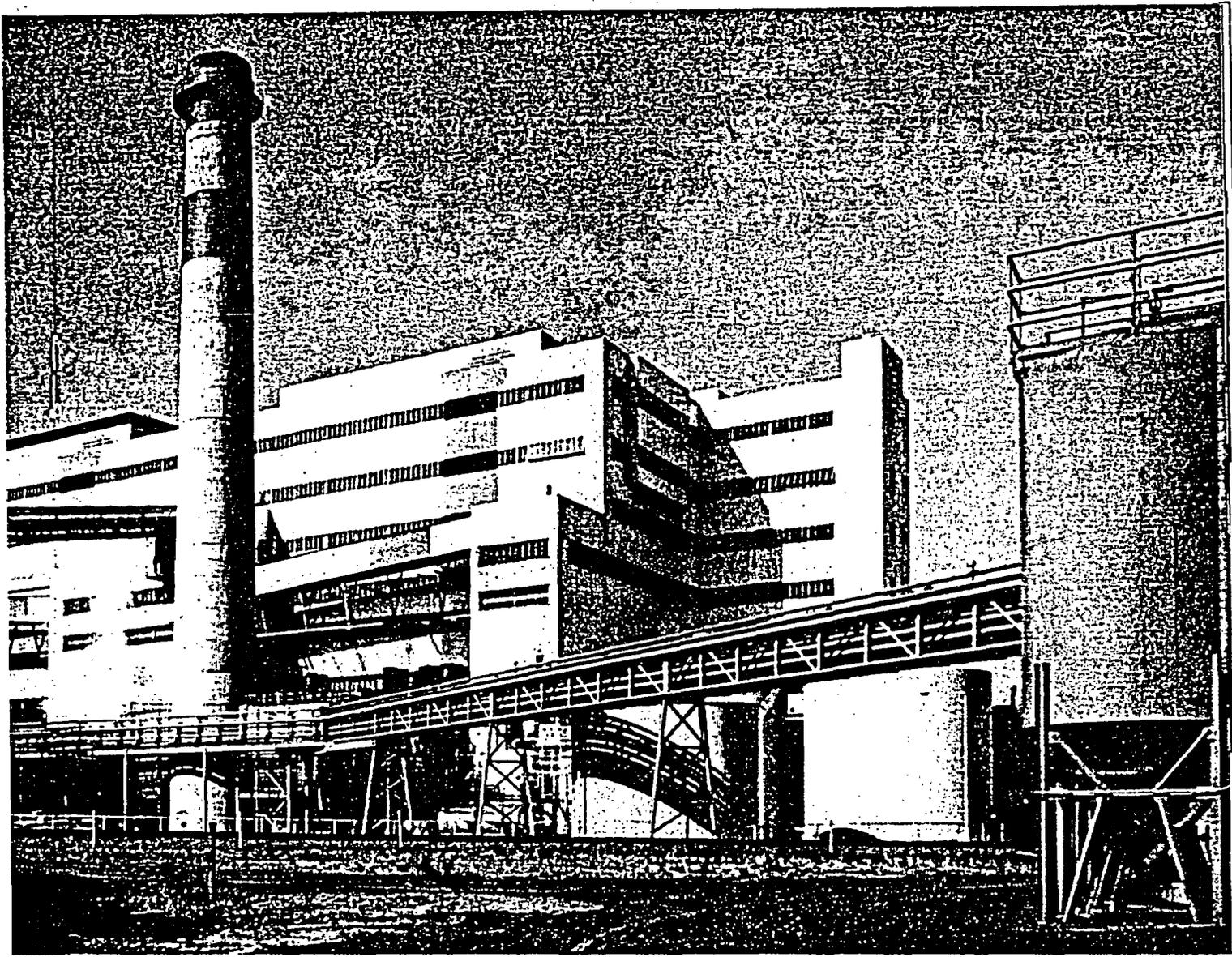
The pressure-temperature conditions of Eddystone No. 1 represent the world's most efficient power plant cycle. Eddystone's second unit is designed to operate at 3500 pounds pressure and 1050 degrees Fahrenheit, which is also in the supercritical range.



Eddystone is the world's most efficient power plant.

Plant operations are controlled from this central location.





Operator carrying out directions from central control room.



Dividends have been paid regularly since 1902 to P. E. stockholders, about half of whom are women.

STOCKHOLDERS

Individuals Own Over Half of the Common Stock

Common Stockholders	Number	Shares	Average Holding
Women	44,994	3,683,990	82
Men	23,860	2,195,784	92
Joint Accounts	17,671	1,227,353	69
Total Individual Owners	86,525	7,107,127	82
Trust Funds, Trustees, and Estates	7,001	5,198,989	743
Corporations, Partnerships, and Insurance Companies	1,036	1,179,331	1,138
Charitable Institutions, Hospitals, Churches, etc.	962	254,949	265
Total Institutions and Funds	8,999	6,633,269	737
Total Common Stockholders	95,524	13,740,396	144
Preferred Stockholders	7,596	874,720	115
Total Stockholders	103,120		

FINANCING No major financing was necessary during 1960. A substantial part of the funds needed for the construction program were provided by the sale of new bonds in the latter part of 1959, and by internally generated cash, including depreciation and earnings retained in the business. Additional funds were obtained through bank loans and the sale of 62,620 shares of Common Stock to employees and annuitants under the employee stock purchase plan approved by the stockholders in 1953.

Construction through 1965 to meet expanding demands for the Company's services is expected to amount to \$445,000,000, of which about 56 per cent will come from internal sources. Financing will be accomplished initially by bank loans, which will be converted to permanent financing as market conditions warrant.

STOCK OWNERSHIP The Company's preferred and common stocks are held by 103,120 shareowners of record residing throughout the United States and in many foreign countries. About half live within the Philadelphia Electric service area and are, therefore, customers of the Company as well.

Of the 95,524 holders of Common Stock, 91 per cent are individuals with an average ownership of 82 shares. More than half of the Company's employees are included in this group. Trust companies acting for many thousands of individuals are the largest shareholders, but aside from these institutions, no shareowner of record owns as much as 1 per cent of the Common Stock.

PUBLIC RELATIONS Providing dependable service at reasonable rates is the primary obligation of a public utility. Over the years, Philadelphia Electric has met this obligation in a way that has inspired confidence and has added to the Company's reputation as a private enterprise of character functioning in the public interest.

Realizing an informed public is a friendly public, frequent institutional advertisements are employed in local newspapers and magazines to tell of operating improvements, construction work in progress, and the importance of the services provided by the Company in everyday life. On the national level, a continuing series of colorful advertisements, which have appeared regularly for the past ten years, effectively promote the Port of Philadelphia and the Greater Philadelphia area.

Friendly, efficient service and participation as a good citizen in projects furthering the best interests of the community have been basic elements in the Company's endeavor to cultivate and maintain good public relations.



Friendliness is characteristic of P. E. employees.



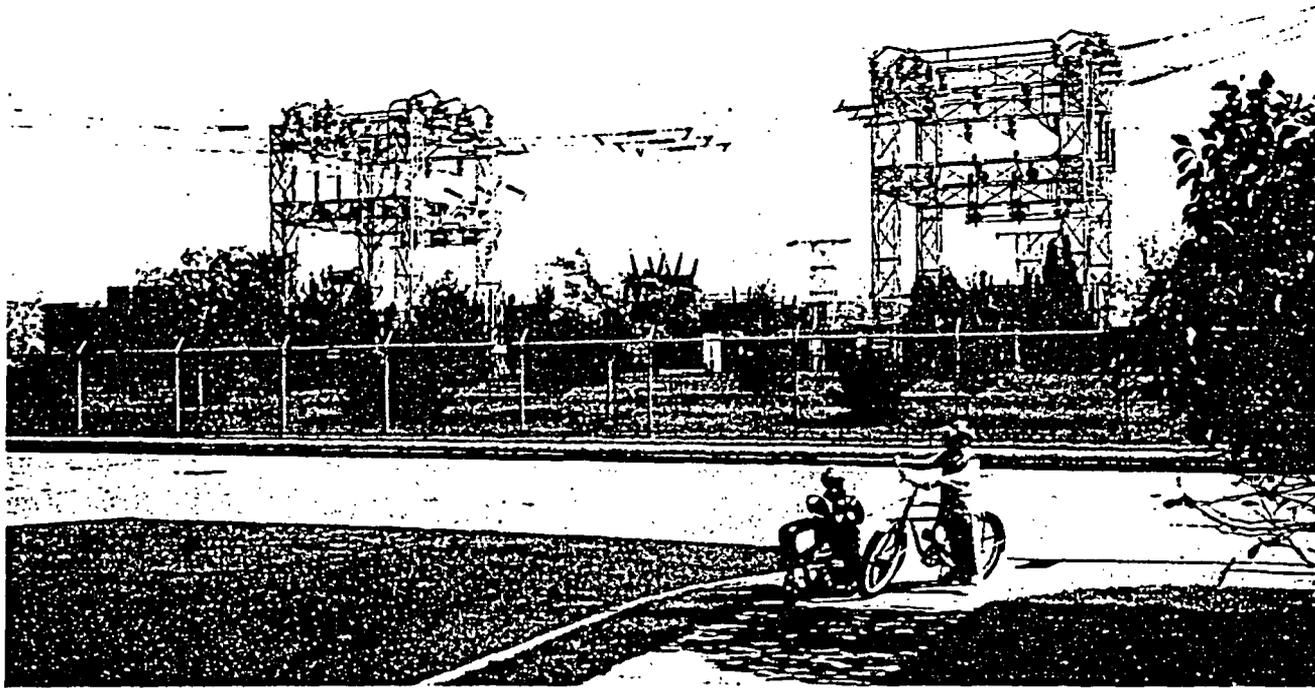
*The pace of progress continues in
America's fastest growing port*

The Port of Philadelphia, which is now the No. 1 export port of the nation, is growing at a rapid pace. It shares a major role in the dynamic expansion of the Greater Philadelphia area. More and more, industry uses its marine facilities to handle raw materials and export finished products. The port is only one of the factors that make this area ideally suited for industrial growth, prosperity and comfort. Within a limited mile area are more than 20 million people with an annual buying power of \$400,000,000. Transportation lines radiate to most international seaports. In addition, factory lines of the diversified chemicals, dependable electric power, available for every general and heavy need. If you want your business to grow fast, call it to the Land of Plenty.

