PETROHAWK ENERGY CORP
Form POS AM
September 14, 2011

As filed with the Securities and Exchange Commission on September 14, 2011

Registration No. 333-45586

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

POST-EFFECTIVE AMENDMENT NO. 1

TO

FORM S-3

REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

PETROHAWK ENERGY CORPORATION

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

86-0876964

(I.R.S. Employer Identification No.)

1000 Louisiana, Suite 5600

Houston, Texas 77002

(832) 204-2700

(Address, including zip code, and telephone number, including area code, of registrant s principal executive offices)

David D. Powell

Vice President

Petrohawk Energy Corporation

1000 Louisiana, Suite 5600

Houston, Texas 77002

(832) 204-2700

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies of all communications, including all communications sent to the agent for service, should be sent to:

Copy to:

Thomas P. Giblin, Jr.

Morgan, Lewis & Bockius LLP

101 Park Avenue

New York, New York 10178

(212) 309-6000

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box: o

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box: o

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following

box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. o

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definitions of large accelerated filer , accelerated filer , and smaller reporting company in Rule 12b-2 of the Exchange Act:

Large accelerated filer x	Accelerated filer o	Non-accelerated filer o	Smaller reporting company o
		(Do not check if a smaller reporting company)	

EXPLANATORY NOTE

DEREGISTRATION OF SECURITIES

This Post-Effective Amendment No. 1 (this **Post-Effective Amendment**) relates to the Registration Statement of Petrohawk Energy Corporation, a Delaware corporation (the **Company**), on Form S-3 (Registration No. 333-45586), filed with the Securities and Exchange Commission (the **SEC**) on September 12, 2000 (the **Registration Statement**), which registered the offering of 2,830,000 shares of common stock, par value $0.001 per share (**Shares**).

On August 25, 2011, pursuant to the Agreement and Plan of Merger, dated as of July 14, 2011 (the **Merger Agreement**), by and among BHP Billiton Limited, a corporation organized under the laws of Victoria, Australia (**BHP Billiton Limited**), BHP Billiton Petroleum (North America) Inc., a Delaware corporation, North America Holdings II Inc., a Delaware corporation (**Merger Sub**), and the Company, Merger Sub merged with and into the Company, with the Company continuing as the surviving corporation and as a wholly-owned indirect subsidiary of BHP Billiton Limited (the **Merger**). As a result of the Merger, the Company has terminated the offering of its Shares pursuant to this Registration Statement.

In connection with the Merger and other transactions contemplated by the Merger Agreement, and in accordance with an undertaking made by the Company in the Registration Statement to remove from registration by means of a post-effective amendment any Shares which remain unsold at the termination of the offering, the Company hereby removes and withdraws from registration all Shares of the Company registered pursuant to the Registration Statement that remain unsold as of the date hereof.

SIGNATURE

Pursuant to the requirements of the Securities Act, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing this Post-Effective Amendment No. 1 to the Registration Statement on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Houston, the State of Texas, on this 14th day of September 2011.

PETROHAWK ENERGY CORPORATION

By: /s/ David D. Powell
David D. Powell
Vice President

Pursuant to the requirements of the Securities Act, this Post-Effective Amendment to the Registration Statement has been signed below by the following persons in the capacities and on the date indicated.

Name	Date	Title
/s/ J. Michael Yeager J. Michael Yeager	September 14, 2011	Director and Chief Executive Officer (principal executive officer)
/s/ David D. Powell David D. Powell	September 14, 2011	Director and Vice President (principal financial officer and principal accounting officer)
/s/ James W. Christmas James W. Christmas	September 14, 2011	Director
/s/ David J. Nelson David J. Nelson	September 14, 2011	Director
/s/ Jeffrey L. Sahlberg Jeffrey L. Sahlberg	September 14, 2011	Director
/s/ Nigel H. Smith Nigel H. Smith	September 14, 2011	Director

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- Power Recovery — DWEER
- Nuclear Seals

- Power Recovery — Hydroturbine
- Cryogenic Pumps

- Energy Recovery Devices
- CVP Concrete Volute Pumps

- Hydraulic Decoking Systems
- Wireless Transmitters

- API Slurry Pumps

EPD Brand Names

- BW Seals
- Byron Jackson
- Calder Energy Recovery Devices
- Cameron
- Durametallic
- FEDD Wireless
- Five Star Seal
- Flowserve
- GASPAC™
- IDP
- Interseal
- Lawrence
- LifeCycle Advantage
- Niigata Worthington
- QRC™
- Pacific
- Pacific Weitz
- Pac-Seal
- ReadySeal
- United Centrifugal
- Western Land Roller
- Wilson-Snyder
- Worthington
- Worthington-Simpson

EPD Services

We provide engineered aftermarket services through our global network of 123 QRCs, some of which are co-located in manufacturing facilities, in 47 countries. Our EPD service personnel provide a comprehensive set of equipment services for flow management control systems, including installation, commissioning, repair, advanced diagnostics, re-rate and retrofit programs, machining and comprehensive asset management solutions. We provide asset management services and condition monitoring for rotating equipment through special contracts with many of our customers that reduce maintenance costs. A large portion of EPD’s service work is performed on a quick response basis, and we offer 24-hour service in all of our major markets.

EPD New Product Development

Our investments in new product R&D continue to focus on increasing the capability of our products as customer applications become more advanced, demanding greater levels of production (i.e., flow, power and pressure) and under more extreme conditions beyond the level of traditional technology. We continue to develop innovations that improve product performance and our competitive position in the engineered equipment industry, specifically targeting pipeline, offshore and downstream applications for the oil and gas market. The emergence of extreme pressure applications prompted the development of an advanced stage design and construction of high pressure test capability necessary to validate the technology prior to introduction into the market.

As new sources of energy generation are explored, we continue to develop new product designs to support the most critical applications in the power generation market. New designs and qualification test programs continue to support the critical services found in the modern nuclear power generation plant. Continued engagement with our end users is exemplified through completion of advancements in coke cutting technology, nozzle design and auxiliary equipment improvements, as well as creation of an automated cutting system to improve operator safety.

We continue to address our core products with design enhancements to improve performance and the speed at which we can deliver our products. Application of advanced computational fluid dynamics methods utilizing unsteady flow analysis led to the development of an advanced inlet chamber and impeller vane design for high energy injection water pumps. Our engineering teams continue to apply and develop sophisticated design technology and methods supporting continuous improvement of our proven technology. Additionally, we are incentivizing our operations and tracking the R&D projects more closely, which is leading to broader engagement in developing new products.

In 2016, EPD continued to advance our Insight platform (formerly known as Technology Advantage) through the Integrated Solutions Organization ("ISO"). This platform utilizes a combination of our developed technologies and leading edge technology partners to increase our asset management and service capabilities for our end-user customers. These technologies include intelligent devices, advanced communication and security protocols, wireless and satellite communications and web-enabled data convergence. Additionally, we have been exploring the "additive manufacturing" opportunities in our products and auxiliary systems.

None of these newly developed products or services required the investment of a material amount of our assets or was otherwise material to our business.

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EPD Customers

Our customer mix is diversified and includes leading EPC firms, original equipment manufacturers, distributors and end users. Our sales mix of original equipment products and aftermarket products and services diversifies our business and helps mitigate the impact of normal economic cycles on our business. Our sales are diversified among several industries, including oil and gas, power generation, chemical, water management and general industries.

EPD Competition

The pump and mechanical seal industry is highly fragmented, with hundreds of competitors. We compete, however, primarily with a limited number of large companies operating on a global scale. Competition among our closest competitors is generally driven by delivery times, expertise, price, breadth of product offerings, contractual terms, previous installation history and reputation for quality. Some of our largest industry competitors include: Sulzer Pumps; Ebara Corp.; SPX FLOW, Inc.; Eagle Burgmann, which is a joint venture of two traditional global seal manufacturers, A. W. Chesterton Co. and AES Corp.; John Crane Inc., a unit of Smiths Group Plc; and Weir Group Plc.

The pump and mechanical seal industry continues to undergo considerable consolidation, which is primarily driven by (i) the need to lower costs through reduction of excess capacity and (ii) customers' preference to align with global full service suppliers to simplify their supplier base. Despite the consolidation activity, the market remains highly competitive.

We believe that our strongest sources of competitive advantage rest with our extensive range of pumps for the oil and gas, chemical and power generation industries, our large installed base of products, our strong customer relationships, our more than 200 years of legacy experience in manufacturing and servicing pumping equipment, our reputation for providing quality engineering solutions and our ability to deliver engineered new seal product orders within 72 hours from the customer's request.

EPD Backlog

EPD's backlog of orders as of December 31, 2016 was $968.8 million (including $11.7 million of interdivision backlog, which is eliminated and not included in consolidated backlog), compared with $1,160.5 million (including $10.5 million of interdivision backlog) as of December 31, 2015 . We expect to ship approximately 87% of December 31, 2016 backlog during 2017 .

INDUSTRIAL PRODUCT DIVISION

Through IPD we design, manufacture, distribute and service pre-configured engineered pumps and pump systems, including submersible motors, for industrial markets. Our globalized operating platform, low-cost sourcing and continuous improvement initiatives are essential aspects of this business. IPD's standardized, general purpose pump products are primarily utilized by the oil and gas, chemical, water management, power generation and general industries. Our products are currently manufactured in 20 manufacturing facilities, five of which are located in the U.S and 10 in Europe, four in Asia, one in Latin America. IPD operates 32 QRCs worldwide, including 20 sites in Europe, six in the U.S., three in Asia Pacific and three in Latin America.

IPD Products

We manufacture approximately 40 different active types of pumps, which are available in a wide range of metal alloys and non-metallics with a variety of configurations to meet the critical operating demands of our customers. The following is a summary list of our IPD products and globally recognized brands:

IPD Pump Product Types

Overhung
- Chemical Process ASME and ISO
- Industrial Process
- Slurry and Solids Handling

Between Bearings
- Side Channel Multistage
- Segmental Channel Multistage
- Single Case — Axially Split
- Single Case — Radially Split

Specialty Products
- Ag Chem
- Molten Salt VTP Pump
- Submersible Pump
- Thruster
- Geothermal Deepwell
- Barge Pump
- Sewage Submersible

Vertical
- Wet Pit and Suction Case API
- Deep Well Submersible Motor
- Slurry and Solids Handling
- Sump
- Vacuum Systems

Vacuum Systems
- Liquid Ring
- LR Systems
- Dry Systems

Positive Displacement
- Gear

IPD Brand Names
- Aldrich
- Durco
- Halberg
- IDP
- Innomag
- Labour
- Meregalli
- Pacific
- Pleuger & Byron Jackson
- Scienco
- Sier Bath
- SIHI
- TKL
- Western Land Roller
- Worthington
- Worthington-Simpson

IPD Services

We market our pump products through our worldwide sales force and our regional service and repair centers or through independent distributors and sales representatives. We provide an array of aftermarket services including product installation and commissioning services, spare parts, repairs, re-rate and upgrade solutions, advanced diagnostics and maintenance solutions through our global network of QRCs.

IPD New Product Development

Our IPD development projects target product feature enhancements, design improvements and sourcing opportunities that we believe will improve the competitive position of our industrial pump product lines. We will invest in our chemical product platform to expand and enhance our products offered to the global chemical industry.

We continue to address our core products with design enhancements to improve performance and the speed at which we can deliver our products. Successful new product release of permanent magnet motor technology in our submersible motor products demonstrated improved product efficiency. We will further our energy efficiency initiatives in response to various global governmental directives. Cost reduction projects incorporating product rationalization, value engineering, lean manufacturing and overhead reduction continue to be key drivers for IPD. None of these newly developed products or services required the investment of a material amount of our assets or was otherwise material.

IPD Customers

Our customer mix is diversified and includes leading EPC firms, original equipment manufacturers, distributors and end users. Our sales mix of original equipment products and aftermarket products and services diversifies our business and helps mitigate the impact of normal economic cycles on our business. Our sales are diversified among several industries, including oil and gas, chemical, water management, power generation and general industries.

IPD Competition

The industrial pump industry is highly fragmented, with many competitors. We compete, however, primarily with a limited number of large companies operating on a global scale. Competition among our closest competitors is generally driven by delivery times, expertise, price, breadth of product offerings, contractual terms, previous installation history and reputation for quality. Some of our largest industry competitors include ITT Industries, KSB Inc. and Sulzer Pumps.

We believe that our strongest sources of competitive advantage rest with our extensive range of pumps for the chemical industry, our large installed base, our strong customer relationships, our more than 200 years of legacy experience in manufacturing and servicing pumping equipment and our reputation for providing quality engineering solutions.

IPD Backlog

IPD's backlog of orders as of December 31, 2016 was $375.6 million (including $14.2 million of interdivision backlog, which is eliminated and not included in consolidated backlog), compared with $424.6 million (including $15.7 million of interdivision backlog) as of December 31, 2015 . We expect to ship approximately 90% of December 31, 2016 backlog during 2017 .

FLOW CONTROL DIVISION

FCD designs, manufactures, distributes and services a broad portfolio of industrial valve and automation solutions, including isolation and control valves, actuation, controls and related equipment. In addition, FCD offers energy management products such as steam traps, boiler controls and condensate and energy recovery systems. FCD leverages its experience and application know-how by offering a complete menu of engineering and project management services to complement its expansive product portfolio. FCD products are used to control, direct and manage the flow of liquids and gases and are an integral part of any flow control system. Our valve products are most often customized and engineered to perform specific functions within each customer's unique flow control environment.

Our flow control products are primarily used by companies operating in the chemical, power generation, oil and gas, water management and general industries. Our products are currently manufactured in 26 principal manufacturing facilities, five of which are located in the U.S., 13 located in Europe, seven located in Asia Pacific and one located in Latin America. FCD operates 32 QRCs worldwide, including 11 sites in Europe, 11 in the U.S., nine in Asia Pacific and one in Latin America.

FCD Products

Our valve, automation and controls product and solutions portfolio represents one of the most comprehensive in the flow control industry. Our products are used in a wide variety of applications, from general service to the most severe and demanding services, including those involving high levels of corrosion, extreme temperatures and/or pressures, zero fugitive emissions and emergency shutdown.

Our "smart" valve and diagnostic technologies integrate sensors, microprocessor controls and software into high performance integrated control valves, digital positioners and switchboxes for automated on/off valve assemblies and electric actuators. These technologies permit real-time system analysis, system warnings and remote indication of asset health. These technologies have been developed in response to the growing demand for reduced maintenance, improved process control efficiency and digital communications at the plant level. We are committed to further enhancing the quality of our product portfolio by continuing to upgrade our existing offerings with cutting-edge technologies.

Our valve automation products encompass a broad range of pneumatic, electric, hydraulic and stored energy actuation designs to take advantage of whatever power source the customer has available. FCD's actuation products can utilize the process fluid flowing through the pipeline as a source of power to actuate the valve. Our actuation products also cover one of the widest ranges of output torques in the industry, providing the ability to automate anything from the smallest linear globe valve to the largest multi-turn gate valve. Most importantly, FCD combines best-in-class mechanical designs with the latest in digital controls in order to provide complete integrated automation solutions that optimize the combined valve-actuator-controls package.

The following is a summary list of our generally available valve and automation products and globally recognized brands:

FCD Product Types

- Valve Automation Systems
- Control Valves
- Ball Valves
- Gate Valves
- Globe Valves
- Check Valves
- Butterfly Valves
- Lined Plug Valves
- Lined Ball Valves
- Lubricated Plug Valves
- Non-Lubricated Plug Valves
- Integrated Valve Controllers
- Diagnostic Software
- Electro Pneumatic Positioners
- Digital Positioners
- Pneumatic Positioners
- Intelligent Positioners
- Electric/Electronic Actuators
- Pneumatic Actuators
- Hydraulic Actuators
- Diaphragm Actuators
- Direct Gas and Gas-over-Oil Actuators
- Limit Switches
- Steam Traps
- Condensate and Energy Recovery Systems
- Boiler Controls
- Digital Communications
- Valve and Automation Repair Services

FCD Brand Names

- Accord
- Anchor/Darling
- Argus
- Atomac
- Automax
- Durco
- Edward
- Flowserve
- Gestra
- Kammer
- Limitorque
- McCANNA/MARPAC
- NAF
- Noble Alloy
- Norbro
- Nordstrom
- PMV
- Serck Audco
- Schmidt Armaturen
- Valbart
- Valtek
- Vogt
- Worcester Controls

FCD Services

Our service personnel provide comprehensive equipment maintenance services for flow control systems, including advanced diagnostics, repair, installation, commissioning, retrofit programs and field machining capabilities. A large portion of our service work is performed on a quick response basis, which includes 24-hour service in all of our major markets. We also provide in-house repair and return manufacturing services worldwide through our manufacturing facilities. We believe our ability to offer comprehensive, quick turnaround services provides us with a unique competitive advantage and unparalleled access to our customers' installed base of flow control products.

FCD New Product Development

Our R&D investment is focused on areas that will advance our technological leadership and further differentiate our competitive advantage from a product perspective. Investment has been focused on significantly enhancing the digital integration and interoperability of valve top works (e.g., positioners, actuators, limit switches and associated accessories) with Distributed Control Systems ("DCS"). We continue to pursue the development and deployment of next-generation hardware and software for valve diagnostics and the integration of the resulting device intelligence through the DCS to provide a practical and effective asset management capability for the end user. In addition to developing these new capabilities and value-added services, our investments also include product portfolio expansion and fundamental research in material sciences in order to increase the temperature, pressure and corrosion/erosion-resistance limits of existing products, as well as noise and cavitation reduction. These investments are made by adding new resources and talent to the organization, as well as leveraging the experience of EPD and IPD and increasing our collaboration with third parties. We expect to continue our R&D investments in the areas discussed above.

None of these newly developed valve products or services required the investment of a material amount of our assets or was otherwise material.

FCD Customers

Our customer mix spans several markets, including the chemical, power generation, oil and gas, water management, pulp and paper, mining and other general industries. Our product mix includes original equipment and aftermarket parts and services. FCD contracts with a variety of customers, ranging from EPC firms, to distributors, end users and other original equipment manufacturers.

FCD Competition

While in recent years the valve market has undergone a significant amount of consolidation, the market remains highly fragmented. Some of the largest valve industry competitors include Pentair Ltd., Cameron International Corp. (a Schlumberger company), Emerson Electric Co., General Electric Co. and Crane Co.

Our market research and assessments indicate that the top 10 global valve manufacturers collectively comprise less than 25% of the total valve market. Based on independent industry sources, we believe that we are the fourth largest industrial valve supplier in the world. We believe that our strongest sources of competitive advantage rest with our comprehensive portfolio of valve products and services, our focus on execution and our expertise in severe corrosion and erosion applications.

FCD Backlog

FCD’s backlog of orders as of December 31, 2016 was $584.5 million , compared with $622.0 million as of December 31, 2015 . We expect to ship approximately 87% of December 31, 2016 backlog during 2017 .

AVAILABLE INFORMATION

We maintain an Internet web site at www.flowserve.com. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to those reports filed or furnished pursuant to Section 13(a) of the Securities Exchange Act of 1934 are made available free of charge through the “Investor Relations” section of our Internet web site as soon as reasonably practicable after we electronically file the reports with, or furnish the reports to, the U.S. Securities and Exchange Commission ("SEC").

Also available on our Internet web site are our Corporate Governance Guidelines for our Board of Directors and Code of Ethics and Business Conduct, as well as the charters of the Audit, Finance, Organization and Compensation and Corporate Governance and Nominating Committees of our Board of Directors and other important governance documents. All of the foregoing documents may be obtained through our Internet web site as noted above and are available in print without charge to shareholders who request them. Information contained on or available through our Internet web site is not incorporated into this Annual Report or any other document we file with, or furnish to, the SEC.

ITEM 1A. RISK FACTORS

Any of the events discussed as risk factors below may occur. If they do, our business, financial condition, results of operations and cash flows could be materially adversely affected. While we believe all known material risks are disclosed, additional risks and uncertainties not presently known to us, or that we currently deem immaterial, may also impair our business operations. Because of these risk factors, as well as other variables affecting our operating results, past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods.

Our business depends on the levels of capital investment and maintenance expenditures by our customers, which in turn are affected by numerous factors, including the state of domestic and global economies, global energy demand, the cyclical nature of their markets, their liquidity and the condition of global credit and capital markets.

Demand for most of our products and services depends on the level of new capital investment and planned maintenance expenditures by our customers. The level of capital expenditures by our customers depends, in turn, on general economic conditions, availability of credit, economic conditions within their respective industries and expectations of future market behavior. Additionally, volatility in commodity prices can negatively affect the level of these activities and can result in postponement of capital spending decisions or the delay or cancellation of existing orders. The ability of our customers to finance capital investment and maintenance may also be affected by factors independent of the conditions in their industry, such as the condition of global credit and capital markets.

The businesses of many of our customers, particularly oil and gas companies, chemical companies and general industrial companies, are to varying degrees cyclical and have experienced periodic downturns. Our customers in these industries, particularly those whose demand for our products and services is primarily profit-driven, historically have tended to delay large capital projects, including expensive maintenance and upgrades, during economic downturns. For example, our chemical customers generally tend to reduce their spending on capital investments and operate their facilities at lower levels in a soft economic environment, which reduces demand for our products and services. Additionally, fluctuating energy demand forecasts and lingering uncertainty concerning commodity pricing, specifically the price of oil, can cause our customers to be more conservative in their capital planning, which may reduce demand for our products and services. Reduced demand for our products and services could result in the delay or cancellation of existing orders or lead to excess manufacturing capacity, which unfavorably impacts our absorption of fixed manufacturing costs. This reduced demand may also erode average selling prices in our industry. Any of these results could adversely affect our business, financial condition, results of operations and cash flows.

Additionally, some of our customers may delay capital investment and maintenance even during favorable conditions in their industries or markets. Despite these favorable conditions, the general health of global credit and capital markets and our customers' ability to access such markets may impact investments in large capital projects, including necessary maintenance and upgrades. In addition, the liquidity and financial position of our customers could impact capital investment decisions and their ability to pay in full and/or on a timely basis. Any of these factors, whether individually or in the aggregate, could have a material adverse effect on our customers and, in turn, our business, financial condition, results of operations and cash flows.

Volatility in commodity prices, effects from credit and capital market conditions and global economic growth forecasts could prompt customers to delay or cancel existing orders, which could adversely affect the viability of our backlog and could impede our ability to realize revenues on our backlog.

Our backlog represents the value of uncompleted customer orders. While we cannot be certain that reported backlog will be indicative of future results, our ability to accurately value our backlog can be adversely affected by numerous factors, including the health of our customers' businesses and their access to capital, volatility in commodity prices (e.g., copper, nickel, stainless steel) and economic uncertainty. While we attempt to mitigate the financial consequences of order delays and cancellations through contractual provisions and other means, if we were to experience a significant increase in order delays or cancellations that can result from the aforementioned economic conditions or other factors beyond our control, it could impede or delay our ability to realize anticipated revenues on our backlog. Such a loss of anticipated revenues could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We may be unable to deliver our backlog on time, which could affect our revenues, future sales and profitability and our relationships with customers.

At December 31, 2016, backlog was $1.9 billion. In 2017, our ability to meet customer delivery schedules for backlog is dependent on a number of factors including, but not limited to, sufficient manufacturing plant capacity, adequate supply channel access to the raw materials and other inventory required for production, an adequately trained and capable workforce, project engineering expertise for certain large projects and appropriate planning and scheduling of manufacturing resources. Many of the contracts we enter into with our customers require long manufacturing lead times and contain penalty clauses related to on-time delivery. Failure to deliver in accordance with customer expectations could subject us to financial penalties, may result in damage to existing customer relationships and could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We sell our products in highly competitive markets, which results in pressure on our profit margins and limits our ability to maintain or increase the market share of our products.

The markets for our products and services are geographically diverse and highly competitive. We compete against large and well-established national and global companies, as well as regional and local companies, low-cost replicators of spare parts and in-house maintenance departments of our end-user customers. We compete based on price, technical expertise, timeliness of delivery, contractual terms, previous installation history and reputation for quality and reliability. Competitive environments in slow-growth industries and for original equipment orders have been inherently more influenced by pricing and domestic and global economic conditions and current economic forecasts suggest that the competitive influence of pricing has broadened. Additionally, some of our customers have been attempting to reduce the number of vendors from which they purchase in order to reduce the size and diversity of their supply chain. To remain competitive, we must invest in manufacturing, marketing, customer service and support and our distribution networks. No assurances can be made that we will have sufficient resources to continue to make the investment required to maintain or increase our market share or that our investments will be successful. If we do not compete successfully, our business, financial condition, results of operations and cash flows could be materially adversely affected.

If we are unable to obtain raw materials at favorable prices, our operating margins and results of operations may be adversely affected.

We purchase substantially all electric power and other raw materials we use in the manufacturing of our products from outside sources. The costs of these raw materials have been volatile historically and are influenced by factors that are outside our control. In recent years, the prices for energy, metal alloys, nickel and certain other of our raw materials have been volatile. While we strive to offset our increased costs through supply chain management, contractual provisions and our CIP initiative, where gains are achieved in operational efficiencies, our operating margins and results of operations and cash flows may be adversely affected if we are unable to pass increases in the costs of our raw materials on to our customers or operational efficiencies are not achieved.

Economic, political and other risks associated with international operations could adversely affect our business.

A substantial portion of our operations is conducted and located outside the U.S. We have manufacturing, sales or service facilities in more than 50 countries and sell to customers in over 90 countries, in addition to the U.S. Moreover, we primarily outsource certain of our manufacturing and engineering functions to, and source our raw materials and components from, China, Eastern Europe, India and Latin America. Accordingly, our business and results of operations are subject to risks associated with doing business internationally, including:

- instability in a specific country's or region's political or economic conditions, particularly economic conditions in Europe, and political conditions in Russia, the Middle East, North Africa, Latin America and other emerging markets;
- trade protection measures, such as tariff increases, and import and export licensing and control requirements;
- political or economic instability relating to the recent Brexit referendum in the United Kingdom;
- uncertainties related to any geopolitical, economic and regulatory effects or changes due to the 2016 U.S. presidential election;
- potentially negative consequences from changes in tax laws or tax examinations;
- difficulty in staffing and managing widespread operations;

- increased aging and slower collection of receivables, particularly in Latin America and other emerging markets;
- difficulty of enforcing agreements and collecting receivables through some foreign legal systems;
- differing and, in some cases, more stringent labor regulations;
- potentially negative consequences from fluctuations in foreign currency exchange rates;
- partial or total expropriation;
- differing protection of intellectual property;
- inability to repatriate income or capital; and
- difficulty in administering and enforcing corporate policies, which may be different than the customary business practices of local cultures.

For example, political unrest or work stoppages could negatively impact the demand for our products from customers in affected countries and other customers, such as U.S. oil refineries, that could be affected by the resulting disruption in the supply of crude oil. Similarly, military conflicts in Russia, the Middle East and North Africa could soften the level of capital investment and demand for our products and services.

Some of the risks outlined above are particularly prevalent in Venezuela. The operating environment in Venezuela is challenging, with high inflation, increased risk of political and economic instability and increased government restrictions. As a result of these factors, we have experienced delays in payments from the national oil company in Venezuela, our primary Venezuelan customer, though these amounts are not disputed. Due to certain actions of this customer and the diminished activity of business and payments in 2016, we have estimated that our ability to fully collect the accounts receivable from our primary Venezuelan customer has become less than probable and we recorded a charge to selling, general and administrative expense ("SG&A") to fully reserve for those potential uncollectible accounts receivable and a charge to cost of sales ("COS")to reserve for related net inventory exposures. For additional information, see the discussion in Item 7 of this Annual Report and under Note 1 to our consolidated financial statements included in Item 8 of this Annual Report. Going forward, additional government actions, political and labor unrest, or other economic headwinds, including the Venezuelan government's inability to fulfill its fiscal obligations, could have further adverse impacts on our ability to fully collect our receivable and our business in Venezuela.

In order to manage our day-to-day operations, we must overcome cultural and language barriers and assimilate different business practices. In addition, we are required to create compensation programs, employment policies and other administrative programs that comply with laws of multiple countries. We also must communicate and monitor standards and directives across our global network. Our failure to successfully manage our geographically diverse operations could impair our ability to react quickly to changing business and market conditions and to enforce compliance with standards and procedures.

Our future success will depend, in large part, on our ability to anticipate and effectively manage these and other risks associated with our international operations. Any of these factors could, however, materially adversely affect our international operations and, consequently, our financial condition, results of operations and cash flows.

Our international operations and foreign subsidiaries are subject to a variety of complex and continually changing laws and regulations.

Due to the international scope of our operations, the system of laws and regulations to which we are subject is complex and includes, without limitation, regulations issued by the U.S. Customs and Border Protection, the U.S. Department of Commerce's Bureau of Industry and Security, the U.S. Treasury Department's Office of Foreign Assets Control and various foreign governmental agencies, including applicable export controls, customs, currency exchange control and transfer pricing regulations, as applicable. No assurances can be made that we will continue to be found to be operating in compliance with, or be able to detect violations of, any such laws or regulations. In addition, we cannot predict the nature, scope or effect of future regulatory requirements to which our international operations might be subject or the manner in which existing laws might be administered or interpreted.

There may be uncertainty as to the position the U.S. will take with respect to world affairs and events following the 2016 U.S. presidential election and related change in the U.S. political agenda, coupled with the transition of administrations. This uncertainty may relate to such issues as the new administration’s support or plans for new or existing treaty and trade relationships with other countries, such as the January 2017 U.S. withdrawal from the Trans-Pacific Partnership, which may affect restrictions or tariffs imposed on products we buy or sell. This

uncertainty, together with other key global events during

2016 (such as the continuing uncertainty arising from the Brexit referendum in the U.K. as well as ongoing terrorist activity), may adversely impact the ability or willingness of non-U.S. companies to transact business in the U.S. This uncertainty may also affect regulations and trade agreements affecting U.S. companies, global stock markets (including the NYSE, on which our common shares are traded), currency exchange rates, and general global economic conditions. All of these factors are outside of our control, but may nonetheless cause us to adjust our strategy in order to compete effectively in global markets.

Our international operations expose us to fluctuations in foreign currency exchange rates.

A significant portion of our revenue and certain of our costs, assets and liabilities, are denominated in currencies other than the U.S. dollar. The primary currencies to which we have exposure are the Euro, British pound, Mexican peso, Brazilian real, Indian rupee, Japanese yen, Singapore dollar, Argentine peso, Canadian dollar, Australian dollar, Chinese yuan, Colombian peso, Chilean peso and South African rand. Certain of the foreign currencies to which we have exposure, such as the Venezuelan bolivar and Argentine peso, have undergone significant devaluation in the past, which can reduce the value of our local monetary assets, reduce the U.S. dollar value of our local cash flow, generate local currency losses that may impact our ability to pay future dividends from our subsidiary to the parent company and potentially reduce the U.S. dollar value of future local net income. Although we enter into forward exchange contracts to economically hedge some of our risks associated with transactions denominated in certain foreign currencies, no assurances can be made that exchange rate fluctuations will not adversely affect our financial condition, results of operations and cash flows.

We could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act and similar worldwide anti-bribery laws and regulations.

The U.S. Foreign Corrupt Practices Act ("FCPA") and similar anti-bribery laws and regulations in other jurisdictions, such as the UK Bribery Act, generally prohibit companies and their intermediaries from making improper payments to government officials for the purpose of obtaining or retaining business or securing an improper advantage. Because we operate in many parts of the world and sell to industries that have experienced corruption to some degree, our policies mandate compliance with applicable anti-bribery laws worldwide. If we are found to be in violation of the FCPA or other similar anti-bribery laws or regulations, whether due to our or others' actions or inadvertence, we could be subject to civil and criminal penalties or other sanctions that could have a material adverse impact on our business, financial condition, results of operations and cash flows. In addition, actual or alleged violations could damage our reputation or ability to do business.

Terrorist acts, conflicts and wars may materially adversely affect our business, financial condition and results of operations and may adversely affect the market for our common stock.

As a global company with a large international footprint, we are subject to increased risk of damage or disruption to us, our employees, facilities, partners, suppliers, distributors, resellers or customers due to terrorist acts, conflicts and wars, wherever located around the world. The potential for future attacks, the national and international responses to attacks or perceived threats to national security, and other actual or potential conflicts or wars, such as the Israeli-Hamas conflict and ongoing instability in Syria and Egypt, have created many economic and political uncertainties. In addition, as a global company with headquarters and significant operations located in the U.S., actions against or by the U.S. may impact our business or employees. Although it is impossible to predict the occurrences or consequences of any such events, they could result in a decrease in demand for our products, make it difficult or impossible to deliver products to our customers or to receive components from our suppliers, create delays and inefficiencies in our supply chain and pose risks to our employees, resulting in the need to impose travel restrictions, any of which could adversely affect our business, financial condition, results of operations and cash flows.

Environmental compliance costs and liabilities could adversely affect our financial condition, results of operations and cash flows.

Our operations and properties are subject to regulation under environmental laws, which can impose substantial sanctions for violations. We must conform our operations to applicable regulatory requirements and adapt to changes in such requirements in all countries in which we operate.

We use hazardous substances and generate hazardous wastes in many of our manufacturing and foundry operations. Most of our current and former properties are or have been used for industrial purposes, and some may require

clean-up of historical contamination. We are currently conducting investigation and/or remediation activities at a number of locations where we have known environmental concerns. In addition, we have been identified as one of many PRPs at five Superfund sites. The projected cost of remediation at these sites, as well as our alleged "fair share" allocation, while not anticipated to

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be material, has been reserved. However, until all studies have been completed and the parties have either negotiated an amicable resolution or the matter has been judicially resolved, some degree of uncertainty remains.

We have incurred, and expect to continue to incur, operating and capital costs to comply with environmental requirements. In addition, new laws and regulations, stricter enforcement of existing requirements, the discovery of previously unknown contamination or the imposition of new clean-up requirements could require us to incur costs or become the basis for new or increased liabilities. Moreover, environmental and sustainability initiatives, practices, rules and regulations are under increasing scrutiny of both governmental and non-governmental bodies, which can cause rapid change in operational practices, standards and expectations and, in turn, increase our compliance costs. Any of these factors could have a material adverse effect on our financial condition, results of operations and cash flows.

We are party to asbestos-containing product litigation that could adversely affect our financial condition, results of operations and cash flows.

We are a defendant in a substantial number of lawsuits that seek to recover damages for personal injury allegedly resulting from exposure to asbestos-containing products formerly manufactured and/or distributed by us. Such products were used as internal components of process equipment, and we do not believe that there was any significant emission of asbestos-containing fibers during the use of this equipment. Although we are defending these allegations vigorously and believe that a high percentage of these lawsuits are covered by insurance or indemnities from other companies, there can be no assurance that we will prevail or that coverage or payments made by insurance or such other companies would be adequate. Unfavorable rulings, judgments or settlement terms could have a material adverse impact on our business, financial condition, results of operations and cash flows.

Our business may be adversely impacted by work stoppages and other labor matters.

As of December 31, 2016, we had approximately 18,000 employees, of which approximately 5,000 were located in the U.S. Approximately 5% of our U.S. employees are represented by unions. We also have unionized employees or employee work councils in Argentina, Australia, Austria, Brazil, Finland, France, Germany, India, Italy, Mexico, The Netherlands, Spain, South Africa, Sweden, Thailand and the U.K. No individual unionized facility produces more than 10% of our revenues. Although we believe that our relations with our employees are generally satisfactory and we have not experienced any material strikes or work stoppages recently, no assurances can be made that we will not in the future experience these and other types of conflicts with labor unions, works councils, other groups representing employees or our employees generally, or that any future negotiations with our labor unions will not result in significant increases in our cost of labor.

Our ability to implement our business strategy and serve our customers is dependent upon the continuing ability to employ talented professionals and attract, train, develop and retain a skilled workforce. We are subject to the risk that we will not be able to effectively replace the knowledge and expertise of an aging workforce as workers retire. Without a properly skilled and experienced workforce, our costs, including productivity costs and costs to replace employees may increase, and this could negatively impact our earnings.

We depend on key personnel, the loss of whom would harm our business.

Our future success will depend in part on the continued service of key executive officers and personnel. The loss of the services of any key individual could harm our business. Our future success also depends on our ability to recruit, retain and engage our personnel sufficiently, both to maintain our current business and to execute our strategic initiatives. Competition for officers and employees in our industry is intense and we may not be successful in attracting and retaining such personnel.

We have recently experienced changes in our senior management, including the resignation and retirement of Mark A. Blinn, our President and Chief Executive Officer, effective March 31, 2017, and the hiring of his successor, R. Scott Rowe.

Inability to protect our intellectual property could negatively affect our competitive position.

We rely on a combination of patents, copyrights, trademarks, trade secrets, confidentiality provisions and licensing arrangements to establish and protect our proprietary rights. We cannot guarantee, however, that the steps we have taken to protect our intellectual property will be adequate to prevent infringement of our rights or misappropriation of our technology. For example, effective patent, trademark, copyright and trade secret protection may be unavailable or limited in some of the foreign countries in which we operate. In addition, while we generally enter into confidentiality

agreements with our employees and third parties to protect our intellectual property, such confidentiality agreements could be breached or otherwise may not provide meaningful protection for our trade secrets and know-how related to the design, manufacture or operation of our products. If it became necessary for us to resort to litigation to protect our intellectual property rights, any proceedings could

be burdensome and costly, and we may not prevail. Further, adequate remedies may not be available in the event of an unauthorized use or disclosure of our trade secrets and manufacturing expertise. If we fail to successfully enforce our intellectual property rights, our competitive position could suffer, which could harm our business, financial condition, results of operations and cash flows.

Significant changes in pension fund investment performance or assumptions changes may have a material effect on the valuation of our obligations under our defined benefit pension plans, the funded status of these plans and our pension expense.

We maintain defined benefit pension plans that are required to be funded in the U.S., Belgium, Canada, India, Italy, Mexico, The Netherlands, Switzerland and the U.K., and defined benefit plans that are not required to be funded in Austria, France, Germany, Japan and Sweden. Our pension liability is materially affected by the discount rate used to measure our pension obligations and, in the case of the plans that are required to be funded, the level of plan assets available to fund those obligations and the expected long-term rate of return on plan assets. A change in the discount rate can result in a significant increase or decrease in the valuation of pension obligations, affecting the reported status of our pension plans and our pension expense. Significant changes in investment performance or a change in the portfolio mix of invested assets can result in increases and decreases in the valuation of plan assets or in a change of the expected rate of return on plan assets. This impact may be particularly prevalent where we maintain significant concentrations of specified investments, such as the U.K. equity and fixed income securities in our non-U.S. defined benefit plans. Changes in the expected return on plan assets assumption can result in significant changes in our pension expense and future funding requirements.

We continually review our funding policy related to our U.S. pension plan in accordance with applicable laws and regulations. U.S. regulations have increased the minimum level of funding for U.S pension plans in prior years, which has at times required significant contributions to our pension plans. Contributions to our pension plans reduce the availability of our cash flows to fund working capital, capital expenditures, R&D efforts and other general corporate purposes.

We may incur material costs as a result of product liability and warranty claims, which could adversely affect our financial condition, results of operations and cash flows.

We may be exposed to product liability and warranty claims in the event that the use of one of our products results in, or is alleged to result in, bodily injury and/or property damage or our products actually or allegedly fail to perform as expected. While we maintain insurance coverage with respect to certain product liability claims, we may not be able to obtain such insurance on acceptable terms in the future, and any such insurance may not provide adequate coverage against product liability claims. In addition, product liability claims can be expensive to defend and can divert the attention of management and other personnel for significant periods of time, regardless of the ultimate outcome. An unsuccessful defense of a product liability claim could have an adverse effect on our business, financial condition, results of operations and cash flows. Even if we are successful in defending against a claim relating to our products, claims of this nature could cause our customers to lose confidence in our products and our company. Warranty claims are not generally covered by insurance, and we may incur significant warranty costs in the future for which we would not be reimbursed.

The recording of increased deferred tax asset valuation allowances in the future or the impact of tax law changes on such deferred tax assets could affect our operating results.

We currently have significant net deferred tax assets resulting from tax credit carryforwards, net operating losses and other deductible temporary differences that are available to reduce taxable income in future periods. Based on our assessment of our deferred tax assets, we determined, based on projected future income and certain available tax planning strategies, that approximately $289 million of our deferred tax assets will more likely than not be realized in the future, and no valuation allowance is currently required for this portion of our deferred tax assets. Should we determine in the future that these assets will not be realized we will be required to record an additional valuation allowance in connection with these deferred tax assets and our operating results would be adversely affected in the period such determination is made. In addition, tax law changes could negatively impact our deferred tax assets.

Our outstanding indebtedness and the restrictive covenants in the agreements governing our indebtedness limit our operating and financial flexibility.

We are required to make scheduled repayments and, under certain events of default, mandatory repayments on our outstanding indebtedness, which may require us to dedicate a substantial portion of our cash flows from operations to payments on our indebtedness, thereby reducing the availability of our cash flows to fund working capital, capital expenditures, R&D

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efforts and other general corporate purposes, such as dividend payments and share repurchases, and could generally limit our flexibility in planning for, or reacting to, changes in our business and industry.

In addition, the agreements governing our indebtedness impose certain operating and financial restrictions on us and somewhat limit management's discretion in operating our businesses. These agreements limit or restrict our ability, among other things, to: incur additional debt; pay dividends and make other distributions; prepay subordinated debt; make investments and other restricted payments; create liens; sell assets; and enter into transactions with affiliates. We are also required to maintain certain debt ratings, comply with leverage and interest coverage financial covenants and deliver to our lenders audited annual and unaudited quarterly financial statements. Our ability to comply with these covenants may be affected by events beyond our control. Failure to comply with these covenants could result in an event of default which, if not cured or waived, may have a material adverse effect on our business, financial condition, results of operations and cash flows.

We may not be able to continue to expand our market presence through acquisitions, and any future acquisitions may present unforeseen integration difficulties or costs.

Since 1997, we have expanded through a number of acquisitions, and we may pursue strategic acquisitions of businesses in the future. Our ability to implement this growth strategy will be limited by our ability to identify appropriate acquisition candidates, covenants in our credit agreement and other debt agreements and our financial resources, including available cash and borrowing capacity. Acquisitions may require additional debt financing, resulting in higher leverage and an increase in interest expense. In addition, acquisitions may require large one-time charges and can result in the incurrence of contingent liabilities, adverse tax consequences, substantial depreciation or deferred compensation charges, the amortization of identifiable purchased intangible assets or impairment of goodwill, any of which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Should we acquire another business, the process of integrating acquired operations into our existing operations may create operating difficulties and may require significant financial and managerial resources that would otherwise be available for the ongoing development or expansion of existing operations. Some of the more common challenges associated with acquisitions that we may experience include:

- loss of key employees or customers of the acquired company;
- conforming the acquired company's standards, processes, procedures and controls, including accounting systems and controls, with our operations, which could cause deficiencies related to our internal control over financial reporting;
- coordinating operations that are increased in scope, geographic diversity and complexity;
- retooling and reprogramming of equipment;
- hiring additional management and other critical personnel; and
- the diversion of management's attention from our day-to-day operations.

Further, no guarantees can be made that we would realize the cost savings, synergies or revenue enhancements that we may anticipate from any acquisition, or that we will realize such benefits within the time frame that we expect. If we are not able to timely address the challenges associated with acquisitions and successfully integrate acquired businesses, or if our integrated product and service offerings fail to achieve market acceptance, our business could be adversely affected.

Goodwill impairment could negatively impact our net income and stockholders' equity.

Goodwill is not amortized, but is tested for impairment at the reporting unit level, which is an operating segment or one level below an operating segment. Goodwill is required to be tested for impairment annually and between annual tests if events or circumstances indicate that it is more likely than not that the fair value of a reporting unit is less than its carrying value. Reductions in or impairment of the value of our goodwill or other intangible assets will result in charges against our earnings, which could have a material adverse effect on our reported results of operations and financial position in future periods.

There are numerous risks that may cause the fair value of a reporting unit to fall below its carrying amount, which could lead to the measurement and recognition of goodwill impairment. These risks include, but are not limited to, lowered expectations of future financial results, adverse changes in the business climate, increase in the discount rate, an adverse action or assessment by a regulator, the loss of key personnel, a more-likely-than-not expectation that all or a significant portion of a reporting unit may be disposed of, failure to realize anticipated synergies from acquisitions, a

sustained decline

in the Company's market capitalization, and significant, prolonged negative variances between actual and expected financial results. In recent years, the estimated fair value of EPO and IPD have fluctuated, partially due to broad-based capital spending declines and heightened pricing pressures experienced in the oil and gas markets. Although we have concluded that there is no impairment on the goodwill associated with our EPO and IPD reporting units as of December 31, 2016, we will continue to monitor their performance and related market conditions for future indicators of potential impairment. For additional information, see the discussion in Item 7 of this Annual Report and under Note 1 to our consolidated financial statements included in Item 8 of this Annual Report.

Cybersecurity threats could disrupt our business and result in the loss of critical and confidential information.

Our information technology networks and related systems and devices are critical to the operation of our business and essential to our ability to successfully perform day-to-day operations. Cybersecurity breaches could expose us to a risk of loss, misuse, or interruption of sensitive and critical information and functions, including our proprietary information and information related to our customers, suppliers and employees. While we devote substantial resources to maintaining adequate levels of cybersecurity, there can be no assurance that we will be able to prevent all of the rapidly evolving forms of increasingly sophisticated and frequent cyberattacks. The potential consequences of a material cybersecurity incident include reputational damage, litigation with third parties, regulatory actions, theft of intellectual property, and increased cybersecurity protection and remediation costs. If we are unable to prevent, detect or adequately respond to security breaches, our operations could be disrupted and our business could be materially and adversely affected.

If we are not able to successfully execute and realize the expected financial benefits from our strategic realignment and other cost-saving initiatives, our business could be adversely affected.

In April 2015, we announced cost saving actions and a strategic manufacturing optimization initiative intended to reduce our cost structure and drive an optimized, low-cost manufacturing footprint. This initiative was expanded in the latter half of 2015 and the beginning of 2016 to include additional realignment activities that will continue beyond 2016. This initiative will involve reducing our workforce, accelerating structural changes in our global manufacturing footprint through leveraging investments in low-cost regions, additional consolidation of product manufacturing and further SG&A reductions.

While we expect significant financial benefits from our strategic realignment, we may not realize the full benefits that we currently expect within the anticipated time frame or at all. Adverse effects from our execution of realignment activities could interfere with our realization of anticipated synergies, customer service improvements and cost savings from these strategic initiatives. Additionally, our ability to fully realize the benefits and implement the realignment program may be limited by the terms of our credit facilities and other contractual commitments. Moreover, because such expenses are difficult to predict and are necessarily inexact, we may incur substantial expenses in connection with the execution of our realignment plans in excess of what is currently forecast. Further, realignment activities are a complex and time-consuming process that can place substantial demands on management, which could divert attention from other business priorities or disrupt our daily operations. Any of these failures could, in turn, materially adversely affect our business, financial condition, results of operations and cash flows, which could constrain our liquidity.

If these measures are not successful or sustainable, we may undertake additional realignment and cost reduction efforts, which could result in future charges. Moreover, our ability to achieve our other strategic goals and business plans may be adversely affected, and we could experience business disruptions with customers and elsewhere if our realignment efforts prove ineffective.

Ineffective internal controls could impact the accuracy and timely reporting of our business and financial results.

Our internal control over financial reporting may not prevent or detect misstatements because of its inherent limitations, including the possibility of human error, the circumvention or overriding of controls, or fraud. Even effective internal controls can provide only reasonable assurance with respect to the preparation and fair presentation of financial statements. If we fail to maintain the adequacy of our internal controls, including any failure to implement required new or improved controls, or if we experience difficulties in their implementation, our business and financial results could be harmed and we could fail to meet our financial reporting obligations. For example, in connection with the revisions made in this Form 10-K/A, management re-evaluated the effectiveness of our internal control over financial reporting as of December 31, 2016 and concluded that a deficiency in our internal controls related to the

control environment primarily related to the operation of certain inventory controls or recording of unsupported manual journal entries at one of the non-U.S. sites and the design and maintenance of effective business performance reviews represents material weaknesses in our internal control over financial reporting and, therefore, that we did not maintain effective internal control over financial reporting as of December 31, 2016 . For a description of the material weaknesses identified by management and the remediation efforts being implemented for the material weaknesses, see “Part II, Item 9A - Controls and Procedures.” If the enhanced controls implemented to address the material

weaknesses and to strengthen the overall internal control related to the control environment at the one non-U.S. site and the business performance review controls are not designed or do not operate effectively, if we are unsuccessful in implementing or following these enhanced processes, or we are otherwise unable to remediate these material weaknesses, this may result in untimely or inaccurate reporting of our financial results.

Forward-Looking Information is Subject to Risk and Uncertainty

This Annual Report and other written reports and oral statements we make from time-to-time include “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical facts included in this Annual Report regarding our financial position, business strategy, plans and objectives of management for future operations, industry conditions, market conditions and indebtedness covenant compliance are forward-looking statements. In some cases forward looking statements can be identified by terms such as "may," "should," "expects," "could," "intends," "projects," "predicts," "plans," "anticipates," "estimates," "believes," "forecasts" or other comparable terminology. These statements are not historical facts or guarantees of future performance, but instead are based on current expectations and are subject to significant risks, uncertainties and other factors, many of which are outside of our control.

We have identified factors that could cause actual plans or results to differ materially from those included in any forward-looking statements. These factors include those described above under this "Risk Factors" heading, or as may be identified in our other SEC filings from time to time. These uncertainties are beyond our ability to control, and in many cases, it is not possible to foresee or identify all the factors that may affect our future performance or any forward-looking information, and new risk factors can emerge from time to time. Given these risks and uncertainties, undue reliance should not be placed on forward-looking statements as a prediction of actual results.

All forward-looking statements included in this Annual Report are based on information available to us on the date of this Annual Report and the risk that actual results will differ materially from expectations expressed in this report will increase with the passage of time. We undertake no obligation, and disclaim any duty, to publicly update or revise any forward-looking statement or disclose any facts, events or circumstances that occur after the date hereof that may affect the accuracy of any forward-looking statement, whether as a result of new information, future events, changes in our expectations or otherwise. This discussion is provided as permitted by the Private Securities Litigation Reform Act of 1995 and all of our forward-looking statements are expressly qualified in their entirety by the cautionary statements contained or referenced in this section.

ITEM 6. SELECTED FINANCIAL DATA

	Year Ended December 31,				
	2016(a)(h)	2015(b)(g)(h)	2014(g)(h)	2013(c)(g)(h)	2012(g)(h)
	(Amounts in thousands, except per share data and ratios)				
RESULTS OF OPERATIONS					
Sales	$3,990,487	$4,557,791	$4,877,885	$4,954,619	$4,751,339
Gross profit	1,231,233	1,477,537	1,710,171	1,686,379	1,580,951
Selling, general and administrative expense	(976,194)	(972,733)	(936,900)	(966,830)	(922,125)
Operating income	267,965	514,665	785,386	758,566	675,778
Interest expense	(60,137)	(65,270)	(60,322)	(54,413)	(43,520)
Provision for income taxes	(77,380)	(148,351)	(209,311)	(204,862)	(160,766)
Net earnings attributable to Flowserve Corporation	132,455	258,411	513,372	483,652	448,339
Net earnings per share of Flowserve Corporation common shareholders (basic)(d)	1.02	1.94	3.75	3.42	2.86
Net earnings per share of Flowserve Corporation common shareholders (diluted)(d)	1.01	1.93	3.72	3.40	2.84
Cash flows from operating activities (i)	240,476	440,759	594,481	515,724	546,029
Cash dividends declared per share(d)	0.76	0.72	0.64	0.56	0.48
FINANCIAL CONDITION					
Working capital	$1,119,251	$1,106,946	$1,164,381	$1,136,317	$1,006,152
Total assets	4,708,923	4,963,106	4,844,667	4,921,829	4,737,477
Total debt	1,570,623	1,620,996	1,145,658	1,190,231	919,398
Retirement obligations and other liabilities	407,839	387,786	362,970	387,823	406,231
Total equity	1,637,388	1,664,382	1,930,246	1,870,669	1,889,905
FINANCIAL RATIOS					
Return on average net assets(e)	5.2 %	9.4 %	17.9 %	16.9 %	16.5 %
Net debt to net capital ratio(f)	42.4 %	43.0 %	26.4 %	30.6 %	24.5 %

(a) Results of operations in 2016 include costs of $94.8 million resulting from realignment initiatives, resulting in a reduction of after tax net earnings of $75.8 million .

(b) Results of operations in 2015 include costs of $108.1 million resulting from realignment initiatives, resulting in a reduction of after tax net earnings of $85.0 million.

(c) Results of operations in 2014 include costs of $10.7 million resulting from realignment initiatives, resulting in a reduction of after tax net earnings of $7.6 million.

(d) Periods prior to 2013 have been retrospectively adjusted for a three-for-one stock split.

(e) Calculated as adjusted net income divided by adjusted net assets, where adjusted net income is the sum of earnings before income taxes plus interest expense multiplied by one minus our effective tax rate and adjusted net assets is the average of beginning of year and end of year net assets, excluding cash and cash equivalents and debt due in one year.

(f) Calculated as total debt minus cash and cash equivalents divided by the sum of total debt and shareholders' equity minus cash and cash equivalents.

(g) Financial condition and financial ratios have been retrospectively adjusted to reflect the adoption of ASU No. 2015-03, "Interest - Imputation of Interest (Subtopic 835-30) and ASU No. 2015-17, Balance Sheet Classification of Deferred Taxes." These adjustments are more fully described in Note 1 to our consolidated financial statements included in Item 8 of this Annual Report.

(h) All periods have been revised for the errors described in Note 2 to our consolidated financial statements included in Item 8 of this Annual Report.

(i) Other information for cash flows from operating activities have been retrospectively adjusted to reflect the adoption of ASU No. 2016-09, "Compensation - Stock Compensation (Topic 718), Improvements to Employee

Share-Based Payment

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Accounting." These adjustments are more fully described in Note 1 to our consolidated financial statements included in Item 8 of this Annual Report.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis is provided to increase the understanding of, and should be read in conjunction with, the accompanying consolidated financial statements and notes. See “Item 1A. Risk Factors” and the “Forward-Looking Statements” included in this Annual Report on Form 10-K for the year ended December 31, 2016 ("Annual Report") for a discussion of the risks, uncertainties and assumptions associated with these statements. Unless otherwise noted, all amounts discussed herein are consolidated.

EXECUTIVE OVERVIEW

Our Company

We believe that we are a world-leading manufacturer and aftermarket service provider of comprehensive flow control systems. We develop and manufacture precision-engineered flow control equipment integral to the movement, control and protection of the flow of materials in our customers’ critical processes. Our product portfolio of pumps, valves, seals, automation and aftermarket services supports global infrastructure industries, including oil and gas, chemical, power generation and water management, as well as general industrial markets where our products and services add value. Through our manufacturing platform and global network of Quick Response Centers ("QRCs"), we offer a broad array of aftermarket equipment services, such as installation, advanced diagnostics, repair and retrofitting. We currently employ approximately 18,000 employees in more than 50 countries.

Our business model is significantly influenced by the capital spending of global infrastructure industries for the placement of new products into service and maintenance spending for aftermarket services for existing operations. The worldwide installed base of our products is an important source of aftermarket revenue, where products are expected to ensure the maximum operating time of many key industrial processes. Over the past several years, we have significantly invested in our aftermarket strategy to provide local support to drive customer investments in our offerings and use of our services to replace or repair installed products. The aftermarket portion of our business also helps provide business stability during various economic periods. The aftermarket business, which is primarily served by our network of 183 QRCs located around the globe, provides a variety of service offerings for our customers including spare parts, service solutions, product life cycle solutions and other value-added services. It is generally a higher margin business compared to our original equipment business and a key component of our profitable growth strategy.

Our operations are conducted through three business segments that are referenced throughout this Management’s Discussion and Analysis of Financial Condition and Results of Operations ("MD&A"):

- Engineered Product Division for long lead time, custom and other highly-engineered pumps and pump systems, mechanical seals, auxiliary systems and replacement parts and related services;
- Industrial Product Division for pre-configured engineered pumps and pump systems and related products and services; and
- Flow Control Division for engineered and industrial valves, control valves, actuators and controls and related services.

Our business segments share a focus on industrial flow control technology and have a high number of common customers. These segments also have complementary product offerings and technologies that are often combined in applications that provide us a net competitive advantage. Our segments also benefit from our global footprint and our economies of scale in reducing administrative and overhead costs to serve customers more cost effectively. For example, our segment leadership reports to our Chief Operating Officer ("COO") and the segments share leadership for operational support functions, such as research and development, marketing and supply chain.

The reputation of our product portfolio is built on more than 50 well-respected brand names such as Worthington, IDP, Valtek, Limitorque, Durco, Edward, Anchor/Darling and Durametallic, which we believe to be one of the most comprehensive in the industry. Our products and services are sold either directly or through designated channels to more than 10,000 companies, including some of the world’s leading engineering, procurement and construction ("EPC") firms, original equipment manufacturers, distributors and end users.

We continue to leverage our QRC network to be positioned as near to customers as possible for service and support in order to capture valuable aftermarket business. Along with ensuring that we have the local capability to sell, install

and service our equipment in remote regions, it is equally imperative to continuously improve our global operations. We continue to expand our global supply chain capability to meet global customer demands and ensure the quality and timely delivery of our

products. Additionally, we continue to devote resources to improving the supply chain processes across our business segments to find areas of synergy and cost reduction and to improve our supply chain management capability to ensure it can meet global customer demands. We also remain focused on improving on-time delivery and quality, while managing warranty costs as a percentage of sales across our global operations, through the assistance of a focused Continuous Improvement Process ("CIP") initiative. The goal of the CIP initiative, which includes lean manufacturing, six sigma business management strategy and value engineering, is to maximize service fulfillment to customers through on-time delivery, reduced cycle time and quality at the highest internal productivity.

During 2015, 2016 and in early 2017, we have been challenged by broad-based capital spending declines, originating in the oil and gas industry, heightened pricing pressures and negative currency impacts caused by a stronger U.S. dollar. This has been further compounded by economic and geo-political conditions in Latin America, the Middle East and China. In addition, we experienced lower than expected activity levels in our aftermarket business due to deferred spending of our customers' repair and maintenance budgets. We expect that the current environment will persist into 2017, with potential improvement in the second half of the year.

We have experienced a deterioration from plan in the operating results of our Engineered Product Operations ("EPO") and IPD reporting units which we believe was both operationally and market driven. We have concluded that there is no impairment of the goodwill associated with EPO and IPD as of December 31, 2016. Conditions are uncertain and can quickly change in the markets in which we operate which could result in sustained or further deterioration and could impact the recoverability of certain of our long-lived assets, including goodwill. We will continue to closely monitor their performance and related market conditions.

To better align costs and improve long-term efficiency, we initiated Realignment Programs to accelerate both short- and long-term strategic plans, including targeted manufacturing optimization through the consolidation of facilities, SG&A efficiency initiatives, transfer of activities from high-cost regions to lower-cost facilities and the divestiture of certain non-strategic assets. At the completion of the programs, we expect a 15% to 20% reduction in our global workforce, relative to early 2015 workforce levels. With an expected near-term investment of approximately $400 million, including projects still under final evaluation, we expect the results of our Realignment Programs will deliver annualized run-rate savings of approximately $230 million. Since inception of the Realignment Programs in 2015, we have incurred charges of $222.6 million and we expect to incur most remaining charges in 2017.

In addition, we are focusing on our ongoing low-cost sourcing, including greater use of third-party suppliers and increasing our lower-cost, emerging market capabilities.

Our Markets

The following discussion should be read in conjunction with the "Outlook for 2017" section included below in this MD&A.

Our products and services are used in several distinct industries: oil and gas, chemical, power generation, water management, and a number of other industries that are collectively referred to as "general industries."

Demand for most of our products depends on the level of new capital investment and planned and unplanned maintenance expenditures by our customers. The level of new capital investment depends, in turn, on capital infrastructure projects driven by the need for oil and gas, chemicals, power generation and water management, as well as general economic conditions. These drivers are generally related to the phase of the business cycle in their respective industries and the expectations of future market behavior. The levels of maintenance expenditures are additionally driven by the reliability of equipment, planned and unplanned downtime for maintenance and the required capacity utilization of the process.

Sales to EPC firms and original equipment manufacturers are typically for large project orders and critical applications, as are certain sales to distributors. Project orders are typically procured for customers either directly from us or indirectly through contractors for new construction projects or facility enhancement projects.

The quick turnaround business, which we also refer to as "short-cycle," is defined as orders that are received from the customer (booked) and shipped generally within six months of receipt. These orders are typically for more standardized, general purpose products, parts or services. Each of our three business segments generate certain levels of this type of business.

In the sale of aftermarket products and services, we benefit from a large installed base of our original equipment, which requires periodic maintenance, repair and replacement parts. We use our manufacturing platform and global

network of QRCs to offer a broad array of aftermarket equipment services, such as installation, advanced diagnostics, repair and retrofitting. In

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geographic regions where we are positioned to provide quick response, we believe customers have traditionally relied on us, rather than our competitors, for aftermarket products due to our highly engineered and customized products. However, the aftermarket for standard products is competitive, as the existence of common standards allows for easier replacement of the installed products. As proximity of service centers, timeliness of delivery and quality are important considerations for all aftermarket products and services, we continue to selectively expand our global QRC capabilities to improve our ability to capture this important aftermarket business.

Oil and Gas

The oil and gas industry represented approximately 36% of our bookings in both 2016 and 2015. Capital spending in the oil and gas industry decreased in 2016 compared to the previous year due to continued broad-based capital spending declines, heightened pricing pressures and negative currency impacts caused by a stronger U.S. dollar. Aftermarket opportunities in this industry decreased in 2016 due to deferred spending on our customers' repair and maintenance budgets and the impact of end-user union strikes in North America.

The outlook for the oil and gas industry is heavily dependent on the demand growth from both mature markets and developing geographies. We believe lower oil prices that began in the fourth quarter of 2014 will continue to negatively impact oil and gas upstream investment most acutely and impact mid-stream and downstream investment to a lesser extent. In addition, a reduction in the overall level of spending by oil and gas companies could continue to decrease demand for our products and services. However, we believe the long-term fundamentals for this industry remain solid in spite of the current down cycle as the industry works through current excess supply with projected depletion rates of existing fields and forecasted long-term demand growth. With our long-standing reputation in providing successful solutions for upstream, mid-stream and downstream applications, along with the advancements in our portfolio of offerings, we believe that we continue to be well-positioned to assist our customers in this challenging environment.

Chemical

The chemical industry, which represented approximately 21% and 22% of our bookings in 2016 and 2015, respectively, experienced a decreased level of capital spending in 2016 due to broad-based capital spending declines, heightened pricing pressures and negative currency impacts caused by a stronger U.S. dollar. The aftermarket opportunities decreased in 2016 due to deferred spending of our customers' repair and maintenance budgets.

The outlook for the chemical industry remains heavily dependent on global economic conditions. As global economies stabilize and unemployment conditions improve, a rise in consumer spending should follow. An increase in spending would drive greater demand for chemical-based products supporting improved levels of capital investment. We believe the chemical industry in the near-term will continue to invest in North America and Middle East capacity additions, maintenance and upgrades for optimization of existing assets and that developing regions will selectively invest in capital infrastructure to meet current and future indigenous demand. We believe our global presence and our localized aftermarket capabilities are well-positioned to serve the potential growth opportunities in this industry.

Power Generation

The power generation industry represented approximately 14% of our bookings in both 2016 and 2015. In 2016, the power generation industry continued to experience some softness in capital spending in the mature regions driven by the uncertainty related to environmental regulations, as well as potential regulatory impacts to the overall civilian nuclear market. In the developing regions, capital investment remained in place driven by increased demand forecasts for electricity in countries such as China and India. Global concerns about the environment continue to support an increase in desired future capacity from renewable energy sources. The majority of the active and planned construction throughout 2016 continued to utilize designs based on fossil fuels. Natural gas increased its percentage of utilization driven by market prices for gas remaining low and relatively stable. With the potential of unconventional sources of gas, such as shale gas, the power generation industry is forecasting an increased use of this form of fuel for power generation plants.

We believe the outlook for the power generation industry remains favorable. Current legislative efforts to limit the emissions of carbon dioxide may have an adverse effect on investment plans depending on the potential requirements imposed and the timing of compliance by country. However, we believe that proposed methods of limiting carbon dioxide emissions offer business opportunities for our products and services. We believe the long-term fundamentals for the power generation industry remain solid based on projected increases in demand for electricity driven by global

population growth, advancements of industrialization and growth of urbanization in developing markets. We also believe that our long-standing reputation in the power generation industry, our portfolio of offerings for the various generating methods, our advancements in serving the

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renewable energy market and carbon capture methodologies, as well as our global service and support structure, position us well for the future opportunities in this important industry.

Water Management

The water management industry represented approximately 4% our bookings in both 2016 and 2015. Water management industry activity level experienced some softness in 2016 despite worldwide demand for fresh water and water treatment continuing to create requirements for new facilities or for upgrades of existing systems, many of which require products that we offer, particularly pumps. The proportion of people living in regions that find it difficult to meet water requirements is expected to double by 2025. We believe that the persistent demand for fresh water during all economic cycles supports continued investments, especially in North America and developing regions.

General Industries

General industries represented, in the aggregate, approximately 25% and 24% of our bookings in 2016 and 2015, respectively. General industries comprises a variety of different businesses, including mining and ore processing, pharmaceuticals, pulp and paper, food and beverage and other smaller applications, none of which individually represented more than 5% of total bookings in 2016 and 2015. General industries also includes sales to distributors, whose end customers operate in the industries we primarily serve.

The outlook for this group of industries is heavily dependent upon the condition of global economies and consumer confidence levels. The long-term fundamentals of many of these industries remain sound, as many of the products produced by these industries are common staples of industrialized and urbanized economies. We believe that our specialty product offerings designed for these industries and our aftermarket service capabilities will provide continued business opportunities.

OUR RESULTS OF OPERATIONS

Throughout this discussion of our results of operations, we discuss the impact of fluctuations in foreign currency exchange rates. We have calculated currency effects on operations by translating current year results on a monthly basis at prior year exchange rates for the same periods.

In the second quarter of 2017, we identified accounting errors focused mainly at two of our non-U.S. sites in the inventory, accounts receivable, cost of sales and selling, general and administrative expense balances for prior periods through the first quarter of 2017. We have assessed these errors, individually and in the aggregate, and concluded that they are not material to any prior annual or interim period. However, to facilitate comparisons among periods we have revised our previously issued audited consolidated financial information for the fiscal years ended December 31, 2014, 2015 and 2016 and unaudited condensed consolidated financial information for the interim periods of 2016 and the three months ended March 31, 2017. We also corrected the timing of immaterial previously recorded out-of-period adjustments and reflected them in the revised prior period financial statements, where applicable. Prior periods not presented herein will be revised, as applicable, in future filings. Refer to Note 2 to our consolidated financial statements included in this Annual Report for more information.

In the first and second quarters of 2015, we initiated realignment programs that consist of both restructuring and non-restructuring charges ("Realignment Programs") that are further discussed in Note 19 of our consolidated financial statements included in Item 8 of this Annual Report. The Realignment Programs have continued throughout 2016 and the total charges for the Realignment Programs by segment are detailed below for the years ended December 31, 2016 and 2015:

	December 31, 2016					
(Amounts in thousands)	Engineered Product Division	Industrial Product Division	Flow Control Division	Subtotal–Reportable Segments	Eliminations and All Other	Consolidated Total
Total Realignment Program Charges						
COS	$30,642	$26,224	$8,038	$ 64,904	$ 8	$ 64,912
SG&A	13,804	8,400	3,367	25,571	4,450	30,021
Income tax expense	6,000	2,800	600	9,400	—	9,400
Total	$50,446	$37,424	$12,005	$ 99,875	$ 4,458	$ 104,333

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(Amounts in thousands)	December 31, 2015 Engineered Product Division	Industrial Product Division	Flow Control Division	Subtotal–Reportable Segments	Eliminations and All Other	Consolidated Total
Total Realignment Program Charges						
COS	$20,229	$28,607	$17,884	$ 66,720	$ —	$ 66,720
SG&A	14,006	15,407	11,024	40,437	—	40,437
Income tax expense	3,400	6,500	1,200	11,100	—	11,100
Total	$37,635	$50,514	$30,108	$ 118,257	$ —	$ 118,257

We anticipate a total investment in these Realignment Programs of approximately $400 million, including projects still under final evaluation. Since inception of the Realignment Programs in 2015, we have incurred charges of $222.6 million and we expect to incur most remaining charges in 2017.

Based on actions under our Realignment Programs, we estimate that we have achieved annual cost savings of approximately $120 million as of December 31, 2016, of which approximately $75 million was in COS with the remainder in SG&A. Upon completion of the Realignment Programs, we expect annual run-rate cost savings of approximately $230 million. Actual savings could vary from expected savings, which represent management's best estimate to date.

Effective January 7, 2015, we acquired for inclusion in IPD, 100% of SIHI Group B.V. ("SIHI"), a global provider of engineered vacuum and fluid pumps and related services.

Effective March 31, 2014, we sold our FCD Naval OY ("Naval") business to a Finnish valve manufacturer. The sale included Naval's manufacturing facility located in Laitila, Finland and a service and support center located in St. Petersburg, Russia.

Note 2 to our consolidated financial statements included in Item 8 of this Annual Report discusses the details of the above acquisition and disposition.

Bookings and Backlog

	2016	2015	2014
	(Amounts in millions)		
Bookings	$3,760.4	$4,176.8	$5,161.0
Backlog (at period end)	1,901.8	2,176.4	2,704.2

We define a booking as the receipt of a customer order that contractually engages us to perform activities on behalf of our customer in regards to the manufacture, delivery, and/or support of products or the delivery of service. Bookings recorded and subsequently canceled within the same fiscal period are excluded from bookings. Bookings of $3.8 billion in 2016 decrease d by $416.4 million , or 10.0% , as compared with 2015 . The decrease included negative currency effects of approximately $108 million . The decrease was primarily driven by the oil and gas industry, and to a lesser extent, the chemical and general industries. The decrease was primarily due to customer original equipment bookings.

Bookings in 2015 decrease d by $ 984.2 million , or 19.1% , as compared with 2014. The decrease included negative currency effects of approximately $377 million. The decrease was primarily driven by the oil and gas industry, and to a lesser extent, the general and chemical industries. The decrease was more heavily weighted toward customer original equipment bookings.

Backlog represents the aggregate value of booked but uncompleted customer orders and is influenced primarily by bookings, sales, cancellations and currency effects. Backlog of $1.9 billion at December 31, 2016 decrease d by $274.6 million , or 12.6% , as compared with December 31, 2015 . The decrease included negative currency effects of approximately $18 million (currency effects on backlog are calculated using the change in period end exchange rates). Backlog related to aftermarket orders was approximately 30% and 26% of the backlog at December 31, 2016 and 2015 , respectively. We expect to ship approximately 88% of December 31, 2016 backlog during 2017 . Backlog of $2.2 billion at December 31, 2015 decrease d by $527.8 million , or 19.5% , as compared with December 31, 2014. The decrease included negative currency effects of approximately $145 million and the impact

of cancellations of

$118.4 million of orders booked during prior years. Order cancellations do not typically result in material negative impacts to our financial results due to the cancellation provisions of our long lead time contracts.

Sales

	2016	2015	2014
	(Amounts in millions)		
Sales	$3,990.5	$4,557.8	$4,877.9

Sales in 2016 decrease d by $567.3 million , or 12.4% , as compared with 2015 . The decrease included negative currency effects of approximately $115 million . The decrease was more heavily weighted toward original equipment sales. Sales decreased into every region except for sales into the Middle East.

Sales in 2015 decrease d by $320.1 million , or 6.6% , as compared with 2014. The decrease included negative currency effects of approximately $431 million . The decrease was more heavily weighted towards original equipment sales. Sales decreased into every region except for sales into Europe, primarily due to the favorable impact of SIHI sales into the region. Sales in 2015 include $294.2 million sales from SIHI which do not compare to 2014.

Sales to international customers, including export sales from the U.S., were approximately 64% of total sales in 2016 , 66% in 2015 and 68% in 2014 . Sales into Europe, the Middle East and Africa ("EMA") were approximately 35% , 34% and 32% of total sales in 2016 , 2015 and 2014 , respectively. Sales into Asia Pacific were approximately 18% of total sales for 2016 , 18% for 2015 and 20% for 2014 . Sales into Latin America were approximately 7% of total sales in 2016 , 9% for 2015 and 11% for 2014 .

Gross Profit and Gross Profit Margin

	2016	2015	2014
	(Amounts in millions, except percentages)		
Gross profit	$1,231.2	$1,477.5	$1,710.2
Gross profit margin	30.9 %	32.4 %	35.1 %

Gross profit in 2016 decrease d by $246.3 million , or 16.7% , as compared with 2015 . Gross profit margin in 2016 of 30.9% decrease d from 32.4% in 2015 . The decrease in gross profit and gross profit margin was primarily attributed to the negative impact of decreased sales on our absorption of fixed manufacturing costs, unfavorable impacts of short-term operational inefficiencies related to the initial execution of certain Realignment Programs, lower margin projects that shipped from backlog and a charge to write down inventory in Brazil, partially offset by realignment savings achieved related to our Realignment Programs and a mix shift to higher margin aftermarket sales. Aftermarket sales increased to approximately 45% of total sales, as compared with approximately 43% of total sales for the same period in 2015 .

Gross profit in 2015 decrease d by $232.7 million , or 13.6% , as compared with 2014. Gross profit margin in 2015 of 32.4% decreased from 35.1% in 2014. The decrease in gross profit and gross profit margin was primarily attributed to the negative impact resulting from purchase accounting adjustments on acquired SIHI backlog and inventory of $18.1 million, charges related to our Realignment Programs of $66.7 million, and to a lesser extent, certain lower margin projects that shipped from backlog and the negative impact of decreased sales on our absorption of fixed manufacturing costs, as compared with the same period in 2014. The decrease was partially offset by a decrease in compensation, which included a decrease in broad-based annual incentive program compensation, and a mix shift to higher margin aftermarket sales. Aftermarket sales increased to approximately 43% of total sales, as compared with approximately 42% of total sales for the same period in 2014.

SG&A

	2016	2015	2014
	(Amounts in millions, except percentages)		
SG&A	$976.2	$972.7	$936.9
SG&A as a percentage of sales	24.5 %	21.3 %	19.2 %

SG&A in 2016 increase d by $3.5 million , or 0.4% , as compared with 2015 . Currency effects yielded a decrease of approximately $28 million . SG&A as a percentage of sales in 2016 increase d 320 basis points as compared with the same period in 2015 due primarily to increased bad debt expense as a result of the $73.5 million reserve established for our primary Venezuelan customer in the third quarter of 2016 and lower sales leverage, partially offset by decreased charges and savings achieved related to our Realignment Programs and lower SIHI integration costs.

SG&A in 2015 increase d by $35.8 million , or 3.8% , as compared with 2014. Currency effects yielded a decrease of approximately $81 million . SG&A as a percentage of sales in 2015 increase d 210 basis points as compared with the same period in 2014 due in part to $41.2 million of charges related to our Realignment Programs, $11.6 million of SIHI acquisition-related costs, lower sales leverage, a $11.9 million increase in bad debt expense and the $13.4 million gain from the sale of the Naval business in the first quarter of 2014, partially offset by a decrease in compensation, which included a decrease in broad-based annual incentive program compensation, and a $6.8 million gain from the reversal of contingent consideration on our purchase of Innovative Mag-Drive, LLC ("Innomag").

Net Earnings from Affiliates

	2016	2015	2014
	(Amounts in millions)		
Net earnings from affiliates	$12.9	$9.9	$12.1

Net earnings from affiliates represents our net income from investments in eight joint ventures (one located in each of Chile, Japan, Saudi Arabia, South Korea, the United Arab Emirates, and India and two in China) that are accounted for using the equity method of accounting. Net earnings from affiliates in 2016 increase d by $3.0 million primarily as a a result of increased earnings of our EPD joint venture in South Korea and IPD joint venture in Chile. Net earnings from affiliates in 2015 decrease d by $ 2.2 million primarily as a result of decreased earnings of our EPD joint venture in South Korea.

Operating Income

	2016	2015	2014
	(Amounts in millions, except percentages)		
Operating income	$268.0	$514.7	$785.4
Operating income as a percentage of sales	6.7 %	11.3 %	16.1 %

Operating income in 2016 decrease d by $246.7 million , or 47.9% , as compared with 2015 . The decrease was primarily a result of the $246.3 million decrease in gross profit, partially offset by the $3.5 million increase in SG&A discussed above. The decrease included negative currency effects of approximately $12 million .

Operating income in 2015 decrease d by $ 270.7 million , or 34.5% , as compared with 2014. The decrease was primarily a result of the $232.7 million decrease in gross profit and the $35.8 million increase in SG&A discussed above. The decrease included negative currency effects of approximately $42 million and $108.1 million of realignment expense.

Interest Expense and Interest Income

	2016	2015	2014
	(Amounts in millions)		
Interest expense	$(60.1)	$(65.3)	$(60.3)
Interest income	2.8	2.1	1.7

Interest expense in 2016 decrease d by $5.2 million as compared with 2015 . The decrease was primarily attributable to decreased commitments and borrowings under our Revolving Credit Facility (as such term is defined in Note 11 to our consolidated financial statements in Item 8 of this Annual Report) in 2016, as compared to the same period in 2015. Interest expense in 2015 increase d by $5.0 million as compared with 2014. The increase was primarily attributable to interest expense associated with increased borrowings in 2015 related to our public offering

of €500.0 million of Euro senior notes in aggregate principal amount due March 17, 2022 (the "2022 EUR Senior Notes") issued on March 17, 2015.

Interest income in 2016 increase d by $0.7 million as compared with 2015 . Interest income in 2015 increase d by $0.4 million as compared with 2014.

Other Income (Expense), net

	2016	2015	2014
	(Amounts in millions)		
Other income (expense), net	$2.3	$(39.1)	$2.0

Other income, net increased $41.4 million from expense of $39.1 million in 2015 to income of $2.3 million in 2016 . The increase was primarily due to a $58.7 million decrease in losses arising from transactions in currencies other than our sites' functional currencies, partially offset by a $18.2 million decrease in gains from foreign exchange contracts. The net change was primarily due to the foreign currency exchange rate movements in the Brazilian real, Canadian dollar and British pound in relation to the U.S. dollar during the year ended December 31, 2016 , as compared with the same period in 2015, and the $18.5 million loss as a result of the remeasurement of our Venezuelan bolivar-denominated net monetary assets in the first quarter of 2015 that did not recur.
Other expense, net increased $41.1 million from income of $2.0 million in 2014 to a loss of $39.1 million in 2015. The increase was primarily due to a $55.9 million increase in losses arising from transactions in currencies other than our sites' functional currencies, including the impact of the $18.5 million loss as a result of the first quarter of 2015 remeasurement of our bolivar-denominated Venezuelan net monetary assets, partially offset by a $15.4 million increase in gains from foreign exchange contracts. The changes are primarily due to the foreign currency exchange rate movements of the Brazilian real, Mexican peso and Euro in relation to the U.S. dollar as compared with the same period in 2014.

Tax Expense and Tax Rate

	2016	2015	2014
	(Amounts in millions, except percentages)		
Provision for income taxes	$77.4	$148.4	$209.3
Effective tax rate	36.3 %	36.0 %	28.7 %

The 2016 tax rate differed from the federal statutory rate of 35% primarily due to the net impact of foreign operations, tax impacts from our Realignment Programs and losses in certain foreign jurisdictions for which no tax benefit was provided. Our effective tax rate of 36.3% for the year ended December 31, 2016 increased from 36.0% in 2015 due primarily to the tax impacts described above. The 2015 tax rate differed from the federal statutory rate of 35% primarily due to tax impacts of the realignment programs, the non-deductible Venezuelan exchange rate remeasurement loss, and the establishment of a valuation allowance against our deferred tax assets in Brazil in the amount of $12.6 million, partially offset by the net impact of foreign operations, which included the impacts of lower foreign tax rates and changes in our reserves established for uncertain tax positions. The 2014 tax rate differed from the federal statutory rate of 35% primarily due to the net impact of foreign operations, which included the impacts of lower foreign tax rates and changes in our reserves established for uncertain tax positions.
On May 17, 2006, the Tax Increase Prevention and Reconciliation Act of 2005 was signed into law, creating an exclusion from U.S. taxable income for certain types of foreign related party payments of dividends, interest, rents and royalties that, prior to 2006, had been subject to U.S. taxation. On December 18, 2015, this exclusion was further extended for five additional years. This exclusion is effective for the years 2006 through 2019, and applies to certain of our related party payments.
Our effective tax rate is based upon current earnings and estimates of future taxable earnings for each domestic and international location. Changes in any of these and other factors, including our ability to utilize foreign tax credits and net operating losses or results from tax audits, could impact the tax rate in future periods. As of December 31, 2016 , we have foreign tax credits of $60.0 million , expiring in 2020 through 2026 against which we recorded a valuation allowance of $0.6 million . Additionally, we have recorded other net deferred tax assets of $84.3 million , which relate to net operating losses, tax credits and other deductible temporary differences that are available to reduce taxable income in future periods, most of which do not have a definite expiration. Should we not be able to utilize all or a portion of these credits and losses, our effective tax rate would increase.

Net Earnings and Earnings Per Share

	2016	2015	2014
	(Amounts in millions, except per share amounts)		
Net earnings attributable to Flowserve Corporation	$132.5	$258.4	$513.4
Net earnings per share — diluted	$1.01	$1.93	$3.72
Average diluted shares	131.0	133.8	137.8

Net earnings in 2016 decrease d by $125.9 million million to $132.5 million , or to $1.01 per diluted share, as compared with 2015 . The decrease was primarily attributable to a $246.7 million decrease in operating income, partially offset by a $41.4 million increase in other income, net, a $5.2 million decrease in interest expense and a $71.0 million decrease in tax expense.

Net earnings in 2015 decrease d by $255.0 million to $258.4 million , or to $1.93 per diluted share, as compared with 2014. The decrease was primarily attributable to a $270.7 million decrease in operating income, a $41.1 million increase in other expense, net and a $5.0 million increase in interest expense, partially offset by a $60.9 million decrease in tax expense.

Other Comprehensive Loss

	2016	2015	2014
	(Amounts in millions)		
Other comprehensive loss	$(85.8)	$(156.7)	$(158.5)

Other comprehensive loss in 2016 decrease d by $70.9 million to $85.8 million as compared to $156.7 million in 2015. The loss was primarily due to foreign currency translation adjustments resulting primarily from exchange rate movements of the British pound, Euro and Mexican peso versus the U.S. dollar at December 31, 2016 as compared with 2015 .

Other comprehensive loss in 2015 decreased by $1.8 million to $156.7 million as compared to $158.5 million in 2014. The loss was primarily due to foreign currency translation adjustments resulting primarily from exchange rate movements of the Euro, Brazilian real and Argentine peso versus the U.S. dollar at December 31, 2015 as compared with 2014.

Business Segments

We conduct our operations through three business segments based on type of product and how we manage the business. We evaluate segment performance and allocate resources based on each segment's operating income. See Note 16 to our consolidated financial statements included in Item 8 of this Annual Report for further discussion of our segments. The key operating results for our three business segments, EPD, IPD and FCD, are discussed below.

Engineered Product Division Segment Results

Our largest business segment is EPD, through which we design, manufacture, distribute and service custom and other highly-engineered pumps and pump systems, mechanical seals and auxiliary systems (collectively referred to as "original equipment"). EPD includes longer lead time, highly-engineered pump products, and shorter cycle engineered pumps and mechanical seals that are generally manufactured within shorter lead times. EPD also manufactures replacement parts and related equipment and provides aftermarket services. EPD primarily operates in the oil and gas, power generation, chemical, and general industries. EPD operates in 47 countries with 32 manufacturing facilities worldwide, 10 of which are located in Europe, 10 in North America, seven in Asia and five in Latin America, and it has 123 QRCs, including those co-located in manufacturing facilities and/or shared with FCD.

	EPD		
	2016	2015	2014
	(Amounts in millions, except percentages)		
Bookings	$1,823.8	$2,065.6	$2,832.8
Sales	1,996.0	2,256.8	2,564.6
Gross profit	621.6	738.3	891.5
Gross profit margin	31.1 %	32.7 %	34.8 %
Segment operating income	167.4	320.0	446.2
Segment operating income as a percentage of sales	8.4 %	14.2 %	17.4 %
Backlog (at period end)	968.8	1,160.5	1,573.3

Bookings in 2016 decrease d by $241.8 million , or 11.7% , as compared with 2015 . The decrease included negative currency effects of approximately $76 million . The decrease in customer bookings was primarily driven by the oil and gas and general industries, and to a lesser extent, the chemical industry. Customer bookings decreased $87.0 million into Europe, $52.0 million into Latin America, $38.0 million into North America, $36.4 million into the Middle East, $26.2 million into Asia Pacific and $2.6 million into Africa. The decrease was primarily driven by decreased customer original equipment bookings. Of the $1.8 billion of bookings in 2016 , approximately 48% were from oil and gas, 17% from general industries, 18% from chemical, and 17% from power generation. Interdivision bookings (which are eliminated and are not included in consolidated bookings as disclosed above) decreased $8.4 million .

Bookings in 2015 decrease d by $767.2 million , or 27.1% , as compared with 2014. The decrease included negative currency effects of approximately $228 million. The decrease in customer bookings was primarily driven by the oil and gas industry, and to a lesser extent, the chemical and general industries. Customer bookings decreased $267.5 million into North America, $226.0 million into Latin America, $149.1 million into Europe, and $92.4 million into Asia Pacific. The decrease was more heavily weighted toward customer original equipment bookings. Of the $2.1 billion of bookings in 2015, approximately 47% were from oil and gas, 19% from general industries, 17% from chemical, 15% from power generation and 2% from water management. Interdivision bookings (which are eliminated and are not included in consolidated bookings as disclosed above) decreased $18.9 million.

Sales in 2016 decrease d $260.8 million , or 11.6% , as compared with 2015 . The decrease included negative currency effects of approximately $88 million . The decrease was proportionally driven by decreased original equipment and aftermarket sales, resulting from decreased customer sales of $110.2 million into Latin America, $84.3 million into North America, $27.7 million into Europe, $19.3 million into Africa, $13.5 million into Asia Pacific and $2.0 million into the Middle East. Interdivision sales (which are eliminated and are not included in consolidated sales as disclosed above) decrease d $14.0 million .

Sales in 2015 decrease d $307.8 million , or 12.0% , as compared with 2014. The decrease included negative currency effects of approximately $257 million . The decrease was primarily driven by decreased original equipment sales, resulting from decreased customer sales of $127.4 million into Asia Pacific, $71.4 million into Latin America, $39.9 million into the Middle East, $27.8 million into Europe and $11.3 million into North America. Interdivision sales (which are eliminated and are not included in consolidated sales as disclosed above) decreased $10.0 million.

Gross profit in 2016 decrease d by $116.7 million , or 15.8% , as compared with 2015 . G ross profit margin in 2016 of 31.1% decrease d from 32.7% in 2015 . The decrease in gross profit margin was primarily attributable to the negative impact of decreased sales on our absorption of fixed manufacturing costs, a charge to write down inventory in Brazil and increased charges related to our Realignment Programs, partially offset by realignment savings achieved.

Gross profit in 2015 decrease d by $153.2 million , or 17.2% , as compared with 2014. G ross profit margin in 2015 of 32.7% decreased from 34.8% in 2014. The decrease in gross profit margin was primarily attributable to the charges related to our Realignment Programs and the negative impact of decreased sales on our absorption of fixed manufacturing costs, partially offset by a decrease in broad-based annual incentive program compensation.

Operating income in 2016 decrease d by $152.6 million , or 47.7% , as compared with 2015 . The decrease included negative currency effects of approximately $10 million . The decrease was due to a $116.7 million decrease in

gross profit, and a $39.1 million increase in SG&A (including a decrease due to currency effects of approximately $22 million). The increase in SG&A is primarily due to increased bad debt expense as a result of EPD's $71.2 million portion of the $73.5

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million reserve established for our primary Venezuelan customer in the third quarter of 2016, partially offset by savings achieved related to our Realignment Programs and lower selling-related expenses.
Operating income in 2015 decrease d by $126.2 million , or 28.3% , as compared with 2014. The decrease included negative currency effects of approximately $28 million . The decrease was due to a $153.2 million decrease in gross profit, partially offset by a $30.1 million decrease in SG&A (including a decrease due to currency effects of approximately $49 million). The decrease in SG&A was due primarily to decreased selling and marketing-related expenses resulting from lower sales, savings associated with strategic cost reduction programs and a decrease in broad-based annual incentive program compensation, partially offset by charges related to our Realignment Programs and increased bad debt expenses.
Backlog of $1.0 billion at December 31, 2016 decrease d by $191.7 million, or 16.5% , as compared with December 31, 2015 . Currency effects provided a decrease of approximately $2 million . Backlog at December 31, 2016 included $11.7 million of interdivision backlog (which is eliminated and not included in consolidated backlog as disclosed above). Backlog of $1.2 billion at December 31, 2015 decreased by $412.8 million , or 26.2% , as compared with December 31, 2014. Currency effects provided a decrease of approximately $80 million. The decrease includes the impact of cancellations of orders booked during prior years. Order cancellations do not typically result in material negative impacts to our financial results due to the cancellation provisions of our long lead time contracts. Backlog at December 31, 2015 included $10.5 million of interdivision backlog (which is eliminated and not included in consolidated backlog as disclosed above).
Industrial Product Division Segment Results
Through IPD we design, manufacture, distribute and service engineered, pre-configured industrial pumps and pump systems, including submersible motors and specialty products, collectively referred to as "original equipment." Additionally, IPD manufactures replacement parts and related equipment, and provides a full array of support services, collectively referred to as "aftermarket". IPD primarily operates in the oil and gas, chemical, water management, power generation and general industries. IPD operates 20 manufacturing facilities, five of which are located in the U.S and 10 in Europe, four in Asia, one in Latin America and it operates 32 QRCs worldwide, including 20 sites in Europe and six in the U.S. three in Latin America and three in Asia, including those co-located in manufacturing facilities.

	IPD		
	2016	2015	2014
	(Amounts in millions, except percentages)		
Bookings	$797.7	$887.2	$781.0
Sales	835.1	981.9	805.9
Gross profit	182.5	238.7	217.6
Gross profit margin	21.9 %	24.3 %	27.0 %
Segment operating (loss) income	(6.4)	29.1	103.6
Segment operating (loss) income as a percentage of sales	(0.8)%	3.0 %	12.9 %
Backlog (at period end)	375.6	424.6	393.9

Bookings in 2016 decrease d by $89.5 million , or 10.1% , as compared with 2015 . The decrease included negative currency effects of approximately $10 million . The decrease in customer bookings was primarily driven by the oil and gas, power generation and chemical industries. Bookings decrease d $36.7 million into Asia Pacific, $19.1 million into Europe, $12.5 million into Africa, $7.7 million into Latin America and $7.2 million into North America. The decrease was driven by customer original equipment bookings. Of the $797.7 million of bookings in 2016 , approximately 44% were from general industries, 22% from chemical, 14% from oil and gas, 14% from water management and 6% from power generation. Interdivision bookings (which are eliminated and are not included in consolidated bookings as disclosed above) decrease d $7.4 million .

Bookings in 2015 increase d by $106.2 million , or 13.6% , as compared with 2014. The increase included negative currency effects of approximately $42 million. Increased customer bookings in the chemical, general and power

generation industries were partially offset by a decrease in the oil and gas and the water management industries. Bookings increased $116.1 million into Europe and $30.7 million into Asia Pacific primarily due to SIHI, partially offset by a $30.5 million decrease into North America. The increase was primarily driven by customer original equipment bookings. Interdivision bookings (which are eliminated and are not included in consolidated bookings as disclosed above) decreased $4.5 million. Of the $887.2 million of bookings in 2015, approximately 38% were from general industries, 23% from chemical, 18% from oil and gas, 13% from water management and 8% from power generation.

Sales in 2016 decrease d by $146.8 million , or 15.0% , as compared with 2015 . The decrease included negative currency effects of approximately $13 million and was primarily driven by customer original equipment sales. Customer sales decreased $54.8 million into Europe, $31.3 million into North America and $17.8 million into Asia Pacific, $14.5 million into the Middle East, $13.1 million into Latin America and $5.4 million into Africa. Interdivision sales (which are eliminated and are not included in consolidated sales as disclosed above) decrease d $9.0 million .

Sales in 2015 increase d by $176.0 million , or 21.8% , as compared with 2014. The increase included negative currency effects of approximately $50 million and was primarily driven by customer original equipment sales. Customer sales increased $151.7 million into Europe, $39.8 million into North America and $36.6 million into Asia Pacific primarily due to SIHI, partially offset by decreased sales of $29.6 million into Latin America and $22.1 million into Africa. Interdivision sales (which are eliminated and are not included in consolidated sales as disclosed above) decreased $0.8 million.

Gross profit in 2016 decrease d by $56.2 million, or 23.5% , as compared with 2015 . Gross profit margin in 2016 of 21.9% decrease d from 24.3% in 2015 . The decrease in gross profit margin was primarily attributable to the negative impact of decreased sales on our absorption of fixed manufacturing costs, lower margin projects that shipped from backlog and the unfavorable impact of short-term operational inefficiencies related to the initial execution of certain Realignment Programs, partially offset by savings achieved related to our Realignment Programs and the reduced impact of SIHI purchase accounting adjustments in 2016.

Gross profit in 2015 increase d by $21.1 million , or 9.7% , as compared with 2014. Gross profit margin in 2015 of 24.3% decreased from 27.0% in 2014. The decrease in gross profit margin was primarily attributable to charges related to our Realignment Programs and the negative impact of SIHI's purchase accounting adjustments, partially offset by a decrease in broad-based annual incentive program compensation.

Operating income (loss) for 2016 decrease d by $35.5 million, or 122.0% , as compared with 2015 . The decrease included currency benefits of approximately $1 million . The decrease was primarily due to the $56.2 million decrease in gross profit, partially offset by a $20.8 million decrease in SG&A related primarily to savings achieved and decreased charges related to our Realignment Programs, lower SIHI integration costs and lower selling-related expenses.

Operating income for 2015 decrease d by $74.5 million , or 71.9% as compared with 2014. The decrease included negative currency effects of approximately $5 million . The decrease was primarily due to a $96.6 million increase in SG&A, due primarily to the inclusion of SIHI's SG&A, which included charges related to our Realignment Programs and acquisition-related costs, and increased bad debt expense, partially offset by a decrease in broad-based annual incentive compensation.

Backlog of $375.6 million at December 31, 2016 decrease d by $49.0 million , or 11.5% , as compared with December 31, 2015 . Currency effects provided a decrease of approximately $17 million . Backlog at December 31, 2016 included $14.2 million of interdivision backlog (which is eliminated and not included in consolidated backlog as disclosed above). Backlog of $424.6 million at December 31, 2015 decreased by $30.7 million , or 7.8% , as compared to December 31, 2014. Currency effects provided an decrease of approximately $16 million. Backlog at December 31, 2015 included $15.7 million of interdivision backlog (which is eliminated and not included in consolidated backlog as disclosed above).

Flow Control Division Segment Results

Our second largest business segment is FCD, which designs, manufactures and distributes a broad portfolio of engineered-to-order and configured-to-order isolation valves, control valves, valve automation products, boiler controls and related services. FCD leverages its experience and application know-how by offering a complete menu of engineered services to complement its expansive product portfolio. FCD has a total of 58 manufacturing facilities and QRCs in 25 countries around the world, with five of its 26 manufacturing operations located in the U.S., 13 located in Europe, seven located in Asia Pacific and one located in Latin America. Based on independent industry sources, we believe that FCD is the third largest industrial valve supplier on a global basis.

	FCD		
	2016	2015	2014
	(Amounts in millions, except percentages)		
Bookings	$1,216.8	$1,318.5	$1,665.2
Sales	1,233.7	1,415.5	1,615.7
Gross profit	427.4	496.8	603.0
Gross profit margin	34.6 %	35.1 %	37.3 %
Segment operating income	198.6	233.6	322.8
Segment operating income as a percentage of sales	16.1 %	16.5 %	20.0 %
Backlog (at period end)	584.5	622.0	774.8

Bookings in 2016 decrease d $101.7 million , or 7.7% , as compared with 2015 . The decrease included negative currency effects of approximately $22 million . The decrease in customer bookings was primarily driven by the oil and gas industry, and to a lesser extent, the general and chemical industries. Decreased customer bookings of $69.6 million into North America and $46.7 million into the Middle East were partially offset by increased bookings of $22.7 million into Europe and $6.6 million into Latin America. The decrease was primarily driven by decreased customer original equipment bookings. Of the $1.2 billion of bookings in 2016 , approximately 31% were from oil and gas, 28% from chemical, 24% from general industries, 16% from power generation and 1% from water management.

Bookings in 2015 decrease d $346.7 million , or 20.8% , as compared with 2014. The decrease included negative currency effects of approximately $107 million. The decrease in customer bookings was primarily driven by the general, chemical, and oil and gas industries. Customer bookings decreased $136.2 million into Europe, $129.8 million into Asia Pacific, $46.3 million into Latin America and $37.3 million into North America. The decrease was driven by decreased customer original equipment bookings. Of the $1.3 billion of bookings in 2015, approximately 32% were from oil and gas, 27% from chemical, 24% from general industries, 15% from power generation and 2% from water management.

Sales in 2016 decrease d by $181.8 million , or 12.8% , as compared with 2015 . The decrease included negative currency effects of approximately $14 million and was primarily driven by decreased customer original equipment sales. Sales decrease d $83.5 million into Asia Pacific, $62.7 million into Europe, $45.0 million into North America and $18.3 million into Latin America, partially offset by an increase of $25.9 million into the Middle East.

Sales in 2015 decrease d by $200.2 million , or 12.4% , as compared with 2014. The decrease included negative currency effects of approximately $125 million and was primarily driven by decreased customer original equipment sales. Sales decreased $66.0 million into Asia Pacific, $54.8 million into Europe, $38.4 million into North America, $24.3 million into Latin America, and $22.2 million into Africa, partially offset by an increase of $3.5 million into the Middle East.

Gross profit in 2016 decrease d by $69.4 million , or 14.0% , as compared with 2015 . Gross profit margin in 2016 of 34.6% decrease d from 35.1% for the same period in 2015 . The decrease in gross profit margin was primarily attributable to the negative impact of decreased sales on our absorption of fixed manufacturing costs and lower margin projects that shipped from backlog, partially offset by savings achieved and decreased charges related to our Realignment Programs compared to the same period in 2015.

Gross profit in 2015 decrease d by $106.2 million , or 17.6% , as compared with 2014. Gross profit margin in 2015 of 35.1% decreased from 37.3% for the same period in 2014. The decrease in gross profit margin was primarily attributable to unfavorable shift in product line mix and charges related to our Realignment Programs, partially offset by a decrease in broad-based annual incentive compensation.

Operating income in 2016 decrease d by $35.0 million , or 15.0% , as compared with 2015 . The decrease included negative currency effects of approximately $3 million . The decrease was primarily attributable to the $69.4 million

decrease in gross profit, partially offset by the $34.4 million decrease in SG&A. The decrease in SG&A was primarily due to savings achieved and decreased charges related to our Realignment Programs and lower selling-related expenses as compared to the same period in 2015.

Operating income in 2015 decrease d by $89.2 million , or 27.6% , as compared with 2014. The decrease included negative currency effects of approximately $14 million . The decrease was primarily attributable to the $106.2 million decrease in gross profit, partially offset by the $17.1 million decrease in SG&A. The decrease in SG&A was primarily driven by the

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decrease in broad-based annual incentive compensation, partially offset by charges related to our Realignment Programs and the $13.4 million gain from the sale of the Naval business in the first quarter of 2014 that did not recur.
Backlog of $584.5 million at December 31, 2016 decrease d by $37.5 million, or 6.0% , as compared with December 31, 2015 . Currency effects provided an increase of less than $1 million . Backlog of $622 million at December 31, 2015 decreased by $152.8 million , or 19.7% , as compared to December 31, 2014. Currency effects provided a decrease of approximately $49 million.

LIQUIDITY AND CAPITAL RESOURCES

Cash Flow Analysis

	2016	2015	2014
	(Amounts in millions)		
Net cash flows provided by operating activities	$240.5	$440.8	$594.5
Net cash flows used by investing activities	(91.5)	(525.3)	(84.1)
Net cash flows (used) provided by financing activities	(143.7)	37.7	(391.2)

Existing cash, cash generated by operations and borrowings available under our existing revolving credit facility are our primary sources of short-term liquidity. We monitor the depository institutions that hold our cash and cash equivalents on a regular basis, and we believe that we have placed our deposits with creditworthy financial institutions. Our sources of operating cash generally include the sale of our products and services and the conversion of our working capital, particularly accounts receivable and inventories. Our total cash balance at December 31, 2016 was $367.2 million , compared with $366.4 million at December 31, 2015 and $450.4 million at December 31, 2014 .

Our cash provided by operating activities was $240.5 million , $440.8 million and $594.5 million in 2016 , 2015 and 2014 , respectively, which provided cash to support short-term working capital needs. Cash flow used by working capital increased in 2016 due primarily to lower accounts payable of $71.0 million and lower accrued liabilities of $88.8 million , partially offset by higher cash provided by lower accounts receivable of $36.9 million and lower inventory of $52.9 million . During 2016 , we contributed $42.5 million to our defined benefit pension plans. Working capital increased in 2015 due primarily to lower accounts payable of $113.6 million and higher inventory of $21.3 million , partially offset by lower accounts receivable of $53.1 million . During 2015 , we contributed $43.8 million to our defined benefit pension plans.

Decreases in accounts receivable provided $36.9 million of cash flow in 2016 , as compared with $53.1 million in 2015 and a use of $79.7 million in 2014 . The decrease in accounts receivable in 2016 was partially attributable to lower sales during the period. As described more fully in Note 1 to our consolidated financial statements included in Item 8 of this Annual Report, we estimated that our ability to fully collect the accounts receivable from our primary Venezuelan customer became less than probable and in the third quarter of 2016 we recorded a charge of $73.5 million to selling, general and administrative expense ("SG&A") to fully reserve for those potentially uncollectible accounts receivable. We continue to pursue payments and on-going business with our Venezuelan customer. For the fourth quarter of 2016 our days' sales outstanding ("DSO") was 74 days. DSO was 72 days for 2015 and 74 for 2014 . We have not experienced a significant increase in customer payment defaults in 2016 .

Decreases in inventory provided $52.9 million of cash flow in 2016 compared with a use of $21.3 million in 2015 and a use of $31.4 million in 2014 . The source of cash from inventory in 2016 was primarily due to decreased inventory balances as a result of decreased backlog. The use of cash from inventory in 2015 was primarily due to a decrease in progress billings on large orders at December 31, 2015 . Inventory turns were 3.3 times at December 31, 2016 , compared with 3.7 times for the same period in both 2015 and 2014 . Our calculation of inventory turns does not reflect the impact of advanced cash received from our customers.

Decreases in accounts payable used $71.0 million of cash flow in 2016 compared with $113.6 million in 2015 .

Decreases in accrued liabilities and income taxes payable used $88.8 million of cash flow in 2016 compared with a source of cash of $51.1 million in 2015 .

Cash flows used by investing activities were $91.5 million, $525.3 million and $84.1 million in 2016 , 2015 and 2014 , respectively. Capital expenditures represented the largest use in 2016 and were $89.7 million, $181.9 million

and $132.6 million in 2016 , 2015 and 2014 , respectively. In the second quarter of 2016 we divested of a non-strategic foundry business which resulted in a cash outflow of $5.1 million and a loss of $7.7 million. Cash outflows for the same period in 2015 resulted

primarily from payments for the SIHI acquisition of $353.7 million. In 2017, we currently estimate capital expenditures to be between $80 million and $90 million before consideration of any acquisition activity.

Cash flows used by financing activities were $143.7 million in 2016 compared with a source of cash of $37.7 million in 2015 and a use of cash of $391.2 million in 2014 . Cash outflows during 2016 resulted primarily from $97.7 million of dividend payments and $60.0 million in payments on long-term debt. Cash inflows during 2015 resulted primarily from the $526.3 million in proceeds from the issuance of the 2022 EUR Senior Notes, partially offset by outflows from the repurchase of $303.7 million of our common stock, $93.7 million of dividend payments and $45.0 million in payments on long-term debt. Cash outflows during 2014 resulted primarily from the repurchase of $246.5 million of our common stock, $85.1 million of dividend payments and $40.0 million in payments on long-term debt.

We have maintained our previously-announced policy of annually returning 40% to 50% of running two-year average net earnings to shareholders following attainment of the previously announced target leverage ratio. On November 13, 2014, our Board of Directors approved a $500.0 million share repurchase authorization, which included approximately $175 million of remaining capacity under the previous share repurchase authorization. As of December 31, 2016, we had $160.7 million of remaining capacity under our current share repurchase program. While we intend to adhere to this policy for the foreseeable future, any future returns of cash through dividends and/or share repurchases, will be reviewed individually, declared by our Board of Directors and implemented by management at its discretion, depending on our financial condition, business opportunities and market conditions at such time.

In the fourth quarter of 2015, through amendment we extended the maturity of our Senior Credit Facility by two years to October 14, 2020, lowered the sublimits for the issuance of letters of credit and reduced the commitment fee from 0.175% to 0.15% on the daily unused portions of the Senior Credit Facility. The amended Senior Credit Facility also increases the maximum permitted leverage ratio from 3.25 to 3.5 times debt to total Consolidated EBITDA (as defined in the Senior Credit Facility). Additionally, on March 17, 2015, we issued $500.0 million 2022 EUR Senior Notes, which bear an annual stated interest rate of 1.25%. These items are more fully described in Note 11 to our consolidated financial statements included in Item 8 of this Annual Report.

Our cash needs for the next 12 months are expected to be comparable to those of 2016. We believe cash flows from operating activities, combined with availability under our Revolving Credit Facility and our existing cash balances, will be sufficient to enable us to meet our cash flow needs for the next 12 months. However, cash flows from operations could be adversely affected by a decrease in the rate of general global economic growth and an extended decrease in capital spending of our customers, as well as economic, political and other risks associated with sales of our products, operational factors, competition, regulatory actions, fluctuations in foreign currency exchange rates and fluctuations in interest rates, among other factors. We believe that cash flows from operating activities and our expectation of continuing availability to draw upon our credit agreements are also sufficient to meet our cash flow needs for periods beyond the next 12 months.

Acquisitions and Dispositions

We regularly evaluate acquisition opportunities of various sizes. The cost and terms of any financing to be raised in conjunction with any acquisition, including our ability to raise economical capital, is a critical consideration in any such evaluation.

Note 3 to our consolidated financial statements included in Item 8 of this this Annual Report contains a discussion of our acquisition and disposition activity.

Financing

A discussion of our debt and related covenants is included in Note 11 to our consolidated financial statements included in Item 8 of this this Annual Report. We were in compliance with all covenants as of December 31, 2016.

Certain financing arrangements contain provisions that may result in an event of default if there was a failure under other financing arrangements to meet payment terms or to observe other covenants that could result in an acceleration of payment due. Such provisions are referred to as "cross default" provisions. The Senior Credit Facility and the Senior Notes as described in Note 11 to our consolidated financial statements included in Item 8 of this Annual Report are cross-defaulted to each other.

The rating agencies assign credit ratings to certain of our debt. Our access to capital markets and costs of debt could be directly affected by our credit ratings. Any adverse action with respect to our credit ratings could generally cause borrowing costs to increase and the potential pool of investors and funding sources to decrease. In particular, a decline

in credit ratings would increase the cost of borrowing under our Senior Credit Facility.

Liquidity Analysis

Our cash balance increased by $0.7 million to $367.2 million as of December 31, 2016 as compared with December 31, 2015 . The slight cash increase included $89.7 million in capital expenditures, $97.7 million in dividend payments and $60.0 million in payments on long-term debt, partially offset by $240.5 million in operating cash flows.

Approximately 27% of our currently outstanding Term Loan Facility (as such term is defined in Note 11 to our consolidated financial statements in Item 8 of this Annual Report) and $33.3 million of other short-term borrowings are due to mature in 2017 and 2018. Our Senior Credit Facility matures in October 2020. As of December 31, 2016, we had no revolving loans and $102.6 million letters of credit outstanding under our $1.0 billion Revolving Credit Facility. As of December 31, 2016, due to a financial covenant in the Senior Credit Facility, the amount available for borrowings under our Revolving Credit Facility was effectively limited to $553.5 million. Our Revolving Credit Facility is committed and held by a diversified group of financial institutions.

At December 31, 2016 and 2015, as a result of increases in values of the plan's assets and our contributions to the plan, our U.S. pension plan was fully-funded as defined by applicable law. After consideration of our intent to maintain fully funded status, we contributed $20.0 million to our U.S. pension plan in 2016, excluding direct benefits paid of $2.5 million. We continue to maintain an asset allocation consistent with our strategy to maximize total return, while reducing portfolio risks through asset class diversification.

At December 31, 2016, $342.8 million of our total cash balance of $367.2 million was held by foreign subsidiaries, $228.8 million of which we consider permanently reinvested outside the U.S. Based on the expected 2017 liquidity needs of our various geographies, we currently do not anticipate the need to repatriate any permanently reinvested cash to fund domestic operations that would generate adverse tax results. However, in the event this cash is needed to fund domestic operations, we estimate the $228.8 million could be repatriated resulting in a U.S. cash tax liability between $5 million and $15 million. Should we be required to repatriate this cash, it could limit our ability to assert permanent reinvestment of foreign earnings and invested capital in future periods.

OUTLOOK FOR 2017

Our future results of operations and other forward-looking statements contained in this Annual Report, including this MD&A, involve a number of risks and uncertainties — in particular, the statements regarding our goals and strategies, new product introductions, plans to cultivate new businesses, future economic conditions, revenue, pricing, gross profit margin and costs, capital spending, expected cost savings from our realignment programs, depreciation and amortization, research and development expenses, potential impairment of investments, tax rate and pending tax and legal proceedings. Our future results of operations may also be affected by employee incentive compensation including our annual program and the amount, type and valuation of share-based awards granted, as well as the amount of awards forfeited due to employee turnover. In addition to the various important factors discussed above, a number of other factors could cause actual results to differ materially from our expectations. See the risks described in "Item 1A. Risk Factors" of this Annual Report.

Our bookings were $3,760.4 million during 2016. Because a booking represents a contract that can be, in certain circumstances, modified or canceled, and can include varying lengths between the time of booking and the time of revenue recognition, there is no guarantee that bookings will result in comparable revenues or otherwise be indicative of future results.

We believe lower oil prices that began in the fourth quarter of 2014 will continue to negatively impact oil and gas upstream investment most acutely and impact mid-stream and downstream investment to a lesser extent. In addition, a reduction in the overall level of spending by oil and gas companies could continue to decrease demand for our products and services. However, we believe the long-term fundamentals for this industry remain solid in spite of the current down cycle as the industry works through current excess supply with projected depletion rates of existing fields and forecasted long-term demand growth. With our long-standing reputation in providing successful solutions for upstream, mid-stream and downstream applications, along with the advancements in our portfolio of offerings, we believe that we continue to be well-positioned to assist our customers in this challenging environment.

We expect a continued competitive economic environment in 2017. Continued execution of our Realignment Programs and investments in broad-based employee incentive compensation, while providing long-term benefits, will

pressure operating margins in 2017. We anticipate benefits from the continuation of our end-user strategies, the strength of our high margin aftermarket business, continued disciplined cost management, our diverse customer base, our broad product portfolio and our unified operating platform. Similar to prior years, we expect our results will be weighted towards the second half of the year. While we believe that our primary markets continue to provide opportunities, we remain cautious in our outlook for 2017 given the continuing uncertainty of capital spending in many of our markets and global economic conditions. Accordingly,
due to the decrease in backlog at December 31, 2016 as compared with the prior year and a continued competitive environment we expect that sales will decline between 6% to 11% in 2017. For additional discussion on our markets and our opportunities, see the "Business Overview — Our Markets" section of this MD&A.
On December 31, 2016, we had $1,313.1 million of fixed-rate Senior Notes outstanding and $224.3 million of variable-rate debt under our Term Loan Facility. As of December 31, 2016, we had no variable to fixed interest rate derivative contracts. However, because a portion of our debt carries a variable rate of interest, our debt is subject to volatility in rates, which could impact interest expense. We expect our interest expense in 2017 will be relatively consistent with amounts incurred in 2016. Our results of operations may also be impacted by unfavorable foreign currency exchange rate movements. See “Item 7A. Quantitative and Qualitative Disclosures about Market Risk” of this Annual Report.
We expect to generate sufficient cash from operations and have sufficient capacity under our Revolving Credit Facility to fund our working capital, capital expenditures, dividend payments, share repurchases, debt payments and pension plan contributions in 2017. The amount of cash generated or consumed by working capital is dependent on our level of revenues, customer cash advances, backlog, customer-driven delays and other factors. We seek to improve our working capital utilization, with a particular focus on improving the management of accounts receivable and inventory. In 2017, our cash flows for investing activities will be focused on strategic initiatives to pursue new markets, geographic expansion, information technology infrastructure and cost reduction opportunities and we currently estimate capital expenditures to be between $80 million and $90 million, before consideration of any acquisition activity. We have $60.0 million in scheduled principal repayments in 2017 under our Term Loan Facility, and we expect to comply with the covenants under our Senior Credit Facility in 2017. See Note 11 to our consolidated financial statements included in Item 8 of this Annual Report for further discussion of our debt covenants.
We currently anticipate that our minimum contribution to our qualified U.S. pension plan will be approximately $20 million, excluding direct benefits paid, in 2017 in order to maintain fully-funded status as defined by applicable law. We currently anticipate that our contributions to our non-U.S. pension plans will be approximately $6 million in 2017, excluding direct benefits paid.

CONTRACTUAL OBLIGATIONS AND COMMERCIAL COMMITMENTS
The following table presents a summary of our contractual obligations at December 31, 2016:

	Payments Due By Period				
	Within 1 Year	1-3 Years	3-5 Years	Beyond 5 Years	Total
	(Amounts in millions)				
Term Loan Facility and Senior Notes	$60.0	$ 119.3	$ 45.0	$1,313.1	$1,537.4
Fixed interest payments(1)	36.1	72.2	72.2	36.3	216.8
Variable interest payments(2)	4.9	7.0	0.8	—	12.7
Other debt and capital lease obligations	25.4	7.9	—	—	33.3
Operating leases	48.6	67.4	42.9	65.3	224.2
Purchase obligations:(3)					
Inventory	320.1	13.9	—	—	334.0
Non-inventory	45.4	0.5	—	—	45.9
Pension and postretirement benefits(4)	58.6	115.7	121.8	299.6	595.7
Total	$599.1	$ 403.9	$ 282.7	$1,714.3	$3,000.0

(1)

Fixed interest payments represent interest payments on the Senior Notes and Term Loan Facility as defined in Note 10 to our consolidated financial statements included in Item 8 of this Annual Report.

(2) Variable interest payments under our Term Loan Facility were estimated using a base rate of three-month LIBOR as of December 31, 2016.

(3) Purchase obligations are presented at the face value of the purchase order, excluding the effects of early termination provisions. Actual payments could be less than amounts presented herein.

(4) Retirement and postretirement benefits represent estimated benefit payments for our U.S. and non-U.S. defined benefit plans and our postretirement medical plans, as more fully described below and in Note 11 to our consolidated financial statements included in Item 8 of this Annual Report.

As of December 31, 2016, the gross liability for uncertain tax positions was $59.3 million. We do not expect a material payment related to these obligations to be made within the next twelve months. We are unable to provide a reasonably reliable estimate of the timing of future payments relating to the uncertain tax positions.

The following table presents a summary of our commercial commitments at December 31, 2016:

	Commitment Expiration By Period				
	Within 1 Year	1-3 Years	3-5 Years	Beyond 5 Years	Total
	(Amounts in millions)				
Letters of credit	$287.2	$ 162.2	$ 43.6	$ 30.4	$523.4
Surety bonds	71.9	4.1	0.2	—	76.2
Total	$359.1	$ 166.3	$ 43.8	$ 30.4	$599.6

We expect to satisfy these commitments through performance under our contracts.

PENSION AND POSTRETIREMENT BENEFITS OBLIGATIONS

Plan Descriptions

We and certain of our subsidiaries have defined benefit pension plans and defined contribution plans for full-time and part-time employees. Approximately 65% of total defined benefit pension plan assets and approximately 54% of defined benefit pension obligations are related to the U.S. qualified plan as of December 31, 2016. The assets for the U.S. qualified plan are held in a single trust with a common asset allocation. Unless specified otherwise, the references in this section are to all of our U.S. and non-U.S. plans. None of our common stock is directly held by these plans.

Our U.S. defined benefit plan assets consist of a balanced portfolio of primarily U.S. equity and fixed income securities. Our non-U.S. defined benefit plan assets include a significant concentration of United Kingdom ("U.K.") fixed income securities, as discussed in Note 12 to our consolidated financial statements included in Item 8 of this Annual Report. We monitor investment allocations and manage plan assets to maintain acceptable levels of risk. At December 31, 2016, the estimated fair market value of U.S. and non-U.S. plan assets for our defined benefit pension plans increased to $642.3 million from $639.0 million at December 31, 2015. Assets were allocated as follows:

	U.S. Plan	
Asset category	2016	2015
U.S. Large Cap	20%	19%
U.S. Small Cap	4 %	4 %
International Large Cap	14%	14%
Emerging Markets	5 %	5 %
World Equity	8 %	8 %
Equity securities	51%	50%
Liability Driven Investment	39%	39%
Long-Term Government/Credit	10%	11%
Fixed income	49%	50%

	Non-U.S. Plans	
Asset category	2016	2015
North American Companies	7 %	6 %
U.K. Companies	—%	8 %
European Companies	—%	3 %
Asian Pacific Companies	—%	2 %
Global Equity	8 %	8 %
Equity securities	15%	27%
U.K. Government Gilt Index	31%	27%
U.K. Corporate Bond Index	1 %	19%
Global Fixed Income Bond	2 %	18%
Liability Driven Investment	11%	—%
Fixed income	45%	64%
Multi-asset	25%	—%
Buy-in Contract	9 %	—%
Other	6 %	9 %
Other Types	40%	9 %

The projected benefit obligation ("Benefit Obligation") for our defined benefit pension plans was $833.5 million and $812.4 million as of December 31, 2016 and 2015, respectively. Benefits under our defined benefit pension plans are based primarily on participants' compensation and years of credited service.

The estimated prior service cost and the estimated actuarial net loss for the defined benefit pension plans that will be amortized from accumulated other comprehensive loss into net pension expense in 2017 is approximately $0.1 million and $9.5 million, respectively. We amortize estimated prior service costs and estimated net losses over the remaining expected service period or over the remaining expected lifetime for plans with only inactive participants.

We sponsor defined benefit postretirement medical plans covering certain current retirees and a limited number of future retirees in the U.S. These plans provide for medical and dental benefits and are administered through insurance companies. We fund the plans as benefits are paid, such that the plans hold no assets in any period presented. Accordingly, we have no investment strategy or targeted allocations for plan assets. The benefits under the plans are not available to new employees or most existing employees.

The Benefit Obligation for our defined benefit postretirement medical plans was $27.3 million and $28.6 million as of December 31, 2016 and 2015, respectively. The estimated actuarial net loss for the defined benefit postretirement medical plans that will be amortized from accumulated other comprehensive loss into net pension expense in 2017 is $0.1 million. The estimated prior service cost that is expected to be amortized from accumulated other comprehensive loss into pension expense in 2017 is $0.1 million. We amortize any estimated net loss over the remaining expected service period of approximately three years.

Accrual Accounting and Significant Assumptions

We account for pension benefits using the accrual method, recognizing pension expense before the payment of benefits to retirees. The accrual method of accounting for pension benefits requires actuarial assumptions concerning future events that will determine the amount and timing of the benefit payments.

Our key assumptions used in calculating our cost of pension benefits are the discount rate, the rate of compensation increase and the expected long-term rate of return on plan assets. We, in consultation with our actuaries, evaluate the key actuarial assumptions and other assumptions used in calculating the cost of pension and postretirement benefits, such as discount rates, expected return on plan assets for funded plans, mortality rates, retirement rates and assumed rate of compensation increases, and determine such assumptions as of December 31 of each year to calculate liability information as of that date and pension and postretirement expense for the following year. See discussion of our accounting for and assumptions related to pension and postretirement benefits in the "Our Critical Accounting Estimates" section of this MD&A.

In 2016, net pension expense for our defined benefit pension plans included in operating income was $37.5 million compared with $40.1 million in 2015 and $45.5 million in 2014.

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The following are assumptions related to our defined benefit pension plans as of December 31, 2016:

	U.S. Plan	Non-U.S. Plans
Weighted average assumptions used to determine Benefit Obligation:		
Discount rate	4.00%	2.34 %
Rate of increase in compensation levels	4.00	3.22
Weighted average assumptions used to determine 2016 net pension expense:		
Long-term rate of return on assets	6.00%	4.68 %
Discount rate	4.75	3.13
Rate of increase in compensation levels	4.00	3.61

The following provides a sensitivity analysis of alternative assumptions on the U.S. qualified and aggregate non-U.S. pension plans and U.S. postretirement plans.

Effect of Discount Rate Changes and Constancy of Other Assumptions:

	0.5% Increase	0.5% Decrease
	(Amounts in millions)	
U.S. defined benefit pension plan:		
Effect on net pension expense	$(1.3)	$ 1.3
Effect on Benefit Obligation	(16.8)	18.2
Non-U.S. defined benefit pension plans:		
Effect on net pension expense	(2.5)	2.6
Effect on Benefit Obligation	(26.9)	30.6
U.S. Postretirement medical plans:		
Effect on postretirement medical expense	(0.1)	—
Effect on Benefit Obligation	(0.9)	0.9

Effect of Changes in the Expected Return on Assets and Constancy of Other Assumptions:

	0.5% Increase	0.5% Decrease
	(Amounts in millions)	
U.S. defined benefit pension plan:		
Effect on net pension expense	$ (2.0)	$ 2.0
Non-U.S. defined benefit pension plans:		
Effect on net pension expense	(1.1)	1.1

As discussed below, accounting principles generally accepted in the U.S. ("U.S. GAAP") provide that differences between expected and actual returns are recognized over the average future service of employees.

At December 31, 2016, as compared with December 31, 2015, we decreased our discount rate for the U.S. plan from 4.75% to 4.00% based on an analysis of publicly-traded investment grade U.S. corporate bonds, which had lower yields due to current market conditions. The average discount rate for the non-U.S. plans decreased from 3.13% to 2.34% based on analysis of bonds and other publicly-traded instruments, by country, which had lower yields due to

market conditions. The average assumed rate of compensation remained relatively constant at approximately 4.00% for the U.S. plan and decreased to 3.22% from 3.61% for our non-U.S. plans. To determine the 2016 pension expense, the expected rate of return on U.S. plan assets decreased to 6.00% from 6.25% and we decreased our average rate of return on non-U.S. plan assets from 5.03% to 4.68%, primarily based on our target allocations and expected long-term asset returns. As the expected rate of return on plan assets is long-term in nature, short-term market changes do not significantly impact the rate. For all U.S. plans, we adopted the RP-2006 mortality tables and the MP-2016 improvement scale published in October 2016. We applied the RP-2006 tables based on the constituency of our plan population for union and non-union participants. We adjusted the improvement scale to utilize 75% of the ultimate improvement rate, consistent with assumptions adopted by the Social Security Administration trustees, based on long-term historical experience. Currently, we believe this approach provides the best estimate of our future obligation. Most plan participants elect to receive plan benefits as a lump sum at the end of service, rather than an annuity. As such, the updated mortality tables had an immaterial effect on our pension obligation.

We expect that the net pension expense for our defined benefit pension plans included in earnings before income taxes will be approximately $3.5 million lower in 2017 than the $37.5 million in 2016, primarily due to the reduction in the amortization of the actuarial net loss. We have used discount rates of 4.00%, 2.34% and 3.75% at December 31, 2016, in calculating our estimated 2017 net pension expense for U.S. pension plans, non-U.S. pension plans and postretirement medical plans, respectively.

The assumed ranges for the annual rates of increase in health care costs were 7.5% for 2016, 2015 and 2014, with a gradual decrease to 5.0% for 2025 and future years. If actual costs are higher than those assumed, this will likely put modest upward pressure on our expense for retiree health care.

Plan Funding

Our funding policy for defined benefit plans is to contribute at least the amounts required under applicable laws and local customs. We contributed $42.5 million, $43.8 million and $43.5 million to our defined benefit plans in 2016, 2015 and 2014, respectively. After consideration of our intent to remain fully-funded based on standards set by law, we currently anticipate that our contribution to our U.S. pension plan in 2017 will be approximately $20 million, excluding direct benefits paid. We expect to contribute approximately $6 million to our non-U.S. pension plans in 2017, excluding direct benefits paid.

For further discussion of our pension and postretirement benefits, see Note 11 to our consolidated financial statements included in Item 8 of this Annual Report.

OUR CRITICAL ACCOUNTING ESTIMATES

The process of preparing financial statements in conformity with U.S. GAAP requires the use of estimates and assumptions to determine reported amounts of certain assets, liabilities, revenues and expenses and the disclosure of related contingent assets and liabilities. These estimates and assumptions are based upon information available at the time of the estimates or assumptions, including our historical experience, where relevant. The most significant estimates made by management include: timing and amount of revenue recognition; deferred taxes, tax valuation allowances and tax reserves; reserves for contingent loss; pension and postretirement benefits; and valuation of goodwill, indefinite-lived intangible assets and other long-lived assets. The significant estimates are reviewed at least annually if not quarterly by management. Because of the uncertainty of factors surrounding the estimates, assumptions and judgments used in the preparation of our financial statements, actual results may differ from the estimates, and the difference may be material.

Our critical accounting policies are those policies that are both most important to our financial condition and results of operations and require the most difficult, subjective or complex judgments on the part of management in their application, often as a result of the need to make estimates about the effect of matters that are inherently uncertain. We believe that the following represent our critical accounting policies. For a summary of all of our significant accounting policies, see Note 1 to our consolidated financial statements included in Item 8 of this Annual Report. Management and our external auditors have discussed our critical accounting estimates and policies with the Audit Committee of our Board of Directors.

Revenue Recognition

Revenues for product sales are recognized when the risks and rewards of ownership are transferred to the customers, which is typically based on the contractual delivery terms agreed to with the customer and fulfillment of all but inconsequential or perfunctory actions. In addition, our policy requires persuasive evidence of an arrangement, a fixed or determinable sales price and reasonable assurance of collectibility. We defer the recognition of revenue when advance payments are received from customers before performance obligations have been completed and/or services have been performed. Freight charges billed to customers are included in sales and the related shipping costs are included in cost of sales in our consolidated statements of income. Our contracts typically include cancellation provisions that require customers to reimburse us for costs incurred up to the date of cancellation, as well as any contractual cancellation penalties.

We enter into certain agreements with multiple deliverables that may include any combination of designing, developing, manufacturing, modifying, installing and commissioning of flow management equipment and providing services related to the performance of such products. Delivery of these products and services typically occurs within a one to two-year period, although many arrangements, such as "short-cycle" type orders, have a shorter timeframe for

delivery. We separate deliverables into units of accounting based on whether the deliverable(s) have standalone value to the customer (impact of general rights of return is immaterial). Contract value is allocated ratably to the units of accounting in the arrangement based on their relative selling prices determined as if the deliverables were sold separately.

Revenues for long-term contracts that exceed certain internal thresholds regarding the size and duration of the project and provide for the receipt of progress billings from the customer are recorded on the percentage of completion method with

progress measured on a cost-to-cost basis.   Percentage of completion revenue represents less than 5% of our consolidated sales as of December 31, 2016 and 7% as of December 31, 2015 and 2014.
Revenue on service and repair contracts is recognized after services have been agreed to by the customer and rendered. Revenues generated under fixed fee service and repair contracts are recognized on a ratable basis over the term of the contract. These contracts can range in duration, but generally extend for up to five years. Fixed fee service contracts represent approximately 1% of consolidated sales for each year presented.
In certain instances, we provide guaranteed completion dates under the terms of our contracts. Failure to meet contractual delivery dates can result in late delivery penalties or non-recoverable costs. In instances where the payment of such costs are deemed to be probable, we perform a project profitability analysis, accounting for such costs as a reduction of realizable revenues, which could potentially cause estimated total project costs to exceed projected total revenues realized from the project. In such instances, we would record reserves to cover such excesses in the period they are determined. In circumstances where the total projected revenues still exceed total projected costs, the incurrence of penalties or non-recoverable costs generally reduces profitability of the project at the time of subsequent revenue recognition. Our reported results would change if different estimates were used for contract costs or if different estimates were used for contractual contingencies.
Deferred Taxes, Tax Valuation Allowances and Tax Reserves
We recognize valuation allowances to reduce the carrying value of deferred tax assets to amounts that we expect are more likely than not to be realized. Our valuation allowances primarily relate to the deferred tax assets established for certain tax credit carryforwards and net operating loss carryforwards for non-U.S. subsidiaries, and we evaluate the realizability of our deferred tax assets by assessing the related valuation allowance and by adjusting the amount of these allowances, if necessary. We assess such factors as our forecast of future taxable income and available tax planning strategies that could be implemented to realize the net deferred tax assets in determining the sufficiency of our valuation allowances. Failure to achieve forecasted taxable income in the applicable tax jurisdictions could affect the ultimate realization of deferred tax assets and could result in an increase in our effective tax rate on future earnings. Implementation of different tax structures in certain jurisdictions could, if successful, result in future reductions of certain valuation allowances.
The amount of income taxes we pay is subject to ongoing audits by federal, state and foreign tax authorities, which often result in proposed assessments. Significant judgment is required in determining income tax provisions and evaluating tax positions. We establish reserves for open tax years for uncertain tax positions that may be subject to challenge by various tax authorities. The consolidated tax provision and related accruals include the impact of such reasonably estimable losses and related interest and penalties as deemed appropriate. Tax benefits recognized in the financial statements from uncertain tax positions are measured based on the largest benefit that has a greater than fifty percent likelihood of being realized upon ultimate settlement.
While we believe we have adequately provided for any reasonably foreseeable outcome related to these matters, our future results may include favorable or unfavorable adjustments to our estimated tax liabilities. To the extent that the expected tax outcome of these matters changes, such changes in estimate will impact the income tax provision in the period in which such determination is made.
Reserves for Contingent Loss
Liabilities are recorded for various contingencies arising in the normal course of business when it is both probable that a loss has been incurred and such loss is estimable. Assessments of reserves are based on information obtained from our independent and in-house experts, including recent legal decisions and loss experience in similar situations. The recorded legal reserves are susceptible to changes due to new developments regarding the facts and circumstances of each matter, changes in political environments, legal venue and other factors. Recorded environmental reserves could change based on further analysis of our properties, technological innovation and regulatory environment changes.
Estimates of liabilities for unsettled asbestos-related claims are based on known claims and on our experience during the preceding two years for claims filed, settled and dismissed, with adjustments for events deemed unusual and unlikely to recur. A substantial majority of our asbestos-related claims are covered by insurance or indemnities.
Estimated indemnities and receivables from insurance carriers for unsettled claims and receivables for settlements and legal fees paid by us for asbestos-related claims are estimated using our historical experience with insurance recovery rates and estimates of future recoveries, which include estimates of coverage and financial viability of our insurance

carriers. We have claims pending against certain insurers that, if resolved more favorably than estimated future recoveries, would result in discrete gains in the applicable quarter. We are currently unable to estimate the impact, if any, of unasserted asbestos-related claims, although future claims would also be subject to existing indemnities and insurance coverage. Changes in claims filed, settled and

dismissed and differences between actual and estimated settlement costs and insurance or indemnity recoveries could impact future expense.

Pension and Postretirement Benefits

We provide pension and postretirement benefits to certain of our employees, including former employees, and their beneficiaries. The assets, liabilities and expenses we recognize and disclosures we make about plan actuarial and financial information are dependent on the assumptions and estimates used in calculating such amounts. The assumptions include factors such as discount rates, health care cost trend rates, inflation, expected rates of return on plan assets, retirement rates, mortality rates, turnover, rates of compensation increases and other factors.

The assumptions utilized to compute expense and benefit obligations are shown in Note 11 to our consolidated financial statements included in Item 8 of this Annual Report. These assumptions are assessed annually in consultation with independent actuaries and investment advisors as of December 31 and adjustments are made as needed. We evaluate prevailing market conditions and local laws and requirements in countries where plans are maintained, including appropriate rates of return, interest rates and medical inflation (health care cost trend) rates. We ensure that our significant assumptions are within the reasonable range relative to market data. The methodology to set our significant assumptions includes:

- Discount rates are estimated using high quality debt securities based on corporate or government bond yields with a duration matching the expected benefit payments. For the U.S. the discount rate is obtained from an analysis of publicly-traded investment-grade corporate bonds to establish a weighted average discount rate. For plans in the U.K. and the Eurozone we use the discount rate obtained from an analysis of AA-graded corporate bonds used to generate a yield curve. For other countries or regions without a corporate AA bond market, government bond rates are used. Our discount rate assumptions are impacted by changes in general economic and market conditions that affect interest rates on long-term high-quality debt securities, as well as the duration of our plans' liabilities.
- The expected rates of return on plan assets are derived from reviews of asset allocation strategies, expected long-term performance of asset classes, risks and other factors adjusted for our specific investment strategy. These rates are impacted by changes in general market conditions, but because they are long-term in nature, short-term market changes do not significantly impact the rates. Changes to our target asset allocation also impact these rates.
- The expected rates of compensation increase reflect estimates of the change in future compensation levels due to general price levels, seniority, age and other factors.

Depending on the assumptions used, the pension and postretirement expense could vary within a range of outcomes and have a material effect on reported earnings. In addition, the assumptions can materially affect benefit obligations and future cash funding. Actual results in any given year may differ from those estimated because of economic and other factors.

We evaluate the funded status of each retirement plan using current assumptions and determine the appropriate funding level considering applicable regulatory requirements, tax deductibility, reporting considerations, cash flow requirements and other factors. We discuss our funding assumptions with the Finance Committee of our Board of Directors.

Valuation of Goodwill, Indefinite-Lived Intangible Assets and Other Long-Lived Assets

The initial recording of goodwill and intangible assets requires subjective judgments concerning estimates of the fair value of the acquired assets. We test the value of goodwill and indefinite-lived intangible assets for impairment as of December 31 each year or whenever events or circumstances indicate such assets may be impaired.

The test for goodwill impairment involves significant judgment in estimating projections of fair value generated through future performance of each of the reporting units. The identification of our reporting units began at the operating segment level and considered whether components one level below the operating segment levels should be identified as reporting units for purpose of testing goodwill for impairment based on certain conditions. These conditions included, among other factors, (i) the extent to which a component represents a business and (ii) the aggregation of economically similar components within the operating segments and resulted in five reporting units. Other factors that were considered in determining whether the aggregation of components was appropriate included the similarity of the nature of the products and services, the nature of the production processes, the methods of distribution and the types of industries served.

An impairment loss for goodwill is recognized if the implied fair value of goodwill is less than the carrying value. We estimate the fair value of our reporting units based on an income approach, whereby we calculate the fair value of a reporting unit based on the present value of estimated future cash flows. A discounted cash flow analysis requires us to make various judgmental assumptions about future sales, operating margins, growth rates and discount rates, which are based on our budgets,

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business plans, economic projections, anticipated future cash flows and market participants. Assumptions are also made for varying perpetual growth rates for periods beyond the long-term business plan period.

We did not record an impairment of goodwill in 2016, 2015 or 2014; however the estimated fair value of our Engineered Product Operations ("EPO") and IPD reporting units reduced significantly due to broad-based capital spending declines and heightened pricing pressure experienced in the oil and gas markets which are anticipated to continue in the near to mid-term. The EPO reporting unit is a component of our EPD reporting segment and is primarily focused on long lead time, custom and other highly-engineered pumps and pump systems. As of December 31, 2016 our EPO reporting unit had approximately $156 million of goodwill and its estimated fair value exceeded its carrying value by approximately 45%. In addition, our IPD reporting unit, which is primarily focused on pre-configured industrial pumps and pump systems had approximately $298 million of goodwill and it fair value exceeded its carrying value by approximately 70%. Key assumptions used in determining the estimated fair value of our EPO and IPD reporting units included the annual operating plan and forecasted operating results, successful execution of our current realignment programs and identified strategic initiatives, a constant cost of capital, a short-term stabilization and mid to long-term improvement of the macro-economic conditions of the oil and gas market, and a relatively stable global gross domestic product. A 100 basis point increase in our cost of capital would reduce the estimated fair values of both EPO and IPD reporting units by approximately 13%, which coupled with a prolonged down cycle of the oil and gas markets, could potentially put both reporting units' goodwill at risk of a future impairment. Although we have concluded that there is no impairment on the goodwill associated with our EPO and IPD reporting units as of December 31, 2016, we will continue to closely monitor their performance and related market conditions for future indicators of potential impairment and reassess accordingly.

We also consider our market capitalization in our evaluation of the fair value of our goodwill. Our market capitalization increased as compared with 2015 and did not indicate a potential impairment of our goodwill as of December 31, 2016.

Impairment losses for indefinite-lived intangible assets are recognized whenever the estimated fair value is less than the carrying value. Fair values are calculated for trademarks using a "relief from royalty" method, which estimates the fair value of a trademark by determining the present value of estimated royalty payments that are avoided as a result of owning the trademark. This method includes judgmental assumptions about sales growth and discount rates that have a significant impact on the fair value and are substantially consistent with the assumptions used to determine the fair value of our reporting units discussed above. We did not record a material impairment of our trademarks in 2016, 2015 or 2014.

The recoverable value of other long-lived assets, including property, plant and equipment and finite-lived intangible assets, is reviewed when indicators of potential impairments are present. The recoverable value is based upon an assessment of the estimated future cash flows related to those assets, utilizing assumptions similar to those for goodwill. Additional considerations related to our long-lived assets include expected maintenance and improvements, changes in expected uses and ongoing operating performance and utilization.

Due to uncertain market conditions and potential changes in strategy and product portfolio, it is possible that forecasts used to support asset carrying values may change in the future, which could result in non-cash charges that would adversely affect our financial condition and results of operations.

ACCOUNTING DEVELOPMENTS

We have presented the information about accounting pronouncements not yet implemented in Note 1 to our consolidated financial statements included in Item 8 of this Annual Report.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We have market risk exposure arising from changes in interest rates and foreign currency exchange rate movements. We are exposed to credit-related losses in the event of non-performance by counterparties to financial instruments, but we currently expect all counterparties will continue to meet their obligations given their current creditworthiness.

Interest Rate Risk

Our earnings are impacted by changes in short-term interest rates as a result of borrowings under our Senior Credit Facility, which bear interest based on floating rates. At December 31, 2016, we had $224.3 million of variable rate debt obligations outstanding under our Senior Credit Facility with a weighted average interest rate of 2.25%. A hypothetical change of 100 basis points in the interest rate for these borrowings, assuming constant variable rate debt levels, would have changed interest expense by $2.2 million for the year ended December 31, 2016.

Foreign Currency Exchange Rate Risk

A substantial portion of our operations are conducted by our subsidiaries outside of the U.S. in currencies other than the U.S. dollar. The primary currencies in which we operate, in addition to the U.S. dollar, are the Argentine peso, Australian dollar, Brazilian real, British pound, Canadian dollar, Chinese yuan, Colombian peso, Euro, Indian rupee, Japanese yen, Mexican peso, Singapore dollar, Swedish krona, Russian ruble, Malaysian ringgit and Venezuelan bolivar. Almost all of our non-U.S. subsidiaries conduct their business primarily in their local currencies, which are also their functional currencies. Foreign currency exposures arise from translation of foreign-denominated assets and liabilities into U.S. dollars and from transactions, including firm commitments and anticipated transactions, denominated in a currency other than a non-U.S. subsidiary’s functional currency. In March 2015, we designated €255.7 million of our €500.0 million 2022 EUR Senior Notes as a net investment hedge of our investments in certain of our international subsidiaries that use the Euro as their functional currency. Generally, we view our investments in foreign subsidiaries from a long-term perspective and use capital structuring techniques to manage our investment in foreign subsidiaries as deemed necessary. We realized net losses associated with foreign currency translation of $72.0 million , $173.4 million and $148.3 million for the years ended December 31, 2016 , 2015 and 2014 , respectively, which are included in other comprehensive loss . The net loss in 2016 was primarily driven by the weakening of the British pound, Euro and Mexican peso versus the U.S. dollar at December 31, 2016 as compared with December 31, 2015 .

We employ a foreign currency risk management strategy to minimize potential changes in cash flows from unfavorable foreign currency exchange rate movements. Where available, the use of forward exchange contracts allows us to mitigate transactional exposure to exchange rate fluctuations as the gains or losses incurred on the forward exchange contracts will offset, in whole or in part, losses or gains on the underlying foreign currency exposure. Our policy allows foreign currency coverage only for identifiable foreign currency exposures, and beginning in the fourth quarter of 2013 instruments that meet certain criteria are designated for hedge accounting. As of December 31, 2016 , we had a U.S. dollar equivalent of $393.8 million in aggregate notional amount outstanding in foreign exchange contracts with third parties, compared with $397.3 million at December 31, 2015 . Transactional currency gains and losses arising from transactions outside of our sites’ functional currencies and changes in fair value of non-designated foreign exchange contracts are included in our consolidated results of operations. We recognized foreign currency net gains (losses) of $2.8 million , $(37.7) million and $2.8 million for the years ended December 31, 2016 , 2015 and 2014 , respectively, which are included in o ther income (expense), net in the accompanying consolidated statements of income. See discussion of the impact in 2015 of the devaluation of the Venezuelan bolivar in Note 1 to our consolidated financial statements included in Item 8 of this Annual Report.

Based on a sensitivity analysis at December 31, 2016 , a 10% change in the foreign currency exchange rates for the year ended December 31, 2016 would have impacted our net earnings by approximately $4 million . This calculation assumes that all currencies change in the same direction and proportion relative to the U.S. dollar and that there are no indirect effects, such as changes in non-U.S. dollar sales volumes or prices. This calculation does not take into account the impact of the foreign currency forward exchange contracts discussed above.

Hedging related transactions for designated foreign exchange contracts recorded to other comprehensive loss , net of deferred taxes, are summarized in Note 18 to our consolidated financial statements included in Item 8 of this Annual Report.

We expect to recognize losses of $0.1 million , net of deferred taxes, into earnings in the next twelve months related to designated cash flow hedges based on their fair values at December 31, 2016 .

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Flowserve Corporation

In our opinion, the consolidated financial statements listed in the index appearing under Item 15(a)(1) present fairly, in all material respects, the financial position of Flowserve Corporation and its subsidiaries as of December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2016, in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the index appearing under Item 15(a)(2) presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. Management and we previously concluded that the Company maintained effective internal control over financial reporting as of December 31, 2016. However, management has subsequently determined that material weaknesses in internal control over financial reporting related to the control environment at one non-U.S. site and the design of business performance controls used to monitor the completeness and accuracy of the financial results of subsidiaries and to identify potential breakdowns in lower level controls existed as of that date. Accordingly, management's report has been restated and our present opinion on internal control over financial reporting, as presented herein, is different from that expressed in our previous report. Also in our opinion, the Company did not maintain, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) because material weaknesses in internal control over financial reporting related to the control environment at one non-U.S. site and the design of business performance controls used to monitor the completeness and accuracy of the financial results of subsidiaries and to identify potential breakdowns in lower level controls existed as of that date. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the annual or interim financial statements will not be prevented or detected on a timely basis. The material weaknesses referred to above are described in Management's Report on Internal Control Over Financial Reporting appearing under Item 9A. We considered these material weaknesses in determining the nature, timing, and extent of audit tests applied in our audit of the 2016 consolidated financial statements, and our opinion regarding the effectiveness of the Company's internal control over financial reporting does not affect our opinion on those consolidated financial statements. The Company's management is responsible for these financial statements and financial statement schedule, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in management's report referred to above. Our responsibility is to express opinions on these financial statements, on the financial statement schedule, and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance

with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers LLP
PricewaterhouseCoopers LLP
Dallas, Texas
February 16, 2017, except for the effects of the revision discussed in Note 2 to the consolidated financial statements and the matters discussed in the penultimate paragraph of Management's Report on Internal Control Over Financial Reporting, as to which the date is August 11, 2017

FLOWSERVE CORPORATION
CONSOLIDATED BALANCE SHEETS

	December 31,	
	2016	2015
	(Amounts in thousands, except per share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	$367,162	$366,444
Accounts receivable, net	882,638	985,772
Inventories, net	897,690	978,641
Prepaid expenses and other	150,199	126,465
Total current assets	2,297,689	2,457,322
Property, plant and equipment, net	724,805	758,427
Goodwill	1,205,054	1,223,986
Deferred taxes	83,722	70,264
Other intangible assets, net	214,527	228,777
Other assets, net	183,126	224,330
Total assets	$4,708,923	$4,963,106
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$412,087	$491,378
Accrued liabilities	680,986	798,564
Debt due within one year	85,365	60,434
Total current liabilities	1,178,438	1,350,376
Long-term debt due after one year	1,485,258	1,560,562
Retirement obligations and other liabilities	407,839	387,786
Commitments and contingencies (See Note 13)		
Shareholders' equity:		
Common shares, $1.25 par value	220,991	220,991
Shares authorized — 305,000		
Shares issued — 176,793 and 176,793, respectively		
Capital in excess of par value	491,848	494,961
Retained earnings	3,598,396	3,565,958
Treasury shares, at cost — 46,980 and 47,703 shares, respectively	(2,078,527)	(2,106,785)
Deferred compensation obligation	8,507	10,233
Accumulated other comprehensive loss	(624,788)	(538,232)
Total Flowserve Corporation shareholders' equity	1,616,427	1,647,126
Noncontrolling interests	20,961	17,256
Total equity	1,637,388	1,664,382
Total liabilities and equity	$4,708,923	$4,963,106

See accompanying notes to consolidated financial statements.

FLOWSERVE CORPORATION
CONSOLIDATED STATEMENTS OF INCOME

	Year Ended December 31,		
	2016	2015	2014
	(Amounts in thousands, except per share data)		
Sales	$3,990,487	$4,557,791	$4,877,885
Cost of sales	(2,759,254)	(3,080,254)	(3,167,714)
Gross profit	1,231,233	1,477,537	1,710,171
Selling, general and administrative expense	(976,194)	(972,733)	(936,900)
Net earnings from affiliates	12,926	9,861	12,115
Operating income	267,965	514,665	785,386
Interest expense	(60,137)	(65,270)	(60,322)
Interest income	2,804	2,065	1,680
Other income (expense), net	2,280	(39,093)	2,000
Earnings before income taxes	212,912	412,367	728,744
Provision for income taxes	(77,380)	(148,351)	(209,311)
Net earnings, including noncontrolling interests	135,532	264,016	519,433
Less: Net earnings attributable to noncontrolling interests	(3,077)	(5,605)	(6,061)
Net earnings attributable to Flowserve Corporation	$132,455	$258,411	$513,372
Net earnings per share attributable to Flowserve Corporation common shareholders:			
Basic	$1.02	$1.94	$3.75
Diluted	1.01	1.93	3.72
Cash dividends declared per share	$0.76	$0.72	$0.64

See accompanying notes to consolidated financial statements.

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FLOWSERVE CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year Ended December 31,		
	2016	2015	2014
	(Amounts in thousands)		
Net earnings, including noncontrolling interests	$135,532	$264,016	$519,433
Other comprehensive loss:			
Foreign currency translation adjustments, net of taxes of $42,776, $103,279 and $88,547 in 2016, 2015 and 2014, respectively	(71,994)	(173,385)	(148,273)
Pension and other postretirement effects, net of taxes of $7,281, $(6,843) and $8,698 in 2016, 2015 and 2014, respectively	(16,069)	14,937	(5,870)
Cash flow hedging activity, net of taxes of $(734), $(862) and $1,937 in 2016, 2015 and 2014, respectively	2,220	1,752	(4,396)
Other comprehensive loss	(85,843)	(156,696)	(158,539)
Comprehensive income, including noncontrolling interests	49,689	107,320	360,894
Comprehensive income attributable to noncontrolling interests	(3,787)	(7,036)	(6,144)
Comprehensive income attributable to Flowserve Corporation	$45,902	$100,284	$354,750

See accompanying notes to consolidated financial statements.

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FLOWSERVE CORPORATION
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

	Total Flowserve Corporation Shareholders' Equity									
	Common Stock		Capital in Excess of Par Value	Retained Earnings	Treasury Stock		Deferred Compensation Obligation	Accumulated Other Comprehensive Loss	Noncontrolling Interests	Total Ec
	Shares	Amount			Shares	Amount				
	(Amounts in thousands)									
Balance, as reported — January 1, 2014	176,793	$220,991	$476,218	$2,985,391	(39,630)	$(1,600,266)	$9,522	$(221,477)	$6,742	$1,877,
Adjustment, revision to previously reported financial information (Note 2)	—	—	—	(6,452)	—	—	—	—	—	(6,452
Revised Balance — January 1, 2014	176,793	220,991	476,218	2,978,939	(39,630)	(1,600,266)	9,522	(221,477)	6,742	1,870,66
Stock activity under stock plans	—	—	(31,860)	—	607	15,851	—	—	—	(16,009
Stock-based compensation	—	—	42,655	20	—	—	—	—	—	42,675
Tax benefit associated with stock-based compensation	—	—	8,587	—	—	—	—	—	—	8,587
Net earnings	—	—	—	513,372	—	—	—	—	6,061	519,433
Cash dividends declared	—	—	—	(88,497)	—	—	—	—	—	(88,497
Repurchases of common shares	—	—	—	—	(3,421)	(246,504)	—	—	—	(246,50
Other comprehensive loss, net of tax	—	—	—	—	—	—	—	(158,622)	83	(158,53
Purchase of shares from and dividends paid to noncontrolling interests	—	—	—	—	—	—	—	—	(2,605)	(2,605
Other, net	—	—	—	—	—	—	1,036	—	—	1,036
Balance — December 31, 2014	176,793	220,991	495,600	3,403,834	(42,444)	(1,830,919)	10,558	(380,099)	10,281	1,930,2
	—	—	(41,860)	—	789	27,785	—	—	—	(14,075

Stock activity under stock plans										
Stock-based compensation	—	—	34,797	19	—	—	—	—	—	34,816
Tax benefit associated with stock-based compensation	—	—	6,424	—	—	—	—	—	—	6,424
Net earnings	—	—	—	258,411	—	—	—	—	5,605	264,016
Cash dividends declared	—	—	—	(96,306)	—	—	—	—	—	(96,306
Repurchases of common shares	—	—	—	—	(6,048)	(303,651)	—	—	—	(303,65
Other comprehensive loss, net of tax	—	—	—	—	—	—	—	(158,133)	1,437	(156,69
Purchase of shares from and dividends paid to noncontrolling interests	—	—	—	—	—	—	—	—	(67)	(67
Other, net	—	—	—	—	—	—	(325)	—	—	(325
Balance — December 31, 2015	176,793	$220,991	$494,961	$3,565,958	(47,703)	$(2,106,785)	$10,233	$(538,232)	$17,256	$1,664,
Stock activity under stock plans	—	—	(33,571)	—	723	28,258	—	—	—	(5,313
Stock-based compensation	—	—	30,203	10	—	—	—	—	—	30,213
Tax benefit associated with stock-based compensation	—	—	255	—	—	—	—	—	—	255
Net earnings	—	—	—	132,455	—	—	—	—	3,077	135,532
Cash dividends declared	—	—	—	(100,027)	—	—	—	—	—	(100,02
Repurchases of common shares	—	—	—	—	—	—	—	—	—	—
Other comprehensive loss, net of tax	—	—	—	—	—	—	—	(86,556)	713	(85,843
Purchase of shares from and dividends paid to noncontrolling interests	—	—	—	—	—	—	—	—	(85)	(85
Other, net	—	—	—	—	—	—	(1,726)	—	—	(1,726

Balance — December 31, 2016	176,793	$220,991	$491,848	$3,598,396	(46,980)	$(2,078,527)	$8,507	$(624,788)	$20,961	$1,637,:

See accompanying notes to consolidated financial statements.

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FLOWSERVE CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2016	2015	2014
	(Amounts in thousands)		
Cash flows — Operating activities:			
Net earnings, including noncontrolling interests	$135,532	$264,016	$519,433
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Depreciation	99,897	99,501	93,307
Amortization of intangible and other assets	16,855	27,586	16,970
Loss (gain) on divestitures of businesses	7,664	—	(13,403)
Stock-based compensation	30,213	34,816	42,675
Latin America accounts receivable reserve	73,452	—	—
Foreign currency and other non-cash adjustments	(8,127)	74,382	39,942
Change in assets and liabilities, net of acquisitions:			
Accounts receivable, net	36,927	53,060	(79,655)
Inventories, net	52,892	(21,260)	(31,404)
Prepaid expenses and other	(25,165)	(13,882)	(4,479)
Other assets, net	(20,310)	6,646	(25,311)
Accounts payable	(71,008)	(113,639)	50,752
Accrued liabilities and income taxes payable	(88,770)	51,073	(11,827)
Retirement obligations and other liabilities	16,372	(21,456)	(7,905)
Net deferred taxes	(15,948)	(84)	5,386
Net cash flows provided by operating activities	240,476	440,759	594,481
Cash flows — Investing activities:			
Capital expenditures	(89,699)	(181,861)	(132,619)
Payments for acquisition, net of cash acquired	—	(353,654)	—
Proceeds from disposal of assets	3,294	10,220	1,731
(Payments) proceeds for divestitures of businesses	(5,064)	—	46,805
Net cash flows used by investing activities	(91,469)	(525,295)	(84,083)
Cash flows — Financing activities:			
Payments on long-term debt	(60,000)	(45,000)	(40,000)
Proceeds from issuance of senior notes	—	526,332	—
Payments of deferred loan costs	—	(5,108)	—
Proceeds under other financing arrangements	35,680	9,426	19,285
Payments under other financing arrangements	(12,636)	(34,949)	(20,502)
Payments related to tax withholding for stock-based compensation	(10,405)	(15,844)	(15,734)
Repurchases of common shares	—	(303,651)	(246,504)
Payments of dividends	(97,746)	(93,650)	(85,118)
Other	1,386	99	(2,604)
Net cash flows (used) provided by financing activities	(143,721)	37,655	(391,177)
Effect of exchange rate changes on cash	(4,568)	(37,025)	(32,675)
Net change in cash and cash equivalents	718	(83,906)	86,546
Cash and cash equivalents at beginning of year	366,444	450,350	363,804
Cash and cash equivalents at end of year	$367,162	$366,444	$450,350
Income taxes paid (net of refunds)	$151,191	$152,536	$159,520
Interest paid	57,393	57,030	58,269

See accompanying notes to consolidated financial statements.

FLOWSERVE CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
AS OF DECEMBER 31, 2016 AND 2015 AND FOR THE
THREE YEARS ENDED DECEMBER 31, 2016

1. SIGNIFICANT ACCOUNTING POLICIES AND ACCOUNTING DEVELOPMENTS

We are principally engaged in the worldwide design, manufacture, distribution and service of industrial flow management equipment. We provide long lead time, custom and other highly-engineered pumps; standardized, general-purpose pumps; mechanical seals; industrial valves; and related automation products and solutions primarily for oil and gas, chemical, power generation, water management and other general industries requiring flow management products and services. Equipment manufactured and serviced by us is predominantly used in industries that deal with difficult-to-handle and corrosive fluids, as well as environments with extreme temperatures, pressure, horsepower and speed. Our business is affected by economic conditions in the United States ("U.S.") and other countries where our products are sold and serviced, by the cyclical nature and competitive environment of our industries served, by the relationship of the U.S. dollar to other currencies and by the demand for and pricing of our customers' end products.

Revision to Previously Reported Financial Information - In the second quarter of 2017, we identified accounting errors focused mainly at two of our non-U.S. sites in the inventory, accounts receivable, cost of sales and selling, general and administrative expense balances for prior periods through the first quarter of 2017. We have assessed these errors, individually and in the aggregate, and concluded that they are not material to any prior annual or interim period. However, to facilitate comparisons among periods we have revised our previously issued audited consolidated financial information for the fiscal years ended December 31, 2014, 2015 and 2016 and unaudited condensed consolidated financial information for the interim periods of 2016 and the three months ended March 31, 2017. We also corrected the timing of immaterial previously recorded out-of-period adjustments and reflected them in the revised prior period financial statements, where applicable. Prior periods not presented herein will be revised, as applicable, in future filings. See Note 2 for more information.

Venezuela — Our operations in Venezuela primarily consist of a service center that performs service and repair activities. Our Venezuelan subsidiary's sales for the year ended December 31, 2016 represented less than 0.5% of consolidated sales and its assets at December 31, 2016 represented less than 0.5% of total consolidated assets. Assets primarily consisted of United States ("U.S.") dollar-denominated monetary assets and bolivar-denominated non-monetary assets at December 31, 2016. In addition, certain of our operations in other countries sell equipment and parts that are typically denominated in U.S. dollars directly to Venezuelan customers.

We continue to experience delays in collecting payment on our accounts receivable from the national oil company in Venezuela, our primary Venezuelan customer. Our total outstanding gross accounts receivable with this customer was approximately 6% and 7% of our gross accounts receivable at December 31, 2016 and December 31, 2015, respectively, of which 100% and 64% has been classified as long-term within other assets, net on our condensed consolidated balance sheet at December 31, 2016 and 2015, respectively. These accounts receivable are primarily U.S. dollar-denominated and not disputed. However, while we have not historically had write-offs relating to this customer, the accounts receivable continue to be significantly in arrears. The increased deterioration of the social, political, economic and legal climate in 2016 has given rise to significant uncertainties about Venezuela's economic and political stability, and while we continue to conduct business on a prepayment basis with the Venezuelan customer, the volume of activity has diminished significantly throughout 2016 from prior year levels. In September 2016, the Venezuelan customer offered current bondholders the ability to swap their current bonds for new bonds with a delayed maturity, price premium and higher coupon rate due to their current inability to service their debt obligations. As a result of the bond swap offer, S&P Global Ratings downgraded the customer's bonds to CC which potentially indicates that default is imminent with little prospect for recovery. Although we do not currently hold any related bonds, we interpreted this action to be indicative of the customer's increasing inability to make future payments on our accounts receivable. Accordingly, due to these actions and the diminished activity of business and payments in 2016, we estimated that our ability to fully collect the accounts receivable from our primary Venezuelan customer became less than probable and in the third quarter of 2016 we recorded a charge of $73.5 million to selling, general and

administrative expense ("SG&A") to fully reserve for those potentially uncollectible accounts receivable and a charge to cost of sales ("COS") of $1.9 million to reserve for related net inventory exposures. We continue to pursue payments and on-going business with our Venezuelan customer.

At December 31, 2016 the DICOM exchange rate (formerly SIMADI) was 674 bolivars to the U.S. dollar, compared with the official exchange rate of 10.0 bolivars to the U.S. dollar. As of March 31, 2015, we determined, based on our specific facts and circumstances, that the SIMADI exchange rate was the most appropriate for the remeasurement of our Venezuelan subsidiary's bolivar-denominated net monetary assets in U.S. dollars. As a result of the remeasurement, in the first quarter of 2015 we recognized a loss of $20.6 million of which $18.5 million was reported in other income (expense), net and $2.1 million in cost of goods sold in our condensed consolidated statement of income and resulted in no tax benefit. As of December 31, 2016, we believe the DICOM exchange rate continues to be the most appropriate rate to remeasure the U.S. dollar value of the assets, liabilities and results of operations of our Venezuelan subsidiary.

Principles of Consolidation — The consolidated financial statements include the accounts of our company and our wholly and majority-owned subsidiaries. In addition, we would consolidate any variable interest entities for which we are deemed to be the primary beneficiary. Noncontrolling interests of non-affiliated parties have been recognized for all majority-owned consolidated subsidiaries. Intercompany profits/losses, transactions and balances among consolidated entities have been eliminated from our consolidated financial statements. Investments in unconsolidated affiliated companies, which represent noncontrolling ownership interests between 20% and 50%, are accounted for using the equity method, which approximates our equity interest in their underlying equivalent net book value under accounting principles generally accepted in the U.S. ("U.S. GAAP"). Investments in interests where we own less than 20% of the investee are accounted for by the cost method, whereby income is only recognized in the event of dividend receipt. Investments accounted for by the cost method are tested for impairment if an impairment indicator is present.

Use of Estimates — The process of preparing financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect reported amounts of certain assets, liabilities, revenues and expenses. We believe our estimates and assumptions are reasonable; however, actual results may differ materially from such estimates. The most significant estimates and assumptions are used in determining:

- Timing and amount of revenue recognition;
- Deferred taxes, tax valuation allowances and tax reserves;
- Reserves for contingent loss;
- Pension and postretirement benefits; and
- Valuation of goodwill, indefinite-lived intangible assets and other long-lived assets.

Revenue Recognition — Revenues for product sales are recognized when the risks and rewards of ownership are transferred to the customers, which is typically based on the contractual delivery terms agreed to with the customer and fulfillment of all but inconsequential or perfunctory actions. In addition, our policy requires persuasive evidence of an arrangement, a fixed or determinable sales price and reasonable assurance of collectibility. We defer the recognition of revenue when advance payments are received from customers before performance obligations have been completed and/or services have been performed. Freight charges billed to customers are included in sales and the related shipping costs are included in cost of sales in our consolidated statements of income. Our contracts typically include cancellation provisions that require customers to reimburse us for costs incurred up to the date of cancellation, as well as any contractual cancellation penalties.

We enter into certain agreements with multiple deliverables that may include any combination of designing, developing, manufacturing, modifying, installing and commissioning of flow management equipment and providing services related to the performance of such products. Delivery of these products and services typically occurs within a one to two-year period, although many arrangements, such as "short-cycle" type orders, have a shorter timeframe for delivery. We separate deliverables into units of accounting based on whether the deliverable(s) have standalone value to the customer (impact of general rights of return is immaterial). Contract value is allocated ratably to the units of accounting in the arrangement based on their relative selling prices determined as if the deliverables were sold separately.

Revenues for long-term contracts that exceed certain internal thresholds regarding the size and duration of the project and provide for the receipt of progress billings from the customer are recorded on the percentage of completion method with progress measured on a cost-to-cost basis. Percentage of completion revenue represents less than 5% of our consolidated sales as of December 31, 2016 and 7% as of December 31, 2015 and 2014.

Revenue on service and repair contracts is recognized after services have been agreed to by the customer and rendered. Revenues generated under fixed fee service and repair contracts are recognized on a ratable basis over the term of the contract.

These contracts can range in duration, but generally extend for up to five years. Fixed fee service contracts represent approximately 1% of consolidated sales for each year presented.

In certain instances, we provide guaranteed completion dates under the terms of our contracts. Failure to meet contractual delivery dates can result in late delivery penalties or non-recoverable costs. In instances where the payment of such costs are deemed to be probable, we perform a project profitability analysis, accounting for such costs as a reduction of realizable revenues, which could potentially cause estimated total project costs to exceed projected total revenues realized from the project. In such instances, we would record reserves to cover such excesses in the period they are determined. In circumstances where the total projected revenues still exceed total projected costs, the incurrence of penalties or non-recoverable costs generally reduces profitability of the project at the time of subsequent revenue recognition.

Cash and Cash Equivalents — We place temporary cash investments with financial institutions and, by policy, invest in those institutions and instruments that have minimal credit risk and market risk. These investments, with an original maturity of three months or less when purchased, are classified as cash equivalents. They are highly liquid and principal values are not subject to significant risk of change due to interest rate fluctuations.

Allowance for Doubtful Accounts and Credit Risk — The allowance for doubtful accounts is established based on estimates of the amount of uncollectible accounts receivable, which is determined principally based upon the aging of the accounts receivable, but also customer credit history, industry and market segment information, economic trends and conditions and credit reports. Customer credit issues, customer bankruptcies or general economic conditions may also impact our estimates.

Credit risks are mitigated by the diversity of our customer base across many different geographic regions and industries and by performing creditworthiness analyses on our customers. Additionally, we mitigate credit risk through letters of credit and advance payments received from our customers. In 2016 we have experienced increased aging and slower collection of receivables with our primary Venezuelan customer. Due to certain actions of this customer and the diminished activity of business and payments in 2016, we have estimated that our ability to fully collect the accounts receivable from our primary Venezuelan customer has become less than probable and we recorded a charge to selling, general and administrative expense ("SG&A") to fully reserve for those potential uncollectible accounts receivable and a charge to cost of sales ("COS") to reserve for related net inventory exposures. We do not believe that we have any other significant concentrations of credit risk.

Inventories and Related Reserves — Inventories are stated at the lower of cost or market. Cost is determined by the first-in, first-out method. Reserves for excess and obsolete inventories are based upon our assessment of market conditions for our products determined by historical usage and estimated future demand. Due to the long life cycles of our products, we carry spare parts inventories that have historically low usage rates and provide reserves for such inventory based on demonstrated usage and aging criteria.

Income Taxes, Deferred Taxes, Tax Valuation Allowances and Tax Reserves — We account for income taxes under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are calculated using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the period that includes the enactment date. We record valuation allowances to reflect the estimated amount of deferred tax assets that may not be realized based upon our analysis of existing deferred tax assets, net operating losses and tax credits by jurisdiction and expectations of our ability to utilize these tax attributes through a review of past, current and estimated future taxable income and establishment of tax strategies.

We provide deferred taxes for the temporary differences associated with our investment in foreign subsidiaries that have a financial reporting basis that exceeds tax basis, unless we can assert permanent reinvestment in foreign jurisdictions. Financial reporting basis and tax basis differences in investments in foreign subsidiaries consist of both unremitted earnings and losses, as well as foreign currency translation adjustments.

The amount of income taxes we pay is subject to ongoing audits by federal, state, and foreign tax authorities, which often result in proposed assessments. We establish reserves for open tax years for uncertain tax positions that may be subject to challenge by various tax authorities. The consolidated tax provision and related accruals include the impact

of such reasonably estimable losses and related interest and penalties as deemed appropriate.

We recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities. The determination is based on the technical merits of the position and presumes that each uncertain tax position will be examined by the relevant taxing authority that has full knowledge of all relevant information. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than fifty percent likelihood of being realized upon ultimate settlement.

Legal and Environmental Contingencies — Legal and environmental reserves are recorded based upon a case-by-case analysis of the relevant facts and circumstances and an assessment of potential legal obligations and costs. Amounts relating to legal and environmental liabilities are recorded when it is probable that a loss has been incurred and such loss is estimable. Assessments of legal and environmental costs are based on information obtained from our independent and in-house experts and our loss experience in similar situations. Estimates are updated as applicable when new information regarding the facts and circumstances of each matter becomes available. Legal fees associated with legal and environmental liabilities are expensed as incurred.

Estimates of liabilities for unsettled asbestos-related claims are based on known claims and on our experience during the preceding two years for claims filed, settled and dismissed, with adjustments for events deemed unusual and unlikely to recur, and are included in retirement obligations and other liabilities in our consolidated balance sheets. A substantial majority of our asbestos-related claims are covered by insurance or indemnities. Estimated indemnities and receivables from insurance carriers for unsettled claims and receivables for settlements and legal fees paid by us for asbestos-related claims are estimated using our historical experience with insurance recovery rates and estimates of future recoveries, which include estimates of coverage and financial viability of our insurance carriers. Estimated receivables are included in other assets, net in our consolidated balance sheets. We have claims pending against certain insurers that, if resolved more favorably than estimated future recoveries, would result in discrete gains in the applicable quarter. We are currently unable to estimate the impact, if any, of unasserted asbestos-related claims, although future claims would also be subject to existing indemnities and insurance coverage.

Warranty Accruals — Warranty obligations are based upon product failure rates, materials usage, service delivery costs, an analysis of all identified or expected claims and an estimate of the cost to resolve such claims. The estimates of expected claims are generally a factor of historical claims and known product issues. Warranty obligations based on these factors are adjusted based on historical sales trends for the preceding 24 months.

Insurance Accruals — Insurance accruals are recorded for wholly or partially self-insured risks such as medical benefits and workers' compensation and are based upon an analysis of our claim loss history, insurance deductibles, policy limits and other relevant factors that are updated annually and are included in accrued liabilities in our consolidated balance sheets. The estimates are based upon information received from actuaries, insurance company adjusters, independent claims administrators or other independent sources. Receivables from insurance carriers are estimated using our historical experience with insurance recovery rates and estimates of future recoveries, which include estimates of coverage and financial viability of our insurance carriers. Estimated receivables are included in accounts receivable, net and other assets, net, as applicable, in our consolidated balance sheets.

Pension and Postretirement Obligations — Determination of pension and postretirement benefits obligations is based on estimates made by management in consultation with independent actuaries and investment advisors. Inherent in these valuations are assumptions including discount rates, expected rates of return on plan assets, retirement rates, mortality rates and rates of compensation increase and other factors all of which are reviewed annually and updated if necessary. Current market conditions, including changes in rates of return, interest rates and medical inflation rates, are considered in selecting these assumptions.

Actuarial gains and losses and prior service costs are recognized in accumulated other comprehensive loss as they arise and we amortize these costs into net pension expense over the remaining expected service period.

Property, Plant and Equipment and Depreciation — Property, plant and equipment are stated at historical cost, less accumulated depreciation. If asset retirement obligations exist, they are capitalized as part of the carrying amount of the asset and depreciated over the remaining useful life of the asset. The useful lives of leasehold improvements are the lesser of the remaining lease term or the useful life of the improvement. When assets are retired or otherwise disposed of, their costs and related accumulated depreciation are removed from the accounts and any resulting gains or losses are included in income from operations for the period. Depreciation is computed by the straight-line method

based on the estimated useful lives of

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the depreciable assets, or in the case of assets under capital leases, over the related lease turn. Generally, the estimated useful lives of the assets are:

Buildings and improvements	10 to 40 years
Machinery, equipment and tooling	3 to 14 years
Software, furniture and fixtures and other	3 to 7 years

Costs related to routine repairs and maintenance are expensed as incurred.

Internally Developed Software — We capitalize certain costs associated with the development of internal-use software. Generally, these costs are related to significant software development projects and are amortized over their estimated useful life, typically three to five years, upon implementation of the software.

Intangible Assets — Intangible assets, excluding trademarks (which are considered to have an indefinite life), consist primarily of engineering drawings, patents, existing customer relationships, software, distribution networks and other items that are being amortized over their estimated useful lives generally ranging from four to 40 years. These assets are reviewed for impairment whenever events and circumstances indicate impairment may have occurred.

Valuation of Goodwill, Indefinite-Lived Intangible Assets and Other Long-Lived Assets — The value of goodwill and indefinite-lived intangible assets is tested for impairment as of December 31 each year or whenever events or circumstances indicate such assets may be impaired. The identification of our reporting units began at the operating segment level and considered whether components one level below the operating segment levels should be identified as reporting units for purpose of testing goodwill for impairment based on certain conditions. These conditions included, among other factors, (i) the extent to which a component represents a business and (ii) the aggregation of economically similar components within the operating segments and resulted in five reporting units. Other factors that were considered in determining whether the aggregation of components was appropriate included the similarity of the nature of the products and services, the nature of the production processes, the methods of distribution and the types of industries served.

An impairment loss for goodwill is recognized if the implied fair value of goodwill is less than the carrying value. We estimate the fair value of our reporting units based on an income approach, whereby we calculate the fair value of a reporting unit based on the present value of estimated future cash flows. A discounted cash flow analysis requires us to make various judgmental assumptions about future sales, operating margins, growth rates and discount rates, which are based on our budgets, business plans, economic projections, anticipated future cash flows and market participants. Assumptions are also made for varying perpetual growth rates for periods beyond the long-term business plan period.

We did not record an impairment of goodwill in 2016, 2015 or 2014; however the estimated fair value of our Engineered Product Operations ("EPO") and IPD reporting units reduced significantly due to broad-based capital spending declines and heightened pricing pressure experienced in the oil and gas markets which are anticipated to continue in the near to mid-term. The EPO reporting unit is a component of our EPD reporting segment and is primarily focused on long lead time, custom and other highly-engineered pumps and pump systems. As of December 31, 2016 our EPO reporting unit had approximately $156 million of goodwill and its estimated fair value exceeded its carrying value by approximately 45%. In addition, our IPD reporting unit, which is primarily focused on pre-configured industrial pumps and pump systems had approximately $298 million of goodwill and it fair value exceeded its carrying value by approximately 70%. Key assumptions used in determining the estimated fair value of our EPO and IPD reporting units included the annual operating plan and forecasted operating results, successful execution of our current realignment programs and identified strategic initiatives, a constant cost of capital, a short-term stabilization and mid to long-term improvement of the macro-economic conditions of the oil and gas market, and a relatively stable global gross domestic product. Although we have concluded that there is no impairment on the goodwill associated with our EPO and IPD reporting units as of December 31, 2016, we will continue to closely monitor their performance and related market conditions for future indicators of potential impairment and reassess accordingly.

We also consider our market capitalization in our evaluation of the fair value of our goodwill. Our market capitalization increased as compared with 2015 and did not indicate a potential impairment of our goodwill as of December 31, 2016.

Impairment losses for indefinite-lived intangible assets are recognized whenever the estimated fair value is less than the carrying value. Fair values are calculated for trademarks using a "relief from royalty" method, which estimates the fair value of a trademark by determining the present value of estimated royalty payments that are avoided as a result of owning the trademark. This method includes judgmental assumptions about sales growth and discount rates that have a significant

impact on the fair value and are substantially consistent with the assumptions used to determine the fair value of our reporting units discussed above. We did not record a material impairment of our trademarks in 2016, 2015 or 2014.
The recoverable value of other long-lived assets, including property, plant and equipment and finite-lived intangible assets, is reviewed when indicators of potential impairments are present. The recoverable value is based upon an assessment of the estimated future cash flows related to those assets, utilizing assumptions similar to those for goodwill. Additional considerations related to our long-lived assets include expected maintenance and improvements, changes in expected uses and ongoing operating performance and utilization.
Deferred Loan Costs — Deferred loan costs, consisting of fees and other expenses associated with debt financing, are amortized over the term of the associated debt using the effective interest method. Additional amortization is recorded in periods where optional prepayments on debt are made.
Fair Values of Financial Instruments — Our financial instruments are presented at fair value in our consolidated balance sheets, with the exception of our long-term debt. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Where available, fair value is based on observable market prices or parameters or derived from such prices or parameters. Where observable prices or inputs are not available, valuation models may be applied.
Assets and liabilities recorded at fair value in our consolidated balance sheets are categorized based upon the level of judgment associated with the inputs used to measure their fair values. Hierarchical levels, as defined by Accounting Standards Codification ("ASC") 820, "Fair Value Measurements and Disclosures," are directly related to the amount of subjectivity associated with the inputs to fair valuation of these assets and liabilities. An asset or a liability's categorization within the fair value hierarchy is based on the lowest level of significant input to its valuation.
Hierarchical levels are as follows:
Level I — Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.
Level II — Inputs (other than quoted prices included in Level I) are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life.
Level III — Inputs reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.
Recurring fair value measurements are limited to investments in derivative instruments and certain equity securities. The fair value measurements of our derivative instruments are determined using models that maximize the use of the observable market inputs including interest rate curves and both forward and spot prices for currencies, and are classified as Level II under the fair value hierarchy. The fair values of our derivative instruments are included in Note 7. The fair value measurements of our investments in equity securities are determined using quoted market prices and are classified as Level I. The fair values of our investments in equity securities, and changes thereto, are immaterial to our consolidated financial position and results of operations.
Derivatives and Hedging Activities — We have a foreign currency derivatives and hedging policy outlining the conditions under which we can enter into financial derivative transactions. We do not use derivative instruments for trading or speculative purposes. All derivative instruments are recognized on the balance sheet at their fair values. The accounting for gains and losses resulting from changes in fair value depends on whether the derivative is designated and qualifies for hedge accounting.

Foreign Exchange Contracts —We employ a foreign currency economic hedging strategy to mitigate certain financial risks resulting from foreign currency exchange rate movements that impact foreign currency denominated receivables and payables, firm committed transactions and forecasted sales and purchases. In 2013 we began to designate certain forward exchange contracts as hedging instruments and apply hedge accounting to those instruments.

For designated forward exchange contracts, the changes in fair value are recorded in other comprehensive loss until the underlying hedged item affects earnings, at which time the change in fair value is recognized in sales in the consolidated statements of income. For non-designated forward exchange contracts, the changes in the fair values are

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recognized immediately in other income (expense), net in the consolidated statements of income. See Note 6 for further discussion of forward exchange contracts.

We discontinue hedge accounting when (1) we deem the hedge to be ineffective and determine that the designation of the derivative as a hedging instrument is no longer appropriate; (2) the derivative matures, terminates or is sold; or (3) occurrence of the contracted or committed transaction is no longer probable or will not occur in the originally expected period.

When hedge accounting is discontinued and the derivative remains outstanding, we carry the derivative at its estimated fair value on the balance sheet, recognizing changes in the fair value in current period earnings. If a cash flow hedge becomes ineffective, any deferred gains or losses remain in accumulated other comprehensive loss until the underlying hedged item is recognized. If it becomes probable that a hedged forecasted transaction will not occur, deferred gains or losses on the hedging instrument are recognized in earnings immediately.

We are exposed to risk from credit-related losses resulting from nonperformance by counterparties to our financial instruments. We perform credit evaluations of our counterparties under forward exchange contracts and expect all counterparties to meet their obligations. If necessary, we would adjust the values of our derivative contracts for our or our counterparties' credit risks.

Foreign Currency Translation — Assets and liabilities of our foreign subsidiaries are translated to U.S. dollars at exchange rates prevailing at the balance sheet date, while income and expenses are translated at average rates for each month. Translation gains and losses are reported as a component of accumulated other comprehensive loss. Transactional currency gains and losses arising from transactions in currencies other than our sites' functional currencies are included in our consolidated results of operations.

Transaction and translation gains and losses arising from intercompany balances are reported as a component of accumulated other comprehensive loss when the underlying transaction stems from a long-term equity investment or from debt designated as not due in the foreseeable future. Otherwise, we recognize transaction gains and losses arising from intercompany transactions as a component of income. Where intercompany balances are not long-term investment related or not designated as due beyond the foreseeable future, we may mitigate risk associated with foreign currency fluctuations by entering into forward exchange contracts.

Stock-Based Compensation — Stock-based compensation is measured at the grant-date fair value. The exercise price of stock option awards and the value of restricted share, restricted share unit and performance-based unit awards (collectively referred to as "Restricted Shares") are set at the closing price of our common stock on the New York Stock Exchange on the date of grant, which is the date such grants are authorized by our Board of Directors. Restricted share units and performance-based units refer to restricted awards that do not have voting rights and accrue dividends, which are forfeited if vesting does not occur.

The intrinsic value of Restricted Shares, which is typically the product of share price at the date of grant and the number of Restricted Shares granted, is amortized on a straight-line basis to compensation expense over the periods in which the restrictions lapse based on the expected number of shares that will vest. The forfeiture rate is based on unvested Restricted Shares forfeited compared with original total Restricted Shares granted over a 3-year period, excluding significant forfeiture events that are not expected to recur.

Earnings Per Share — We use the two-class method of calculating Earnings Per Share ("EPS"), which determines earnings per share for each class of common stock and participating security as if all earnings for the period had been distributed. Unvested restricted share awards that earn non-forfeitable dividend rights qualify as participating securities and, accordingly, are included in the basic computation as such. Our unvested restricted shares participate on an equal basis with common shares; therefore, there is no difference in undistributed earnings allocated to each participating security. Accordingly, the presentation below is prepared on a combined basis and is presented as earnings per common share. The following is a reconciliation of net earnings of Flowserve Corporation and weighted average shares for calculating basic net earnings per common share.

Earnings per weighted average common share outstanding was calculated as follows:

	Year Ended December 31,		
	2016	2015	2014
	(Amounts in thousands, except per share data)		
Net earnings of Flowserve Corporation	$132,455	$258,411	$513,372
Dividends on restricted shares not expected to vest	6	12	12
Earnings attributable to common and participating shareholders	$132,461	$258,423	$513,384
Weighted average shares:			
Common stock	130,147	132,567	136,334
Participating securities	285	507	578
Denominator for basic earnings per common share	130,432	133,074	136,912
Effect of potentially dilutive securities	543	737	931
Denominator for diluted earnings per common share	130,975	133,811	137,843
Net earnings per share attributable to Flowserve Corporation common shareholders:			
Basic	$1.02	$1.94	$3.75
Diluted	1.01	1.93	3.72

Diluted earnings per share is based upon the weighted average number of shares as determined for basic earnings per share plus shares potentially issuable in conjunction with stock options, restricted share units and performance share units.

Research and Development Expense — Research and development costs are charged to expense when incurred. Aggregate research and development costs included in selling, general and administrative expenses ("SG&A") were $42.8 million, $45.9 million and $40.9 million in 2016, 2015 and 2014, respectively. Costs incurred for research and development primarily include salaries and benefits and consumable supplies, as well as rent, professional fees, utilities and the depreciation of property and equipment used in research and development activities.

Accounting Developments

Pronouncements Implemented

In June 2014, the FASB issued ASU No. 2014-12 "Compensation-Stock Compensation (Topic 718): Accounting for Share-Based Payments When the Terms of an Award Provide That a Performance Target Could Be Achieved after the Requisite Service Period." This ASU was issued to address share-based payment awards with a performance target affecting vesting that could be achieved after the employee’s requisite service period. Our adoption of ASU No. 2014-12 effective January 1, 2016 did not have an impact on our consolidated financial condition and results of operations.

In August 2014, the FASB issued ASU No. 2014-15, "Presentation of Financial Statements - Going Concern (Subtopic 205-40): Disclosure of Uncertainties about an Entity’s Ability to Continue as a Going Concern." This ASU requires management to evaluate whether there are conditions or events that raise substantial doubt about the ability of a company to continue as a going concern for one year from the date the financial statements are issued or within one year after the date that the financial statements are available to be issued when applicable. Further, the ASU provides management guidance regarding its responsibility to disclose the ability of a company to continue as a going concern in the notes to the financial statements. This ASU is effective for annual periods ending after December 15, 2016, and interim periods thereafter, with early adoption permitted. The adoption of ASU No. 2014-15 did not have an impact on our consolidated financial condition and results of operations.

In November 2014, the FASB issued ASU No. 2014-16, "Derivatives and Hedging (Topic 815): "Determining Whether the Host Contract in a Hybrid Financial Instrument Issued in the Form of a Share Is More Akin to Debt or to Equity." This ASU was issued to clarify and reinforce the practice of evaluating all relevant terms and features when reviewing the nature of a host contract. Our adoption of ASU No. 2014-16 effective January 1, 2016 did not have an impact on our consolidated financial condition and results of operations.

In January 2015, the FASB issued ASU No. 2015-01, "Income Statement-Extraordinary and Unusual Items (Subtopic 225-20): Simplifying Income Statement Presentation by Eliminating the Concept of Extraordinary Items." In connection with the FASB's efforts to simplify accounting standards, the FASB released new guidance on simplifying Income Statement presentation by eliminating the concept of extraordinary items from accounting principles generally accepted in the U.S. ("U.S. GAAP"). Our adoption of ASU No. 2015-01 effective January 1, 2016 did not have an impact on our consolidated financial condition and results of operations.
In February 2015, the FASB issued ASU No. 2015-02, "Consolidation (Topic 810) - Amendments to the Consolidation Analysis," which provides guidance on the analysis process companies must perform in order to determine whether a legal entity should be consolidated. Our adoption of ASU No. 2015-02 effective January 1, 2016 did not have an impact on our consolidated financial condition and results of operations.
In April 2015, the FASB issued ASU No. 2015-03, "Interest - Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs." The ASU was issued in connection with the FASB's efforts to simplify accounting standards for the presentation of debt issuance costs. The ASU requires companies to present debt issuance costs in the same manner that debt discounts are currently reported, as a direct deduction from the carrying value of that debt liability. The applicability of this requirement does not impact the recognition and measurement guidance for debt issuance costs. In August 2015, the FASB issued ASU 2015-15, "Interest - Imputation of Interest (Subtopic 835-30): Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements-Amendments to SEC Paragraphs Pursuant to Staff Announcement at June 18, 2015 EITF Meeting (SEC Update)." In this ASU the SEC staff announced that it would "not object to an entity deferring and presenting debt issuance costs as an asset and subsequently amortizing the deferred debt issuance costs ratably over the term of the line-of-credit arrangement." We adopted the provisions of ASU 2015-03 and ASU 2015-15 as of January 1, 2016. Prior period amounts have been reclassified to conform to the current period presentation. As of December 31, 2015, $10.3 million of debt issuance costs were reclassified in our consolidated balance sheet from other assets, net to long-term debt. Our adoption of ASU No. 2015-03 and ASU No. 2015-15 effective January 1, 2016 did not have an impact on our consolidated results of operations.
In May 2015, the FASB issued ASU No. 2015-07, "Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent) (a consensus of the Emerging Issues Task Force)." The ASU removes the requirement to categorize all investments for which fair value is measured using the net asset value per share practical expedient within the fair value hierarchy. