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RE: Air Products and Chemicals, Inc. (the "Company")
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    Annual Report on Form 10-K - File No. 1-4534
    Ladies and Gentlemen:
Filed herewith, in electronic format, on behalf of Air Products and Chemicals, Inc., is the Company's Annual Report on Form 10-K for the fiscal year ended September 30, 2001

The financial statements in the Annual Report do not reflect any material changes from the preceding year in accounting principles or practices or in the method of applying such principles or practices.

Sincerely,
/s/ Robert F. Gerkens
Robert F. Gerkens
Assistant Corporate Secretary and Assistant General Counsel

## Washington, D.C. 20549

FORM $10-\mathrm{K}$
(Mark One) |X| ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 [NO FEE REQUIRED] For the fiscal year ended September 30, 2001

OR
I_| TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 [NO FEE REQUIRED] For the transition period from $\qquad$ to $\qquad$

Commission file number 1-4534

AIR PRODUCTS AND CHEMICALS, INC.
(Exact name of registrant as specified in its charter)
(State or other jurisdiction of (IRS Employer Identification No.) incorporation or organization)

7201 Hamilton Boulevard
Allentown, Pennsylvania
18195-1501
(Address of principal executive offices) (Zip Code) Registrant's telephone number, including area code (610) 481-4911

Securities registered pursuant to Section 12(b) of the Act:

## Name of each exchange on

 which registeredTitle of each class
Common Stock, par value $\$ 1.00$ per share
New York and Pacific Preferred Stock Purchase Rights
8 3/4\% Debentures Due 2021

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or $15(d)$ of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. YES X NO

405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form $10-\mathrm{K}$ or any amendments to this Form 10-K. [X]

The aggregate market value of the voting stock held by non-affiliates of the registrant on November 1, 2001, was $\$ 8.63$ billion. For purposes of the foregoing calculation (i) all directors and/or executive officers have been deemed to be affiliates, but the registrant disclaims that any such director and/or executive officer is an affiliate and (ii) registrant's Flexible Employee Benefit Trust, described under Item 12 of this Report, is deemed a non-affiliate.

The number of shares of Common Stock outstanding as of November 30, 2001 was 227,200,340.

## DOCUMENTS INCORPORATED BY REFERENCE

Annual Report to Shareholders for the fiscal year ended September 30, 2001. With the exception of those portions which are incorporated by reference into Parts I, II, and IV of this Form $10-\mathrm{K}$, the Annual Report is not deemed to be filed.

Proxy Statement for Annual Meeting of Shareholders to be held January 24, 2002 . . . Part III.

The forward-looking statements contained in this document are based on current expectations regarding important risk factors. Actual results may differ materially from those expressed. In addition to important risk factors and uncertainties referred to in the Management's Discussion and Analysis which is included under Item 7 herein, other important risk factors and uncertainties include overall economic and business conditions; demand and timing of the placing of orders for the goods and services of Air Products, including the success of recovery in the Air Products markets in the electronics industry; competitive factors in the industries in which it competes; the ability to recover increased energy and raw material costs from customers; spikes in the pricing of natural gas; changes in government regulations; consequences of acts of terrorism impacting the United States and other markets; the success of implementing cost reduction programs; the timing, impact and other uncertainties of future acquisitions or divestitures; significant fluctuations in interest rates and foreign currencies; the impact of tax and other legislation and regulations in jurisdictions in which Air Products and its affiliates operate; and the timing and rate at which tax credits can be utilized.
Page
PART I ..... 1
ITEM 1. Business .....  1
GASES ..... 1
Power Generation and Flue Gas Desulfurization .....  2
CHEMICALS. ..... 2
Performance Chemicals .....  3
Chemical Intermediates ..... 3
EQUIPMENT ..... 4
GENERAL ..... 4
Foreign Operations ..... 4
Technology Development ..... 5
Raw Materials and Energy ..... 6
Environmental Controls ..... 6
Competition ..... 7
Insurance .....  8
Employees .....  8
Executive Officers of the Company. ..... 9
ITEM 2. Properties ..... 10
Gases ..... 10
Chemicals ..... 10
Equipment ..... 11
ITEM 3. Legal Proceedings. ..... 11
ITEM 4. Submission of Matters to a Vote of Security Holders ..... 11
PART II ..... 11
ITEM 5. Market for Registrant's Common Equity and Related Stockholder Matters ..... 11
ITEM 6. Selected Financial Data. ..... 12
ITEM 7. Management's Discussion and Analysis of Financial Condition and Results of Operations ..... 12
ITEM 7a. Quantitative and Qualitative Disclosures about Market Risk. ..... 12
ITEM 8. Financial Statements ..... 12
ITEM 9. Disagreements on Accounting and Financial Disclosure. ..... 12
PART III ..... 12
ITEM 10. Directors and Executive Officers of the Company ..... 12
ITEM 11. Executive Compensation. ..... 12
ITEM 12. Security Ownership of Certain Beneficial Owners and Management ..... 12
ITEM 13. Certain Relationships and Related Transactions. ..... 13
PART IV ..... 13
ITEM 14. Exhibits, Financial Statement Schedules, and Reports on Form 8-K. ..... 13
SIGNATURES ..... 17

ITEM 1. Business
Through internal development and by acquisitions, Air Products and Chemicals, Inc. has established an internationally recognized industrial gas and related industrial process equipment business and developed strong positions as a producer of certain chemicals.

The gases business segment recovers and distributes industrial gases such as oxygen, nitrogen, argon, and hydrogen and a variety of medical and specialty gases. The chemicals business segment produces and markets performance chemicals and chemical intermediates. The equipment business segment supplies cryogenic and other process equipment and related engineering services.

Financial information concerning the Company's business segments appears in Note 18 to the Consolidated Financial Statements included under Item 8 herein, which information is incorporated herein by reference, as are all other specific references herein to information appearing in such 2001 Financial Review Section of the Annual Report.

As used in this Report, the term "Air Products" or "Company" includes subsidiaries and predecessors of the registrant or its subsidiaries, unless the context indicates otherwise.

## GASES

The principal industrial gases sold by the Company are oxygen, nitrogen, argon (primarily recovered by the cryogenic distillation of air), hydrogen, carbon monoxide, carbon dioxide (purchased, purified, or recovered through the processing of natural gas or the by-product streams from process plants), synthesis gas (combined streams of hydrogen and carbon monoxide), and helium (purchased or refined from crude helium). Medical and specialty gases are manufactured or blended by the Company or purchased for resale. The gases segment also includes the Company's power generation and flue gas treatment businesses.

The Company's gas business involves two principal modes of supply:
"Tonnage" or "on-site" supply--For large volume or "tonnage" users of industrial gases, a plant is built adjacent to, on, or near the customer's facility--hence the term "on-site". Alternatively, the gases are delivered through a pipeline from nearby locations. Supply is generally made under contracts having terms in excess of three years. In numerous areas--the Houston (Texas) Ship Channel including the Port Arthur, Texas, area; "Silicon Valley", California; Los Angeles, California; Phoenix, Arizona; Decatur, Alabama; Central Louisiana; Rotterdam, the Netherlands; Korea; Singapore; Malaysia; and Bahia, Brazil--Air Products' hydrogen, oxygen, carbon monoxide, or nitrogen gas pipelines serve multiple customers from one or more centrally located plants. Industrial gas companies in which the Company has less than controlling interests have pipelines in Thailand, Taiwan, and South Africa.

Merchant supply--Smaller volumes of industrial gas products are delivered to thousands of customers in liquid or gaseous form by tanker trucks or tube trailers. These merchant customers use equipment designed and installed by Air Products to store the product near the point of use, normally in liquid state, and vaporize the product into gaseous state for their use as needed. Some customers are also supplied by small on-site generators using noncryogenic technology based on adsorption and membrane technology which, in certain circumstances, the Company sells to its customers. Merchant customers' contract terms normally are from three to five years. Merchant gases and various specialty gases are also delivered in cylinders, dewars, and lecture bottle sizes.

Oxygen, nitrogen, argon, and hydrogen sold to merchant customers are usually recovered at large "stand-alone" facilities located near industrial areas or high-tech centers, or at small noncryogenic generators, or are taken from tonnage plants used primarily to supply tonnage users. Tonnage plants are frequently designed to have more capacity than is required by their principal customer to recover additional product that is liquefied for sale to a merchant market. Air Products also designs and builds systems for recovering oxygen, hydrogen, nitrogen, carbon monoxide, and low dew point gases using adsorption technology.

Tonnage and merchant sales of atmospheric gases--oxygen, nitrogen, and argon--constituted approximately $25 \%$ of Air Products' consolidated sales in fiscal year 2001 and $26 \%$ in fiscal years 2000 and 1999. Tonnage and merchant sales of industrial gases--principally oxygen, nitrogen, and hydrogen--to the chemical process industry and the electronics industry, the largest consuming industries, were approximately $21 \%$ and $14 \%$, respectively, of Air Products' consolidated sales in fiscal year 2001.

Other important consumers of Air Products' industrial and specialty gases are the basic steel industry, the oil industry (which uses inert nitrogen for oil well stimulation and field pressurization and hydrogen and oxygen for refining), and the food industry (which uses liquid nitrogen for food freezing). Air Products believes that it is the largest liquefier of hydrogen, which it supplies to many customers, including the National Aeronautics and Space Administration for its space shuttle program

Helium is sold for use in magnetic resonance imaging equipment, controlled atmospheres processes, and welding. Medical gases and equipment, primarily for inhalation therapy, are supplied to hospitals and clinics, as well as in Europe to the home care market

Specialty gases include fluorine products, rare gases such as xenon, krypton, and neon, and more common gases of high purity or gases which are precisely blended as mixtures. Specialty chemicals for use by the electronics industry include silane, arsine, silicon tetrafluoride, nitrogen trifluoride, carbon tetrafluoride, hexafluoromethane, and tungsten hexafluoride. These gases and chemicals are used in numerous industries and in electronic and laboratory applications. In certain circumstances, the Company sells equipment related to the use, handling, and storage of such specialty gases and specialty chemicals.

Sales of industrial gases to merchant customers and/or sales of specialty products to the electronics industry are made principally through field sales forces from 108 offices in 38 states in the United States and Puerto Rico, and from 198 offices in 24 foreign countries. In addition, industrial gas companies in which the Company has investments operate in more than 30 foreign countries.

Electricity and hydrocarbons, including natural gas as a feedstock for producing certain gases, are important to Air Products' gas business. See "Raw Materials and Energy". The Company's large truck fleet, which delivers products to merchant customers, requires a readily available supply of gasoline or diesel fuel. Also, environmental and health laws and regulations will continue to affect the Company's gas businesses. See "Environmental Controls"

Power Generation and Flue Gas Desulfurization
Air Products operates and has 50\% interests in a 49-megawatt fluidized-bed coal-fired power generation facility in Stockton, California and a 24-megawatt gas-fired combined cycle power generation facility near Rotterdam, the Netherlands, and a $100 \%$ interest in a 25 -megawatt gas-fired combined cycle power generation facility principally supplying the Company's chemical complex in Calvert City, Kentucky. A 112-megawatt gas-fueled power generation facility, in which the Company has a $48.8 \%$ interest, operates in Thailand and supplies electricity to a state-owned electricity generating authority and steam and electricity to an Air Products industrial gases affiliate. In the fourth quarter of fiscal year 2001, the Company sold its ownership and operating interests in two cogeneration facilities: an 88-megawatt facility in western Pennsylvania and a 115-megawatt facility in Orlando, Florida. The Company continues to assess the possibility of divestiture of its interest in the flue gas desulfurization facility in Porter County, Indiana.

Additional information with respect to the Company's power generation and flue gas treatment businesses is included in Notes 3,7 and 16 to the Consolidated Financial Statements included under Item 8 herein.

## CHEMICALS

The Company's chemicals businesses consist of performance chemicals nd chemical intermediates, where the Company is able to differentiate itself by the performance of its products in the customer's application, the technical service which the Company provides, and the scale of production and the production technology employed by the Company.

The principal businesses of performance chemicals are emulsions and specialty, polyurethane, and epoxy additives. Total sales from the performance chemicals business constituted approximately 16\% of Air Products consolidated sales in fiscal year 2001, 21\% in fiscal year 2000, and 22\% in fiscal year 1999.

## Additives

Air Products' additives chemicals are differentiated from the competition based on their performance when used in the customer's products and the technical service which the Company provides.

Specialty Additives-These products are primarily acetylenic alcohols and amines which are used as performance additives in coatings, lubricants, electro-deposition processes, agricultural formulations, and corrosion inhibitors.

Polyurethane Additives-These products include catalysts and surfactants which are used as performance control additives and processing aids in the production of both flexible and rigid polyurethane foam around the world. The principal end markets for polyurethane foams include furniture cushioning, insulation, carpet underlay, bedding, and automobile seating.

Epoxy Additives-These products include polyamides, aromatic amines, cycloaliphatic amines, reactive diluents, and specialty epoxy resins which are used as performance additives in epoxy formulations by epoxy manufacturers worldwide. The end markets for epoxies are coatings, flooring, adhesives, reinforced composites, and electrical laminates.

Emulsions

Air Products' emulsions are water-based and water-soluble products derived primarily from vinyl acetate monomer.

The Company's major emulsions products are vinyl acetate homopolymer emulsions and AIRFLEX(R) vinyl acetate-ethylene copolymer emulsions. The Company also produces emulsions which incorporate vinyl chloride and various acrylates in the polymer. These products are used in adhesives, nonwoven fabric binders, paper coatings, paints, inks, and carpet backing binder formulations.

Air Products owns 65\% of a worldwide joint venture with Wacker-Chemie GmbH that produces polymer emulsions and pressure-sensitive adhesives. The Company also owns 20\% of a worldwide joint venture with Wacker-Chemie that produces redispersible powders made from polymer emulsions.

Pressure-sensitive adhesives are water-based acrylic emulsions which are used for both permanent and removable pressure-sensitive adhesives primarily for labels and tapes.

## Chemical Intermediates

The chemical intermediates businesses use the Company's proprietary technology and scale of production to differentiate themselves from the competition. The principal intermediates sold by the Company include amines and polyurethane intermediates. The Company also produces certain industrial chemicals (ammonia, methanol, and nitric acid) as raw materials for its differentiated products. Total third-party sales from the chemical intermediates businesses constituted $11 \%$ of Air Products' consolidated sales in fiscal year 2001, 12\% in fiscal year 2000, and 11\% in fiscal year 1999.

Amines-The Company produces a broad range of amines using ammonia and methanol, which are both manufactured by Air Products, and other alcohol feedstocks purchased from various suppliers. Other, more specialized amines, are produced by the hydrogenation of purchased intermediates. Substantial quantities of these products are sold under long-term contracts to a small number of customers. These products are used by the Company's customers as raw materials in the manufacture of herbicides, pesticides, water treatment chemicals, animal nutrients, polyurethane coatings, rubber chemicals, and pharmaceuticals. Ammonia is produced as a feedstock for its alkylamines business, supplemented by external purchases. Additional ammonia is purchased and converted to ammonium nitrate prills and solutions which are primarily sold to customers as fertilizers or for other chemical applications. Methanol is produced by Air Products as a feedstock in methylamine production, and the excess over this requirement is sold to a third party.

Polyurethane Intermediates-The Company produces dinitrotoluene ("DNT") and toluene diamine ("TDA") for use as intermediates by the Company's customers in the manufacture of a major precursor of flexible polyurethane foam. The principal end markets for flexible polyurethane foams include furniture cushioning, carpet underlay, bedding, and seating in automobiles. Virtually all of the Company's production of DNT and TDA is sold under long-term contracts to a small number of customers.

Chemical sales are supported from various locations in the United States, England, Germany, Brazil, Mexico, the Netherlands, Japan, China Singapore, and South Africa, and through sales representatives or distributors in most industrialized countries. Dry products are delivered in railcars, trucks, drums, bags, and cartons. Liquid products are delivered by barge, rail tank cars, tank-trailers, drums and pails, and, at one location, by pipeline.

The chemicals business depends on adequate energy sources, including natural gas as a feedstock for the production of certain products (see "Raw Materials and Energy") and will continue to be affected by various environmental and health laws and regulations (see "Environmental Controls").

## EQUIPMENT

The Company designs and manufactures equipment for cryogenic air separation, gas processing, natural gas liquefaction, and hydrogen purification. Air Products also designs and builds systems for recovering hydrogen, nitrogen, carbon monoxide, carbon dioxide, and low dew point gases using membrane technology. Additionally, a broad range of plant design, engineering, procurement, and construction management services is provided for the above areas. Equipment is manufactured for use by the gases segment and for sale in industrial markets which include the Company's international industrial gas affiliates.

The backlog of orders (including letters of intent) believed to be firm from other companies and equity affiliates for equipment was approximately $\$ 227$ million on September 30, 2001, approximately $34 \%$ of which relates to cryogenic air separation, as compared with a total backlog of approximately $\$ 149$ million on September 30, 2000. It is expected that approximately $\$ 187$ million of the backlog on September 30, 2001, will be completed during fiscal year 2002.

## GENERAL

## Foreign Operations

Air Products, through subsidiaries and affiliates, conducts business in numerous countries outside the United States. The structure of the Air Products gas business in Europe mirrors the Company's United States operation. Air Products' international business is subject to risks customarily encountered in foreign operations, including fluctuations in foreign currency exchange rates and controls, import and export controls, and other economic, political, and regulatory policies of local governments.

Majority and wholly owned industrial gas subsidiaries operate in Argentina, Brazil, Canada, and throughout Europe and Asia in 14 and nine countries, respectively. There are $50 \%$ industrial gas joint ventures in Africa, South Africa, Canada, seven countries in Europe, and five in Asia, and less than controlling interests in Canada and Mexico, four countries in Europe, and six in Asia. The Company has a $50 \%$ interest in a power generation facility in the Netherlands and a 48.8\% interest in one in Thailand.

The principal geographic markets for the Company's chemical products are North America, Europe, Asia, Brazil, and Mexico. Majority and wholly owned subsidiaries operate in Germany, Italy, the Netherlands, the United Kingdom, Australia, Singapore, Japan, Korea, China, and Mexico. The Company also has $50 \%$ joint ventures in Japan for distribution of POLYCAT(R) and manufacture and sale of DABCO(R) amine catalysts and a $50 \%$ joint venture in the U.K which is developing products relating to silicon wafer polishing, chemical mechanical planarization processes, and hard disk polishing. The polymer emulsions and pressure-sensitive adhesives joint venture with Wacker-Chemie GmbH has headquarters in the United States and production facilities in the United States, Germany, Mexico, and Korea, along with a technical service center in Shanghai, China. Headquarters for the $20 \%$ investment in the redispersible powder venture with Wacker-Chemie are in Germany with manufacturing facilities in Germany and the United States. The Company also has less than controlling interests in Japan and Ireland, which sell chemicals to the electronics industry.

Financial information about Air Products' foreign operations and investments is included in Notes 7, 14, and 18 to the Consolidated Financial Statements included under Item 8 herein. Information about foreign currency translation is included in Note 1 to the Consolidated Financial Statements included under Item 8 herein, under "Foreign Currency", and information on Company exposure to currency fluctuations is included in Note 5 to the Consolidated Financial Statements included under Item 8 herein, under "Financial Instruments". Export sales from operations in the United States to unconsolidated customers amounted to $\$ 602$ million, $\$ 558$ million, and $\$ 528$ million in 2001, 2000, and 1999, respectively.

Total export sales in fiscal year 2001 included $\$ 46$ million in export sales to affiliated customers. The sales to affiliated customers were primarily equipment sales.

## Technology Development

Air Products conducts research and development principally in its laboratories located in Trexlertown, Pennsylvania, as well as in Basingstoke, London, and Crewe in the U.K.; Burghausen, Germany; Utrecht, the Netherlands; San Juan del Rio, Mexico; and Barcelona, Spain. The Company also funds and works closely on research and development programs with a number of major universities and conducts a sizable amount of research work funded by others, principally the United States Government.

The Company's market-oriented approach to technology development encompasses research and development and engineering, as well as commercial development.

The amount expended by the Company on research and development during fiscal year 2001 was $\$ 123$ million, $\$ 124$ million in fiscal year 2000, and $\$ 123$ million in fiscal year 1999.

In the gases and equipment segments, technology development is directed primarily to developing new and improved processes and equipment for the production and delivery of industrial gases and cryogenic fluids, developing new products, and developing new and improved applications for industrial gases. It is through such applications and improvements that the Company has become a major supplier to the electronics and chemical process industries including gases from air separation, specialty gases and hydrogen. Additionally, technology development for the equipment business is directed primarily to reducing the capital and operating costs of its facilities and to commercializing new technologies in gas production and separation.

In the chemicals segment, technology development is primarily concerned with new products and applications to strengthen and extend our present positions in polymer and performance chemicals. In addition, a major continuing effort supports the development of new and improved process and manufacturing technology for chemical intermediates and polymers.

A corporate research group supports the research efforts of the Company's various businesses. This group includes the Company's Corporate Science and Technology Center, which conducts research in areas important to the long-term growth of the Company, with focus on performance materials.

As of November 14, 2001, Air Products owned 935 United States patents and 1,630 foreign patents. The Company is also licensed to practice under patents owned by others. While the patents and licenses are considered important, Air Products does not consider its business as a whole to be materially dependent upon any particular patent or patent license, or group of patents or licenses.

The Company manufactures hydrogen, carbon monoxide, synthesis gas, carbon dioxide, and methanol principally from natural gas. Such products accounted for approximately $13 \%$ of the Company's consolidated sales in fiscal year 2001. The Company's principal raw material purchases are chemical intermediates produced by others from basic petrochemical feedstocks such as olefins and aromatic hydrocarbons. These feedstocks are generally derived from various crude oil fractions or from liquids extracted from natural gas. The Company purchases its chemical intermediates from many sources and generally is not dependent on one supplier. However, with respect to vinyl acetate monomer which supports the polymer business, the Company is heavily dependent on a single supplier under a long-term contract which produces vinyl acetate monomer from several facilities. The Company characterizes the availability of these chemical intermediates as generally being readily available. The Company uses such raw materials in the production of emulsions, amines, polyurethane intermediates, specialty additives, polyurethane additives, and epoxy additives. Such products accounted for approximately $28 \%$ of the Company's consolidated sales in fiscal year 2001. Natural gas is an energy source at a number of the Company's facilities. The Company also purchases ammonia under long-term contracts as a feedstock for several of its chemicals facilities.

The Company's industrial gas facilities use substantial amounts of electrical power. Any shortage of electrical power or interruption of its supply or increase in its price which cannot be passed through to customers for competitive reasons will adversely affect the merchant gas business of the Company.

In addition, the Company purchases finished and semi-finished materials and chemical intermediates from many suppliers. During fiscal year 2001 no significant difficulties were encountered in obtaining adequate supplies of energy or raw materials.

## Environmental Controls

The Company is subject to various environmental laws and regulations in the United States and foreign countries where it has operations. Compliance with these laws and regulations results in higher capital expenditures and costs. Additionally, from time to time, the Company is involved in proceedings under the Comprehensive Environmental Response, Compensation, and Liability Act (the federal Superfund law), similar state laws, and the Resource Conservation and Recovery Act (RCRA) relating to the designation of certain sites for investigation and possible cleanup. Additional information with respect to these proceedings is included under Item 3, Legal Proceedings, below. The Company's accounting policies on environmental expenditures are discussed in Note 1 to the Consolidated Financial Statements included under Item 8 herein.

The amounts charged to earnings on an after-tax basis related to environmental protection totaled $\$ 21$ million in 2001, $\$ 30$ million in 2000, and $\$ 27$ million in 1999. These amounts represent an estimate of expenses for compliance with environmental laws, as well as remedial activities, and costs incurred to meet internal Company standards. Such costs are estimated to be $\$ 24$ million in 2002 and 2003.

Although precise amounts are difficult to define, the Company estimates that in fiscal year 2001 it spent approximately $\$ 11$ million on capital projects to control pollution versus $\$ 3$ million in 2000. Capital expenditures to control pollution in future years are estimated at approximately $\$ 16$ million in 2002 and $\$ 13$ million in 2003.

To the extent long-term contracts have been entered into for supply of product, such as for the industrial gas on-site business and for certain chemical products, the cost of any environmental compliance generally is contractually passed through to the customer.

It is the Company's policy to accrue environmental investigatory and noncapital remediation costs for identified sites when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. The potential exposure for such costs is estimated to range from $\$ 9$ million to a reasonably possible upper exposure of $\$ 19$ million. The balance sheet at September 30, 2001, includes an accrual of $\$ 14$ million. At September 30, 2000, the balance sheet accrual was $\$ 17$ million.

In addition to the environmental exposures discussed in the preceding paragraph, there will be spending at a Company-owned manufacturing site where the Company is undertaking RCRA remediation action. The Company estimates capital costs to implement the anticipated remedial program should not exceed $\$ 33$ million. Spending was $\$ 28$ million through fiscal year 2001 and is estimated at $\$ .3$ million for fiscal year 2002 and $\$ 2$ million for fiscal year 2003. Operating and maintenance expenses associated with continuing the remedial program were minimal in fiscal year 2001 and are estimated to be approximately $\$ 1$ million per year for an estimated period of up to 30 years. A former owner and operator at the site has agreed to reimburse the Company approximately $20 \%$ of the costs incurred in the remediation. Reimbursement of $\$ .3$ million and $\$ 1.4$ million was received in fiscal years 2001 and 2000, respectively, and the reimbursement is estimated at $\$ .2$ million for fiscal year 2002. In fiscal year 1999, an insurance recovery related to this environmental site was received in the amount of $\$ 7.7$ million. The cost estimates have not been reduced by the value of such reimbursements and insurance recovery.

Actual costs to be incurred in future periods may vary from the estimates, given inherent uncertainties in evaluating environmental exposures. Subject to the imprecision in estimating future environmental costs, the Company does not expect that any sum it may have to pay in connection with environmental matters in excess of the amounts recorded or disclosed above would have a materially adverse effect on its financial condition or results of operations in any one year.

## Competition

The Company's businesses face strong competition from others, some of which are larger and have greater resources than Air Products.

Air Products' gas business competes in the United States with three major sellers and with several regional sellers. Competition in industrial gas markets is based primarily on price, reliability of supply, and furnishing or developing applications for use of such gases by customers, and in some cases the provisions of other services or products such as power and steam generation. A similar competitive situation exists in European industrial gas markets in which the Company competes against one or more larger entrenched competitors in most countries.

The number of the Company's principal competitors in the chemicals business varies from product to product, and it is not practical to identify such competitors because of the broad range of the Company's chemical products and the markets served, although the Company believes it has a leading or strong market position in most of its chemical products. For amines the competition is principally from other large chemical companies that also have the ability to provide competitive pricing, reliability of supply, technical service assistance, and quality products and services. The possibility of back integration by large customers is the major competitive factor for the sale of polyurethane additives. In its other chemical products, the Company competes with a large number of chemical companies, some of which are larger, possess greater financial resources, and are more vertically integrated than the Company. Competition in these products is principally on the basis of price, quality, product performance, reliability of product supply, and technical service assistance.

The Company's equipment business competes in all aspects with a great number of firms, some of which have greater financial resources than Air Products. Another important factor in certain export sales is financing provided by governmental entities in the United States and the United Kingdom as compared with financing offered by their counterparts in other countries.

Competition is based primarily on technological performance, service, technical know-how, price, and performance guarantees. Air Products believes that its comprehensive project development capability, operating experience, engineering and financing capabilities, and construction management experience will enable it to compete effectively.

The Company's policy is to obtain public liability and property insurance coverage that is currently available at what management determines to be a fair and reasonable price. The Company, for itself and its power generation and flue gas treatment joint venture affiliates for which it assumes operating responsibility, maintains public liability and property insurance coverage at amounts which management believes are sufficient, after retention, to meet the Company's anticipated needs in light of historical experience to cover future litigation and claims. There is no assurance, however, that the Company will not incur losses beyond the limits of, or outside the coverage of, its insurance.

Employees
On September 30, 2001, the Company (including majority-owned subsidiaries) had approximately 17,800 full-time employees, of whom approximately 7,700 were located outside the United States. The Company has collective bargaining agreements with unions at numerous locations which expire on various dates over the next three to four years. The Company considers relations with its employees to be satisfactory. The Company does not believe that any expiring collective bargaining agreements will result in a material adverse impact on the Company. Executive Officers of the Company

The Company's executive officers and their respective positions and ages on December 15, 2001, follow. Except where indicated, each of the executive officers listed below has been employed by the Company in the position indicated during the past five fiscal years. Information with respect to offices held is stated in fiscal years.

Name
Age

54
(D)
W. Douglas Brown
(D)

Andrew E. Cummins
(D)
Leo J. Daley 5
(D)

Robert E. Gadomski (D)

John P. Jones III
(A) (B) (C) (D)

Ronaldo Sullam 60 (D)

Office
------

Vice President - Human Resources (became Vice PresidentHuman Resources in 2001; Vice President-Human Resources and Procurement of Air Products Europe prior thereto)

Vice President, General Counsel, and Secretary
(became Vice President, General Counsel, and Secretary in 1999; Vice President-Administration, Gases and Equipment in 1997; Senior Vice President-Law and Secretary of American Ref-Fuel Company prior thereto)

Group Vice President-Chemicals
(became Group Vice President-Chemicals in 1999; Vice
President-North America Gases in 1999; Vice
President-General Industries Group in 1996)
Vice President-Finance and Controller
(became Controller in 2000; Vice President-Finance in 1998; Vice President and Treasurer prior thereto)

Executive Vice President-Gases and Equipment
(became Executive Vice President-Gases and Equipment in 1999; Executive Vice President-Chemicals, Asia, and Latin America in 1998; Executive Vice President-Chemicals in 1996)

Chairman, President, and Chief Executive Officer
(became Chairman and Chief Executive Officer in 2000; President and Chief Operating Officer in 1998; Executive Vice President-Gases and Equipment in 1996)

President-Air Products Europe, Inc.
(became President-Air Products Europe, Inc. in 1996)
(A) Member, Board of Directors
(B) Member, Executive Committee of the Board of Directors
(C) Member, Finance Committee of the Board of Directors
(D) Member, Corporate Executive Committee

The principal executive offices of Air Products are located at its headquarters in Trexlertown, near Allentown, Pennsylvania. Additional administrative offices are located in owned facilities in Hersham, near London, England; Brampton, near Toronto, Canada; and Hattingen, Germany. Administrative offices are also located in leased facilities in the Allentown area, Pennsylvania; Tokyo, Japan; Hong Kong, the People's Republic of China; Singapore; Brussels, Belgium; Paris, France; Barcelona, Spain; and Sao Paulo, Brazil. The management considers the Company's manufacturing facilities, described in more detail below, to be adequate to support the business efficiently. The following information with respect to properties is as of September 30, 2001

## Gases

The gases segment has approximately 190 plant facilities in 38 states, the majority of which recover nitrogen, oxygen, and argon. The Company has eight facilities which produce specialty gases and 31 facilities which recover hydrogen throughout the United States. Helium is recovered at two plants in Kansas and Texas, and acetylene is manufactured at six plants in six states in the United States. There are 110 sales offices and/or cylinder distribution centers located in 38 states.

The property on which the above plants are located is owned by Air Products at approximately one-fourth of the locations, and leased by Air products at the remaining locations. However, in virtually all cases, the plant itself is owned and operated by Air Products. Air Products owns approximately half of its sales offices and cylinder distribution centers, including related real estate, and leases the other half.

Air Products' European plant facilities total 73 and include nine plants which recover hydrogen, seven plants which manufacture dissolved acetylene, and four which recover carbon monoxide. The majority of European plants recover nitrogen, oxygen, and argon. In addition, there are four specialty gas centers. There is a combined total of 163 sales offices and/or cylinder distribution centers in Europe, and several additional facilities located in Brazil, Canada, Japan, the People's Republic of China, Puerto Rico, Singapore, Indonesia, Taiwan, Korea, Malaysia, and the Middle East. Representative offices are located in Hong Kong, Taiwan, and in Beijing and Shanghai in the People's Republic of China.

Chemicals
The chemicals segment manufactures amines, nitric acid, methanol, anhydrous ammonia, and ammonia products at its Pace, Florida facility; alkylamines at its St. Gabriel, Louisiana facility and its Camacari, Bahia, Brazil facility; polyvinyl acetate emulsions at its South Brunswick, New Jersey facility; styrene emulsions, styrene acrylics, polyvinyl acetate acrylics, and polyvinyl acetate emulsions at its San Juan del Rio facility in Mexico; polyvinyl acetate emulsions at its Cologne, Germany facility; nitric acid, dinitrotoluene, and toluene diamine at its Pasadena, Texas facility; polyvinyl acetate emulsions and acetylenic chemicals at its Calvert City, Kentucky facility; specialty amines at its Wichita, Kansas facility; methylamines, dimethyl formamide, choline chloride, and dimethyl amino ethanol at its Teesside, England facility; and epoxy additives at its facilities in Manchester, England, Los Angeles, California, and Cumberland, Rhode Island. The chemicals segment manufactures polyurethane additives and polyurethane specialty products (AIRTHANE(R)/VERSATHANE(R)) at its Paulsboro, New Jersey facility which is leased in part and owned in part. The chemicals segment also manufactures polyvinyl acetate emulsions at five smaller locations.

The chemicals segment has 15 plant facilities, two sales offices, and one laboratory in the United States and operates three plants, nine sales/representative offices, and three laboratories in Europe, two laboratories in Brazil, Korea, China, and Japan, one plant in Mexico, two plants in Korea, one plant in Brazil, and sales offices in Australia, Brazil, Mexico, Japan, Korea, and Singapore, and representative offices in Beijing, Shanghai, and Hong Kong in the People's Republic of China. Substantially all of the chemicals segment's plants and real estate are owned. Approximately $75 \%$ of the offices are leased by the Company and $25 \%$ are owned.

## Equipment

The principal facilities utilized by the equipment segment include five plants and two sales offices in the United States, two plants and one office in Europe, one office in Japan, and one sales office in the People's Republic of China. Air Products owns approximately $50 \%$ of the facilities and real estate in this segment and leases the remaining $50 \%$.

ITEM 3. Legal Proceedings.
In the normal course of business Air Products and its subsidiaries are involved in legal proceedings including proceedings involving governmental authorities under the Comprehensive Environmental Response, Compensation, and Liability Act (the federal Superfund law), the Resource Conservation and Recovery Act (RCRA), and similar state environmental laws relating to the designation of certain sites for investigation or remediation. Presently there are approximately 45 sites on which a final settlement has not been reached where the Company, along with others, has been designated a Potentially Responsible Party by the Environmental Protection Agency or is otherwise engaged in investigation or remediation. The Company does not expect that any sums it may have to pay in connection with these matters would have a materially adverse effect on its consolidated financial position, nor is there any material additional exposure expected in any one year in excess of the amounts the Company currently has accrued. Additional information on the Company's environmental exposure is included under "Environmental Controls".

ITEM 4. Submission of Matters to a Vote of Security Holders.
Not applicable.

PART II
ITEM 5. Market for Registrant's Common Equity and Related Stockholder Matters.
The Company's Common Stock, ticker symbol "APD", is listed on the New York and Pacific Stock Exchanges. Quarterly stock prices, as reported on the New York Stock Exchange composite tape of transactions, and dividend information for the last two fiscal years appear below.

Quarterly Stock Information

| 2001 | High | Low | Close | Dividend |
| :---: | :---: | :---: | :---: | :---: |
| First | \$42.25 | \$30.50 | \$41.00 | \$. 19 |
| Second | 43.45 | 35.00 | 38.40 | . 19 |
| Third | 48.70 | 37.98 | 45.75 | . 20 |
| Fourth | 49.00 | 32.25 | 38.58 | . 20 |

$\$ .78$

| 2000 | High | Low | Close | Dividend |
| :---: | :---: | :---: | :---: | :---: |
| First | \$33.88 | \$25.69 | \$33.56 | \$. 18 |
| Second | 37.00 | 23.00 | 28.44 | . 18 |
| Third | 39.06 | 27.56 | 30.81 | . 19 |
| Fourth | 39.13 | 29.25 | 36.00 | . 19 |

The Company has authority to issue $25,000,000$ shares of preferred stock in series. The Board of Directors is authorized to designate the series and to fix the relative voting, dividend, conversion, liquidation, redemption and other rights, preferences, and limitations as between series. When preferred stock is issued, holders of Common Stock are subject to the dividend and liquidation preferences and other prior rights of the preferred stock. There currently is no preferred stock outstanding. The Company's Transfer Agent and Registrar is American Stock Transfer and Trust Company, 59 Maiden Lane, New York, New York, 10038, telephone (800) 937-5449, Internet website www.amstock.com, and e-mail address info@amstock.com.

As of November 30, 2001 there were 11,621 record holders of the Company's Common Stock.

ITEM 6. Selected Financial Data
The tabular information appearing under "Eleven-Year Summary of Selected Financial Data" on pages 48 and 49 of the 2001 Financial Review Section of the Annual Report to Shareholders is incorporated herein by reference.

ITEM 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

The textual information appearing under "Management's Discussion and Analysis" on pages 17 through 23 of the 2001 Financial Review Section of the Annual Report to Shareholders is incorporated herein by reference.

ITEM 7a. Quantitative and Qualitative Disclosures about Market Risk.
The textual information appearing under "Market Risks and Sensitivity Analysis" on pages 22 and 23 of the 2001 Financial Review Section of the Annual Report to Shareholders is incorporated herein by reference.

ITEM 8. Financial Statements.
The consolidated financial statements and the related notes thereto, together with the report thereon of Arthur Andersen LLP dated 26 October 2001, appearing on pages 24 through 49 of the 2001 Financial Review Section of the Annual Report to Shareholders, are incorporated herein by reference.

ITEM 9. Disagreements on Accounting and Financial Disclosure.
Not applicable.
PART III
ITEM 10. Directors and Executive Officers of the Company.
The biographical information relating to the Company's directors contained on pages 7 through 10 of the Proxy Statement relating to the Company's 2002 Annual Meeting of Shareholders is incorporated herein by reference. Biographical information relating to the Company's executive officers is set forth in Item 1 of Part I of this Report.

ITEM 11. Executive Compensation.
The information under "Director Compensation", "Report of the Management Development and Compensation Committee", "Executive Compensation Tables", "Severance and Other Change In Control Arrangements", and "Stock Performance Graph", appearing on pages 12 through 20 of the Proxy Statement relating to the Company's 2002 Annual Meeting of Shareholders is incorporated herein by reference.

ITEM 12. Security Ownership of Certain Beneficial Owners and Management.
The information required for this Item is set forth in the sections headed "Persons Owning More than 5\% of Air Products Stock" and "Air Products Stock Beneficially Owned by Officers and Directors" contained on pages 21 through 22 of the Proxy Statement relating to the Company's 2002 Annual Meeting of Shareholders and such information is incorporated herein by reference.

ITEM 13. Certain Relationships and Related Transactions.
Not applicable.

## PART IV

ITEM 14. Exhibits, Financial Statement Schedules, and Reports on Form 8-K.
(a) The following documents are filed as a part of this Report:

1. The 2001 Financial Review Section of the Company's 2001 Annual Report to Shareholders. Information contained therein is not deemed filed except as it is incorporated by reference into this Report. The following financial information is incorporated herein by reference:
(Page references to 2001 Financial Review Section of the Annual Report)

Management's Discussion and Analysis....................................................................... 17
Report of Independent Public Accountants.................................................................... 24

Consolidated Balance Sheets at 30 September 2001 and 2000..................................... 26
Consolidated Cash Flows for the three years ended 30 September 2001.............................. 27
Consolidated Shareholders' Equity for the three years ended 30 September 2001................. 28
Notes to Consolidated Financial Statements............................................................ 29
Business Segment and Geographic Information....................................................... 45
Eleven-Year Summary of Selected Financial Data............................................................. 48
2. The following additional information should be read in conjunction with the financial statements in the Company's 2001 Financial Review Section of the Annual Report to Shareholders:
(Page references to this report)
Report of Independent Public Accountants on Schedule ..... 19
Consent of Independent Public Accountants ..... 19

Consolidated Schedule for the years ended 30 September 2001, 2000, and 1999 as follows:

## Schedule

Number
VIII Valuation and Qualifying Accounts

All other schedules are omitted because the required matter or conditions are not present or because the information required by the Schedules is submitted as part of the consolidated financial statements and notes thereto.
3. Exhibits.