PHILADELPHIA ELECTRIC COMPANY



Typical national advertisement promoting the Port of Philadelphia and the Greater Philadelphia area.



Substation landscaped to blend with residential surroundings.

MANAGEMENT AND PERSONNEL The death on March 28 of Edwin K. Daly, a member of the Board of Directors since 1957, is recorded with regret. His wise counsel, valued by the Board, will be greatly missed.

On April 13, Vincent P. McDevitt, vice-president and general counsel of the Company, was elected a director to succeed Mr. Daly. Mr. McDevitt is prominent as a utility lawyer, and is presently chancellor of the Philadelphia Bar Association.

At a regular meeting of the Board of Directors on May 23, the by-laws of the Company were amended to increase the number of directors from eleven to twelve, at which time Gustave G. Amsterdam, president of Bankers Securities Corporation, was elected a member of the Board.

On October 3, K. M. Irwin, vice-president—engineering, died suddenly after forty-one years of service with the Company. A vice-president since 1948, Mr. Irwin was affiliated with many engineering societies and played an important part in numerous industry groups.

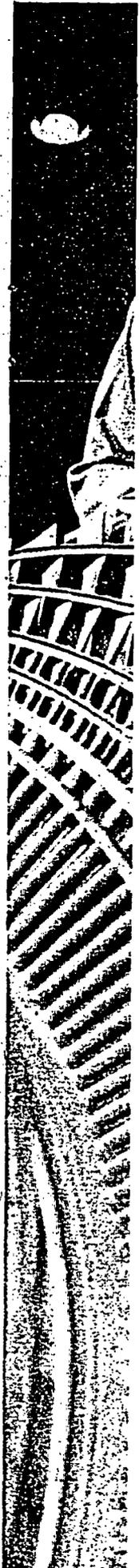
On October 10, L. R. Gaty, vice-president—research and development since 1956, was elected vice-president—engineering and research, assuming additional responsibilities for engineering formerly held by Mr. Irwin.

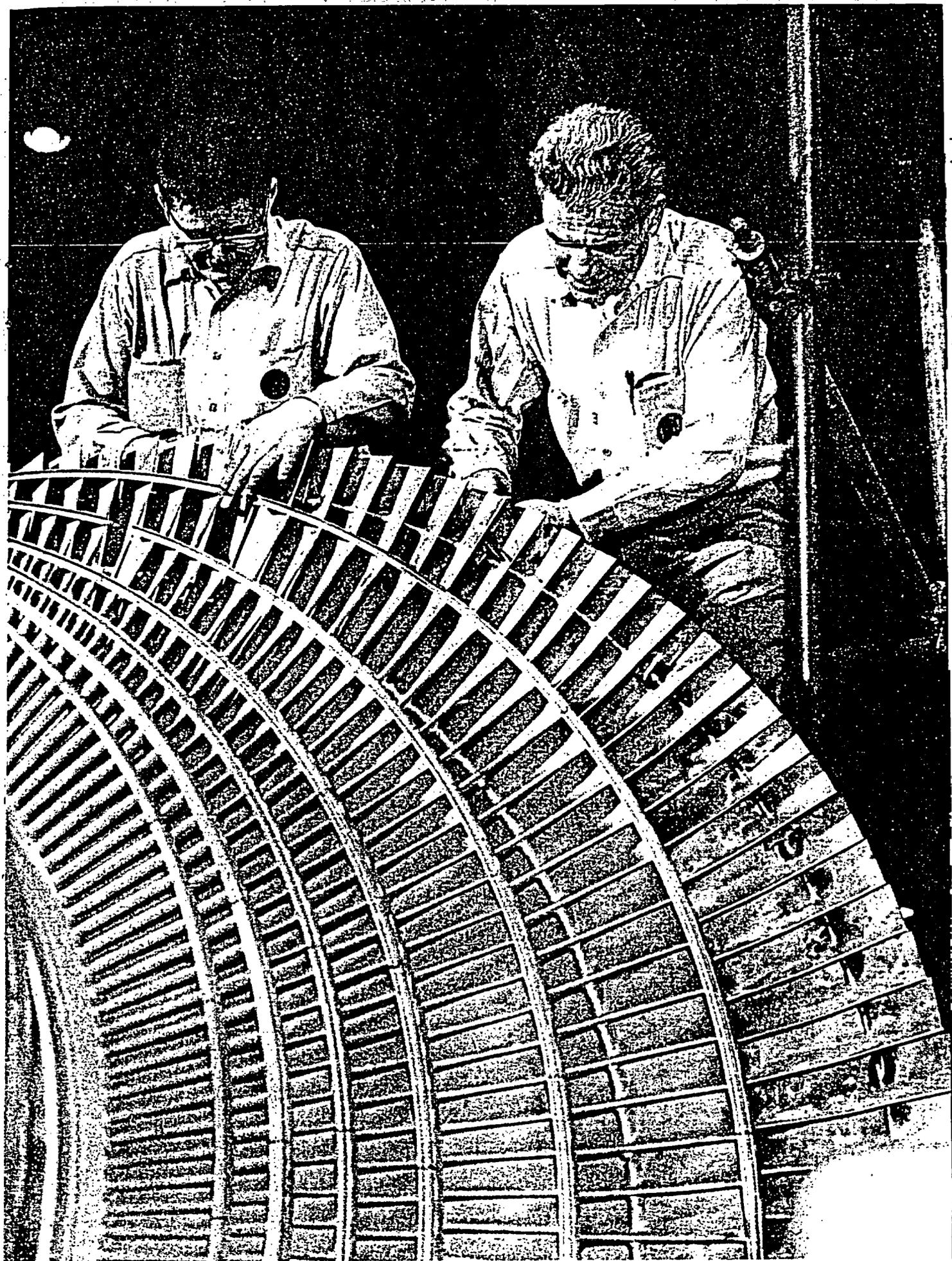
On October 24, C. W. Watson, assistant to the president since 1957, was elected vice-president—general administration.

Just as farsighted planning has characterized the Company's rapid expansion, so progressive personnel policies have fostered advantageous working conditions and high employment standards. The desirability of working with Philadelphia Electric is attested by the fact that more than one in every four employees has been with the Company in excess of twenty-five years.

Over nine thousand service-minded employees combine their skills to perform a variety of 1600 jobs—linemen, meter readers, mechanics, engineers, managers, stenographers, service representatives, to mention but a few. All contribute significantly to the Company's success in serving more than 1,300,000 customers.

Skilled mechanics install steam turbine blades.







New suburban office and warehouse.



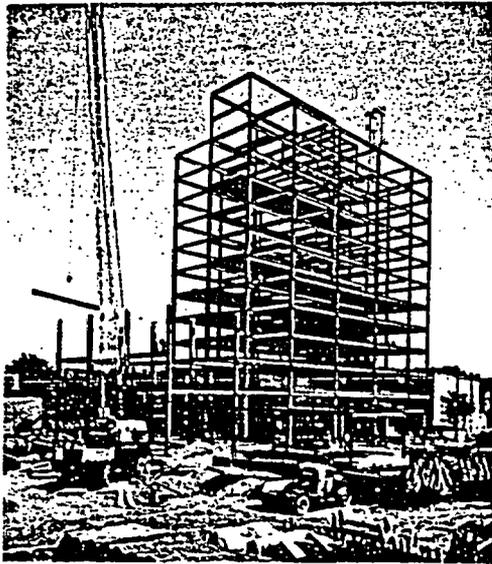
Expressway extension.

AREA DEVELOPMENT

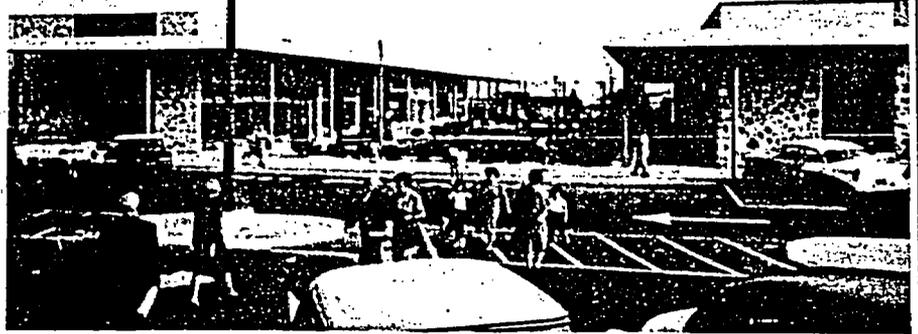
Mirroring the rapid pace of progress in Greater Philadelphia are many new homes, apartment buildings, shopping centers, schools, industrial parks, expressways, and civic improvements which are updating city and suburb alike for modern living. More and more people are finding good housing, good jobs, and educational, spiritual, and cultural opportunities of a high order in this area, which traces its development to days when the nation was young.

Modern subway-elevated cars.





Construction moves ahead.

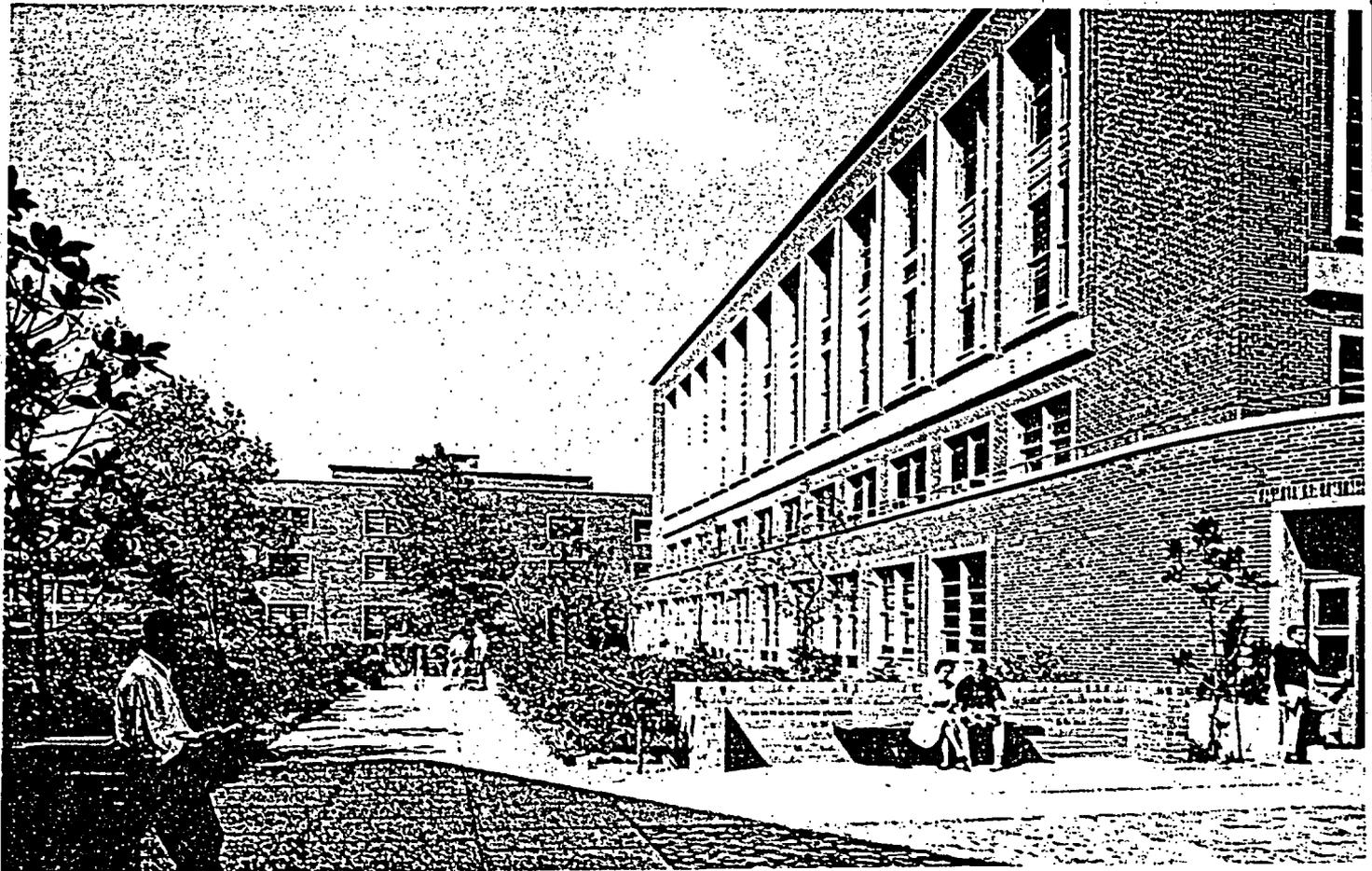


Up-to-date shopping center.

A wide diversification of industry has earned for Greater Philadelphia its reputation as the "Workshop of the World." This diversified industrial complex, with easy access to abundant raw materials, rich markets, and workers with many skills, stabilizes the area's vigorous economy and assures its future growth.

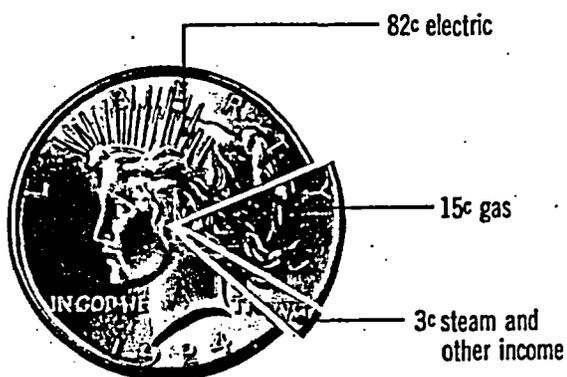
Philadelphia Electric actively co-operates with numerous community development groups in promoting Greater Philadelphia.

Schools and universities expand.

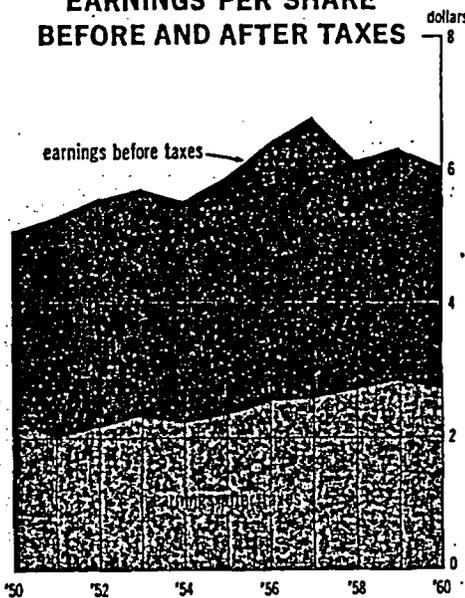


SOURCE AND DISPOSITION OF PHILADELPHIA ELECTRIC'S REVENUE DOLLAR

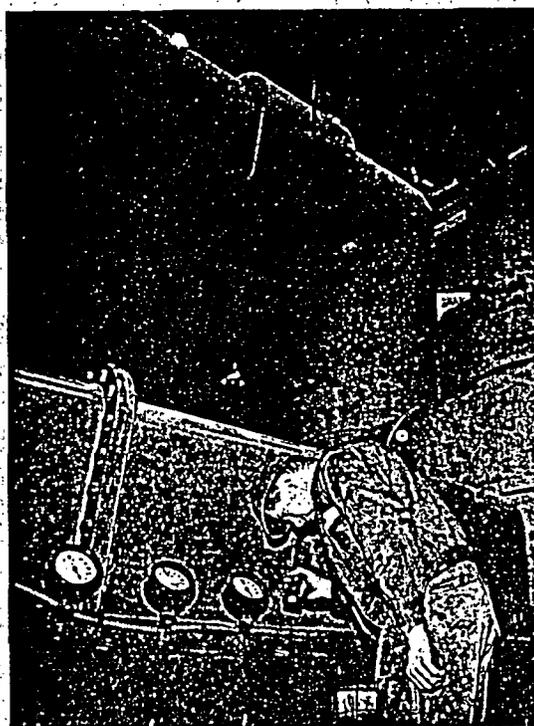
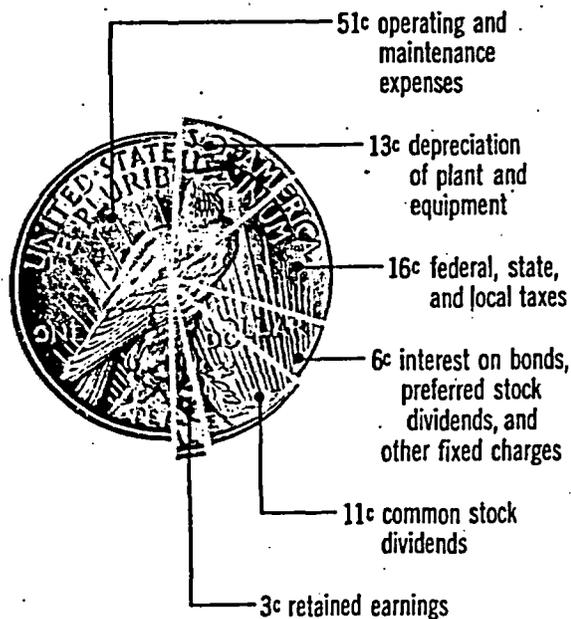
Where the dollar came from



EARNINGS PER SHARE BEFORE AND AFTER TAXES



Where it went



Well-trained and experienced employees are essential to efficient operations.



PHILADELPHIA ELECTRIC COMPANY and Subsidiary Companies

CONSOLIDATED STATEMENT OF INCOME

For The Year Ended December 31

	<u>1960</u>	<u>1959</u>
OPERATING REVENUE		
Electric.....	\$224,381,712	\$218,524,672
Gas.....	42,021,955	39,026,322
Steam.....	6,646,029	6,333,526
Total Operating Revenue.....	<u>273,049,696</u>	<u>263,884,520</u>
OPERATING REVENUE DEDUCTIONS		
Operating Expenses, other than maintenance.....	114,629,323	112,771,961
Maintenance.....	23,576,608	21,761,630
Total Operating Expenses.....	<u>138,205,931</u>	<u>134,533,591</u>
Provision for Depreciation.....	34,919,745	30,105,101
Amortization of Plant Acquisition Adjustments.....	—	734,836
Provision for Taxes		
Federal Income.....	32,064,537	33,483,837
State Income.....	3,587,559	3,723,252
Deferred Taxes on Income.....	(22,108)	1,434,710
Other than Income.....	8,268,031	8,017,831
Total Provision for Taxes.....	<u>43,898,019</u>	<u>46,659,630</u>
Total Operating Revenue Deductions.....	<u>217,023,695</u>	<u>212,033,158</u>
OPERATING INCOME.....	56,026,001	51,851,362
OTHER INCOME.....	886,077	903,182
GROSS INCOME.....	<u>56,912,078</u>	<u>52,754,544</u>
INCOME DEDUCTIONS		
Interest on Long-Term Debt.....	17,587,486	15,624,584
Amortization of Debt Discount, Premium, and Expense	92,946	95,013
Interest on Notes Payable to Banks.....	265,048	180,347
Other Deductions.....	573,645	426,736
Interest Charged to Construction.....	(3,877,487)	(6,498,397)
Total Income Deductions.....	<u>14,641,638</u>	<u>9,828,283</u>
NET INCOME.....	<u>\$ 42,270,440</u>	<u>\$ 42,926,261</u>

The accompanying Notes and Schedules to Financial Statements are an integral part of this statement.



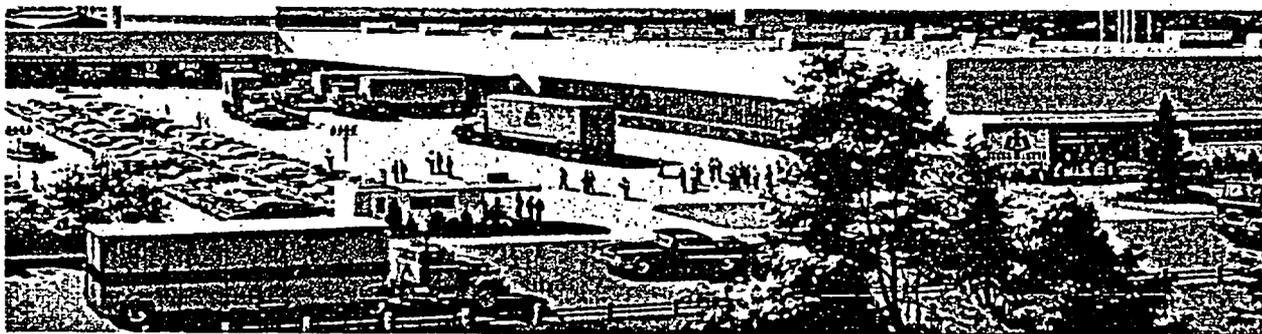
PHILADELPHIA ELECTRIC COMPANY and Subsidiary Companies

CON

ASSETS AND OTHER DEBITS

	<u>December 31</u>	
	<u>1960</u>	<u>1959</u>
UTILITY PLANT		
Plant, at original cost		
Electric.....	\$1,093,886,828	\$1,038,541,694
Gas.....	133,359,082	125,378,598
Steam.....	24,442,143	23,972,630
Common, used in all services.....	38,149,441	37,018,380
	<u>1,289,837,494</u>	<u>1,224,911,302</u>
Less: Reserve for Depreciation.....	287,727,599	262,972,812
	<u>1,002,109,895</u>	<u>961,938,490</u>
INVESTMENTS		
Other Physical Property.....	1,733,208	2,117,913
Other Investments, at cost.....	620,060	960,874
	<u>2,353,268</u>	<u>3,078,787</u>
CURRENT ASSETS		
Cash.....	16,595,430	17,689,617
Special Deposits.....	4,100,065	3,097,008
Temporary Cash Investments, at cost.....	—	10,000,470
Accounts Receivable		
Customers, for Utility Service.....	17,220,297	15,217,539
Merchandising and Jobbing.....	5,616,406	5,495,014
Other.....	493,769	245,413
Reserve for Uncollectible Accounts.....	(316,052)	(369,073)
Materials and Supplies, at average cost		
Operating and Construction.....	11,369,205	11,602,843
Fuel.....	9,097,793	10,401,769
Merchandise for Sale.....	880,235	1,019,502
Prepayments.....	1,235,479	1,352,907
	<u>66,292,627</u>	<u>75,753,009</u>
DEFERRED DEBITS		
Unamortized Debt Discount and Expense.....	2,641,874	2,781,576
Cost of Conversion of Gas Appliances.....	848,400	969,600
(Being amortized over a period ending in 1967)		
Other.....	507,881	476,604
	<u>3,998,155</u>	<u>4,227,780</u>
TOTAL ASSETS AND OTHER DEBITS.....	<u><u>\$1,074,753,945</u></u>	<u><u>\$1,044,998,066</u></u>

The accompanying Notes and Schedules to Financial Statements are an inte



ies **CONSOLIDATED BALANCE SHEET**

LIABILITIES AND OTHER CREDITS

	<u>December 31</u>	
	<u>1960</u>	<u>1959</u>
CAPITALIZATION		
Stockholders' Equity—See Schedule, page 29		
Preferred Stock (\$100 par) cumulative, including premium of \$1,213,910.....	\$ 88,685,910	\$ 88,685,910
Common Stock (no par).....	248,275,227	245,513,685
Earnings Retained for Use in the Business.....	123,290,070	115,101,822
	<u>460,251,207</u>	<u>449,301,417</u>
Long-Term Debt—See Schedule, page 29.....	509,165,000	510,613,000
	<u>969,416,207</u>	<u>959,914,417</u>
CURRENT LIABILITIES		
Long-Term Debt, due within one year.....	1,446,000	1,116,000
Notes Payable to Banks.....	24,000,000	—
Accounts Payable.....	11,183,307	15,114,915
Dividends Declared.....	3,020,894	1,907,880
Customers' Deposits.....	2,061,027	1,978,038
Taxes Accrued		
Federal Income.....	16,231,069	17,114,476
Other.....	6,330,565	6,356,466
Interest Accrued.....	4,198,968	4,186,260
Payroll Accrued.....	1,604,684	1,509,540
Other.....	2,962,216	3,985,232
	<u>73,038,730</u>	<u>53,268,807</u>
DEFERRED CREDITS		
Unamortized Premium on Debt.....	471,727	515,718
Other.....	458,554	554,107
	<u>930,281</u>	<u>1,069,825</u>
RESERVES.....	<u>2,234,011</u>	<u>2,039,389</u>
CONTRIBUTIONS IN AID OF CONSTRUCTION.....	<u>7,882,369</u>	<u>7,431,173</u>
ACCUMULATED DEFERRED TAXES ON INCOME...	<u>21,252,347</u>	<u>21,274,455</u>
TOTAL LIABILITIES AND OTHER CREDITS.....	<u>\$1,074,753,945</u>	<u>\$1,044,998,066</u>

**CONSOLIDATED STATEMENT OF EARNINGS
RETAINED FOR USE IN THE BUSINESS**

For the Year Ended December 31, 1960

BALANCE, JANUARY 1, 1960.....	\$115,101,822
ADD—Net Income.....	<u>42,270,440</u>
	157,372,262
DEDUCT	
Cash Dividends Declared	
\$4.68 per share on 4.68% Preferred Stock.....	\$ 702,000
\$4.40 per share on 4.4% Preferred Stock.....	1,208,768
\$4.30 per share on 4.3% Preferred Stock.....	645,006
\$3.80 per share on 3.8% Preferred Stock.....	1,140,000
\$1.00 per share on \$1 Dividend Preference Common Stock.....	231,345
\$2.24 per share on Common Stock.....	<u>30,155,073</u>
	<u>34,082,192</u>
BALANCE, DECEMBER 31, 1960.....	<u><u>\$123,290,070</u></u>

The accompanying Notes and Schedules to Financial Statements are an integral part of this statement.

**LYBRAND, ROSS BROS. & MONTGOMERY
CERTIFIED PUBLIC ACCOUNTANTS**

To the Board of Directors,
Philadelphia Electric Company,
Philadelphia, Pennsylvania.

We have examined the consolidated balance sheet of Philadelphia Electric Company and subsidiary companies as of December 31, 1960, and the related statements of income and earnings retained for use in the business for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying consolidated balance sheet and statements of income and earnings retained for use in the business present fairly the financial position of Philadelphia Electric Company and subsidiary companies at December 31, 1960, and the results of their operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

LYBRAND, ROSS BROS. & MONTGOMERY

Philadelphia, Pennsylvania,
February 3, 1961.

SCHEDULE OF STOCKHOLDERS' EQUITY
December 31, 1960

	<u>Number of Shares</u>		<u>Amount</u>
	<u>Authorized</u>	<u>Outstanding</u>	
PHILADELPHIA ELECTRIC COMPANY			
Preferred Stock—\$100 par, Cumulative (Note)			
4.68% Series.....	150,000	150,000	\$ 15,000,000
4.4% Series.....	500,000	274,720	27,472,000
4.3% Series.....	150,000	150,000	15,000,000
3.8% Series.....	300,000	300,000	30,000,000
Unclassified.....	400,000	—	—
Premium on Preferred Stock.....	—	—	1,213,910
Total Preferred Stock.....	<u>1,500,000</u>	<u>874,720</u>	<u>88,685,910</u>
Common Stock—no par			
\$1 Dividend Preference Common			
Stock, Cumulative.....	231,345	231,345	
Common Stock.....	<u>14,768,655</u>	<u>13,509,051</u>	
Total Common Stock.....	<u>15,000,000</u>	<u>13,740,396</u>	248,275,227
Earnings Retained for Use in the Business.....			123,290,070
Total Stockholders' Equity.....			<u>\$460,251,207</u>

Note: Redeemable, at the option of the Company, at the following amounts per share, plus accrued dividends:
 4.68% Series—\$105 to December 31, 1962, and \$104 thereafter.
 4.4% Series—\$112.50
 4.3% Series—\$102
 3.8% Series—\$106

SCHEDULE OF LONG-TERM DEBT
December 31, 1960

PHILADELPHIA ELECTRIC COMPANY	
First and Refunding Mortgage Bonds	
2¾% Series due 1967.....	\$ 65,000,000
2¾% Series due 1971.....	20,000,000
2¾% Series due 1974.....	65,000,000
2½% Series due 1978.....	25,000,000
2¾% Series due 1981.....	30,000,000
3¼% Series due 1982.....	35,000,000
3½% Series due 1983.....	20,000,000
3½% Series due 1985.....	50,000,000
4½% Series due 1986.....	50,000,000
4½% Series due 1987.....	40,000,000
3¾% Series due 1988.....	40,000,000
5% Series due 1989.....	50,000,000
Total Philadelphia Electric Company.....	<u>490,000,000</u>
PHILADELPHIA ELECTRIC POWER COMPANY—A SUBSIDIARY	
First Mortgage Bonds, 2½% Series due 1975.....	19,165,000
(Excludes amount due within one year. See Note 3.)	
Total Long-Term Debt.....	<u>\$509,165,000</u>

NOTES TO FINANCIAL STATEMENTS

1. DEPRECIATION

In 1959 and 1960, the usual straight-line provisions for depreciation were increased by amounts equal to annual tax reductions resulting from the use of liberalized depreciation for income tax purposes. Such supplemental provisions were \$3,469,800 in 1959 and \$5,164,200 in 1960. Since it now appears that the supplemental depreciation provision would not be allowed as an expense for rate making purposes, it has been discontinued for financial accounting purposes, beginning January 1, 1961. The use of liberalized depreciation for tax purposes will be continued and resulting income tax reductions will be reflected in net income.

2. DEFERRED TAXES ON INCOME

The amortization, for income tax purposes only, over periods of sixty months with respect to approximately \$50,000,000 of construction costs on facilities covered by certificates of necessity was completed in October, 1960. Amounts equivalent to the resulting deferred taxes on income were charged to income and credited to Accumulated Deferred Taxes on Income. These amounts are being credited to income over

the estimated remaining service lives of the facilities.

3. LONG-TERM DEBT

Philadelphia Electric Power Company, a subsidiary, and The Susquehanna Power Company, its subsidiary, are required under the terms of their mortgage (as joint mortgagors) to pay to the trustee for the 1975 series bonds, semi-annually, a sum in cash sufficient to redeem \$724,000 principal amount of 1975 series bonds on the next succeeding interest payment date, or in lieu of the whole or any part of such cash payment to deliver to the trustee 1975 series bonds in an equivalent amount. The principal amount of \$1,446,000, shown as due within one year, is after a reduction of \$2,000 of these bonds acquired for delivery to the trustee before the next succeeding interest payment date.

4. PLANT ACQUISITION ADJUSTMENTS

On December 31, 1959, amortization of plant acquisition adjustments was accelerated and completed by a charge of \$734,837 to Earnings Retained for Use in the Business, as permitted by orders of the regulatory authorities having jurisdiction.

FISCAL AGENTS FOR STOCKS AND BONDS

PHILADELPHIA ELECTRIC COMPANY

Preferred, Preference Common, and Common Stocks

Registrars

GIRARD TRUST CORN EXCHANGE BANK
Broad & Chestnut Streets, Philadelphia 2, Pa.
CHEMICAL BANK NEW YORK TRUST CO.
165 Broadway, New York 15, N.Y.

Transfer Agents

PHILADELPHIA ELECTRIC COMPANY
900 Sansom Street, Philadelphia 5, Pa.
MORGAN GUARANTY TRUST CO. of N.Y.
140 Broadway, New York 15, N.Y.

PHILADELPHIA ELECTRIC COMPANY—First and Refunding Mortgage Bonds
PHILADELPHIA ELECTRIC POWER COMPANY (A Subsidiary)—First Mortgage Bonds

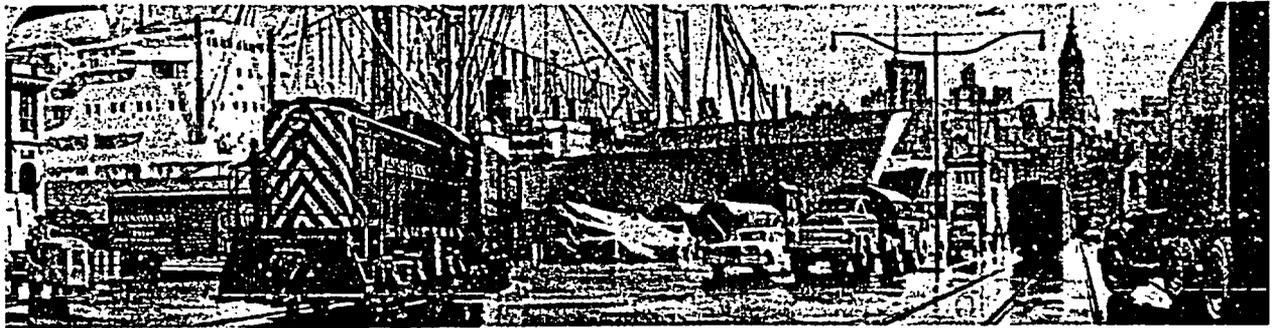
Trustee

FIDELITY-PHILADELPHIA TRUST COMPANY
Broad & Walnut Streets, Philadelphia 9, Pa.

New York Agent

MORGAN GUARANTY TRUST CO. of N.Y.
140 Broadway, New York 15, N.Y.

All Philadelphia Electric Company securities are listed on the Philadelphia-Baltimore Stock Exchange and the New York Stock Exchange. Philadelphia Electric Power Company bonds are listed on the Philadelphia-Baltimore Stock Exchange.



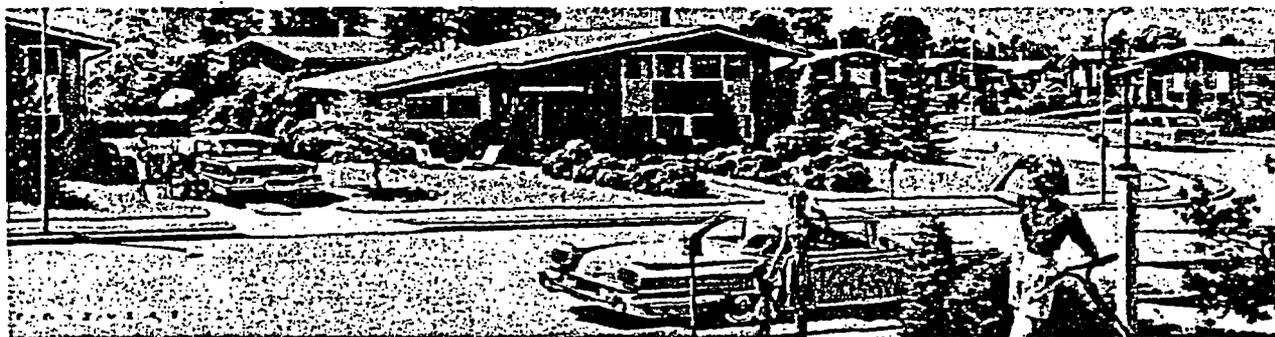
FINANCIAL STATISTICS

SUMMARY OF EARNINGS (MILLIONS OF DOLLARS)

	1960	1959	1958	1957	1956	1955	1950
Operating Revenue (for details see page 32)	\$273.0	\$263.9	\$247.7	\$236.0	\$224.7	\$209.9	\$155.5
Operating Revenue Deductions							
Fuel	61.3	59.3	57.1	56.5	48.9	44.7	36.1
Electricity and Steam Purchased	0.3	2.0	(0.9)	(0.5)	0.1	1.3	2.4
Other Operating Expenses	76.6	73.2	69.5	64.2	60.1	57.3	37.8
Total Operation and Maintenance	138.2	134.5	125.7	120.2	109.1	103.3	76.3
Depreciation and Amortization	34.9	30.8	31.0	28.6	26.6	23.9	15.4
Taxes, including provision for Deferred Taxes	43.9	46.7	43.4	41.2	44.7	41.7	29.6
Total	217.0	212.0	200.1	190.0	180.4	168.9	121.3
Operating Income	56.0	51.9	47.6	46.0	44.3	41.0	34.2
Other Income	0.9	0.8	0.5	0.7	0.7	0.5	0.9
Gross Income	56.9	52.7	48.1	46.7	45.0	41.5	35.1
Income Deductions							
Interest on Long-Term Debt	17.6	15.6	12.5	10.3	9.8	9.7	6.6
Interest Charged to Construction	(3.9)	(6.5)	(4.8)	(2.4)	(1.1)	(1.9)	(1.1)
Other Income Deductions	0.9	0.7	1.2	1.7	0.9	0.5	1.0
Total	14.6	9.8	8.9	9.6	9.6	8.3	6.5
Net Income for Stockholders	42.3	42.9	39.2	37.1	35.4	33.2	28.6
Dividends on Preferred and \$1 Dividend							
Preference Common Stocks	3.9	3.9	3.9	3.9	3.9	4.0	3.8
Earnings for Common Stock	\$38.4	\$39.0	\$35.3	\$33.2	\$31.5	\$29.2	\$24.8
Earnings per Share (dollars)	\$2.84	\$2.90	\$2.76	\$2.60	\$2.59	\$2.39	\$2.31

