

C. Failing to set forth on invoices the item number or mark assigned to a fur product.

It is further ordered, That the respondent herein shall, within sixty (60) days after service upon him of this order, file with the Commission a report in writing setting forth in detail the manner and form in which he has complied with this order.

IN THE MATTER OF
HIGH VOLTAGE ENGINEERING CORPORATION

CONSENT ORDER, ETC., IN REGARD TO THE ALLEGED VIOLATION OF SEC. 7
OF THE CLAYTON ACT

Docket C-322. Complaint, Mar. 26, 1963—Decision, Mar. 26, 1963

Consent order requiring absolute divestiture as a going concern, to a purchaser approved by the Commission, of the assets of the second largest domestic producer acquired in June 1960 by the largest—resulting in concentrating 90% of total dollar sales in one concern—in the particle accelerator industry engaged in the research, development, and production of particle accelerator machines for the synthetic production of radiation energy and used for (1) research by universities, public and private research organizations, and government agencies; (2) industrial radiation processing by plastic, drug and electronic manufacturers, among others; (3) radiography by manufacturers of large metal castings and weldments; and (4) medical therapy by hospitals and clinics.

COMPLAINT

The Federal Trade Commission, having reason to believe that the above-named respondent has violated and is now violating the provisions of Section 7 of the amended Clayton Act (15 U.S.C., Sec. 18), hereby issues its complaint, pursuant to Section 11 of the aforesaid Act (15 U.S.C., Sec. 21), charging as follows:

PARAGRAPH 1. Respondent, High Voltage Engineering Corporation, hereinafter sometimes referred to as HVEC, is a corporation organized in 1946 and existing under the laws of the State of Massachusetts, with its principal office at Burlington, Massachusetts.

PAR. 2. Since its formation, HVEC has engaged in research, development, manufacture and sale of particle accelerators which are

machines for the synthetic production of radiation energy. HVEC also manufactures other products, principally accessories for its particle accelerator machines, including such items as magnets, beam-handling equipment, particle sources, high vacuum components, particle deflection and analysis devices and components for microwave power generation. Its subsidiary, Electronized Chemicals Corporation, with a plant located at Burlington, Massachusetts, which is engaged in contract radiation processing and holds patents on radiation processing techniques, used in connection with particle accelerators, was acquired by HVEC in 1957. Its subsidiary, Glass Grinding Corporation, with a plant located at Whitman, Massachusetts, manufactures ground glass insulators used by HVEC in the construction of vacuum tubes and accelerators and in grinding various materials for the use of HVEC and for other customers. Its wholly owned subsidiary, HVEC (Europa), operates a manufacturing plant at Amersfoort, The Netherlands, which manufactures machines to produce synthetic nuclear radiations and other products. As of December 31, 1959, HVEC listed total assets of over \$8,000,000 and sales for the year of over \$8,000,000. As of December 31, 1960, HVEC listed total assets of over \$10,000,000 and sales for the year of over \$12,000,000. HVEC sells the products it manufactures throughout the United States, and is otherwise engaged in commerce, as "commerce" is defined in the amended Clayton Act.

PAR. 3. On or about June 1, 1960, HVEC acquired substantially all of the stock of Applied Radiation Corporation, hereinafter referred to as ARCO, a corporation organized in 1953 and existing under the laws of the State of California. By an agreement dated April 18, 1960 and "Plan of Reorganization", HVEC and ARCO agreed to an exchange of one share of common stock of HVEC for each 10.75 shares of common stock of ARCO. Under the exchange agreement, HVEC issued common stock to ARCO having a market value in excess of \$5,000,000.

Since its formation, and at the time of acquisition, ARCO has engaged in research, development, manufacture and sale of particle accelerators and associated equipment. As of September 30, 1959, ARCO listed total assets in excess of \$1,600,000 and sales for the fiscal year 1959 in excess of \$1,600,000. As of September 30, 1960, ARCO listed total assets in excess of \$1,900,000 and sales for the fiscal year 1960 in excess of \$2,400,000. ARCO, prior to and at the time of acquisition, sold the products it manufactured throughout the United States, and was otherwise engaged in commerce, as "commerce" is defined in the amended Clayton Act.