Exhibit No. Description
(3)
3.1 By-Laws of the Company. (Filed as Exhibit 3.1 to the By-Laws of the Company. (Filed as Exhibit 3.1 to the
Company's Form 8-K Report dated September 18, 1997.)*

Restated Certificate of Incorporation of the Company. (Filed as Exhibit 3.2 to the Company's Form $10-\mathrm{K}$ Report or the fiscal year ended September 30, 1987.)*

Amendment to the Restated Certificate of Incorporation of the Company dated January 25, 1996. (Filed as Exhibit 3.3 to the Company's Form $10-\mathrm{K}$ Report for the fiscal year ended September 30, 1996.)*
(4)

Instruments defining the rights of security holders, including indentures. Upon request of the Securities and Exchange Commission, the Company hereby undertakes to furnish copies of the instruments with respect to its long-term debt.

| 4.1 | Rights Agreement, dated as of March 19, 1998, between the Company and First Chicago Trust Company of New York. (Filed as Exhibit 1 to the Company's Form 8-A Registration Statement dated March 19, 1998, as amended by Form 8-A/A dated July 16, 1998.)* |
| :---: | :---: |
| 4.2 | Amended and Restated Credit Agreement dated as of September 16, 1999 among the Company, Additional Borrowers parties thereto, Lenders parties thereto, and The Chase Manhattan Bank (as amended). (Filed as Exhibit 4.2 to the Company's Form 10-K Report for the fiscal year ended September 30, 1999.)* |
| (10) | Material Contracts. |
| 10.1 | 1990 Deferred Stock Plan of the Company, as amended and restated effective October 1, 1989. (Filed as Exhibit 10.1 to the Company's Form 10-K Report for the fiscal year ended September 30, 1989.)* |
| 10.2 | 1997 Long-Term Incentive Plan of the Company effective October 1, 1996. (Filed as Exhibit 10.2(c) to the Company's Form 10-K Report for the fiscal year ended September 30, 1996.)* |
| 10.2(a) | Excerpt from resolutions approving amendments to the 1997 Long-Term Incentive Plan of the Company, effective 20 September 2000. (Filed as Exhibit 10.2(a) to the Company's Form 10-K Report for the fiscal year ended September 30, 2000.)* |
| 10.3 | Amended and Restated 1997 Annual Incentive Plan of the Company effective 1 January 2000. (Filed as Exhibit 10.2 to the Company's Form 10-Q Report for the period ending 31 March 2000.)* |
| 10.3(a) | Excerpt from resolutions amending the 1997 Annual Incentive Plan of the Company, effective 20 September 2000. (Filed as Exhibit 10.3(a) to the Company's Form 10-K Report for the fiscal year ended September 30, 2000.)* |
| 10.4 | Supplementary Pension Plan of the Company, as amended effective October 1, 1988. (Filed as Exhibit 10.4 to the Company's Form 10-K Report for the fiscal year ended September 30, 1989.)* |
| 10.4(a) | Amendment to the Pension Plan for Salaried Employees and the Pension Plan for Hourly Rated Employees of the Company, adopted September 20, 1995. (Filed as Exhibit 10.4(d) to the Company's Form 10-K Report for the fiscal year ended September 30, 1995.)* |
| 10.4(b) | Amendment to Supplementary Pension Plan of the Company, adopted September 20, 1995. (Filed as Exhibit 10.4(e) to the Company's Form 10-K Report for the fiscal year ended September 30, 1995.)* |
| 10.4(c) | Amendment to Supplementary Pension Plan of the Company, adopted November 2, 1995. (Filed as Exhibit 10.4(c) to the Company's Form 10-K Report for the fiscal year ended September 30, 1996.)* |
| 10.4(d) | Resolutions delegating certain authority to amend the Supplementary Pension Plan of the Company, effective January 26, 2000. (Filed as Exhibit 10.4(d) to the Company's Form 10-K Report for the fiscal year ended September 30, 2000.)* |
| 10.4(e) | Resolutions approving amendments to the Supplementary Pension Plan of the Company, effective September 20, 2000. (Filed as Exhibit 10.4(e) to the Company's Form $10-\mathrm{K}$ Report for the fiscal year ended September 30, 2000.)* |
| 10.5 | Supplementary Savings Plan of the Company as amended October 1, 1989. (Filed asExhibit 10.5 to the Company's Form 10-K Report for the fiscal year ended September 30, 1989.)* |
| 10.5(a) | Amendment to Supplementary Savings Plan of the Company effective April 1, 1998. (Filed as Exhibit 10.3(a) to the Company's Form 10-K Report for the fisca year ended September 30, 1998.)* |


| 10.5(b) | Resolutions approving amendments to the Supplementary Savings Plan of the Company effective 1 January 2000. (Filed as Exhibit 10.2 to the Company's Form 10-Q Report for the period ending 31 March 2000.)* |
| :---: | :---: |
| 10.6 | Amended and Restated Deferred Compensation Plan for |
|  | Directors of the Company, effective May 19, 1998. (Filed as Exhibit 10.6(a) to the Company's Form 10-K |
|  | Report for the fiscal year ended September 30, 1998.)* |
| 10.6(a) | Resolutions approving amendments to the Compensation |
|  | Program For Directors of the Company effective 1 April |
|  | 2000. (Filed as Exhibit 10.6(a) to the Company's Form 10-K |
|  | Report for the fiscal year ended September 30, 2000.)* |
| 10.6(b) | Resolutions approving an Amendment to the Deferred |
|  | Compensation Plan for Directors of the Company effective 20 September 2001. |
| 10.7 | Stock Option Plan for Directors of the Company, effective |
|  | January 27, 1994, as amended October 21, 1999. (Filed |
|  | as Exhibit 10.7 to the Company's Form 10-K Report for the fiscal year ended September 30, 1999.)* |
| 10.8 | Letter dated July 1, 1997 concerning pension for an |
|  | executive officer. (Filed as Exhibit 10.7(b) to the |
|  | Company's Form 10-K Report for the fiscal year ended |
|  | September 30, 1998.)* |
| 10.9 | Letter dated July 7, 1997 concerning pension for an |
|  | executive officer. (Filed as Exhibit 10.7(c) to the |
|  | Company's Form 10-K Report for the fiscal year ended September 30, 1998.)* |
| 10.10 | Letter dated July 1, 1997 concerning pension for an executive officer. (Filed as Exhibit 10.10 to the |
|  | Company's Form 10-K Report for the fiscal year ended September 30, 1999.)* |
| 10.11 | Air Products and Chemicals, Inc. Severance Plan effective |
|  | March 15, 1990. (Filed as Exhibit 10.8(a) to the |
|  | Company's Form 10-K Report for the fiscal year ended |
|  | September 30, 1992.)* |
| 10.12 | Air Products and Chemicals, Inc. Change of Control |
|  | Severance Plan effective March 15, 1990. (Filed as |
|  | Exhibit 10.8(b) to the Company's Form 10-K Report for the fiscal year ended September 30, 1992.)* |
| 10.13 | Amended and Restated Trust Agreement by and between the |
|  | Company and PNC Bank, N.A. relating to the Defined |
|  | Benefit Pension Plans dated as of August 1, 1999. |
|  | (Filed as Exhibit 10.13 to the Company's Form 10-K Report for the fiscal year ended September 30, 1999.)* |
| 10.13(a) | Amendment No. 1 to the Amended and Restated Trust Agreement |
|  | by and between the Company and PNC Bank, N.A. relating to |
|  | the Defined Benefit Pension Plan, adopted January 1, 2000. (Filed as Exhibit 10.13(a) to the Company's Form $10-\mathrm{K}$ |
|  | Report for the fiscal year ended September 30, 2000.)* |
| 10.14 | Amended and Restated Trust Agreement by and between the |
|  | Company and PNC Bank, N.A. relating to the Supplementary |
|  | Savings Plan dated as of August 1, 1999. (Filed as |
|  | Exhibit 10.14 to the Company's Form 10-K Report for the fiscal year ended September 30, 1999.)* |
| 10.14(a) | Amendment No. 1 to the Amended and Restated Trust |
|  | Agreement by and between the Company and PNC Bank, N.A. relating to the Supplementary Savings Plan, adopted |
|  | January 1, 2000. (Filed as Exhibit 10.14(a) to the |
|  | Company's Form 10-K Report for the fiscal year ended |
|  | September 30, 2000.)* |
| 10.15 | Form of Split Employment Contracts for an executive officer with the Company dated November 6, 1999 and with an affiliate of the Company dated June 4, 1996, and amended by letter dated November 6, 1999. (Filed as Exhibit 10.15 to the Company's Form 10-K Report for the fiscal year ended September 30, 1999.)* |


| 10.16 | Form of Severance Agreements which the Company has with <br> each of its U.S. Executive Officers and European Executive <br> Officer. (Filed as Exhibit 10.16 to the Company's <br> Form 10-K Report for the fiscal year ended September 30, <br> 1999.)* |
| :--- | :--- |
| 10.17 | Resolutions authorizing modifications to the <br> Supplementary Pension Plan and Supplementary Savings Plan <br> of the Company, effective 15 September 1999. (Filed as <br> Exhibit 10.17 to the Company 's Form 10-K Report for the <br> fiscal year ended September 30, 2000.)* |
| (11) | Earnings per share. <br> (12) <br> Computation of Ratios of Earnings to Fixed Charges. |
| (21) | 2001 Financial Review Section of the Annual Report to <br> Shareholders for the fiscal year ended September 30, 2001, |
| which is furnished to the Commission for information only, |  |

(b) Reports on Form 8-K filed during the quarter ended September 30, 2001:

Current Reports on Form 8-K dated July 20, 2001, August 16, 2001, and August 30, 2001, were filed in which Items 5 and 9 of such Form were reported.
*Previously filed as indicated and incorporated herein by reference. Exhibits incorporated by reference are located in SEC File No. 1-4534.

## SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Dated: December 14, 2001
AIR PRODUCTS AND CHEMICALS, INC. (Registrant)

By: /s/ Leo. J. Daley
Leo J. Daley, Vice President-
Finance and Controller
Principal Financial and Accounting Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature
/s/ John P. Jones
(John P. Jones III)
*
(Mario L. Baeza)
*
(L. Paul Bremer III)
(Robert Cizik)
$\qquad$
(Michael J. Donahue)
(Ursula F. Fairbairn)
(Edward E. Hagenlocker)

Director
December 14, 2001

Director

## Director

## Director

December 14, 2001

## Date

Director, Chairman, President, and December 14, 2001 Chief Executive Officer
(Principal Executive Officer)

Director

December 14, 2001
(James F. Hardymon)
(Terry R. Lautenbach)

* Director December 14, 2001
(Charles H. Noski)


## Director

December 14, 2001
(Paula G. Rosput)
Director
December 14, 2001
(Lawrason D. Thomas)
*W. Douglas Brown, Vice President, General Counsel, and Secretary, by signing his name hereto, does sign this document on behalf of the above noted individuals, pursuant to a power of attorney duly executed by such individuals which is filed with the Securities and Exchange Commission herewith.
/s/ W. Douglas Brown
W. Douglas Brown

Attorney-in-Fact

To: Air Products and Chemicals, Inc.
We have audited, in accordance with auditing standards generally accepted in the United States, the consolidated financial statements included in Air Products and Chemicals, Inc.'s Annual Report to Shareholders, incorporated by reference in this Form $10-\mathrm{K}$, and have issued our report thereon dated 26 October 2001. Our audit was made for the purpose of forming an opinion on those statements taken as a whole. The schedule referred to in Item 14(a)(2) in this Form $10-\mathrm{K}$ is the responsibility of the Company's management and is presented for the purposes of complying with the Securities and Exchange Commission's rules and is not part of the basic consolidated financial statements. This schedule has been subjected to the auditing procedures applied in the audit of the basic consolidated financial statements and, in our opinion, fairly states in all material respects the financial data required to be set forth therein in relation to the basic consolidated financial statements taken as a whole.

## ARTHUR ANDERSEN LLP

Philadelphia, Pennsylvania
26 October 2001

## CONSENT OF INDEPENDENT PUBLIC ACCOUNTANTS

To: Air Products and Chemicals, Inc.
As independent public accountants, we hereby consent to the
incorporation of our reports included or incorporated by reference in this form 10-K, into the Company's previously filed Registration Statements on Form S-8 and Form S-3 (File Nos. 333-33851, 333-02461, 33-2068, 33-65117, 333-21145, 333-45239, 333-18955, 333-21147, 333-60147, 333-71405, 333-73105, 333-95317, 333-31578, 333-90773, 333-54224, and 333-56292).

AIR PRODUCTS AND CHEMICALS, INC. AND SUBSIDIARIES
SCHEDULE VIII-VALUATION AND QUALIFYING ACCOUNTS
For the Years Ended 30 September 2001, 2000, and 1999

Classification

|  | Additions |  | Other Changes Increase(Decrease) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Balance at | Charged | Charged | Cumulative |  | Balance |
| Beginning | to | to other | Translation |  | at End of |
| of period | Expense | Accounts[1] | Adjustment | Other[2] | Period |

(in millions of dollars)

| Year Ended 30 September 2001 <br> Allowance for doubtful accounts | $\$ 13$ | $\$ 10$ | $\$ 0$ | $\$ 0$ | \$(13) |
| :--- | :--- | :--- | :--- | :--- | :--- |

## Notes:

[1] Includes primarily collections on accounts previously written off.
[2] Primarily includes write-offs of uncollectible accounts.

## RESOLUTIONS APPROVING AN AMENDMENT

TO THE AIR PRODUCTS AND CHEMICALS, INC. DEFERRED COMPENSATION PLAN FOR DIRECTORS (THE "PLAN")

WHEREAS, it has been recommended to the Board of Directors by the Nominating and Corporate Governance Committee that the Plan be amended to permit directors to transfer rights under the Plan to the payment of deferred compensation and earnings thereon by gift to, or to trusts for the benefit of, their family members;

NOW, THEREFORE, BE IT RESOLVED, that effective 20 September 2001, Plan Section 11 shall be, and it hereby is, amended and restated in its entirety to read as follows:
11. Nonassignability

The right of a participant to the payment of deferred compensation and earnings thereon under the Plan shall not be assigned, transferred, pledged or encumbered or be subject in any manner to alienation or anticipation, except by gift to the director participant's family member(s) or to trust(s) of which such family member(s) are beneficiaries and subject to the administrative procedures and conditions set forth in the "Administrative Procedures Regarding Transfers of the Right to Payment of Deferred Compensation dated 20 September 2001" attached as Exhibit A; to his or her designated beneficiary; or by will or the laws of descent and distribution.

RESOLVED FURTHER, that the proper officers of the Company be, and they each hereby are, authorized and empowered, in the name and on behalf of the Company, to make, execute, and deliver such instruments, documents, and certificates and to do and perform such other acts and things as may be necessary or appropriate to accomplish the amendment of the Plan as aforesaid, and to carry out the intent and accomplish the purpose of these resolutions.

APCI BOARD OF DIRECTORS
20 September 2001

AIR PRODUCTS AND CHEMICALS, INC., AND SUBSIDIARIES
COMPUTATION OF RATIOS OF EARNINGS TO FIXED CHARGES
(Unaudited)

| Year Ended 30 September |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 1997 | 1998 | 1999 | 2000 | 2001 |
| (Millions of dollars) |  |  |  |  |

Earnings:
Income before extraordinary item and changes:

| $\$ 429.3$ | $\$ 546.8$ | $\$ 450.5$ | $\$ 124.2$ |
| :--- | :--- | :--- | :--- | :--- |

Add (deduct)
Provision for income taxes
Fixed charges, excluding capitalized interest

Capitalized interest amortized during the period
203.
280.
209.5
(7.5)
224.8
233.0
202.8
194.4
232.6
217.4

Undistributed earnings of less-than-fifty-percent-owned affiliates

Earnings, as adjusted

Fixed Charges:
Interest on indebtedness, including capital lease obligations

| \$217.8 | \$186.7 |
| :---: | :---: |
| 20.9 | 18.4 |
| 1.8 | 1.9 |
| 13.4 | 14.2 |
| \$253.9 | \$221.2 |
| 3.3 | 4.6 |

\$175.4
\$210. 3
$\$ 201.6$
Capitalized interest

Amortization of debt discount premium and expense

Portion of rents under operating leases representative of the interest factor

Fixed charges

| 8.3 | 7.4 | 6.1 | 6.6 | 7.1 |
| :---: | :---: | :---: | :---: | :---: |
| (31.1) | (25.3) | (44.5) | (32.1) | (34.3) |
| \$842.9 | \$1, 012.6 | \$816. 0 | \$323.8 | \$927.9 |
| ====== | ======== | ====== | ===== | $=$ |


| 8.3 | 7.4 | 6.1 | 6.6 | 7.1 |
| :---: | :---: | :---: | :---: | :---: |
| (31.1) | (25.3) | (44.5) | (32.1) | (34.3) |
| \$842.9 | \$1, 012.6 | \$816. 0 | \$323.8 | \$927.9 |
| ====== | ======== | ====== | ===== | $=$ |

6.6
7.1

Ratio of Earnings to Fixed Charges:

## OVERVIEW OF 2001

Results for 2001 were affected by a slowing global economy and higher raw material and energy costs. The company managed through a number of difficult issues caused by the declining economy without losing sight of long-term strategies. The company maintained its return on capital by focusing on raw material cost recovery, controlling overhead and production costs, reducing capital spending, and strengthening the balance sheet. Leadership positions and the breadth of the business portfolio allowed the company to perform relatively well during these difficult economic times. The company produced solid results, implemented several strategic steps, and took some difficult but decisive actions. Divesting its interest in two cogeneration facilities was consistent with the commitment to focus resources on strategic growth businesses. The company restructured other businesses, made targeted staff reductions, and wrote down some underperforming assets. To take advantage of the lower interest rate environment, the company also repurchased a portion of its debt.

RESULTS OF OPERATIONS
[millions of dollars, except per share]

| Consolidated |  |  |  |
| :---: | :---: | :---: | :---: |
|  | 2001 | 2000 | 1999 |
| Sales | \$5, 717.2 | \$5,467.1 | \$5, 020.1 |
| Operating income | 745.4 | 830.8 | 724.7 |
| Equity affiliates' income | 81.2 | 87.6 | 61.5 |
| Income before extraordinary item | 512.9 | 124.2 | 450.5 |
| Net income | 465.6 | 124.2 | 450.5 |
| Basic earnings per share | 2.17 | . 58 | 2.12 |
| Diluted earnings per share | 2.12 | . 57 | 2.09 |

The results of years 2001, 2000, and 1999 included after-tax charges for special items of $\$ 6.4, \$ 408.4$, and $\$ .3$, respectively. An extraordinary charge for the early retirement of debt of $\$ 47.3$ was also recorded in 2001 . These should be considered in the comparison of the annual results. See Note 3 to the consolidated financial statements for details of the special items and Note 9 for details of the early retirement of debt.

The following table presents the results for years 2001, 2000, and 1999 exclusive of extraordinary and special items. The discussion of the consolidated and segment results is based on income excluding extraordinary and special items. Numbers presented in the discussion are in millions of dollars unless otherwise stated. All comparisons in the discussion are to the corresponding prior year unless otherwise stated.

Exclusive of Extraordinary and Special Items

|  | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Sales | \$5,717.2 | \$5,467.1 | \$5, 020.1 |
| Operating income | 860.6 | 879.9 | 769.2 |
| Equity affiliates' income | 81.2 | 87.6 | 61.5 |
| Net income | 519.3 | 532.6 | 450.8 |
| Basic earnings per share | 2.42 | 2.50 | 2.12 |
| Diluted earnings per share | 2.37 | 2.46 | 2.09 |

Sales in 2001 increased $\$ 250.1$, or $5 \%$. Sales growth declined $3 \%$ due to the divestiture of the polyvinyl alcohol business (PVOH) in 2000 and $2 \%$ due to unfavorable currency impacts. Sales of industrial gases increased 14\%, benefiting from natural gas cost pass-through for the first nine months of the year and from higher shipments to the electronics end market during the first half of the year. Sales in the chemicals segment declined 4\%, excluding the impact of PVOH , due to lower volumes resulting from the slowing economy, market share loss due to price increases, and from customer facility outages. Equipment sales rose 9\%.

Operating income in 2001 declined $\$ 19.3$, or $2 \%$. Currency and exchange-related impacts reduced operating income growth about $4 \%$. Gases operating income grew $4 \%$, primarily due to higher volumes in key markets, improved pricing in North America and Europe, and improved operating performance in chemicals and processing industries (CPI). Chemicals segment operating income declined \$56.8, or $29 \%$, due to lower volumes and higher raw material and energy costs. There was
no significant impact of the PVOH divestiture. An unfavorable project mix resulted in a $\$ 4.8$ decline in the equipment segment.

Operating income benefited from global cost reduction plans initiated in 2001, 2000, and 1999. The plans provided for the elimination of 1,468 positions and asset write-downs, which resulted in a cumulative charge of $\$ 198.8$. See Note 3 to the consolidated financial statements for details of the individual plans. Benefits generated from the plans of \$58 in 2001, \$23 in 2000, and \$5 in 1999 resulted primarily from reduced personnel costs. Benefits of $\$ 83$ are expected in 2002, and total annual benefits will be approximately $\$ 100$ after completion of the 2001 plan in 2002.

Equity affiliates' income in 2001 declined $\$ 6.4$, or $7 \%$. Lower global volume and margin pressure in the chemicals emulsions business accounted for most of the decline.

Sales in 2000 grew 9\%. While revenue growth was $16 \%$ for gases and $7 \%$ for chemicals, there was a decline of $\$ 137.5$, or $38 \%$, in the equipment segment. Unfavorable currency impacts reduced sales growth about 2\%. Acquisitions contributed about one-third of the reported sales increase. Demand for industrial gases grew in several major markets, particularly electronics and CPI. Sales in the chemicals segment increased on broad-based volume growth.

Operating income in 2000 increased \$110.7, a 14\% increase. Currency and exchange-related impacts reduced year-to-year operating income growth about $3 \%$. Gases operating income increased \$149.9, or $27 \%$, primarily due to higher shipments to the electronics and CPI markets. Chemicals segment operating income decreased $\$ 10.3$, or $5 \%$, as volume growth, cost control, and productivity gains were more than offset by increased raw material and energy costs. Lower equipment project activity resulted in a $\$ 20.6$, or $55 \%$, decline in operating income. Selling and administrative overheads were up about $2 \%$, with the increase due to acquisitions being substantially offset by constraints in overhead spending.

Equity affiliates' income in 2000 increased \$26.1, a 42\% improvement, primarily due to improved business conditions in Asia and Mexico. About one-third of the increase was due to currency and exchange-related impacts as well as tax benefits. The growth was achieved in spite of the consolidation of Korea Industrial Gases (KIG) following the purchase of the remaining $51.1 \%$ of the affiliate's shares in December 1999.

Segment Analysis
A description of the products, services, and markets for each of the business segments is included in Note 18 to the consolidated financial statements.

## Gases

|  | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Sales | \$3,944.0 | \$3,465.5 | \$2,996.4 |
| Operating income | 654.9 | 673.1 | 521.9 |
| Operating income--excluding special items | 724.0 | 698.8 | 548.9 |
| Equity affiliates' income | 71.7 | 73.6 | 46.8 |

Sales in 2001 grew \$478.5, or $14 \%$. Natural gas cost pass-through added $6 \%$ to revenue, primarily occurring during the first nine months of the year. Unfavorable currency impacts reduced sales growth about 3\%. The balance of the sales increase was principally due to higher shipments to the electronics industry and of HyCO (hydrogen, carbon monoxide, and syngas--a mix of hydrogen and carbon monoxide) products.

Electronics volume growth resulted from strong global demand for specialty gases and chemicals during the first half of 2001, with a significant slowdown in the second half. Favorable sales mix and slightly higher volumes led to increased sales in CPI. HyCO growth resulted from both new investment and increased loading on franchise pipeline systems. Gaseous oxygen/gaseous nitrogen (GOX/GAN) was impacted by weak demand in the petrochemical market.

North American and European liquid bulk volumes declined due to the slowing manufacturing activity. Price and surcharge initiatives in North America resulted in an $8 \%$ increase in the liquid oxygen/liquid nitrogen (LOX/LIN) price index, while the liquid bulk volume index declined $4 \%$. The European LOX/LIN price index increased $2 \%$, while the liquid bulk volume index declined slightly.

Operating income in 2001 increased \$25.2, or 4\%, due to higher volumes in key markets, improved pricing in North America and Europe, and improved operating performance in CPI. The improved profitability also reflects cost containment initiatives and increased facility loading in Asia. Unfavorable currency and exchange-related effects reduced operating income growth about $3 \%$. Excluding the unfavorable margin impact of natural gas cost pass-through on revenues, the operating margin in 2001 was $19.3 \%$, down $.9 \%$. The margin was unfavorably impacted by weakness in the electronics end markets in the second half of 2001, resulting in lower volumes of specialty gases and chemicals.

Equity affiliates' income in 2001 declined slightly, primarily due to the consolidation of KIG in December 1999. The company sold its interest in two cogeneration facilities in September 2001.

# Sales in 2000 grew $\$ 469.1$, or $16 \%$. The increase was primarily due to strong 

 demand in the electronics and CPI end markets as well as improved business conditions in Asia. Contract pass-through of higher natural gas costs added about $3 \%$ to sales growth. Approximately one-third of the increase was attributable to acquisitions. The strong dollar relative to European currencies had an adverse impact on sales of about $4 \%$.The electronics end markets rebounded in 2000, resulting in substantially improved gases volumes. Growth for the company's specialty gases and chemicals products to the electronics markets was particularly strong. Volumes increased globally in the CPI end markets. HyCO volumes grew $18 \%$ and $3 \%$ in North America and Europe, respectively. Sales volumes of GOX/GAN increased 5\% in North America and $8 \%$ in Europe.

LOX/LIN volumes were up $4 \%$ in North America, including non-cryo gases. LOX/LIN prices in North America were up about 2\%. Price increases and surcharges, based on higher energy and diesel fuel costs, offset price declines in the prior year. Liquid argon volumes rose $11 \%$ due to increased demand in the steel and metals markets as well as construction growth in the electronics industry. Liquid hydrogen volumes were up $8 \%$ due to increased government engine testing. European volumes improved, although reported sales were adversely impacted by the strong dollar. Southern Europe sustained growth and Northern Europe experienced modest improvement in business conditions. LOX/LIN volumes in Europe were up 5\%, including non-cryo gases. LOX/LIN prices in Europe were essentially unchanged Asian sales increased substantially, reflecting acquisitions and improved regional business conditions. The electronics markets in Asia were particularly strong in 2000.

Operating income in 2000 increased $27 \%$, or \$149.9. Significant growth in key markets and cost containment initiatives drove the operating income improvement. Acquisitions contributed slightly less than one-third of the increase. The operating margin increased to $20.2 \%$ from $18.3 \%$. Price increases and surcharges only partially offset higher energy and diesel fuel costs, moderating the margin improvement.

Equity affiliates' income in 2000 grew \$26.8, an increase of $57 \%$. The growth was achieved in spite of the consolidation of KIG following the purchase of the remaining 51.1\% of the affiliate's shares in December 1999. The growth in equity affiliates' income was mostly in Asia, Mexico, and the energy-related ventures. Approximately one-third of the increase was due to currency and exchange-related impacts as well as tax benefits.

Chemicals

|  | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Sales | \$1, 522.8 | \$1,772.8 | \$1, 657.4 |
| Operating income | 112.3 | 182.1 | 193.7 |
| Operating income--excluding |  |  |  |
| special items | 140.9 | 197.7 | 208.0 |
| Equity affiliates' income | 7.5 | 12.5 | 12.4 |

Sales in 2001 declined $\$ 250.0$, or $14 \%$. Excluding the impact of the divested PVOH business, sales declined $\$ 65.9$, or $4 \%$. Sales growth was reduced $1 \%$ due to unfavorable currency impacts. Total sales volume declined 8\%, excluding the impact of PVOH . Volumes declined in most major product lines resulting from the slowing economy, lost market share due to price increases, and customer facility outages.

Operating income in 2001 declined $\$ 56.8$, or $29 \%$. Lower volumes and higher raw material and energy costs were significant factors in the reduction in operating income. Cost control actions moderated this decline, and aggressive price increases were partially successful in recovering the rapid rise in costs. Unfavorable currency and exchange-related effects reduced operating income about $5 \%$. The operating margin in 2001 was 9.3\%, down from 11.2\%.

Equity affiliates' income in 2001 declined $\$ 5.0$, as the emulsions business experienced higher global raw material costs. Equity affiliates' income consists primarily of the redispersible powders venture with Wacker-Chemie GmbH.

Sales in 2000 were up $7 \%$, or $\$ 115.4$. Operating income declined $\$ 10.3$, or $5 \%$. Broad-based volume gains, led by epoxy additives and polyurethane intermediates, resulted in an overall segment volume growth of $8 \%$. Emulsions volumes grew slightly as aggressive pricing actions in response to raw material cost increases impacted sales growth. PVOH volumes grew 11\%. There was no significant contribution to operating income from PVOH in 2000. The company completed the sale of the PVOH business in September 2000. See Note 3 to the consolidated financial statements for details on the PVOH business sale. Unfavorable currency and exchange-related impacts reduced sales growth less than 1\%, but had an unfavorable impact of $5 \%$ on operating income growth. The operating margin was $11.2 \%$, down from 12.5\%. Strong volume growth, productivity gains, and effective cost containment initiatives were more than offset by raw material and energy cost pressures, as well as lower pricing in select businesses. Aggressive pricing actions lagged the continued raw material and energy cost increases.

## Equipment

|  | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Sales | \$250.4 | \$228.8 | \$366.3 |
| Operating income | 10.0 | 9.9 | 34.7 |
| Operating income--excluding special items | 12.0 | 16.8 | 37.4 |

Sales in 2001 rose $\$ 21.6$ while operating income declined $\$ 4.8$ due to an unfavorable project mix. Sales backlog for the equipment segment improved to $\$ 227$ at 30 September 2001 compared to $\$ 149$. The increase principally resulted from the receipt of orders for liquid natural gas heat exchangers and a large air separation plant. It is expected that $\$ 187$ of the backlog will be completed during 2002.

Sales in 2000 were down $\$ 137.5$, or $38 \%$. Operating income declined $\$ 20.6$, or $55 \%$. Good project cost performance partially offset the impact of lower project activity. Sales backlog for the equipment segment declined to $\$ 149$ at 30 September 2000, compared to $\$ 175$.

## Interest Expense

|  | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Interest incurred | \$197.2 | \$214.1 | \$181.2 |
| Less: interest capitalized | 6.0 | 17.4 | 22.1 |
| Interest expense | \$191.2 | \$196.7 | \$159.1 |

Interest expense in 2001 declined \$5.5. The decline resulted from lower average debt and slightly lower interest rates largely offset by lower capitalized interest. During the fourth quarter of 2001, the company repurchased $\$ 541.1$ of its outstanding debt. Interest expense in 2000 increased $\$ 37.6$. The increase was due to higher average debt, slightly higher interest rates, and lower capitalized interest. The higher average debt resulted from The BOC Group plc (BOC) transaction.

Income Taxes

|  | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Effective tax rate | 29.9\% | [12.4]\% | 31.1\% |
| Effective tax rate--excluding special items | 30.0\% | 30. 2\% | 31.3\% |

The effective tax rates exclude minority interest. The company had a net tax benefit for 2000. The net benefit resulted from the loss on the BOC transaction combined with tax credits and adjustments.

Excluding the impact of the special items, the effective tax rate in 2001 was comparable to 2000. The effective tax rate in 2000 declined $1.1 \%$ due to higher credits and adjustments.

## ENVIRONMENTAL MATTERS

The company is subject to various environmental laws and regulations in the United States and foreign countries where it has operations. Compliance with these laws and regulations results in higher capital expenditures and costs. Additionally, from time to time the company is involved in proceedings under the Comprehensive Environmental Response, Compensation, and Liability Act (the federal Superfund law), similar state laws, and the Resource Conservation and Recovery Act (RCRA) relating to the designation of certain sites for investigation and possible cleanup. The company's accounting policies for environmental expenditures are discussed in Note 1 to the consolidated financial statements.

The amounts charged to earnings on an after-tax basis related to environmental protection totaled \$21.1, \$30.3, and \$27.2 for 2001, 2000, and 1999, respectively. These amounts represent an estimate of expenses for compliance with environmental laws, as well as remedial activities, and costs incurred to meet internal company standards. Such costs are estimated to be $\$ 24$ in both 2002 and 2003.

Although precise amounts are difficult to define, the company estimates that in 2001 it spent approximately $\$ 10.7$ on capital projects to control pollution versus $\$ 3$ in 2000. Capital expenditures to control pollution in future years are estimated at \$16 in 2002 and \$13 in 2003.

It is the company's policy to accrue environmental investigatory and noncapital remediation costs for identified sites when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. The potential exposure for such costs is estimated to range from $\$ 9$ to a reasonably possible upper exposure of $\$ 19$. The balance sheet at 30 September 2001 included an accrual of $\$ 14.3$. At 30 September 2000, the balance sheet accrual was $\$ 16.7$.

In addition to the environmental exposures discussed in the preceding paragraph, there is spending at a company-owned manufacturing site where the company is undertaking RCRA corrective action remediation. The company estimates capital costs to implement the anticipated remedial program should not exceed $\$ 33$. Spending was $\$ 27.6$ through 2001 and is estimated at $\$ .3$ for 2002 and $\$ 2$ for 2003. Operating and maintenance expenses associated with continuing the remedial program were minimal in 2001 and are estimated at $\$ 1$ million a year and will continue for an estimated period of up to 30 years. A former owner and operator at the site has agreed to reimburse the company $20 \%$ of the costs incurred in the remediation. The cost estimates have not been reduced by such reimbursements of $\$ 4.4$ and an insurance recovery of $\$ 7.7$ received in 1999.

Actual costs to be incurred at identified sites in future periods may vary from the estimates, given inherent uncertainties in evaluating environmental exposures. Subject to the imprecision in estimating future environmental costs, the company does not expect that any sum it may have to pay in connection with environmental matters in excess of the amounts recorded or disclosed above would have a materially adverse effect on its financial condition or results of operations in any one year.

## LIQUIDITY, CAPITAL RESOURCES, AND OTHER FINANCIAL DATA

The company maintained a solid financial position throughout 2001. Cash from operations, supplemented with proceeds from asset sales, provided funding for the company's capital spending program, dividend payout, and share repurchase program. Cash from operations and proceeds from financing will meet liquidity needs for the foreseeable future. The company's long-term debt and commercial paper continue to be rated A/A3 and A-1/P-2, respectively, by Standard \& Poor's and Moody's.

## Capital Expenditures

Capital expenditures in 2001 totaled $\$ 806.3$, down $17 \%$. As in 2000, additions to plant and equipment and acquisitions in 2001 were largely in support of worldwide expansion of the gas business. Acquisitions in 2000 included the purchase of the remaining $51.1 \%$ of KIG, the company's Korean affiliate, raising its ownership to 100\%. Investments in equity affiliates in 1999 included $\$ 52.0$ in INOX, an Indian industrial gas company, and $\$ 53.0$ in a joint venture with Wacker-Chemie GmbH.

|  | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Additions to plant and equipment | \$708.3 | \$767.7 | \$888.9 |
| Investments in and advances to unconsolidated affiliates | 38.3 | 5.6 | 110.6 |
| Acquisitions | 59.2 | 194.8 | 90.4 |
| Capital leases | . 5 | 4.9 | 18.5 |
|  | \$806. 3 | \$973.0 | \$1,108.4 |

Capital expenditures for new plant and equipment in 2002 are expected to be approximately $\$ 700$. In addition, the company intends to continue to pursue acquisition opportunities and investments in affiliated entities. It is anticipated these expenditures will be funded with cash from operations and proceeds from asset sales.

## Financing and Capital Structure

Capital needs in 2001 were satisfied with cash from operations and proceeds from asset sales. At the end of 2001, total debt outstanding was $\$ 2.5$ billion compared to $\$ 3.0$ billion.

Long-term debt financings in 2001 totaled $\$ 121$ and included $\$ 75$ in U.S. dollar debt and $\$ 46$ equivalent in Korean Won debt. The dollar borrowings are floating-rate, and the Won debt is fixed-rate. Terms range from three to thirty-five years.

During 2001, the company repurchased $\$ 541.1$ of its outstanding long-term fixed-rate debt. The average remaining life of the repurchased debt was 18.5 years and the average coupon was $7.56 \%$. The purchase was financed with available cash and proceeds from the issuance of commercial paper.

During the year, the company sold and leased back certain U.S. cryogenic vessel equipment. Proceeds of $\$ 301.9$ from the sale were used to pay down commercial paper. At year-end, $\$ 202.0$ of commercial paper was outstanding compared to $\$ 143.0$.

Substantial credit facilities are maintained to provide backup funding for commercial paper and to ensure availability of adequate sources of liquidity. At 30 September 2001, the company's committed lines of credit totaled $\$ 600$. No borrowings were outstanding under these commitments at the end of 2001. In October 2000, $\$ 500$ of commitments, added during 2000 to provide liquidity while the BOC transaction was in progress, matured. Additional commitments of $\$ 72.7$ are maintained by the company's foreign subsidiaries, of which $\$ 16.4$ was borrowed and outstanding at 30 September 2001.

During 2001, the company purchased 2.1 million of its outstanding shares at a cost of $\$ 87.2$. The share repurchase program was suspended in the fourth quarter of 2001.

Working Capital
Working capital at 30 September 2001 (excluding cash and cash items, short-term borrowings, and the current portion of long-term debt) was \$716.4, or a decline of $\$ 48.9$. The decrease was largely due to a reduction in trade receivables.

Working capital at 30 September 2000 (excluding cash and cash items, short-term borrowings, and the current portion of long-term debt) was \$765.3, up \$21.7. Excluding the impact of currency options and deferred financing expenses included in 30 September 1999 working capital related to the BOC transaction, working capital increased \$55.8. Working capital at 30 September 2000 was slightly reduced
overall due to the sale of the PVOH business and the consolidation of KIG. Excluding the BOC, PVOH, and KIG impacts on working capital, the 2000 increase was primarily due to higher trade receivables.

## Dividends

The Board of Directors in May 2001 increased the quarterly cash dividend 5\%, from 19.0 cents per share, to 20.0 cents per share. Dividends are declared by the Board of Directors and, when declared, are usually paid during the sixth week after the close of the fiscal quarter.

New Accounting Standards
In June 2001, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards (SFAS) No. 141, "Business Combinations," SFAS No. 142, "Goodwill and Other Intangible Assets," and SFAS No. 143, "Accounting for Asset Retirement Obligations." In August 2001, the FASB issued SFAS No. 144 "Accounting for the Impairment or Disposal of Long-Lived Assets." See Note 2 to the consolidated financial statements for information concerning the company's implementation and impact of these new standards.

## Exchange Rate Fluctuations

Exchange rate fluctuations can be a significant variable for international operations, especially fluctuations in local currencies where hedging opportunities are unreasonably expensive or unavailable.

## Inflation

The financial statements are presented in accordance with generally accepted accounting principles and do not fully reflect the impact of prior years' inflation. While the U.S. inflation rate has been modest for several years, the company operates in many international areas with both inflation and currency issues. The ability to pass on inflation costs is an uncertainty due to general economic conditions and competitive situations. It is estimated that the cost of replacing the company's plant and equipment today is greater than its historical cost. Accordingly, depreciation expense would be greater if the expense were stated on a current cost basis

## MARKET RISKS AND SENSITIVITY ANALYSIS

The company's earnings, cash flows, and financial position are exposed to market risks relating to fluctuations in interest rates and foreign currency exchange rates. It is the policy of the company to minimize its cash flow exposure to adverse changes in currency and exchange rates and to reduce the financial risks inherent in funding the company with debt capital.

The company addresses these financial exposures through a controlled program of risk management that includes the use of derivative financial instruments. Counterparties to all derivative contracts are major financial institutions, thereby minimizing the risk of credit loss

The analysis below presents the sensitivity of the market value of the company's financial instruments to selected changes in market rates and prices. The range of changes chosen reflects the company's view of changes which are reasonably possible over a one-year period. Market values are the present value of projected future cash flows based on the market rates and prices chosen. The market values for interest rate risk and foreign currency risk are calculated by the company, using a third-party software model which utilizes standard pricing models to determine the present value of the instruments based on market conditions (interest rates, spot and forward exchange rates, and implied volatilities) as of the valuation date. All instruments are entered into for other than trading purposes. The utilization of these instruments is described more fully in Note 5 to the consolidated financial statements. The major accounting policies for these instruments are described in Note 1 to the consolidated financial statements.

The company's derivative and other financial instruments consist of long-term debt (including current portion), interest rate swaps, interest rate and currency swaps, foreign exchange-forward contracts, and foreign exchange-option contracts. The net market value of these financial instruments combined is referred to below as the net financial instrument position. The net financial instrument position does not include other investments of $\$ 52.1$ at 30 September 2001 and $\$ 34.7$ at 30 September 2000 as disclosed in Note 5 to the consolidated financial statements. These amounts principally represent an investment in a publicly traded foreign company accounted for by the cost method. The company assessed the materiality of the market risk exposure on these financial instruments and determined this exposure to be immaterial.

At 30 September 2001 and 2000, the net financial instrument position was a liability of $\$ 2,300.5$ and $\$ 2,862.0$, respectively. The decrease in the net financial instrument position was due to lower long-term debt, including current portion.

## Interest Rate Risk

The company's debt portfolio, including interest rate swap agreements, as of 30 September 2001 was comprised primarily of debt denominated in U.S. dollars (44\%) and Euros (36\%). The company has both fixed- and variable-rate debt. Changes in interest rates have different impacts on the fixed- and variable-rate portions of the company's debt portfolio. A change in interest rates on the fixed portion of the debt portfolio impacts the net financial instrument position but has no impact on interest incurred or cash flows. A change in interest rates on the variable portion of the debt portfolio impacts the interest incurred and cash flows but does not impact the net financial instrument position.

The sensitivity analysis related to the fixed portion of the company's debt portfolio assumes an instantaneous 100 basis point move in interest rates from their levels at 30 September 2001 and 2000, with all other variables (including foreign exchange rates) held constant. A 100 basis point increase in market interest rates would result in a decrease of $\$ 69$ and $\$ 130$ in the net liability position of financial instruments at 30 September 2001 and 2000, respectively. A 100 basis point decrease in market interest rates would result in an increase of $\$ 75$ and $\$ 137$ in the net liability position of financial instruments at 30 September 2001 and 2000, respectively.

Based on the variable-rate debt included in the company's debt portfolio, including the interest rate swap agreements, as of 30 September 2001 and 2000, a 100 basis point increase in interest rates would result in an additional $\$ 7$ in interest incurred per year at both 30 September 2001 and 2000. A 100 basis point decline would lower interest incurred by $\$ 7$ per year at both 30 September 2001 and 2000.

## Foreign Currency Exchange Rate Risk

The sensitivity analysis assumes an instantaneous $10 \%$ change in the foreign currency exchange rates from their levels of 30 September 2001 and 2000, with all other variables (including interest rates) held constant. A 10\% strengthening of the functional currency of the company versus all other currencies would result in a decrease of $\$ 165$ and $\$ 161$ in the net liability position of financial instruments at 30 September 2001 and 2000, respectively. A $10 \%$ weakening of the functional currency of the company versus all other currencies would result in an increase of $\$ 163$ and $\$ 161$ in the net liability position of financial instruments at 30 September 2001 and 2000, respectively.

The primary currencies for which the company has exchange rate exposure are the U.S. dollar versus the Euro, the U.S. dollar versus the U.K. Pound Sterling, and the Euro versus the Canadian Dollar. Foreign currency debt, interest rate and currency swaps, and foreign exchange-forward contracts are used in countries where it does business, thereby reducing the company's net asset exposure. Foreign exchange-forward contracts are also used to hedge the company's firm and highly anticipated foreign currency cash flows, along with foreign exchange-option contracts. Thus, there is either an asset or cash flow exposure related to all the financial instruments in the above sensitivity analysis for which the impact of a movement in exchange rates would be in the opposite direction and materially equal (or more favorable in the case of purchased foreign exchange-option contracts) to the impact on the instruments in the analysis.

## FORWARD-LOOKING STATEMENTS

The forward-looking statements contained in this document are based on current expectations regarding important risk factors. Actual results may differ materially from those expressed. In addition to important risk factors and uncertainties referred to in the Management's Discussion and Analysis, other important risk factors and uncertainties include overall economic and business conditions; demand and timing of the placing of orders for the goods and services of the company, including the success of recovery in the company's markets in the electronics industry; competitive factors in the industries in which it competes; the ability to recover increased energy and raw material costs from customers; spikes in the pricing of natural gas; changes in government regulations; consequences of acts of terrorism impacting the United States and other markets; the success of implementing cost reduction programs; the timing, impact, and other uncertainties of future acquisitions or divestitures; significant fluctuations in interest rates and foreign currencies; the impact of tax and other legislation and regulations in jurisdictions in which the company and its affiliates operate; and the timing and rate at which tax credits can be utilized.

The accompanying consolidated financial statements have been prepared by the company. They conform with accounting principles generally accepted in the United States and reflect judgments and estimates as to the expected effects of incomplete transactions and events being accounted for currently. The company believes that the accounting systems and related controls that it maintains are sufficient to provide reasonable assurance that assets are safeguarded, transactions are appropriately authorized and recorded, and the financial records are reliable for preparing such financial statements. The concept of reasonable assurance is based on the recognition that the cost of a system of internal accounting controls must be related to the benefits derived. The company maintains an internal audit function which is responsible for evaluating the adequacy and application of financial and operating controls and for testing compliance with company policies and procedures.

The independent public accountants are engaged to perform an audit of the consolidated financial statements in accordance with auditing standards generally accepted in the United States. Their report follows.

The Audit Committee of the Board of Directors is comprised entirely of individuals who are not employees of the company. This Committee meets periodically with the independent public accountants, the internal auditors, and management to consider audit results and to discuss significant internal accounting control, auditing, and financial reporting matters. The Audit Committee recommends the selection of the independent public accountants who are then appointed by the Board of Directors, subject to ratification by the shareholders.
s/John P. Jones III
John P. Jones III
Chairman, President, and
Chief Executive Officer 26 October 2001
/s/Leo J. Daley
Leo J. Daley
Vice President-Finance
and Controller
26 October 2001

Report of Independent Public Accountants
To the Shareholders and Board of Directors, Air Products and Chemicals, Inc.:
We have audited the accompanying consolidated balance sheets of Air Products and Chemicals, Inc. (a Delaware corporation) and subsidiaries as of 30 September 2001 and 2000, and the related consolidated statements of income, cash flows, and shareholders' equity for each of the three years in the period ended 30 September 2001. These financial statements are the responsibility of the company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Air Products and Chemicals, Inc. and subsidiaries as of 30 September 2001 and 2000, and the results of their operations and their cash flows for each of the three years in the period ended 30 September 2001, in conformity with accounting principles generally accepted in the United States.
/s/ Arthur Andersen LLP

ARTHUR ANDERSEN LLP
Philadelphia, Pennsylvania
26 October 2001



[^0]CONSOLIDATED CASH FLOWS
[Air Products and Chemicals, Inc. and Subsidiaries]

| Year Ended 30 September [millions of dollars] | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Operating Activities |  |  |  |
| Net Income | \$ 465.6 | \$ 124.2 | \$ 450.5 |
|  |  |  |  |
| Adjustments to Reconcile Income to Cash Provided by Operating Activities: |  |  |  |
| Depreciation--Note 1 | 573.0 | 575.7 | 527.2 |
| Deferred Income Taxes--Note 14 | 39.0 | [5.5] | 58.8 |
| Extraordinary Loss on Early Retirement of Debt | 47.3 | -- | -- |
| Extraordinary Loss on Early Retirenent of Debt |  |  |  |
| Loss [Gain] on BOC Transaction--Note 3 | -- | 706.1 | [12.5] |
| Undistributed Earnings of Unconsolidated Affiliates | [46.2] | [49.9] | [46.3] |
| --------------------------------------- | [104.7] | [138.6] | 3.7 |
| [Gain] Loss on Sale of Assets and Investments |  |  |  |
| Other | 36.5 | 100.8 | 73.2 |
| Working Capital Changes, Excluding Effects of Acquisitions and Divestitures: |  |  |  |
| --------------------------------------------------------------------- | 63.9 | [158.5] | [26.3] |
| Inventories and Contracts in Progress | 2.6 | [57.4] | 37.0 |
| --------------------------------- |  |  |  |
| Payables, Trade and Other | [75.6] | 92.1 | 26.3 |
| Other | 82.6 | [15.0] | [2.7] |
| Cash Provided by Operating Activities | 1,084.0 | 1,174.0 | 1,088.9 |
|  |  |  |  |
| Investing Activities |  |  |  |
| Additions to Plant and Equipment[a] | [708.3] | [767.7] | [888.9] |
| - --------------------------------- | [59.2] | [170.4] | [83.0] |
| ---------------------------- |  |  |  |
| Investment in and Advances to Unconsolidated Affiliates | [38.3] | [5.6] | [110.6] |
| BOC Transaction Costs | -- | [665.8] | [27.7] |
| -------------------------------------- | 497.0 | 381.8 | 45.6 |
| -------------------------------------------- |  |  |  |
| Other | 31.1 | . 1 | 4.5 |
| Cash Used for Investing Activities | [277.7] | [1, 227.6] | [1, 060.1] |
| Financing Activities |  |  |  |
| ------------------------- |  | 820.9 | 119.5 |
| Long-Term Debt Proceeds[a][b] | 121.0 | 820.9 | 119.5 |
| Payments on Long-Term Debt | [796.6] | [418.0] | [82.9] |
| Net Increase [Decrease] in Commercial Paper and Short-Term Borrowings | 8.0 | [182.1] | 57.5 |
| ---------------------------------------------- | [165.2] | [155.7] | [146.2] |
| - -------------------------- | [87.2] | ------ | [24.6] |
| Issuance of Stock for Options and Award Plans | 87.1 | 15.0 | 46.6 |
| --------------------------------------- |  |  |  |
| Cash [Used for] Provided by Financing Activities | [832.9] | 80.1 | [30.1] |
| Effect of Exchange Rate Changes on Cash | [1.3] | 6.0 | 1.4 |
| [Decrease] Increase in Cash and Cash Items | [27.9] | 32.5 | . 1 |
|  | 94.1 | 61.6 | 61.5 |
| Cash and Cash Items--End of Year--Note 1 | \$ 66.2 | \$ 94.1 | \$ 61.6 |

The accompanying notes are an integral part of these statements.
[a] Excludes capital leases of \$.5, \$4.9, and \$18.5 in 2001, 2000, and 1999, respectively.
[b] Excludes $\$ 24.4$ of long-term debt assumed in acquisitions in 2000 and $\$ 7.4$ of former shareholder liability of a company acquired in 1999.

CONSOLIDATED SHAREHOLDERS' EQUITY
[Air Products and Chemicals, Inc. and Subsidiaries]


| Issuance of Treasury Shares and |
| :--- |
| Shares in Trust for Stock Options |
| and Award Plans | 1,174,$477 \quad$ [7.9] $\quad 26.318 .4$


| Tax Benefit of Stock Option and |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Award Plans |  |  | 8.6 |  |  |  |  | 8.6 |
| Cash Dividends [\$.74 per Share] |  |  |  |  | [158.1] |  |  | [158.1] |
| Balance 30 September 2000 | 214,218,709 | \$249.4 | \$342. 2 | \$3,667.9 | \$[407.8] | \$[681.6] | \$[348.8] | \$2,821.3 |

Comprehensive Income:

| Net Income |  | 465.6 |  |  | 465.6 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Net Gain on Derivatives, Net of |  |  |  |  |  |
| Income Tax of \$1.1 |  |  | 1.8 |  | 1.8 |
| Translation Adjustments, Net of |  |  |  |  |  |
| Income Tax of \$14.1 |  |  | [43.3] |  | [43.3] |
| Net Change in Unrealized Holding |  |  |  |  |  |
| Change in Minimum Pension |  |  |  |  |  |
| Liability, Net of Income Tax of \$5.8 |  |  | [9.5] |  | [9.5] |
| Comprehensive Income |  |  |  |  | 420.9 |
| Issuance of Shares in Trust for |  |  |  |  |  |
| Stock Options and Award Plans | 3,362,762 | 25.0 |  | 75.7 | 100.7 |
| Tax Benefit of Stock Option and |  |  |  |  |  |
| Award Plans |  | 17.7 |  |  | 17.7 |



The accompanying notes are an integral part of these statements.

## 1 MAJOR ACCOUNTING POLICIES

## Consolidation Principles

The consolidated financial statements include the accounts of Air Products and Chemicals, Inc. and its majority-owned subsidiary companies (the company). The equity method of accounting is used when the company has a $20 \%$ to $50 \%$ interest in other companies. Under the equity method, original investments are recorded at cost and adjusted by the company's share of undistributed earnings or losses of these companies.

## Revenue Recognition

Revenue from gases and chemicals sales is recognized as risk and title to the product transfers to the customer, which usually occurs at the time shipment is made. Revenues from equipment sale contracts are recorded primarily using the percentage-of-completion method. Under this method, revenues for sale of major equipment, such as Liquid Natural Gas and Air Separation units, are recognized primarily based on labor hours incurred to date compared with total estimated labor hours. Changes to total estimated labor hours and anticipated losses, if any, are recognized in the period determined. Sales returns and allowances are not a business practice in the industry.

Amounts billed for shipping and handling fees are classified as sales in the consolidated income statement. Costs incurred for shipping and handling are classified as cost of sales.

## Depreciation

In the financial statements, the straight-line method of depreciation is used, which deducts equal amounts of the cost of each asset from earnings every year over its expected useful life.

The estimated useful lives primarily range from 5 to 45 years (principally 30 years) for buildings and components and from 14 to 20 years for gas generating and chemical facilities, machinery and equipment.

## Capitalized Interest

As the company builds new plant and equipment, it includes in the cost of these assets a portion of the interest payments it makes during the year. In 2001, the amount of capitalized interest was \$6.0. In 2000, it was \$17.4, and in 1999, \$22.1.

## Financial Instruments

The company addresses certain financial exposures through a controlled program of risk management that includes the use of derivative financial instruments. The company enters into foreign exchange contracts, including forward, option combination, and purchased option contracts, to reduce the effects of fluctuating foreign currency exchange rates. The company enters into interest rate swap contracts to reduce interest rate risks and to modify the interest rate characteristics of its outstanding debt. The company is also party to interest rate and currency swap agreements. Counterparties to these contracts are major financial institutions. The company has established counterparty credit guidelines and only enters into transactions with financial institutions of investment grade or better. Management believes the risk of incurring losses related to credit risk is remote, and any losses would be immaterial to consolidated financial results.

The company adopted Statement of Financial Accounting Standards (SFAS) No. 133, "Accounting for Derivative Instruments and Hedging Activities," and SFAS No. 138, "Accounting for Certain Derivative Instruments and Certain Hedging Activities," an amendment of SFAS No. 133, on 1 October 2000. These Statements establish accounting and reporting standards that require every derivative instrument (including certain derivative instruments embedded in other contracts) to be recorded on the balance sheet as either an asset or a liability measured at its fair value. SFAS No. 133 requires the transition adjustment resulting from adopting these Statements to be reported in net income or accumulated other comprehensive income, as appropriate, as the cumulative effect of a change in accounting principle.

In accordance with the provisions of SFAS No. 133, as amended, the company recognizes all derivatives on the balance sheet at fair value. On the date the derivative instrument is entered into, the company generally designates the derivative as either (1) a hedge of the fair value of a recognized asset or liability or of an unrecognized firm commitment (fair value hedge), (2) a hedge of a forecasted transaction or of the variability of cash flows to be received or paid related to a recognized asset or liability (cash flow hedge), or (3) a hedge of a net investment in a foreign operation. Changes in the fair value of a derivative that is designated as and meets all the required criteria for a fair value hedge, along with the gain or loss on the hedged asset or liability that is attributable to the hedged risk, are recorded in current period earnings. Changes in the fair value of a derivative that is designated as and meets all the required criteria for a cash flow hedge are recorded in accumulated other comprehensive income and reclassified
into earnings as the underlying hedged item affects earnings. Changes in the fair value of a derivative or nonderivative that is designated as and meets all the required criteria for a hedge of a net investment are recorded in accumulated other comprehensive income. Changes in the fair value of a derivative that is not designated as a hedge are recorded immediately in earnings.

The company formally documents all relationships between hedging instruments and hedged items, as well as its risk-management objective and strategy for undertaking various hedge transactions. This process includes relating all derivatives that are designated as fair value or cash flow hedges to specific assets and liabilities on the balance sheet or to specific firm commitments or forecasted transactions. The company also formally assesses, both at the inception of the hedge and on an ongoing basis, whether each derivative is highly effective in offsetting changes in fair values or cash flows of the hedged item. If it is determined that a derivative is not highly effective as a hedge, or if a derivative ceases to be a highly effective hedge, the company will discontinue hedge accounting with respect to that derivative prospectively.

On 1 October 2000 the company recorded the fair value of all outstanding derivative instruments as assets or liabilities on the balance sheet. The transition adjustment was not material to earnings or to accumulated other comprehensive income. Due to the immateriality of the transition amount to earnings, this amount was included in other income.

Prior to 1 October 2000 the fair value of interest rate swap agreements was not recognized in the financial statements. The net amount to be paid or received was accrued as interest rates changed and recognized over the life of the agreements as an adjustment of interest expense. Gains and losses on the currency component of interest rate and currency swap contracts, which were entered into to hedge lending transactions, were recognized in income and offset the foreign exchange gains and losses of the related transaction. Gains and losses on the currency component of interest rate and currency swap contracts, which were entered into to hedge investments in certain foreign subsidiaries and foreign equity affiliates, were not included in the income statement, but were shown in accumulated other comprehensive income. The interest component of these contracts was accounted for similarly to other interest rate swap agreements. Gains and losses on terminated interest rate swap agreements were amortized into income over the remaining life of the debt obligation or the remaining life of the original swap, if shorter. The accounting for terminated interest rate swap agreements did not change with the implementation of SFAS No. 133.

Prior to 1 October 2000 forward exchange and option combination contracts used to hedge firm commitments and purchased foreign currency options used to hedge firm commitments and certain highly anticipated cash flows were designated as, and effective as, hedges. Gains and losses from these agreements were deferred and reflected as adjustments of the related foreign currency transactions. Gains and losses on terminated contracts, for which hedge criteria were met, were deferred and recognized as adjustments of the related foreign currency transactions. Gains and losses on forward exchange contracts used to hedge the value of investments in subsidiaries and equity affiliates were included in accumulated other comprehensive income. Contracts that were not designated as hedges were marked to market, and the gains and losses from changes in market value of these contracts were included in the income statement.

## Foreign Currency

The value of the U.S. dollar rises and falls day to day on foreign currency exchanges. Since the company does business in many foreign countries, these fluctuations affect the company's financial position and results of operations.

Generally, foreign subsidiaries translate their assets and liabilities into U.S. dollars at current exchange rates--that is, the rates in effect at the end of the fiscal period. The gains or losses that result from this process are shown in accumulated other comprehensive income in the shareholders' equity section of the balance sheet.

The revenue and expense accounts of foreign subsidiaries are translated into U.S. dollars at the average exchange rates that prevailed during the period. Therefore, the U.S. dollar value of these items on the income statement fluctuates from period to period, depending on the value of the dollar against foreign currencies. Some transactions of the company and its subsidiaries are made in currencies different from their own. Gains and losses from these foreign currency transactions are generally included in income as they occur.

## Environmental Expenditures

Accruals for investigatory and noncapital remediation costs are recorded when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. Remediation costs are capitalized if the costs improve the company's property as compared with the condition of the property when originally constructed or acquired or if the costs prevent environmental contamination from future operations. Costs to operate and maintain the capitalized facilities are expensed as incurred.

The measurement of environmental liabilities is based on an evaluation of currently available facts with respect to each individual site and considers factors such as existing technology, presently enacted laws and regulations, and prior experience in remediation of contaminated sites. These liabilities include costs related to other potentially responsible parties to the extent that the company has reason to believe such parties will not fully pay their proportionate share. They also do not take into account any claims for recoveries from insurance or third parties and are not discounted. As assessments and remediation progress at individual sites, these liabilities are reviewed periodically and adjusted to reflect additional technical and legal information that becomes available. Actual costs to be incurred at identified sites in future periods may vary from the estimates, given inherent uncertainties in evaluating environmental exposures. The accruals for environmental liabilities are reflected in the balance sheet primarily as part of other noncurrent liabilities.

## Income Taxes

The company accounts for income taxes under the liability method. Under this method, deferred tax liabilities and assets are recognized for the tax effects of temporary differences between the financial reporting and tax bases of assets and liabilities using enacted tax rates. A principal temporary difference results from the excess of tax depreciation over book depreciation because accelerated methods of depreciation and shorter useful lives are used for income tax purposes. The cumulative impact of a change in tax rates or regulations is included in income tax expense in the period that includes the enactment date.

## Cash and Cash Items

Cash and cash items include cash, time deposits, and certificates of deposit acquired with an original maturity of three months or less.

## Inventories

Inventories are stated at the lower of cost or market. The cost of chemical inventories and some gas and equipment inventories in the United States is determined using the last-in, first-out (LIFO) method. The cost of other inventories is principally determined using the first-in, first-out method (FIFO).

## Goodwill

When a company is acquired, the difference between the fair value of its net assets and the purchase price is goodwill. Goodwill is recorded as an asset on the balance sheet and is amortized into income over periods not exceeding 40 years. The company assesses the impairment of goodwill related to consolidated subsidiaries in accordance with SFAS No. 121. This statement requires the recognition of an impairment loss for an asset held for use when the estimate of undiscounted future cash flows expected to be generated by the asset is less than its carrying amount. Measurement of the impairment loss is based on the fair value of the asset, which is determined using valuation techniques such as the present value of expected future cash flows.

Shares in Trust
The company has established a trust, funded with Treasury Stock, to provide for a portion of future payments to employees under the company's existing compensation and benefit programs. Shares issued to the trust were valued at market price on the date of contribution and reflected as a reduction of shareholders' equity in the balance sheet. As shares are transferred from the trust to fund compensation and benefit obligations, this equity account is reduced based on the original cost of shares to the trust; the satisfaction of liabilities is based on the fair value of shares transferred; and the difference between the fair value of shares transferred and the original cost of shares to the trust is charged or credited to capital in excess of par value.

Estimates and Assumptions
The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

## 2 NEW ACCOUNTING STANDARDS

In June 2001, the Financial Accounting Standards Board (FASB) issued SFAS No. 141, "Business Combinations." SFAS No. 141 requires all business combinations be accounted for by the purchase method and adds disclosure requirements related to business combination transactions. SFAS No. 141 also establishes criteria for the recognition of intangible assets apart from goodwill. This Statement applies to all business combinations for which the acquisition date was 1 July 2001 or later. The company had no significant acquisitions during 2001. The company does not believe this Statement will have a material effect on the company's financial statements.

In June 2001, the FASB issued SFAS No. 142, "Goodwill and Other Intangible Assets." SFAS No. 142 addresses financial accounting and reporting for acquired goodwill and other intangible assets. The Statement provides that goodwill and some intangibles will no longer be amortized on a recurring basis. Goodwill and intangible assets with an indefinite life will be subject to an initial impairment test within six months of adoption of SFAS No. 142 and annually thereafter. The Statement also requires disclosure of certain information about goodwill and other intangible assets subsequent to their acquisition. The company adopted SFAS No. 142 as of the beginning of 2002. During 2001, total goodwill amortized was $\$ 16.6$. The company is evaluating the impact of adopting this Statement.

In June 2001, the FASB issued SFAS No. 143, "Accounting for Asset Retirement Obligations." The Statement addresses financial accounting and reporting for obligations associated with the retirement of tangible long-lived assets and associated asset retirement costs. The Statement requires that the fair value of a liability for an asset retirement obligation be recognized in the period in which it is incurred. The asset retirement obligations will be capitalized as part of the carrying amount of the long-lived asset. The Statement applies to legal obligations associated with the retirement of long-lived assets that result from the acquisition, construction, development, and normal operation of long-lived assets. The Statement is effective for years beginning after 15 June 2002, with earlier adoption permitted. The company is evaluating the impact of adopting this Statement.

In August 2001, the FASB issued SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets." The Statement supersedes SFAS No. 121,
"Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of." The Statement also supersedes Accounting Principles Board Opinion (APB) No. 30 provisions related to the accounting and reporting for the disposal of a segment of a business. This Statement establishes a single accounting model, based on the framework established in SFAS No. 121, for long-lived assets to be disposed of by sale. The Statement retains most of the requirements in SFAS No. 121 related to the recognition of impairment of long-lived assets to be held and used. The Statement is effective for fiscal years beginning after 15 December 2001, with earlier adoption encouraged. The company is evaluating the impact of adopting SFAS No. 144.

## 3 SPECIAL ITEMS

| Income/[Charges] | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Global cost reduction plans | \$[109.2] | \$[55.4] | \$[34.2] |
| - --------------------- |  |  |  |
| Litigation settlement | [6.0] | -- | -- |
|  |  |  |  |
| Sale of interest in |  |  |  |
| Cogeneration facilities | 101.6 | -- | -- |
| - ------------------ |  |  |  |
| Sale of Polyvinyl Alcohol |  |  |  |
| Business | -- | 126.8 | -- |
| - -------------------------- |  |  |  |
| Sale of Packaged Gas facilities | -- | 6.3 | -- |
| Formation of Polymer venture | -- | -- | 34.9 |
| ( |  |  |  |
| BOC transaction | -- | [730.4] | 7.0 |
| Chemicals facility closure |  |  |  |
| costs | -- | -- | [10.3] |
| --------------- | \$[13.6] | \$[652.7] | \$[2.6] |
| Total Before Tax | \$[13.6] | \$[652.7] | \$[2.6] |
| Total--After Tax | \$[6.4] | \$[408.4] | \$[.3] |
| Total--Diluted EPS | \$[.04] | \$[1.89] | \$- |

## Global Cost Reduction Plans

In 2001, the company recorded a charge of $\$ 109.2$ for the global cost reduction plan ( 2001 Plan). This charge includes $\$ 79.6$ for severance benefits and pension plan settlements, and $\$ 29.6$ for asset impairments and related restructuring charges. The company will eliminate 670 positions in the areas of manufacturing, engineering, distribution, and overheads. As of 30 September 2001, 132 positions have been eliminated, with completion of the 2001 Plan expected by 30 September 2002. The company decided to divest several small facilities, which required a write-down of the net book value to the estimated net realizable value. The net carrying value of the assets to be disposed of within one year is $\$ 11.1$ and $\$ 27.7$ in the gases and chemicals segments, respectively. The total charge of $\$ 109.2$ was reflected in the income statement as follows: cost of sales (\$26.9); selling and administrative (\$53.4); research and development (\$.7); and other expense (\$28.2).

In 2000, the company recorded a charge of $\$ 55.4$ for the global cost reduction plan ( 2000 Plan). The 2000 Plan included 450 position eliminations in the areas of manufacturing, engineering, distribution, and overheads, resulting in a charge of $\$ 47.9$ for severance benefits. The 2000 Plan was completed in 2001, with 416 positions eliminated and total expenses of $\$ 45.7$ incurred. A charge of $\$ 7.5$ was recognized for asset impairments related to the rationalization of three small facilities in Europe. The total charge of $\$ 55.4$ was reflected in the income statement as follows: cost of sales (\$20.6); selling and administrative (\$25.4); research and development (\$1.9); and other expense (\$7.5).

In 1999, the company recorded a charge of $\$ 34.2$ for the global cost reduction plan (1999 Plan). The 1999 Plan consisted of the elimination of 348 positions and was completed in 2000 essentially as planned. The charge of $\$ 34.2$ was reflected in the income statement as follows: cost of sales (\$15.3); selling and administrative (\$17.8); and research and development (\$1.1).

| Accrual for cost redu | Severance | Pension | Other [1] | Total |
| :---: | :---: | :---: | :---: | :---: |
| Balance, |  |  |  |  |
| 30 September 1998 | \$ -- | \$ -- | \$ -- | \$ |
| Provision | 34.2 | -- | -- | 34.2 |
| Cash expenditures | [19.8] | - | -- | [19.8] |
| Balance, |  |  |  |  |
| 30 September 1999 | \$ 14.4 | \$ -- | \$ -- | \$ 14.4 |
| Provision | 38.5 | 9.4 | 7.5 | 55.4 |
| Cash expenditures | [29.4] | -- | -- | [29.4] |
| Noncash charges | -- | [9.4] | [7.5] | [16.9] |
| Balance, |  |  |  |  |
| 30 September 2000 | \$23.5 | \$ -- | \$ - | \$ 23.5 |
| Provision | 57.6 | 22.0 | 29.6 | 109.2 |
| Cash expenditures | [29.8] | -- | [4.3] | [34.1] |
| Noncash charges | -- | [22.0] | [23.8] | [45.8] |
| Reverse 2000 Plan Balance | [2.2] | -- | -- | [2.2] |
| Balance, |  |  |  |  |
| 30 September 2001 | \$ 49.1 | \$ -- | \$ 1.5 | \$50.6 |

[1] Asset impairments and related expenses are included in the other category.
Sale of Interest in Cogeneration Facilities
In the fourth quarter of 2001, the company sold its $50 \%$ interest in two cogeneration facilities located in Cambria County, Pennsylvania and Orlando, Florida. The Cambria facility uses a coal by-product to generate electricity, with power generation capability of 88 megawatts. The Orlando facility is a natural gas-fired power plant with power generation capability of 115 megawatts. These investments contributed approximately $\$ 11, \$ 12$, and $\$ 10$ to net income in 2001, 2000, and 1999, respectively.

Sale of Polyvinyl Alcohol Business
In September 2000, the company completed the sale of its polyvinyl alcohol business for $\$ 326.0$. Included in the sale were working capital and production facilities at Pasadena, Texas and Calvert City, Kentucky. The facilities produce 200 million pounds of polyvinyl alcohol per year and employ 200 people. Sales in 2000 were \$194.2, with essentially no operating profit contribution.

## Formation of Polymer Venture

In October 1998, the company and Wacker-Chemie GmbH formed two joint ventures to consolidate their respective positions in polymer emulsions and redispersible powder polymers businesses. The company has a $65 \%$ interest in the polymer emulsions joint venture and a $20 \%$ interest in the redispersible powders venture. The accounting for the polymer emulsions venture as a business combination resulted in the partial sale of assets.

## BOC Transaction

The company, The BOC Group plc (BOC), and L'Air Liquide S.A. (Air Liquide) of France announced in July 1999 that they had agreed to the terms of a recommended offer for the share capital of BOC. In May 2000, the company and Air Liquide announced that the Federal Trade Commission had indicated it would not approve the offer by 12 May 2000, the date on which the period for satisfying the preconditions to the offer would expire, and the offer was not extended beyond 12 May 2000. The charge of $\$ 730.4$ included $\$ 594.6$ for losses on purchased currency option and forward exchange contracts entered into to hedge the currency exposure of the transaction. The remaining charge of $\$ 135.8$ consisted of the BOC fee paid and transaction expenses.

## 4 ACQUISITIONS

## Korea Industrial Gases Ltd.

Acquisitions in 2000, totaling \$194.8, principally included the purchase in December 1999 of the remaining $51.1 \%$ of the shares of Korea Industrial Gases Ltd. (KIG). KIG is the largest industrial gas company in Korea. Since 1980, the company had a joint venture arrangement with KIG. As a result of the purchase of the remaining outstanding shares, KIG is a wholly owned subsidiary of Air

Products. KIG is a full-service industrial gas company with a broad product portfolio supplying specialty gases, liquid/bulk gases, pipeline/on-site gases, and noncryogenic units to the Korean marketplace. Consolidated sales in 2000 included \$121.0 from KIG.

5 FINANCIAL INSTRUMENTS
Currency Risk Management
The company does business in many foreign countries; therefore, its earnings, cash flows, and financial position are exposed to foreign currency risk from foreign currency denominated transactions and net investments in foreign operations. These items are denominated in various foreign currencies.

It is the policy of the company to minimize its cash flow exposure to adverse changes in currency and exchange rates. This is accomplished by identifying and evaluating the risk that the company's cash flows will decline in value due to changes in exchange rates, and by determining the appropriate strategies necessary to manage such exposures. The company's objective is to maintain economically balanced currency risk management strategies that provide adequate downside protection.

The company enters into a variety of foreign exchange contracts, including forward, option combination, and purchased option contracts, to hedge its exposure to fluctuations in foreign currency exchange rates. These agreements generally involve the exchange of one currency for a second currency at some future date.

The company enters into foreign exchange contracts, including forward, option combination, and purchased option contracts to reduce the cash flow exposure to foreign currency fluctuations associated with certain monetary assets and liabilities, as well as highly anticipated cash flows and certain firm commitments. Examples of such exposures are the purchase of plant and equipment and export sales transactions. Forward exchange contracts are also used to hedge the value of investments in certain foreign subsidiaries and affiliates by creating a liability in a currency in which the company has a net equity position. The company also uses foreign currency denominated debt to hedge certain net investments in foreign operations.

Certain forward exchange contracts entered into by the company are not designated as hedging instruments. Contracts used to hedge the exposure to foreign currency fluctuations associated with certain monetary assets and liabilities are not designated as hedging instruments, and changes in the fair value of these items are recorded in earnings to offset the foreign exchange gains and losses of the monetary assets and liabilities. Other forward exchange contracts may be used to economically hedge foreign currency exposures which are not designated as hedging instruments due to the immaterial amount of the underlying hedged exposures. Changes in the fair value of these contracts are also recorded in earnings.

Debt Portfolio Management
It is the policy of the company to identify on a continuing basis the need for debt capital and evaluate the financial risks inherent in funding the company with debt capital. Reflecting the result of this ongoing review, the debt portfolio and hedging program of the company is managed with the objectives and intent to (1) reduce funding risk with respect to borrowings made or to be made by the company to preserve the company's access to debt capital and provide debt capital as required for funding and liquidity purposes, and (2) reduce the aggregate interest rate risk of the debt portfolio in accordance with certain debt management parameters.

The company enters into interest rate swap agreements to change the fixed/variable interest rate mix of the debt portfolio in order to maintain the percentage of fixed- and variable-rate debt within the parameters set by management. In accordance with these parameters, the agreements are used to reduce interest rate risks and costs inherent in the company's debt portfolio. The notional amount of these agreements is equal to or less than the designated debt instrument being hedged. The variable rate bases of the swap instruments and the debt to which they are designated are the same. The company will not enter into any interest rate swap contracts which lever a move in interest rates on a greater than one-to-one basis. The company currently has one outstanding agreement to effectively convert fixed-rate debt to variable-rate debt, which is indexed to LIBOR.

The company is also party to interest rate and currency swap contracts. These contracts entail both the exchange of fixed- and floating-rate interest payments periodically over the life of the agreement and the exchange of one currency for another currency at inception and at a specified future date. These contracts effectively convert the currency denomination of a debt instrument into another currency in which the company has a net equity position while changing the interest rate characteristics of the instrument. The contracts are used to hedge intercompany and third-party borrowing transactions.

## Fair Value Hedges

For the year ended 30 September 2001, there was no gain or loss recognized in earnings resulting from hedge ineffectiveness or from excluding a portion of derivative instruments' gain or loss from the assessment of hedge effectiveness related to derivatives designated as fair value hedges. Also, there was no gain or loss recognized in earnings as a result of a hedged firm commitment no longer qualifying as a fair value hedge.

## Cash Flow Hedges

Sales for the year ended 30 September 2001 included $\$ 1.8$ of net losses related to the volatility value component of purchased foreign currency options used to hedge certain highly anticipated export sales transactions. Other income for the year ended 30 September 2001 included $\$ .2$ of net losses related to the volatility value component of purchased foreign currency options used to hedge inter-
company royalty income. Prior to 1 May 2001, the volatility value component of these cash flow hedges was excluded from the assessment of hedge effectiveness. There was no other hedge ineffectiveness related to cash flow hedges during the period to be recognized in earnings.

Changes in the fair value of derivatives qualifying as cash flow hedges are reported in accumulated other comprehensive income. The gains and losses are reclassified into earnings as the underlying hedged item affects earnings, such as when the hedged export sale occurs. It is expected that $\$ .4$ of net gains in accumulated other comprehensive income will be reclassified into earnings within the next twelve months. Of this amount, $\$ .3$ loss relates to forward and option contracts and $\$ .7$ gain relates to interest rate and currency swaps. The amount reclassified from accumulated other comprehensive income into earnings as a result of the discontinuance of foreign currency cash flow hedges due to the probability of the original forecasted transactions not occurring was not material.

As of 30 September 2001, the maximum length of time over which the company is hedging its exposure to the variability in future cash flows for forecasted transactions is eighteen months.

## Hedges of Net Investments in Foreign Operations

For the year ended 30 September 2001, $\$ 20.0$ of net losses related to hedges of net investments in foreign operations was included in accumulated other comprehensive income.

Fair Value of Financial Instruments
Summarized below are the carrying values and fair values of the company's financial instruments as of 30 September 2001 and 2000.

The fair value of the company's debt, interest rate swap agreements, forward exchange contracts, option combination contracts, and purchased foreign currency options is based on estimates using standard pricing models that take into account the present value of future cash flows as of the balance sheet date. The computation of fair values of these instruments is generally performed by the company.

The fair value of other investments is based principally on quoted market prices. The carrying amounts reported in the balance sheet for cash and cash items, accrued liabilities, accrued income taxes, and short-term borrowings approximate fair value due to the short-term nature of these instruments. Accordingly, these items have been excluded from the following table:

|  | 2001 | 2001 | 2000 | 2000 |
| :---: | :---: | :---: | :---: | :---: |
|  | Carrying | Fair | Carrying | Fair |
| 30 September | Value | Value | Value | Value |
| Assets |  |  |  |  |
| Other Investments | \$52.1 | \$52.1 | \$34.7 | \$34.7 |
| Currency option contracts | 1.6 | 1.6 | -- | -- |
| Interest rate swap agreements | 16.8 | 16.8 | 33.4 | 33.5 |
| Forward exchange contracts | 25.5 | 25.5 | 47.2 | 29.7 |

Liabilities
Long-term debt,
Including
current portion \$2,222.0 \$2,344.4 \$2,795.3 \$2,925.2

## 6 INVENTORIES

The components of inventories are as follows:

| 30 September | 2001 | 2000 |
| :---: | :---: | :---: |
| Inventories at FIFO cost: |  |  |
| Finished goods | \$282.7 | \$244.5 |
| Work in process | 35.8 | 39.7 |
| Raw materials and supplies | 128.0 | 131.9 |
|  | 446.5 | 416.1 |
| Less excess of FIFO cost over LIFO cost | [36.0] | [27.3] |
|  | \$410.5 | \$388.8 |

Inventories valued using the LIFO method comprised $44.6 \%$ and $43.2 \%$ of
consolidated inventories before LIFO adjustment at 30 September 2001 and 2000, respectively. Liquidation of prior years' LIFO inventory layers in 2001, 2000, and 1999 did not materially affect cost of sales in any of these years.

## 7 SUMMARIZED FINANCIAL INFORMATION OF EQUITY AFFILIATES

The following table presents summarized financial information on a combined $100 \%$ basis of the principal companies accounted for by the equity method. Amounts presented include the accounts of the following equity affiliates: Stockton CoGen Company (50\%); Pure Air on the Lake, L.P. (50\%); Bangkok Cogeneration Company Limited (48.8\%); Daido Air Products Electronics, Inc. (49\%); Sapio Produzione Idrogeno Ossigeno S.r.L. (49\%); INFRA Group (40\%); San Fu Chemicals (48.1\%) ; Air Products South Africa (50\%); Bangkok Industrial Gases Company Ltd. (50.6\%) ; INOX Air Products Limited (48.9\%); APP GmbH in WPS GmbH \& CoKG (20\%); DuPont Air Products Nanomaterials, LLC (50\%); Island Pipeline Gas (33\%);

Tyczka Industrie-Gases GmbH (50\%); and principally other industrial gas producers. The company sold its $50 \%$ interest in Cambria CoGen Company and Orlando CoGen Limited in the fourth quarter of 2001.

|  | 2001 | 2000 |
| :---: | :---: | :---: |
| Current assets | \$ 833.9 | \$ 739.3 |
| Noncurrent assets | 1,391.0 | 1,508.1 |
| Current liabilities | 605.1 | 506.9 |
| Noncurrent liabilities | 620.3 | 714.8 |
| Net sales | 1,690.2 | 1,681.1 |
| Sales less cost of sales | 611.5 | 565.6 |
| Net income | 219.4 | 245.7 |

The company's share of income of all equity affiliates for 2001, 2000, and 1999 was $\$ 91.1, \$ 99.6$, and $\$ 83.7$, respectively. These amounts exclude \$9.9, \$12.0, and $\$ 22.2$ of related net expenses incurred by the company. Dividends received from equity affiliates were $\$ 44.9$, $\$ 49.7$, and $\$ 36.1$ in 2001, 2000, and 1999, respectively.

The investment in net assets of and advances to equity affiliates at 30 September 2001 and 2000 included investment in foreign affiliates of $\$ 465.9$ and \$442.4, respectively.

As of 30 September 2001 and 2000, the amount of investment in companies accounted for by the equity method included goodwill in the amount of $\$ 77.2$ and $\$ 76.2$, respectively. The goodwill is being amortized into income over periods not exceeding 40 years.

## 8 PLANT AND EQUIPMENT

The major classes of plant and equipment, at cost, are as follows:

| 30 September | 2001 | 2000 |
| :---: | :---: | :---: |
| Land | \$ 130.0 | \$ 144.0 |
| Buildings | 682.4 | 668.8 |
| Gas generating and chemical facilities, machinery and equipment | 8,996.6 | 9,031.0 |
| Construction in progress | 417.5 | 467.1 |
|  | \$10, 226.5 | \$10,310.9 |

9 LONG-TERM DEBT
The following table shows the company's outstanding debt at the end of 2001 and 2000, excluding any portion of the debt required to be repaid within a year:

| 30 September | Maturities | 2001 | 2000 |
| :---: | :---: | :---: | :---: |
| Payable in U.S. Dollars: |  |  |  |
| Debentures: [Effective Rate] |  |  |  |
| 8.35\% |  | \$ | \$ 100.0 |
| 8.50\% [8.55\%] | 2006 | 100.0 | 100.0 |
| 8.75\% [8.95\%] | 2021 | 18.4 | 100.0 |
| Notes: [Effective Rate] |  |  |  |
| 7.375\% [7.54\%] | 2005 | 150.0 | 150.0 |
| 6.25\% [6.30\%] | 2003 | 100.0 | 100.0 |
| Medium-Term Notes: |  |  |  |
| Weighted Average Rate |  |  |  |
| Series D 6.8\% | 2003 to 2016 | 223.0 | 400.0 |
| Series E 7.6\% | 2008 to 2026 | 17.4 | 250.0 |
| Series F 6.5\% | 2007 to 2010 | 133.0 | 215.0 |
| Other 3.0\% | 2003 to 2036 | 251.1 | 283.4 |

Payable in other currencies:


Capital lease obligations:

| United States $7.3 \%$ | 2003 to 2006 |
| :---: | ---: |

Various debt agreements to which the company is a party include certain financial covenants and other restrictions, including restrictions pertaining to the ability to create property liens and enter into certain sale and leaseback transactions. The company is in compliance with all financial debt covenants.

The company has obtained the commitment of a number of commercial banks to lend money at market rates whenever needed by the company. These committed lines of credit also are used to support the issuance of commercial paper. In January 2001, the company amended and restated its $\$ 600$ committed, multicurrency, syndicated credit facility, which matures in January 2004. No borrowings were outstanding under these commitments at year end. At 30 September 2001, foreign subsidiaries had additional committed credit lines of $\$ 72.7$ million, $\$ 16.4$ of which was borrowed and outstanding.

Maturities of long-term debt in each of the next five years are as follows: $\$ 194.5$ in 2002, \$204.8 in 2003, \$78.0 in 2004, \$682.9 in 2005, and \$200.1 in 2006.

In August 2001, the company retired $\$ 459.6$ principal amount of various medium-term notes--series $D, E$, and $F$ as well as $\$ 81.5$ of the $8.75 \%$ debenture for an aggregate principal retirement of $\$ 541.1$. An extraordinary loss of $\$ 47.3$ was incurred as a result of the early retirement of debt, consisting principally of retirement premiums, net of a tax benefit of $\$ 28.5$.

## 10 LEASES

Capital leases, primarily for machinery and equipment, are included with owned plant and equipment on the balance sheet in the amount of $\$ 59.3$ and $\$ 60.3$ at the end of 2001 and 2000, respectively. Related amounts of accumulated depreciation are $\$ 32.2$ and $\$ 27.6$, respectively.

Operating leases, including month-to-month agreements, cost the company $\$ 91.0$ in 2001, \$89.7 in 2000, and \$87.7 in 1999.

During 2001, the company sold and leased back certain U.S. cryogenic vessel equipment for $\$ 301.9$. This operating lease has a five-year term with purchase and renewal options. The company recognized a deferred gain of $\$ 134.7$ on this sale leaseback. This amount was included in other noncurrent liabilities.

At 30 September 2001, minimum payments due under leases are as follows:

|  | Capital Leases | Operating Leases |
| :---: | :---: | :---: |
| 2002 | \$11.8 | \$ 46.2 |
| 2003 | 10.5 | 35.5 |
| 2004 | 8.1 | 30.8 |
| 2005 | 18.3 | 25.8 |
| 2006 | 4.3 | 23.7 |
| 2007 and thereafter | -- | 67.8 |
|  | \$53.0 | \$229.8 |

The present value of the above future capital lease payments is included in the liabilty section of the balance sheet. At the end of 2001, $\$ 9.8$ was classified as current and $\$ 36.2$ as long-term.

## 11 CAPITAL STOCK

The authorized Capital Stock consists of 25 million preferred shares with a par value of $\$ 1$ per share, none of which was outstanding at 30 September 2001, and 300 million shares of Common Stock with a par value of $\$ 1$ per share.