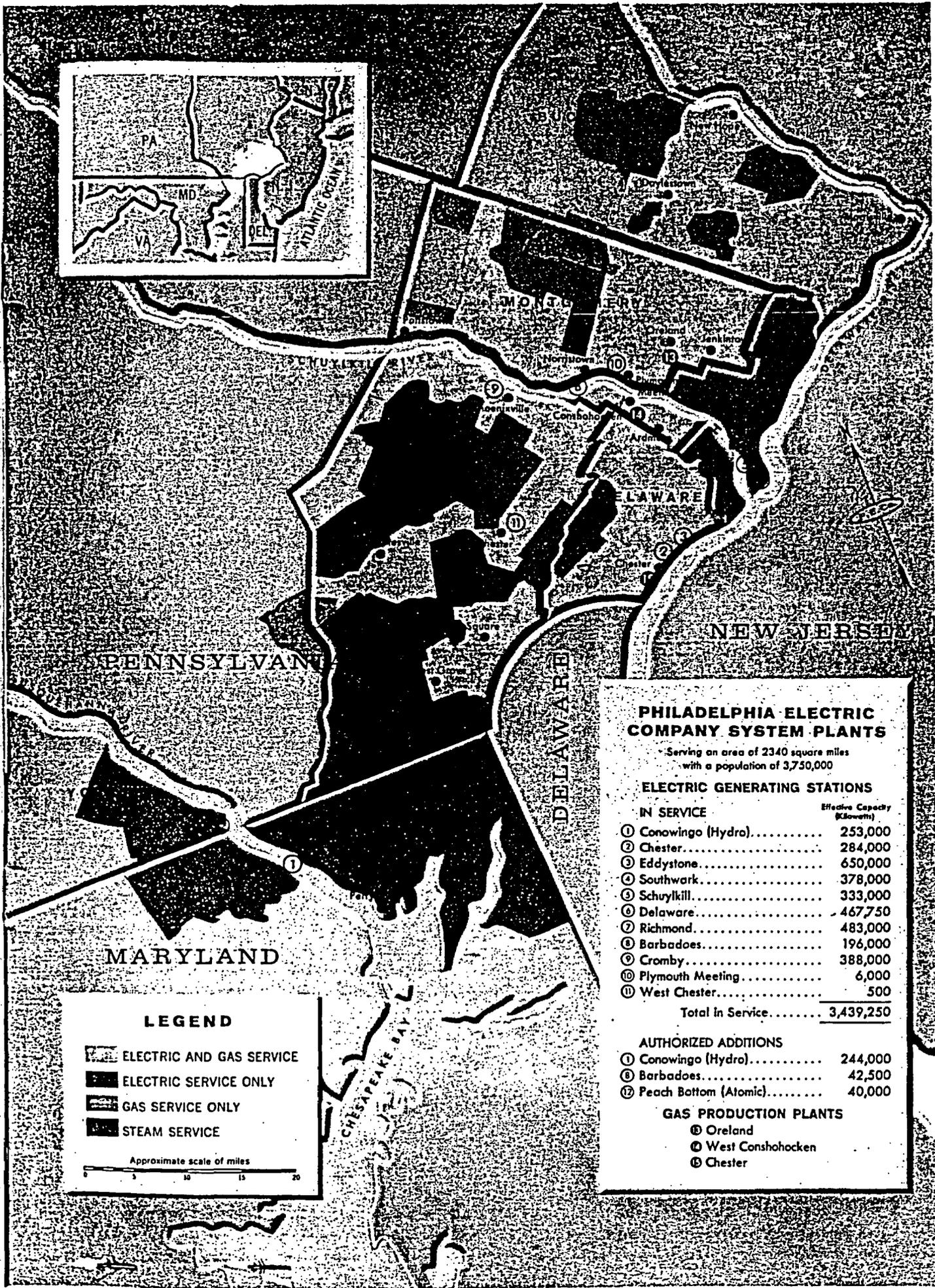
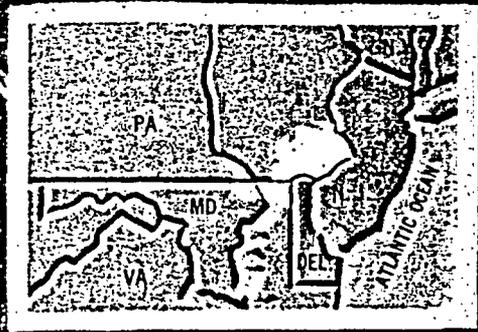
SUMMARY OF FINANCIAL CONDITION—DECEMBER 31 (MILLIONS OF DOLLARS)

Assets and Other Debits							
Utility Plant, at Original Cost	\$1,289.8	\$1,224.9	\$1,125.5	\$1,012.9	\$924.6	\$864.7	\$591.7
Less: Reserve for Depreciation	287.7	263.0	242.7	217.8	194.1	174.7	104.1
Total	1,002.1	961.9	882.8	795.1	730.5	690.0	487.6
Plant Acquisition Adjustments	—	—	1.5	2.2	2.9	3.6	7.3
Investments	2.4	3.1	2.7	2.8	2.9	3.3	10.9
Current Assets							
Cash	16.6	17.7	19.5	16.4	19.1	28.6	19.7
Temporary Cash Investments	—	10.0	—	—	—	4.0	3.2
Materials and Supplies	21.3	23.0	20.2	20.5	20.8	14.2	13.9
Other	28.4	25.1	26.8	23.1	21.9	21.0	17.9
Deferred Debits	4.0	4.2	4.7	3.1	3.2	3.3	1.9
Total Assets and Other Debits	\$1,074.8	\$1,045.0	\$958.2	\$863.2	\$801.3	\$768.0	\$562.4
Liabilities and Other Credits							
Preferred Stock, including Premium	\$88.7	\$88.7	\$88.7	\$88.7	\$88.7	\$88.7	\$73.6
Common Stocks	248.3	245.5	216.4	216.4	194.3	194.3	157.3
Earnings Retained for Use in the Business	123.3	115.1	106.7	96.9	89.2	78.4	44.0
Total Stockholders' Equity	460.3	449.3	411.8	402.0	372.2	361.4	274.9
Long-Term Debt	509.2	510.6	464.4	376.0	337.6	339.2	241.0
Current Liabilities							
Notes Payable to Banks	24.0	—	—	9.0	18.0	—	—
Taxes Accrued	22.5	23.5	23.3	26.1	32.6	34.7	28.0
Other	26.5	29.8	28.7	23.6	18.5	15.8	11.3
Deferred Credits	0.9	1.1	1.2	1.3	1.5	1.5	1.1
Reserves	2.2	2.0	1.9	1.8	1.6	1.4	2.8
Contributions in Aid of Construction	7.9	7.4	7.1	6.7	7.2	6.4	3.3
Accumulated Deferred Taxes on Income	21.3	21.3	19.8	16.7	12.1	7.6	—
Total Liabilities and Other Credits	\$1,074.8	\$1,045.0	\$958.2	\$863.2	\$801.3	\$768.0	\$562.4



OPERATING STATISTICS

	1960	1959	1958	1957	1956	1955	1950
ELECTRIC OPERATIONS							
Energy Supply (millions of kilowatt-hours)							
Generated in System Plants							
Steam Plants	12,196	11,426	10,949	10,993	10,168	9,484	6,919
Hydro Plant—Conowingo	1,327	1,320	1,382	1,128	1,574	1,332	1,655
Internal Combustion	2	2	—	—	—	—	—
Purchased and Net Interchange	98	501	(97)	50	(1)	342	272
Total Generated and Purchased	13,623	13,249	12,234	12,171	11,741	11,158	8,846
Losses and Company Use	957	985	968	912	904	885	734
Total Sales	12,666	12,264	11,266	11,259	10,837	10,273	8,112
Energy Sales (millions of kilowatt-hours)							
Residential and Rural	3,057	2,965	2,732	2,578	2,403	2,160	1,340
Commercial and Industrial—Small	1,684	1,670	1,542	1,530	1,474	1,398	1,057
Commercial and Industrial—Large	6,882	6,565	5,922	6,030	5,791	5,502	3,879
Railroad and Railway	815	836	854	923	988	1,042	1,154
Public Authorities and Highway Lighting..	180	169	158	149	143	134	98
Other Electric Co.'s and Interdepartmental	48	59	58	49	38	37	584
Total Sales	12,666	12,264	11,266	11,259	10,837	10,273	8,112
Number of Customers, Dec. 31 (thousands)							
Residential and Rural	913	900	887	875	858	837	718
Commercial and Industrial—Small	154	155	154	155	155	155	150
Commercial and Industrial—Large	4	3	3	3	3	3	2
All Other	2	2	2	2	2	1	1
Total Customers	1,073	1,060	1,046	1,035	1,018	996	871
Operating Revenue (millions of dollars)							
Residential and Rural	\$77.9	\$75.8	\$71.0	\$67.8	\$63.9	\$58.8	\$40.6
Commercial and Industrial—Small	46.4	46.0	43.4	42.5	40.8	38.7	30.7
Commercial and Industrial—Large	82.2	79.1	72.6	71.3	66.5	62.0	44.3
Railroad and Railway	9.2	9.3	8.7	8.7	9.3	9.9	11.1
Public Authorities and Highway Lighting..	6.0	5.7	5.3	5.0	4.9	4.6	3.6
Other Electric Co.'s and Interdepartmental	0.6	0.7	0.7	0.6	0.4	0.4	4.4
Miscellaneous Electric Revenue	2.1	1.9	1.9	1.8	1.8	1.7	1.2
Total Electric Revenue	\$224.4	\$218.5	\$203.6	\$197.7	\$187.6	\$176.1	\$135.9
Residential Service							
Average Use per Customer (kilowatt-hours)	3,373	3,320	3,102	2,972	2,833	2,619	1,896
Average Revenue per Kilowatt-hour	2.55¢	2.56¢	2.60¢	2.63¢	2.66¢	2.72¢	3.03¢
Electric Peak Load							
Hourly Demand (thousands of kilowatts)..	2,628	2,543	2,306	2,317	2,168	2,183	1,644
Electric Generating Capacity (thousand kw.)	3,439	2,716	2,712	2,527	2,521	2,477	1,879
Cost of Fuel per Ton	\$9.55	\$9.77	\$9.87	\$9.84	\$9.14	\$8.77	\$8.46
Btu per Kilowatt-hour Generated	10,575	11,074	10,995	11,472	11,332	11,554	13,244
GAS OPERATIONS (900 Btu)							
Sales (millions of cubic feet)	27,887	26,327	25,622	23,029	22,459	19,441	12,475
House-Heating Sales in % of Total Sales..	65.0%	64.3%	65.5%	63.2%	63.1%	59.9%	34.5%
Number of Customers, Dec. 31 (thousands)..	230	226	221	218	212	205	172
Total Gas Revenue (millions of dollars).....	\$42.0	\$39.0	\$37.9	\$32.9	\$32.1	\$29.2	\$16.5
STEAM OPERATIONS							
Sales (millions of pounds)	5,323	4,969	4,712	4,160	3,944	3,596	2,606
Number of Customers, Dec. 31 (thousands)..	1	1	1	1	1	1	1
Total Steam Revenue (millions of dollars)...	\$6.6	\$6.3	\$6.2	\$5.4	\$5.0	\$4.6	\$3.1



PHILADELPHIA ELECTRIC COMPANY SYSTEM PLANTS

Serving an area of 2340 square miles
with a population of 3,750,000

ELECTRIC GENERATING STATIONS

IN SERVICE	Effective Capacity (kilowatts)
① Conowingo (Hydro).....	253,000
② Chester.....	284,000
③ Eddystone.....	650,000
④ Southwark.....	378,000
⑤ Schuylkill.....	333,000
⑥ Delaware.....	467,750
⑦ Richmond.....	483,000
⑧ Barbadoes.....	196,000
⑨ Cromby.....	388,000
⑩ Plymouth Meeting.....	6,000
⑪ West Chester.....	500
Total in Service.....	3,439,250

AUTHORIZED ADDITIONS

① Conowingo (Hydro).....	244,000
⑧ Barbadoes.....	42,500
⑫ Peach Bottom (Atomic).....	40,000

GAS PRODUCTION PLANTS

- ⑥ Oreland
- ⑩ West Conshohocken
- ⑪ Chester

LEGEND

- ELECTRIC AND GAS SERVICE
- ELECTRIC SERVICE ONLY
- GAS SERVICE ONLY
- STEAM SERVICE

Approximate scale of miles

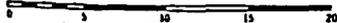


EXHIBIT E

SUMMARY OF TECHNICAL QUALIFICATIONS

PHILADELPHIA ELECTRIC COMPANY

Philadelphia Electric Company is a public utility engaged in supplying electric service in Philadelphia and surrounding counties, gas service in five counties adjacent to Philadelphia, and steam heating service in central Philadelphia and portions of West Chester, Pennsylvania. Subsidiaries of the Company include Philadelphia Electric Power Company and its subsidiary, The Susquehanna Power Company, which respectively own the Pennsylvania and Maryland portions of the Conowingo Hydro-Electric Project; The Susquehanna Electric Company which leases and operates the Maryland portion of the Conowingo Project, the entire electrical output being used by System companies, and Conowingo Power Company which supplies electric service in northern Maryland. The total area served comprises 2,340 square miles.

The Company and its subsidiaries presently own and operate eight steam-electric plants and one hydro-electric station having an aggregate system capability of 3,043,250 kw. An

additional 325,000 kw will be added to this total by the end of 1960, when the second unit of the Eddystone Station, which station contains one of the world's most efficient turbo-generator units, is placed in operation.

For some years the Company has maintained an active interest and has acquired technical experience in the development of atomic energy for electric power generation. In 1952 it became a charter member of the Dow Chemical-Detroit Edison Nuclear Power Development Project, which subsequently became Atomic Power Development Associates, Inc. (APDA). This organization is engaged in the development and design of a large, fast breeder power reactor under the Atomic Energy Commission's Power Demonstration Program and is also making other studies of advanced reactor types.

Philadelphia Electric Company also took a prominent part in the formation of Power Reactor Development Company (PRDC), which was organized to finance, construct, own and operate the 100 emw fast breeder reactor being designed by APDA for the Enrico Fermi Atomic Power Station.

Officers of the Company are serving in executive and technical capacities in connection with both the APDA and PRDC projects.

In addition, engineers have been assigned from the Company on loan to full time duties in various phases of nuclear projects, including (1) assignments to APDA for design and development of core and fuel elements, shielding design, coordination of research at various levels on the metallurgical and chemical aspects of fuel elements, shift supervisor duties and preoperational duties, including preparation of plant operation manuals, at the Enrico Fermi Atomic Power Station; (2) assignment to PRDC for coordination of control, instrumentation and electrical features; (3) assignment to the Nautilus nuclear submarine project for field engineering and mechanical operations during start-up and initial operation; (4) assignment to the nuclear reactor at Shippingport, Pennsylvania for training and operational duties and (5) assignment to the Knolls Atomic Power Laboratory for participation in prototype design of a sodium boiler for a submarine reactor. A number of employees have also taken special courses in nuclear engineering and related subjects at various colleges and universities.

Representatives of the Company have visited a number of atomic energy installations including the National Reactor Test Station, Arco, Idaho, the Hanford Works, the Oak Ridge National

Laboratory, the Argonne National Laboratory, the Knolls Atomic Power Laboratory, the University of California Radiation Laboratories, Westinghouse Electric Corporation's Atomic Power Department facilities, the Enrico Fermi Nuclear Power Station, the Dresden Nuclear Power Plant, the Vallecitos Atomic Power Plant and the Shippingport Atomic Power Plant. In addition, Company representatives have also visited a number of foreign atomic power installations including Calder Hall, Harwell, Risley and Dounreay in the British Isles; Marcoule, France; and the Russian installations at Obnisk and Dubna.

The Company presently has 9100 employees, of whom over 260 are graduate engineers directly engaged in power plant design and engineering. Thirty-four clearances are held under Permit 509 issued to the Company by the Atomic Energy Commission in October, 1955. A separate research and development department, headed by a Vice President, was organized in 1956 with particular emphasis upon the application of atomic energy to electric power generation. Additional specialized training will be provided for Company personnel assigned to the Peach Bottom Atomic Power Station to augment the experienced engineering, research and operating departments now in existence.

BECHTEL CORPORATION

The Bechtel organization, originated by W. A. Bechtel, has been continuously engaged in construction activities since 1898.

Bechtel has served industry and government as engineers and constructors in railroad work; then in highway, tunnels, bridges, dams, and pipelines; and for the last twenty years in the fields of petroleum, power generation and distribution, harbor development, mining and metallurgy, and chemical and industrial processing. The Bechtel organization has grown progressively to be one of the largest designers and constructors of industrial facilities and developers of natural resources. The company activities are world-wide, and principal offices are located in San Francisco, New York, Los Angeles, Toronto, and London.

Over the last five years the average amount of work completed per year by the Bechtel organization is in excess of \$200,000,000.

Bechtel Corporation has been concentrating on power industry activities since the close of World War II and has built up a specialized engineering force of approximately 700 engineers, draftsmen and specialists, plus 200 key supervisory field men specializing in power work.

The total capacity of power projects designed by Bechtel over the last nine years, including hydro and diesel power installations amounts

to over 8,000,000 kw. This program embraces industrial, governmental, and central station type plants in over forty projects individually ranging from 1,600 kw to 625,000 kw in size. The Bechtel experience includes all types of station design and arrangements, such as reheat and non-reheat, indoor and outdoor, single and multiple units, over a wide range of steam conditions up to 2400 psi, 1050/1000 F. Some of these plants are handling high pressure steam in quantities of over a million pounds per hour in installations where outdoor construction has been required to economize on building volume.

The total cost of engineering and construction of the power plants is in excess of \$650,000,000. The majority of these contracts include complete responsibility for both engineering and construction, although several are strictly engineering design assignments.

Bechtel's activities in the nuclear field date back to 1949, when it constructed the first experimental breeder reactor at Arco, Idaho for the Atomic Energy Commission. In 1950, Bechtel performed engineering for the Mark I and Mark II Materials Testing Accelerator project at Livermore, California for the Atomic Energy Commission and constructed the chemical fuel processing plant at Arco, Idaho.

Early in 1951 Bechtel Corporation entered a partnership with Pacific Gas and Electric Company in one of the first United States industrial study teams under contract with the Atomic Energy Commission.

The objective was to investigate the feasibility of applying nuclear energy to the generation of electricity. A number of reactor types were considered and a recommendation was made that a particular type warranted a thorough investigation. These studies covered a two-year period and led to the formation of the expanded study team known as Nuclear Power Group (NPG).

Resulting from the NPG studies was a proposal by Commonwealth Edison Company to the Atomic Energy Commission for private construction and ownership of a 180 mw nuclear power plant. This plant, known as the Dresden Nuclear Power Station, was contracted to the General Electric Company, who in turn awarded a contract to Bechtel Corporation for the engineering of the more conventional portions of the plant and the construction in its entirety. Construction of the Dresden Station was substantially completed in September, 1959, and criticality was first achieved October 15, 1959.

Bechtel in 1956 was retained by the General Electric Company to supply engineering and construction services for their nuclear development center near Pleasanton, California. The Vallecitos laboratory consists of offices, hot and non-radioactive laboratories, and critical facilities. A 5,000 ekw prototype of the 180,000 ekw Boiling Water Reactor for the Commonwealth Edison Company of Chicago was constructed by Bechtel on the site. This prototype has associated with it

a steam power plant built by Bechtel, owned and operated by the Pacific Gas and Electric Company, which is generating commercial electric power for the Pacific Gas and Electric Company system. Bechtel also performed preliminary design for the 30,000 tkw General Electric Test Reactor which has been built at the same site.

For the Army Package Power Reactor 1A (APPR-1A), to be built at Fort Greeley, Alaska, Alco Products, Inc. supplied the design of the nuclear system and specified the containment requirements. Under contract with Alco, Bechtel provided the plant layout, designed the containment structure, the buildings, and all secondary and auxiliary systems. They also provided the drawings for the complete plant and prepared the specifications for all non-nuclear equipment.

In addition to the above-listed projects, Bechtel Corporation is participating or has participated in the engineering and/or construction of the following nuclear facilities:

Pacific Gas and Electric Company - Humboldt Bay Unit No. 3

Bechtel is Engineer-Constructor and Prime Contractor for the design and construction of a 50,000 ekw Boiling Water Reactor Power Plant.

U. S. Atomic Energy Commission - Hallam Nuclear Power Facility

Bechtel is Architect-Engineer for the 75,000 ekw Consumers Public Power District Nuclear Facility near Hallam, Nebraska.

Consumers Power Company - Big Rock Point Nuclear Plant

Bechtel has been selected as Engineer-Constructor and Prime Contractor for the design and construction of a 50,000 ekw Boiling Water Reactor Power Plant for the Consumers Power Company of Jackson, Michigan.

Hot Cell Facilities - Atomics International and General Atomic

In addition to the Hot Cell Facilities at the aforementioned Vallecitos Laboratories, Bechtel has engineered and constructed Hot Cell Facilities for Atomics International and for the General Atomic Division of General Dynamics Corporation.

In 1959 Bechtel carried out preliminary designs for two large water reactor system plants in conjunction with reputable reactor manufacturers and has offered such plants to industry as units which would probably exhibit costs competitive with higher fuel cost conventional units over their plant lifetimes. The Southern California Edison Company has announced that negotiations are underway with Westinghouse Electric Corporation and Bechtel to construct a 340 emw net pressurized water nuclear power plant.

To keep abreast of rapid developments in the nuclear and other scientific fields, Bechtel established in 1958 a Scientific and Nuclear Development department. This department keeps currently informed not only as to new developments in reactor design, but also as to fuel

cycle and fuel reprocessing developments.

The experience of Bechtel Corporation in the engineering construction field over the past sixty years, and particularly in the nuclear field over the past ten years, eminently qualifies it to carry out its responsibilities in connection with the design and construction of the Peach Bottom Atomic Power Station.

GENERAL ATOMIC DIVISION OF GENERAL DYNAMICS CORPORATION

General Dynamics Corporation is a technically-oriented industrial enterprise with an annual product volume of nearly \$2,000,000,000 and more than 100,000 employees. Major emphasis of the Corporation's activities is on the successful development of advanced technological systems, ranging from electronics and ship propulsion to jet airliners and outer-space technology. Many of these advanced systems are of highly complex character. The Corporation's research, development and production activities in the nuclear energy field are a function of its General Atomic Division, including the 115,000 tkw reactor and the nuclear steam supply system for the Peach Bottom Atomic Power Station. As in other areas of work, the entire resources of the Corporation, which enable it to carry out the most advanced systems development, support and are available to the high temperature, gas-cooled reactor program at General Atomic.

General Atomic Division is located in San Diego, California, where the focal point of its activities is the John Jay Hopkins Laboratory for Pure and Applied Science, which ranks as one of the world's largest privately-owned centers of diversified nuclear research and development. The Division's facilities represent an investment of approximately \$15,000,000 of General Dynamic's funds. These facilities include 150 individual laboratories, a megacurie hot cell, 32 MEV linear accelerator, critical assemblies, two TRIGA reactor facilities, computing center, a large experimental building for metallurgical research and fabrication and large-scale engineering experiments, and other supporting facilities.

The staff of General Atomic, numbering more than 1,200, includes some of the world's senior engineers and scientists in the nuclear field. The technical staff of more than 750 includes engineers, chemists, metallurgists, theoretical physicists and experimental physicists. Of these, 104 have doctorates and 73 have master's degrees. A large number of the senior staff have previously been associated with the development, design and construction of reactor systems for research, propulsion and power production, in the United States, Canada and England. General Atomic has assembled a staff distinguished by its broad competence to deal with the development, design and construction of the high temperature, gas-cooled

nuclear power system, including development of high temperature materials. These include, in particular, specialists in the fields of chemistry, metallurgy and chemical and mechanical engineering.

At the present time, approximately 200 persons are directly engaged in the high temperature, gas-cooled reactor project at General Atomic. Others among the staff of 1,200 contribute indirectly to the program. In addition, the services of fabricators of materials and components, and of test reactors at other locations, are being employed.

General Atomic has effective arrangements for exchange of information with others engaged in gas-cooled reactor programs, including the Atomic Energy Commission's national laboratories.

Concurrently with its work in connection with the Peach Bottom plant, General Atomic is engaged in other programs involving development of gas-cooled reactors.

Other programs underway at General Atomic, on a steadily expanding scale, include the development of new and better reactor materials involving studies of physical and mechanical properties at high temperatures, also examinations of corrosion and radiation effects. A broad program of research is carried on in the fields of solid state physics, high temperature and radio chemistry and atomic beam studies.

Current major programs at General Atomic embrace the development of thermoelectric devices for the conversion of heat directly into

electricity, a large program in controlled thermonuclear reactions including exhaustive research into plasma physics, also a classified program for the Department of Defense which involves the application of controlled nuclear pulses to the propulsion of very large space vehicles.

A major General Atomic program is the development, manufacturing and construction of TRIGA reactors for research, training, isotope-production as well as for special medical and industrial applications. Some 20 TRIGAS are today in use, or soon will be operating, on five continents and advanced versions of the TRIGA are being developed to produce repetitive, high energy pulses of radiation at levels up to 1,500,000 kilowatts for fractions of a second. Within the short space of less than two years, the TRIGA was conceived, developed and built by General Atomic.

Thus the facilities, experience and specialized manpower of General Atomic are more than adequate to successfully carry out its responsibilities for the complete nuclear steam supply system for the Peach Bottom Atomic Power Station.

Supporting Data for
Estimated Schedule of Transfers of
Special Nuclear Material

The following information was used in arriving at the foregoing Estimated Schedule of Transfers of Special Nuclear Material.

1. Core loading of 173.3 Kg of U-235.
2. Fuel loading in whole-core batches.
3. Plant life of 40 years.
4. Additional requirement of 6% of core loading to cover scrap losses during fabrication.
5. Unrecoverable scrap losses during conversion and fabrication of 2% of the total required per core.
6. First core life of 4 years (due to reduced load factor).
7. Life of subsequent cores of 3 years at 80% load factor.
8. One-third of first core allotment required during fiscal 1962; the remaining two-thirds during fiscal 1963.
9. One year required for core fabrication.
10. Six months' lead time to allow for conversion, shipping, loading and precriticality operations.
11. Plant start-up in fiscal 1964.

12. Recovery in fuel reprocessing of 97% of residual fissile material.
13. Four-month cooling period for spent fuel prior to shipment.
14. Spent fuel shipments for each core spread over a five-month period.
15. Spare fuel of 6.9 Kg (4%) remains on hand and is sufficient for the life of the plant.

An example of the use of this data to develop the information for all batches except the first batch in the foregoing Estimated Schedule of Transfers of Special Nuclear Material is given below:

Transfer from AEC	(1.06) 173.3	= 183.7 Kg
Conversion and fabrication loss	(0.02) 183.7	= 3.7
Recoverable scrap	(183.7-173.3-3.7)	= <u>6.7</u>
Fabricated fresh fuel		173.3 Kg
Irradiated fuel	Pa-233 = 3.6 Kg	
	U-233 = 42.7	
	U-235 = <u>63.6</u>	
	109.9 Kg	
Loss in reprocessing	(0.03) 109.9	= 3.3
Recovered after reprocessing	- 106.6 Kg	

An example applicable to the first batch follows:

Transfer from AEC	(1.06)(1.04)(173.3)	= 191.0 Kg
Conversion and fabrication loss	(0.02)(191.0)	= 3.8
Recoverable scrap	(191.0; ^{180.2} 173.3 -3.8)	= <u>7.0</u>
Fabricated fresh fuel (First batch)		= 180.2 Kg
Fuel loaded into reactor		= 173.3 Kg
Spare fuel (4% excess)		= 6.9 Kg

March 25, 1961

United States
Atomic Energy Commission
Washington 25, D.C.

Your reference:
LRI:NDM
Docket No. 50-171

Gentlemen:

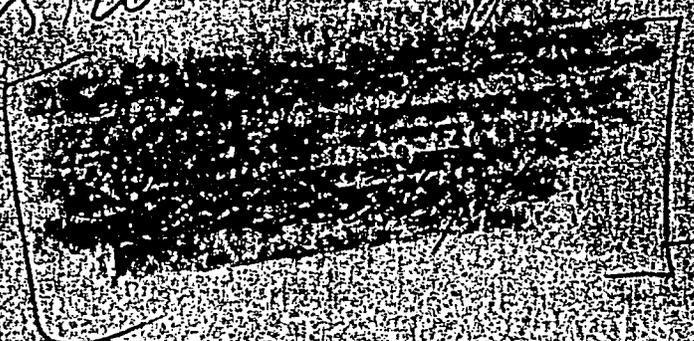
As of previous correspondence in September of 1960, I have assurance that a notice of hearing will be sent to me relevant to the public hearing on the construction of a nuclear power plant for the Philadelphia area (Peach Bottom, York County).

This is to confirm my desire to be heard and to express objections -- fundamental to this franchise.

This reiteration is prompted in the hope that the new administration will furnish this notification.

Very truly yours,

L. W. Wilber



May 4, 1961

Mr. Lawrence W. Goldberg

Ex 6

Re: Philadelphia Electric Co.
Docket No. 50-171

Dear Mr. Goldberg:

Your letter of March 25, 1961, has been referred to me.

As you were previously advised, it is our intention to send you a copy of the Notice of Hearing in this case upon its issuance. No such action has yet been taken upon the above application.

Sincerely yours,

Lionel Kestenbaum
Attorney for the Regulatory Staff

cc: L&R Files

Ex 6

OGC

Kestenbaum:lk

5/4/61