PAR. 4. Prior to June 1, 1960, HVEC and ARCO transacted a sub-

stantial business in the particle accelerator industry. The particle accelerator industry consists of the research, development, production and sale of particle accelerator machines for the synthetic production of radiation energy. In the industry, such machines are known as lower energy accelerators or higher energy accelerators. Energy refers to the characteristic of each particle as measured in electron volts. Low energy radiation refers to the energy range of 0.5 to 150 MEV (million electron volts). High energy radiation refers to the energy range in excess of 150 MEV. These energies are produced by two basic mechanisms. Direct accelerators build up a high voltage potential between a terminal and ground and this voltage is used to accelerate particles in an evacuated tube. Indirect accelerators do not build up a high voltage. The particles are accelerated to a high energy condition by means of electric and magnetic fields.

Particle accelerators are used for:

1. Low energy research and high energy research, in which machines are used in research, among others, as to nuclear reactions, solid states studies, activation analysis, metallurgy and radiation chemistry; as to photonuclear effects, bomb radiation simulation, neutron time of flight, very intense neutron fluxes, nuclear research with high energy electrons and dose rate dependency studies.
2. Radiation processing, in which machines are used in industrial processing, among others, to improve properties of plastic materials, to alter the structure of some electronic components, and to sterilize medical and surgical products, and the preservation of foods.
3. Radiography, in which machines are used, among others, to produce X-rays for inspection of metal parts for hidden defects.
4. Medical therapy, in which machines are used for the treatment of cancer by exposure to controlled radiation.

The users for machines in research are universities, public and private research institutions and government agencies. The users for machines in radiation processing are varied manufacturers, such as, plastic, drug and electronic concerns, among others. The users of machines for radiography are manufacturers of large metal castings and weldments, among others. The users of machines for medical therapy are hospitals and clinics, among others.

PAR. 5. The particle accelerator industry is composed of seven manufacturers of particle accelerators. All seven of said manufacturers compete in the research, development, manufacture and sale of particle accelerators, which are machines for the synthetic production of radiation energy. There are two basic categories of particle accelerators. Two machines, namely, Van de Graaff and Cockcroft-Walton, are lower energy electrostatic accelerators. The other types of par-

ticle accelerators, including the Linear accelerator, are higher energy accelerators. Each of the several accelerators has certain distinguishing physical characteristics which have certain advantages for particular installations. All of the particle accelerators are involved in competition for the synthetic production of radiation energy.

PAR. 6. The particle accelerator industry is a post-World War II development. The industry is characterized by revolutionary technological advances. Government-supported research and development in the area of national defense and government-supported work of public and private institutions in the field of atomic energy have contributed new developments in the particle accelerator industry. The research, and construction of particle accelerators has been developed by government agencies, university research laboratories which build their own equipment and the seven commercial manufacturers. HVEC and ARCO are two of such commercial manufacturers.

PAR. 7. Proposals for the design, development and production of particle accelerators are solicited from known, qualified manufacturers by the research users, and by the nonresearch users. On the basis of submitted proposals for the design, development and production of particle accelerators, awards are made to that firm considered qualified. The then available technical skills and facilities, managerial ability, financial resources, price and other factors are considered. In response to invitations to bid, HVEC and ARCO competed in the submittal of bids and proposals on a substantial volume of research and nonresearch projects. Competition is keen among the bidders for the money available in the research budget of the three principal funding Agencies, namely, Atomic Energy Commission, Office of Naval Research and National Science Foundation.

PAR. 8. By reason of its capabilities, experience, responsibility, competitive activities, among other factors, HVEC is a major manufacturer in the particle accelerator industry. Since beginning operations in 1947, HVEC has designed and manufactured more particle accelerators than all other manufacturers combined in the industry. Prior to and at the time of the acquisition, HVEC solicited and was solicited by research and nonresearch users, for the design, development and production of Van de Graaff particle accelerators and Linear accelerators. Prior to and at the time of the acquisition, HVEC designed, manufactured and sold Van de Graaff particle accelerators and Linear accelerators. HVEC is the sole manufacturer of the Van de Graaff particle accelerator.