The company established a trust to fund a portion of future payments to employees under existing compensation and benefit programs. The trust, which is administered by an independent trustee, was initially funded with 20 million shares of Treasury Stock. It will not increase or alter the amount of benefits or compensation that is paid under existing plans. The establishment of the trust does not have an effect on earnings per share or return on average shareholders' equity.

In 1998, the Board of Directors adopted a shareholder rights plan, under which common stockholders receive an associated right to purchase one one-thousandth $(1 / 1,000)$ of a share of Series A Participating Cumulative Preferred Stock, par value $\$ 1$ per share. Such rights are exercisable at a price of $\$ 345$ and only in the event of certain changes or potential changes in the beneficial ownership of the company's Common Stock, which could result in a person or group owning more than $15 \%$ of the outstanding Common Stock ("Acquiring Person"). If such rights become exercisable, the rights would entitle the stockholder (other than the Acquiring Person) to purchase for the purchase price (i) that number of one one-thousandths of a share of Series A Participating Cumulative Preferred Stock or (ii) that number of shares of common stock of the surviving company (in the event of a business combination with the Acquiring Person or asset purchase of $50 \%$ or more of the company's assets by the Acquiring Person), with a value equal to two times the purchase price of the right. The rights will expire on 19 March 2008 unless earlier redeemed by the company.

## Stock Options

Under various plans, executives, employees, and outside directors receive awards of options to purchase common stock. Under all awards, the terms are fixed at the grant date. Generally, the exercise price equals the market price of the company's stock on the date of the grant, and the option's maximum term is 10 years. In October 1998, the company granted 697,300 premium-priced stock options in addition to the fair market value stock options. Options under the plans generally vest from one to three years. Options issued to directors are exercisable six months after the grant date.

The following table reflects activity under all stock option plans:

|  | Number of Shares | Average Price |
| :---: | :---: | :---: |
| Outstanding at 30 September 1998 | 17,566,742 | \$28.61 |
| Granted | 2,664,400 | 32.27 |
| Grand |  |  |
| Exercised | [1, 773, 003] | 19.30 |
| Forfeited | [264, 433] | 35.46 |
| Forfeited |  |  |
| Outstanding at 30 September 1999 | 18,193,706 | \$29.95 |
| Granted | 4,264,600 | 28.79 |
| - ------ |  |  |
| Exercised | [1, 062, 053] | 14.56 |
| Forfeited | [250, 788] | 35.19 |
| -------------------------- |  |  |
| Outstanding at 30 September 2000 | 21,145,465 | \$30.43 |
| ------- | 4,608,250 | 35.83 |
|  |  |  |
| Exercised | [3, 036, 415] | 24.93 |
| Forfeited | [288,148] | 35.74 |
| Outstanding at 30 September 2001 | 22,429,152 | \$32.03 |
|  |  |  |
| Exercisable at end of year | 13,786,187 |  |
| Available for future grant at end | 9,355,133 |  |

The following table summarizes information about options outstanding at 30 September 2001:

Options Outstanding

|  | Weighted |  |  |
| :---: | :---: | :---: | :---: |
|  |  | Average | Weighted |
| Range of |  | Remaining | Average |
| Exercise | Number | Contractual | Exercise |
| Prices | Outstanding | Life [Years] | Price |
| 16.92-23.12 | 2,724,162 | 3.17 | \$21.67 |
| 26.03-29.47 | 9,756,100 | 7.37 | 28.28 |
| 30.01-41.69 | 9,948,890 | 8.45 | 38.55 |

Options Exercisable

| Range of |  | Weighted Average |
| :---: | :---: | :---: |
| Exercise | Number | Exercise |
| Prices | Outstanding | Price |
| 16.92-23.12 | 2,724,162 | \$21.67 |
| 26.03-29.47 | 5,707,769 | 27.85 |
| 30.01-41.69 | 5,354,256 | 40.85 |

## Pro Forma Information

The company applies APB Opinion No. 25, "Accounting for Stock Issued to
Employees," and related interpretations in accounting for its stock option plans. Therefore, no compensation expense has been recognized for the stock option plans. SFAS No. 123 requires the company to disclose pro forma net income and pro forma earnings per share amounts as if compensation expense were recognized for options granted after 1995. Using this approach, net income and earnings per share would have been reduced to the pro forma amounts indicated in the table:

| As reported | \$465.6 | \$124.2 | \$450. 5 |
| :---: | :---: | :---: | :---: |
| Pro forma | 435.5 | 98.3 | 428.7 |

Basic earnings per share

| As reported | \$2.17 | \$. 58 | \$2.12 |
| :---: | :---: | :---: | :---: |
| Pro forma | 2.03 | . 46 | 2.02 |

Diluted earnings per share

| As reported | \$2.12 | \$. 57 | \$2.09 |
| :---: | :---: | :---: | :---: |
| Pro forma | 2.00 | . 45 | 1.98 |

For disclosure purposes, the fair value of each stock option granted is estimated on the date of grant using the Black-Scholes option-pricing model with the following weighted average of assumptions:

|  | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Dividend yield | 2.1\% | 2. $0 \%$ | 2. $0 \%$ |
| Expected volatility | 29.2\% | 28.4\% | 21.1\% |
| Risk-free interest rate | 5.9\% | 6. $2 \%$ | 4.4\% |
| Expected life [years] | 7.6 | 6.6 | 7.2 |

The Black-Scholes option-pricing model was developed for use in estimating the fair value of traded options that have no vesting restrictions and are fully transferable. In addition, option-pricing models require the input of subjective assumptions, including the expected stock price volatility. Because the company's options have characteristics different from those of traded options, in the opinion of management, the existing models do not necessarily provide a reliable single measure of the fair value of its options.

The company granted deferred stock units identified as performance shares to executive officers and other key employees. These awards provide for the issuance of Common Stock based on certain management objectives achieved by the end of the performance period. The performance period is the one- or two-year period following the grant date. The performance shares are payable either at the end of the performance period or after retirement. The number of shares outstanding for these awards was 493,249 and 360,585 share units as of 30 September 2001 and 2000, respectively. Compensation expense is recognized over the vesting period.

Prior to the issuance of performance shares, the company granted deferred stock units as career share awards in 1992 through 1997 to certain executive officers and other key employees. Career shares are deferred stock units payable in shares of stock after retirement. Career share awards equivalent to 698,555 and 777,482 shares of stock were outstanding at the end of 2001 and 2000, respectively. Compensation expense is recognized over the vesting period.

Deferred stock units equivalent to 492,245 and 692,808 shares of stock were outstanding at the end of 2001 and 2000, respectively. Compensation expense is generally recognized over the four-year deferral period applicable to the awards.

13 EARNINGS PER SHARE
The calculation of basic and diluted earnings per share is as follows:


The following table shows the components of the provision for income taxes before extraordinary item:

|  | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Federal: |  |  |  |
| Current | \$123.7 | \$[31.3] | \$117.5 |
| - |  |  |  |
| Deferred | 27.9 | 3.6 | 38.8 |
|  | 151.6 | [27.7] | 156.3 |
| State: |  |  |  |
| Current | 2.4 | 3.0 | 6.3 |
| Deferred | 14.9 | [14.7] | 1.6 |
| Impact of law/rate change | -- | -- | [1.9] |
|  | 17.3 | [11.7] | 6.0 |
| Foreign: |  |  |  |
| Current | 53.9 | 20.1 | 20.8 |
| Deferred | [3.8] | 5.6 | 20.3 |
|  | 50.1 | 25.7 | 41.1 |
|  | \$219.0 | \$[13.7] | \$203.4 |

The significant components of deferred tax assets and liabilities are as follows:

| 30 September | 2001 | 2000 |
| :---: | :---: | :---: |
| Gross Deferred Tax Assets: |  |  |
| Pension and other compensation accruals | \$ 160.0 | \$142.0 |
| Tax loss and investment tax credit |  |  |
|  |  |  |
| - |  |  |
| Reserves and accruals | 14.3 | 18.9 |
| Foreign currency translation adjustment | 59.7 | . 1 |
| - ------------------------------------ |  |  |
| Postretirement benefits | 27.9 | 27.8 |
| Inventory | 16.0 | 18.4 |
| - ---- |  |  |
| Other | 68.8 | 70.1 |
| Valuation allowance | [9.5] | [6.2] |
| ------------ |  |  |
| Deferred tax assets | \$ 371.9 | \$306.0 |
|  |  |  |
| Gross Deferred Tax Liabilities: |  |  |
| Plant and equipment | \$ 787.1 | \$752.0 |
|  |  |  |
| Investment in partnerships | 96.4 | 84.6 |
| Employee benefit plans | 51.3 | 54.4 |
| Currency gains | 10.8 | 16.9 |
|  |  |  |
| Construction contract accounting methods | 3.2 | 5.0 |
| Unrealized gain on cost investment | 12.1 | 8.7 |
| ---- | 101.7 | 78.0 |
| - |  |  |
| Deferred tax liabilities | \$1,062.6 | \$999.6 |
| Net deferred income tax liability | \$ 690.7 | \$693.6 |

Net current deferred tax assets of $\$ 53.6$ and net noncurrent deferred tax assets of $\$ 34.1$ are included in other current assets and other noncurrent assets at 30 September 2001, respectively. Net current deferred tax assets of $\$ 51.5$ and net noncurrent deferred tax assets of $\$ 36.7$ are included in other current assets and other noncurrent assets at 30 September 2000.

Foreign and state operating loss carryforwards as of 30 September 2001 were $\$ 56.2$ and \$9.2, respectively. The foreign losses have an unlimited carryover
period. State operating loss carryforwards are available through 2020. Foreign capital loss carryforwards were $\$ 10.1$ on 30 September 2001 and have an unlimited carryover period.

| The valuation allowance as of 30 September 2001 primarily relates to the tax loss carryforwards referenced above. If events warrant the reversal of the $\$ 9.5$ valuation allowance, it would result in a reduction of tax expense. |  |  |  |
| :---: | :---: | :---: | :---: |
| Major differences between the federal statutory rate and the effective tax rate are: |  |  |  |
| [Percent of Income Before Taxes] | 2001 | 2000 | 1999 |
| United States federal statutory rate | 35.0\% | 35.0\% | 35.0\% |
| State taxes, net of federal tax benefit | $1.6$ | [3.5] | 2.1 |
| Income from equity affiliates | [3.0] | [22.1] | [3.0] |
| Foreign tax credits and refunds on dividends received from foreign affiliates | . 2 | [8.3] | . 6 |
| Export tax benefits | [.8] | [4.7] | [1.4] |
| Investment tax credits | -- | [.5] | [.1] |
| Restructuring of operations | [1.4] | [6.7] |  |
| Other | [1.7] | [1.6] | [2.1] |
| Effective tax rate after |  |  |  |
| Minority interest | [.2] | . 8 | [.7] |
| Effective tax rate | 29.7\% | [11.6\%] | 30.4\% |

The following table summarizes the income of U.S. and foreign operations, before taxes and minority interest:

|  | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Income From Consolidated Operations: |  |  |  |
| United States | \$491. 8 | \$[145.2] | \$433. 8 |
| Foreign | 154.1 | 163.7 | 151.5 |
| Income from equity affiliates | 91.1 | 99.6 | 83.7 |
|  | \$737.0 | \$ 118.1 | \$669. 0 |

The company does not pay or record U.S. income taxes on the undistributed earnings of its foreign subsidiaries as long as those earnings are permanently reinvested in the companies that produced them. These cumulative undistributed earnings are included in consolidated retained earnings on the balance sheet and amounted to $\$ 915.5$ at the end of 2001. An estimated $\$ 207.5$ in U.S. income and foreign withholding taxes would be due if these earnings were remitted as dividends after payment of all deferred taxes.

## 15 PENSION AND OTHER POSTRETIREMENT BENEFITS

The following table shows reconciliations of the domestic pension plans and other postretirement plan benefits as of 30 September 2001 and 2000. The foreign pension plan information is as of 30 June 2001 and 2000:


During 2001 and 2000, the company incurred charges for special termination benefits as part of enhanced benefit programs offered under the global cost reduction plans.

For measurement purposes, a $7.5 \%$ annual rate of increase in the per capita cost of covered health care benefits was assumed for 2002. The rate was assumed to decrease gradually to 5.5\% for 2006 and thereafter.

|  | Pension Benefits |  |  |  |  | Other Benefits |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2001 | 2000 | 1999 | 2001 | 2000 | 1999 |
| Components of Net Periodic Benefit Cost |  |  |  |  |  |  |  |
| Service cost | \$ | 42.9 | \$ 44.5 | \$ 49.2 | \$ 4.1 | \$ 4.9 | \$4.9 |
| Interest cost |  | 96.3 | 89.7 | 84.7 | 4.9 | 5.6 | 4.3 |
| Expected return on plan assets |  | 102.9] | [95.8] | [93.9] | -- | -- | -- |
| Prior service cost amortization |  | 2.7 | 2.4 | 2.3 | [.1] | [.1] | [.1] |
| Actuarial [gain]/loss amortization |  | 2.2 | 3.2 | 15.2 | [1.2] | -- | -- |
| Transition amount amortization |  | [3.5] | [3.5] | [3.8] | -- | -- | -- |
| Settlement charge |  | 9.5 | -- | -- | -- | -- | -- |
| Special termination benefit |  | 12.5 | 10.7 | -- | . 9 | -- | -- |
| Net periodic benefit cost | \$ | 59.7 | \$ 51.2 | \$ 53.7 | \$ 8.6 | \$10.4 | \$9.1 |

The projected benefit obligation, accumulated benefit obligation, and fair value of plan assets for the pension plans with accumulated benefit obligations in excess of plans' assets were \$1,120.9, \$908.0, and \$714.2, respectively, as of 30 September 2001, and $\$ 96.0, \$ 72.3$, and $\$ 1.5$, respectively, as of 30 September 2000.

The company has two nonpension postretirement benefit plans. Health care benefits are contributory, with contributions adjusted periodically; the life insurance plan is noncontributory. The effect of a change in the health care trend rate is slightly tempered by a cap on average retiree medical cost. A one percentage point change in the assumed health care cost trend rate would have the following effects:

|  | 1 Percentage Point increase | 1 Percentage Point decrease |
| :---: | :---: | :---: |
| Effect on total of service and interest cost | \$ . 4 | \$ [.5] |
| Effect on the postretirementbenefit obligation | \$3.0 | \$[3.3] |

In addition to the above plans, U.S. employees are eligible to contribute to a 401(k) plan. The company matches a portion of these contributions. Contributions charged to income for this plan for 2001, 2000, and 1999 were $\$ 14.3$, $\$ 14.1$, and \$13.8, respectively.

## 16 OTHER COMMITMENTS AND CONTINGENCIES

Cogeneration projects in which the company, through equity affiliates, beneficially owns 48.8\% (Map Ta Phut, Thailand) and 50\% (Rotterdam, the Netherlands) burn natural gas to produce electricity and steam. Specific equity support agreements related to the financings of the two projects obligate the company to contribute equity up to a cumulative total for the two projects of \$15 under certain circumstances.

In addition, the company has guaranteed repayment of borrowings of certain foreign equity affiliates. At 30 September 2001, these guarantees totaled approximately $\$ 67$.

In September 2001, the company entered into an operating lease of cryogenic vessel equipment which included a residual value guarantee not to exceed $\$ 256$ The probability of incurring a material loss under this guarantee is remote.

The company has accrued for certain environmental investigatory and noncapital remediation costs consistent with the policy set forth in Note 1. The potential exposure for such costs is estimated to range from $\$ 9$ to a reasonably possible upper exposure of $\$ 19$. The balance sheet at 30 September 2001 includes an accrual of $\$ 14.3$. The company does not expect that any sums it may have to pay in connection with these environmental matters would have a materially adverse effect on its consolidated financial position or results of operations in any one year.

The company in the normal course of business has commitments, lawsuits,
contingent liabilities, and claims. However, the company does not expect that any sum it may have to pay in connection with these matters will have a materially adverse effect on its consolidated financial position or results of operations.

| 17 SUPPLEMENTAL INFORMATION |  |  |
| :---: | :---: | :---: |
| Payables, Trade and Other |  |  |
| 30 September | 2001 | 2000 |
| Accounts payable, trade | \$408.1 | \$464.5 |
| ------------------------------- |  |  |
| Outstanding checks payable in excess of certain cash balances | 37.2 | 48.1 |
| of certain cash balances | 37.2 | 48.1 |
| Customer advances | 66.9 | 65.8 |
|  | \$512. 2 | \$578.4 |
| Accrued liabilities |  |  |
| 30 September | 2001 | 2000 |
| Accrued payroll and employee benefits | \$111.7 | \$116.5 |
| Accrued interest expense | 42.2 | 77.3 |
| , |  |  |
| Other accrued liabilities | 187.7 | 163.4 |
|  | \$341.6 | \$357. 2 |
| Short-term Borrowings |  |  |
| 30 September | 2001 | 2000 |
| -------- |  |  |
| Bank obligations | \$53.7 | \$104.5 |
| Commercial paper | 202.0 | 143.0 |
| ------ |  |  |
| Notes payable--other | -- | 2.2 |
|  | \$255.7 | \$249.7 |

The weighted average interest rate of short-term commercial paper outstanding as of 30 September 2001 and 2000 was $3.7 \%$ and $6.8 \%$, respectively

Accumulated Other Comprehensive Income [loss]

| 30 September | 2001 | 2000 |
| :---: | :---: | :---: |
| Gain on derivatives | \$ 1.8 | \$ |
| Unrealized gain on investment | 22.0 | 15.7 |
| Minimum pension liability adjustment | [12.2] | [2.7] |
| Cumulative translation adjustments | [464.1] | [420.8] |
|  | \$[452.5] | \$[407.8] |

Other Income, Net

|  | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Interest income | \$ 6.2 | \$ 4.1 | \$ 6.4 |
| Foreign exchange | -- | 6.9 | [3.0] |
| Gain [loss] on sale of assets and investments | . 1 | 13.4 | [3.7] |
| Amortization of intangibles | [19.4] | [17.9] | [18.6] |
| Miscellaneous | 18.6 | 21.9 | 38.6 |
|  | \$ 5.5 | \$28.4 | \$ 19.7 |

Additional Cash Flow Information
Cash paid for interest and taxes is as follows:

|  |  |
| :--- | :--- |
| Interest [net of amounts capitalized] | 2001 |

## Significant noncash transactions are as follows:

|  | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Capital lease additions | \$. 5 | \$4.9 | \$18.5 |
| Liabilities associated with acquisitions | -- | 24.4 | 7.4 |
| Exchange of assets | -- | -- | 19.5 |

This table summarizes the unaudited results of operations for each quarter of 2001 and 2000:

|  | First | Second | Third | Fourth |
| :---: | :---: | :---: | :---: | :---: |
| 2001 |  |  |  |  |
| Sales | \$1,441.3 | \$1,498.3 | \$1,415.9 | \$1,361.7 |
| Operating income | 227.5 | 164.2[a][b] | 215.4 | 138.3 [c] |
| Income before extraordinary item | 135.6 | 94.6[a][b] | 132.3 | 150.4 [c][d] |
| Net income | 135.6 | 94.6[a][b] | 132.3 | 103.1[c][d][e] |
| Basic earnings per share: |  |  |  |  |
| Income before extraordinary item | . 63 | . 44 | . 62 | . 70 |
| Net Income | . 63 | . 44 | . 62 | . 48 |
| Diluted earnings per share: |  |  |  |  |
| Income before extraordinary item | . 62 | . 43 [a][b] | . 60 |  |
| Net Income | . 62 | . 43 [a][b] | . 60 | . 47 [c][d][e] |
| Dividends per common share | . 19 | . 19 | . 20 | . 20 |
| Price per common share: high | 42.25 | 43.45 | 48.70 | 49.00 |
| low | 30.50 | 35.00 | 37.98 | 32.25 |

[a] Includes a charge of $\$ 30.9$ [ $\$ 20.0$ after-tax, or $\$ .09$ per share] for the global cost reduction plan.
[b] Includes a charge of $\$ 6.0$ [ $\$ 3.7$ after-tax, or $\$ .02$ per share] for a litigation settlement.
[c] Includes a charge of \$78.3 [\$47.3 after-tax, or $\$ .21$ per share] for the global cost reduction plan.
[d] Includes a gain of $\$ 101.6$ [\$64.6 after-tax, or $\$ .29$ per share] related to the sale of the fifty percent interest in two cogeneration facilities.
[e] Includes an extraordinary charge of $\$ 47.3$ [\$.21 per share] for the early retirement of debt.

|  | First | Second | Third | Fourth |
| :---: | :---: | :---: | :---: | :---: |
| 2000 |  |  |  |  |
| Sales | \$1,264.4 | \$1,347.2 | \$1,406.4 | \$1,449.1 |
| Operating income | 196.2 | 218.9 [c][d] | $186.4[\mathrm{f}]$ | 229.3 |
| Net income [loss] | 50.6 [a] | 47.6 [b][c][d] | [192.5][e][f] | 218.5[g] |
| Basic earnings [loss] per common share | . 24 | . 22 | [.90] | 1.02 |
| Diluted earnings [loss] per common share | . 23 [a] | . $22[\mathrm{~b}][\mathrm{c}][\mathrm{d}]$ | [.90][e][f] | 1.01[g] |
| Dividends per common share | . 18 | . 18 | . 19 | . 19 |
| Price per common share: high | $\begin{aligned} & 33.88 \\ & 25.69 \end{aligned}$ | $\begin{aligned} & 37.00 \\ & 23.00 \end{aligned}$ | $\begin{aligned} & 39.06 \\ & 27.56 \end{aligned}$ | $\begin{aligned} & 39.13 \\ & 29.25 \end{aligned}$ |

[a] Includes an after-tax charge of $\$ 70.6$, or $\$ .33$ per share, related to the BOC transaction.
[b] Includes an after-tax charge of \$84.1, or $\$ .39$ per share, related to the BOC transaction.
[c] Includes a charge of $\$ 8.7$ [ $\$ 5.5$ after-tax, or $\$ .03$ per share] for a global cost reduction plan.
[d] Includes a gain of $\$ 6.3$ [ $\$ 4.0$ after-tax, or $\$ .02$ per share] on the sale of packaged gas facilities.
[e] Includes an after-tax charge of $\$ 301.8$, or $\$ 1.39$ per share, related to the BOC transaction.
global cost reduction plan.
[g] Includes an after-tax gain of $\$ 79.1$, or $\$ .37$ per share, on the sale of the PVOH business.

The company's segments are organized based on differences in products. The company has three operating segments consisting of gases, chemicals, and equipment.

The company's gases segment includes its industrial gases, power generation, and flue gas treatment businesses. The company is a leading international supplier f industrial and specialty gas products. Principal products of the industrial gases business are oxygen, nitrogen, argon, hydrogen, carbon monoxide, synthesis gas, and helium. The largest market segments are chemical processing, refining, metal production, electronics, food processing, and medical gases. The company has its strongest industrial gas market positions in the United States and Europe. The company constructed, operates, and has a $50 \%$ interest in power generation facilities in California, Rotterdam, and Thailand.

The company's chemicals segment consists of six principal businesses organized around two divisions: performance chemicals and chemical intermediates.

Principal businesses of performance chemicals are emulsions, specialty additives, polyurethane additives, and epoxy additives. Principal chemical intermediates are amines and polyurethane intermediates. The company also produces certain industrial chemicals. The end markets for the company's chemical products are extensive, including adhesive, textile, paper, building products, agriculture, and furniture. Principal geographic markets for the company's chemical products are North America, Europe, Asia, Brazil, and Mexico.

The equipment segment designs and manufactures cryogenic and gas processing equipment for air separation, gas processing, natural gas liquefaction, and hydrogen purification. The segment also designs and builds systems for recovering gases using membrane technology. Equipment is sold worldwide to companies involved in chemical and petrochemical manufacturing, oil and gas recovery and processing, power generation, and steel and primary metal production. Equipment is also manufactured for the company's industrial gas business. Another important market, particularly for air separation equipment, is the company's international industrial gas joint ventures.

The accounting policies of the segments are the same as those described in Note 1. The company evaluates the performance of segments based upon reported segment operating income. Operating income of the business segments includes general corporate expenses. Corporate expenses not allocated to the segments, included in all other, are primarily long-term research and development. Intersegment sales are not material and are recorded at selling prices that approximate market prices. Equipment manufactured for the company's industrial gas business is generally transferred at cost and not reflected as an intersegment sale. Corporate assets not allocated to the segments are included in all other. These assets include cash and cash items, unallocated administrative facilities, and certain deferred items. Long-lived assets include investment in net assets of and advances to equity affiliates, net plant and equipment, and goodwill.


2001


2000

| Revenues from external customers | \$3,465.5 | \$1,772.8 | \$228.8 | \$5,467.1 | \$ | \$5,467.1 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Operating income | 673.1 | 182.1 | 9.9 | 865.1 | [34.3] | 830.8 |
| Operating income--excluding special items | 698.8 | 197.7 | 16.8 | 913.3 | [33.4] | 879.9 |
| Depreciation and amortization | 455.9 | 127.8 | 6.5 | 590.2 | 3.4 | 593.6 |
| Equity affiliates' income | 73.6 | 12.5 | 2.0 | 88.1 | [.5] | 87.6 |
| Gain on sale of polyvinyl alcohol business | -- | 126.8 | -- | 126.8 | -- | 126.8 |

Loss on currency hedges related to BOC transaction and expenses

Segment assets:


## 1999

| Revenues from external customers | \$2,996. 4 | \$1,657.4 | \$366.3 | \$5,020.1 | \$ -- | \$5,020.1 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Operating income | 521.9 | 193.7 | 34.7 | 750.3 | [25.6] | 724.7 |
| Operating income--excluding |  |  |  |  |  |  |
| special items | 548.9 | 208.0 | 37.4 | 794.3 | [25.1] | 769.2 |
| Depreciation and amortization | 403.1 | 128.8 | 9.4 | 541.3 | 4.5 | 545.8 |
| Equity affiliates' income | 46.8 | 12.4 | 1.6 | 60.8 | . 7 | 61.5 |
| Net gain on formation of polymer venture | -- | 34.9 | -- | 34.9 | -- | 34.9 |
| Segment assets: |  |  |  |  |  |  |
| Identifiable assets | 5,438.3 | 1,626.2 | 265.0 | 7,329.5 | 384.6 | 7,714.1 |
| Investment in and advances to equity affiliates | 459.3 | 61.3 | . 8 | 521.4 | -- | 521.4 |


| Total segment assets | 5,897.6 | 1,687.5 | 265.8 | 7,850.9 | 384.6 | 8,235.5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Expenditures for long-lived assets | 904.8 | 158.8 | 14.6 | 1,078.2 | 27.4 | 1,105.6 |
| Operating return on net assets[a] | 10.4\% | 12.9\% | 13.0\% | 11.1\% |  | 10.4 |

[a] Operating return on net assets [ORONA] is calculated as the rolling four-quarter sum of operating income divided by the rolling five-quarter average of total assets less investments in equity affiliates. The ORONA calculation for 2001 excluded a charge of $\$ 109.2$ for a global cost reduction plan and a charge of $\$ 6.0$ for a litigation settlement. The ORONA calculation for 2000 excluded a charge of $\$ 55.4$ for a global cost reduction plan and a gain of $\$ 6.3$ from the sale of packaged gas facilities. The ORONA calculation for 1999 excluded expense of $\$ 34.2$ related to a global cost reduction plan and expense of $\$ 10.3$ related to chemical facility closure costs.

Geographic information is presented below:

|  | 2001 | 2000 | 1999 |
| :---: | :---: | :---: | :---: |
| Revenues from External Customers |  |  |  |
| - |  |  |  |
| United States | \$3,824.7 | \$3,628.8 | \$3,226.9 |
| United Kingdom | 440.1 | 483.8 | 620.4 |
| - |  |  |  |
| Spain | 295.1 | 300.7 | 319.0 |
| ---------- | 581.9 | 559.8 | 564.3 |
| - - |  |  |  |
| Total Europe | 1,317.1 | 1,344.3 | 1,503.7 |
| Canada/Latin America | 243.5 | 240.6 | 202.4 |
| - --- |  |  |  |
| Asia/other | 331.9 | 253.4 | 87.1 |
| Total | \$5,717.2 | \$5,467.1 | \$5,020.1 |
| Long-Lived Assets |  |  |  |
|  |  |  |  |
| United States | \$3,356.9 | \$3,502.2 | \$3,482.1 |
| United Kingdom | 452.6 | 461.2 | 513.1 |
| ------- |  |  |  |
| Spain | 371.1 | 339.2 | 412.2 |
| Other Europe | 819.7 | 711.2 | 873.4 |
| Total Europe | 1,643.4 | 1,511.6 | 1,798.7 |
|  |  |  |  |
| Canada/Latin America | 298.7 | 325.4 | 327.0 |
| Asia/Other | 703.6 | 739.1 | 456.9 |
| - --- |  |  |  |
| Total | \$6,002.6 | \$6,078.3 | \$6,064.7 |

Note: Geographic information is based on country of origin. Included in United States revenues are export sales to unconsolidated customers of $\$ 602.3$ in 2001, $\$ 557.7$ in 2000, and $\$ 528.4$ in 1999. The other Europe segment operates principally in France, Germany, Netherlands, and Belgium.

| [Millions Of Dollars, Except Per Share] | 2001 | 2000 | 1999 | 1998 |
| :---: | :---: | :---: | :---: | :---: |
| Operating Results |  |  |  |  |
| Sales | \$5,717 | \$5,467 | \$5, 020 | \$4,919 |
| Cost of sales | 4,103 | 3,826 | 3,501 | 3,317 |
| Selling and administrative | 752 | 715 | 691 | 660 |
| Research and development | 123 | 124 | 123 | 112 |
| - -------------------- |  |  |  |  |
| Operating income | 745 | 831 | 725 | 846 |
| Equity affiliates' income | 81 | 88 | 62 | 38 |
| Interest expense | 191 | 197 | 159 | 163 |
| Income tax provision [benefit] | 219 | [14] | 203 | 277 |
| Income before extraordinary items | 513 | 124 | 451 | 547 |
| Net income | 466 | 124 | 451 | 547 |
| -------- |  |  |  |  |
| Basic earnings per common share [a] |  |  |  |  |
| Income before extraordinary items | 2.39 | . 58 | 2.12 | 2.54 |
| Net income | 2.17 | . 58 | 2.12 | 2.54 |
| Diluted earnings per common share [a] |  |  |  |  |
| Income before extraordinary items [b] | 2.33 | . 57 | 2.09 | 2.48 |
| Net income [c] | 2.12 | . 57 | 2.09 | 2.48 |
| Year-End Financial Position |  |  |  |  |
| Plant and equipment, at cost | \$10, 227 | \$10, 311 | \$10,188 | \$9,490 |
| Total assets | 8,084 | 8,271 | 8,236 | 7,490 |
| Working capital | 332 | 430 | [75] | 376 |
| Total debt [e] | 2,478 | 3,045 | 2,842 | 2,698 |
| Shareholders' equity | 3,106 | 2,821 | 2,962 | 2,667 |
| Financial Ratios |  |  |  |  |
| Return on sales [d] | 9.0\% | 2.3\% | 9.0\% | 11.1\% |
| ---------------------------------- | 17.4\% | 4.3\% | 16.1\% | 20.8\% |
| Total debt to sum of total debt and shareholders' equity [e] | 44.4\% | 51.9\% | 49.0\% | 50.3\% |
| Cash provided by operations to average total debt [e] | 37.6\% | 37.5\% | 39.5\% | 38.6\% |
| Interest coverage ratio | 4.7 | 1.5 | 4.6 | 5.5 |
| Other Data |  |  |  |  |
| For the year: Depreciation | \$573 | \$576 | \$527 | \$489 |
| Capital expenditures [g] | 806 | 973 | 1,108 | 1,001 |
| Cash dividends per common share [a] | . 78 | . 74 | . 70 | . 64 |
| Market price range per common share [a] | 49-30 | 39-23 | 49-27 | 45-29 |
| Average common shares outstanding [in millions] | 215 | 213 | 212 | 216 |
| Average common shares and common stock equivalent shares outstanding [in millions] | 219 | 216 | 216 | 220 |
| At year end: Book value per common share [a] | 14.41 | 13.17 | 13.90 | 12.61 |
| Shareholders | 11,200 | 11,400 | 11,900 | 11,500 |
| Employees | 17,800 | 17,500 | 17,400 | 16,700 |

[a] Data per common share are based on the average number of shares outstanding during each year retroactively restated to reflect a two-for-one stock split in 1998 and 1992, except for book value per common share, which is based on the number of shares outstanding at the end of each year retroactively restated.
[b] Diluted earnings per share for income before extraordinary item includes the impact of special items. The impacts of special items were: 2001 [charge - \$.04]; 2000 [charge - \$1.89]; 1998 [gain - \$.26]; 1996 [gain - \$.18]; 1995 [gain - \$.03]; 1994 [charge - \$.26]; 1993 [charge - \$.28]; 1992 [gain - \$.04]; and 1991 [gain - \$.06].
[c] Net income for 2001 and 1992 includes an extraordinary charge for the early retirement of debt.

| 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$4,638 | \$4,008 | \$3,865 | \$3,485 | \$3,328 | \$3,217 | \$2,931 |
| 3,195 | 2,780 | 2,678 | 2,455 | 2,340 | 2,233 | 2,030 |
| 628 | 548 | 508 | 446 | 434 | 428 | 411 |
| 114 | 114 | 103 | 97 | 92 | 85 | 80 |
| 726 | 591 | 602 | 486 | 369 | 481 | 435 |
| 66 | 80 | 51 | 28 | 12 | 7 | 1 |
| 161 | 129 | 100 | 81 | 81 | 90 | 86 |
| 201 | 193 | 185 | 92 | 100 | 130 | 113 |
| 429 | 416 | 368 | 234 | 201 | 277 | 249 |
| 429 | 416 | 368 | 248 | 201 | 271 | 249 |
| 1.95 | 1.86 | 1.64 | 1.03 | . 88 | 1.23 | 1.11 |
| 1.95 | 1.86 | 1.64 | 1.09 | . 88 | 1.20 | 1.11 |
| 1.91 | 1.83 | 1.62 | 1.01 | . 87 | 1.20 | 1.09 |
| 1.91 | 1.83 | 1.62 | 1.07 | . 87 | 1.17 | 1.09 |
| \$8,727 | \$8,103 | \$7,350 | \$6,520 | \$5,953 | \$5,785 | \$5,332 |
| 7,244 | 6,522 | 5,816 | 5,036 | 4,761 | 4,492 | 4,228 |
| 500 | 111 | 21 | 101 | 322 | 279 | 117 |
| 2,468 | 2,195 | 1,681 | 1,244 | 1,251 | 1,077 | 1,135 |
| 2,648 | 2,574 | 2,398 | 2,206 | 2,102 | 2,098 | 1,841 |
| 9.3\% | 10.4\% | 9.5\% | 6.7\% | 6.0\% | 8.6\% | 8.5\% |
| 16.6\% | 16.6\% | 16.1\% | 10.9\% | 9.6\% | 14.0\% | 14.1\% |
| 48. $2 \%$ | 46.0\% | 41. $2 \%$ | 36.0\% | 37.3\% | 33.9\% | 38.1\% |
| 40.9\% | 38.5\% | 48.6\% | 59.5\% | 50.3\% | 52.7\% | 57.7\% |
| 4.4 | 5.1 | 5.5 | 4.5 | 4.4 | 5.4 | 4.2 |
| \$459 | \$412 | \$382 | \$353 | \$346[f] | \$340 | \$319 |
| 1,222 | 1,164 | 969 | 655 | 666 | 485 | 657 |
| . 58 | . 53 | . 51 | . 47 | . 45 | . 41 | . 38 |
| 44-29 | 30-24 | 29-21 | 25-19 | 25-18 | 25-15 | 18-10 |
| 220 | 223 | 224 | 227 | 228 | 226 | 224 |
| 225 | 227 | 228 | 231 | 232 | 231 | 228 |
| 12.05 | 11.65 | 10.74 | 9.73 | 9.21 | 9.25 | 8.20 |
| 11,200 | 11,700 | 11,800 | 11,900 | 11,800 | 11,100 | 10,900 |
| 16,400 | 15,200 | 14,800 | 14,100 | 15,300 | 14,500 | 14,600 |

[d] Financial ratios were calculated using income before extraordinary items.
[e] Total debt includes long-term debt, current portion of long-term debt, and short-term borrowings as of the end of the year.
[f] Depreciation expense in 1993 excludes $\$ 56$ associated with asset write-downs.
[g] Capital expenditures include additions to plant and equipment, investment
in and advances to unconsolidated affiliates, acquisitions, and capital lease additions.

COMPUTATION OF EARNINGS PER SHARE (Millions of dollars, except per share)

|  | Year Ended 30 September |  |  |
| :---: | :---: | :---: | :---: |
|  | 2001 | 2000 | 1999 |
| Earnings |  |  |  |
| Income before cumulative effect of accounting changes | \$466 | \$124 | \$451 |
| Cumulative effect of accounting changes | 0 | 0 | 0 |
| Net Income | \$466 | \$124 | \$451 |
| Basic shares |  |  |  |
| Average common shares outstanding during the year | 215 | 213 | 212 |
| Basic earnings per share |  |  |  |
| Income before cumulative effect of accounting changes | \$2.17 | \$0.58 | \$2.12 |
| Cumulative effect of accounting changes | 0 | 0 | 0 |
| Net Income | \$2.17 | \$0.58 | \$2.12 |
| Diluted shares |  |  |  |
| Average common shares outstanding during the year | 215 | 213 | 212 |
| Shares issuable from stock option and award plans | 5 | 3 | 4 |
| Adjusted average common shares outstanding | 220 | 216 | 216 |
| Diluted earnings per share |  |  |  |
| Income before cumulative effect of accounting changes | \$2.12 | \$0.57 | \$2.09 |
| Cumulative effect of accounting changes | 0 | 0 | 0 |
| Net income | \$2.12 | \$0.57 | \$2.09 |

The following is a list of the Company's subsidiaries, all of which are wholly owned as of 30 September 2001, except for certain subsidiaries of the Registrant which do not in the aggregate constitute a significant subsidiary as that term is defined in Rule 12b-2 under the Securities Exchange Act of 1934.

## UNITED STATES

All companies are incorporated in the State of Delaware with the exception of Air Products World Trade, Inc. which is incorporated in the U.S. Virgin Islands.

Registrant -- Air Products and Chemicals, Inc.
Air Products Asia, Inc.
Air Products (Didcot), Inc.
Air Products Helium, Inc.
Air Products Hydrogen Company, Inc.
Air Products, L.P.
Air Products International Corporation
Air Products manufacturing Corporation
Air Products of Oklahoma, Inc.
Air Products Polymers Holdings, L.P.
Air Products Polymers, L.P.
Air Products Powders, Inc.
Air Products World Trade, Inc.
APCI (U.K.), Inc.
KIG Air Products, LLC
Middletown Oxygen Company, Inc.
Prodair Corporation

BELGIUM
Air Products S.A.
Air Products Management S.A.

BRAZIL
Air Products Gases Industriais Ltda. (The organization of this affiliate more closely resembles a partnership with limited liability than a corporation.)

CANADA

Air Products Canada Ltd.
CHINA

Air Products and Chemicals (China) Investment Co., Ltd.
Air Products (Nanjing) Co., Ltd.
Chun Wang Industrial Gases, Limited
Eastern Air Products (Shanghai) Co., Ltd.
Northern Air Products (Tianjin) Limited
Southern Air Products (Guangzhou) Limited
FRANCE

Air Products Industrie
Air Products (Medical) S.a.r.l.
Air Products S.A.
Prodair et Cie S.C.S.
Prodair S.A.

GERMANY
Air Products GmbH
Air Products Polymers GmbH \& Co KG
Air Products Powders GmbH

## INDONESIA

PT Air Products Indonesia

## IRELAND

Air Products Ireland Limited

## ISRAEL

Prodair Israel Limited

JAPAN
Air Products Japan, Inc.
KOREA
Air Products Korea, Inc.
Korean Industrial Gases, Limited

Air Products Holdings B.V. (formerly Air Products Nederland B.V.)
Air Products Leasing B.V.
Air Products (Pernis) B.V.
Air Products (Rozenburg), Inc.

## NORWAY

Air Products A/S

## SPAIN

Air Products Iberica, S.A.
Gases Industriais, S.A.
S.E. de Carburos Metalicos S.A.

## SINGAPORE

Air Products Singapore Pte. Ltd.
UNITED KINGDOM
Air Products PLC
Air Products Group Limited
Air Products (BR) Limited
Air Products (Chemicals) PLC Air Products (Chemicals) Teeside Limited

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints JOHN P. JONES III or LEO J. DALEY or W. DOUGLAS BROWN, acting severally, his/her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him/her and in his/her name, place and stead, in any and all capacities, to sign the Form 10-K Annual Report for the fiscal year ended September 30, 2001 and all amendments thereto and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he/she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities and Exchange Act of 1934, this Power of Attorney has been signed below by the following persons in the capacities and on the dates indicated.

Signature
Title

Director November 15, 2001

## /s/ Mario L. Baeza

Mario L. Baeza

## /s/ L. Paul Bremer III

Director
November 15, 2001
L. Paul Bremer III
/s/ Robert Cizik
Director November 15, 2001

Robert Cizik
/s/ Michael J. Donahue
Director
November 15, 2001
Michael J. Donahue
/s/ Ursula F. Fairbairn
Director November 15, 2001
Ursula F. Fairbairn
/s/ Edward E. Hagenlocker
Director
November 15, 2001
Edward E. Hagenlocker
/s/ James F. Hardymon
Director November 15, 2001
James F. Hardymon
/s/ John P. Jones III
Director November 15, 2001
John P. Jones III
/s/ Terry R. Lautenbach
Director November 15, 2001
Terry R. Lautenbach
/s/ Charles H. Noski
Director
November 15, 2001
Charles H. Noski
/s/ Paula G. Rosput
Director
November 15, 2001
Paula G. Rosput
/s/ Lawrason D. Thomas
Director
November 15, 2001

Lawrason D. Thomas


[^0]:    The accompanying notes are an integral part of these statements.