PAR. 9. By reason of its capabilities, experience, competitive activities, among other factors, ARCO is also a major manufacturer in the particle accelerator industry. Since its formation, ARCO has designed, manufactured and sold Cockcroft-Walton particle accelerators

and Linear particle accelerators. Since its formation, and to the time of acquisition, ARCO designed and manufactured more Linear particle accelerators than all other Linear accelerator manufacturers in the industry. Prior to and at the time of acquisition, ARCO solicited and was solicited by research and nonresearch users for the design, development and production of Cockcroft-Walton particle accelerators and Linear accelerators.

PAR. 10. In 1960, of the seven companies manufacturing and selling particle accelerators in the United States, HVEC was the largest manufacturer with about 70% of total dollar sales and about 70% of total units. The second largest producer in the industry was ARCO with about 20% of total dollar sales. On the basis of units, ARCO had over 10% of total units sold. During 1960, the total dollar sales of 46 particle accelerators exceeded \$11,000,000.

In 1960, HVEC, the sole manufacturer of Van de Graaff particle accelerators, sold 33 Van de Graaff units. ARCO sold one Cockcroft-Walton particle accelerator in 1960.

In 1960, only four companies sold Linear particle accelerators in the United States. HVEC and ARCO, combined, accounted for five of the total of eight units of Linear particle accelerators sold in the United States and accounted for about 78% of the total dollar sales of the eight Linear particle accelerators, which totalled over \$3,000,000.

HVEC, in 1960, by virtue of its acquisition of ARCO increased its market share of all particle accelerators to about 80% of total units and over 85% of total dollar sales. In addition to its increase in market share of all particle accelerators, and as a result of the acquisition of ARCO, HVEC substantially increased its market share in the sale of lower energy electrostatic particle accelerators and Linear particle accelerators. As a result of this acquisition, at least 80% of all particle accelerator unit sales are now concentrated in one producer. As a result of this acquisition, about 90% of all lower energy electrostatic particle accelerator unit sales are now concentrated in one producer. As a result of this acquisition, over 50% of all Linear particle accelerator unit sales are now concentrated in one producer.

PAR. 11. The effect of the aforesaid acquisition by HVEC of ARCO may be substantially to lessen competition or to tend to create a monopoly in the design, development, manufacture and sale of (a) particle accelerators generally, (b) lower energy electrostatic particle accelerators, namely, Van de Graaff and Cockcroft-Walton, (c) lower energy Linear particle accelerators, and (d) higher energy Linear particle accelerators, in the United States within the meaning of Section 7 of the amended Clayton Act, in the following ways, among others:

1. Actual and potential substantial competition between HVEC and

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ARCO in the design, development, manufacture and sale of the aforesaid particle accelerators will be eliminated.

2. Actual and potential competition in the particle accelerator industry may be substantially lessened.

3. ARCO has been eliminated as a substantial competitive factor in the design, development, manufacture and sale of the aforesaid particle accelerators.

4. The high degree of concentration in the design, development, manufacture and sale of the aforesaid particle accelerators will be further increased.

5. Mergers and acquisitions involving other particle accelerator manufacturers may be fostered, thereby causing a material increase in economic concentration and tendency toward monopoly in the particle accelerator field generally.

6. The acquisition will enhance HVEC's competitive advantage over smaller manufacturers of the products of the particle accelerator industry, including electrostatic and Linear particle accelerators, to the detriment of competition.

PAR. 12. The foregoing acquisition, acts and practices, as hereinbefore alleged, constitute a violation of Section 7 of the amended Clayton Act (15 U.S.C., Sec. 18).

DECISION AND ORDER

The Commission having heretofore determined to issue its complaint charging the respondent named in the caption hereof with violation of Section 7 of the Clayton Act, as amended, and the respondent, sometimes hereinafter referred to as HVEC, having been served with notice of said determination and with a copy of the complaint the Commission intended to issue, together with a proposed form of order; and

The respondent and counsel for the Commission having thereafter executed an agreement containing a consent order, an admission by the respondent of all the jurisdictional facts set forth in the complaint to issue herein, a statement that the signing of said agreement is for settlement purposes only and does not constitute an admission by respondent that the law has been violated as set forth in such complaint, and waivers and provisions as required by the Commission's rules; and

The Commission, having considered the agreement, hereby accepts same, issues its complaint in the form contemplated by said agreement, makes the following jurisdictional findings, and enters the following order:

1. High Voltage Engineering Corporation is a corporation orga-

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nized, existing and doing business under and by virtue of the laws of the State of Massachusetts, with its office and principal place of business located in the city of Burlington, State of Massachusetts.

2. The Federal Trade Commission has jurisdiction of the subject matter of this proceeding and of the respondent.

ORDER

I

It is ordered, That the respondent, HVEC, through its officers, directors, agents, representatives and employees, shall, by December 1, 1964, divest itself absolutely, in good faith, of all of the ARCO assets as a going concern to a purchaser approved by the Federal Trade Commission.

II

Provided however, That, during the first twelve (12) months immediately following the date of service of this Order, HVEC shall make good faith efforts to divest itself of the ARCO assets and may effectuate said divestiture upon the following conditions:

1. That the buyer will complete all contracts existing as of the time of sale for the development and manufacture and testing and installation of linear particle accelerators or components thereof;
2. That the buyer will complete all subcontracts between HVEC and third parties in connection with HVEC's contracts for the manufacture of linear particle accelerators; and
3. That the buyer will accept responsibility for warranties and servicing of any linear particle accelerator contracted for by HVEC prior to the divestiture, but manufactured, completed, or in the process of completion by ARCO: *Provided, however*, That if the buyer does not accept responsibility for future warranties and servicing, the buyer will sell to HVEC parts and supplies at reasonable prices, not higher than those charged to others, in order to enable HVEC to meet warranties and servicing obligations on any linear particle accelerator contracted for by HVEC prior to the divestiture.

III

Provided, further, however, That, if after the expiration of twelve (12) months following the date of service of this Order, no divestiture has been made in accordance with the conditions set forth in Section II above, HVEC shall, in any event, divest itself absolutely, in good faith, of all of the ARCO assets by December 1, 1964.

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IV

Provided, further, however, That if the ARCO assets cannot be sold or disposed of entirely for cash, nothing herein contained shall be deemed to prohibit HVEC from retaining, accepting and enforcing a bona fide lien, mortgage, deed of trust, or other form of security on the ARCO assets for the purpose of securing to HVEC full payment of the price at which said assets are disposed of or sold: *Provided, however,* That if, after bona fide disposal pursuant to the divestiture order, HVEC, by enforcing a bona fide lien, mortgage, deed of trust or other form of security regains ownership or control of the ARCO assets disposed of, HVEC shall, subject to the provisions of this Order, divest itself of said assets within twelve (12) months from the time of said reacquisition.

V

It is further ordered, That the ARCO assets shall not be sold or transferred directly or indirectly to anyone who, at the time of divestiture is a stockholder, officer, director, employee or agent of, or otherwise directly, or indirectly connected with or under the control or influence of HVEC or any of HVEC's subsidiaries or affiliated companies.

VI

It is further ordered, That for a period of ten (10) years from the date of service of this Order by the Federal Trade Commission, HVEC shall cease and desist from acquiring, directly or indirectly, through subsidiaries or otherwise the assets, stock or any equity in any particle accelerator manufacturer in the United States.

VII

It is further ordered, That HVEC shall, within sixty (60) days after service upon them of this Order, file with the Federal Trade Commission a report in writing setting forth in detail the manner and form in which they propose to comply with this Order.

Thereafter, respondent shall submit reports to the Commission each ninety (90) days, describing the action that has been taken and the efforts that have been made to sell the ARCO assets. Such reports shall indicate the methods and means employed to effectuate a sale, the results of such actions and efforts and shall set forth the name and address of each person or company contacted, or who has indicated any interest in acquiring said assets, together with copies of all correspondence and summaries of all oral communications with such persons or companies.

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FEDERAL TRADE COMMISSION DECISIONS

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VIII

Jurisdiction is retained so that respondent may at any time herein-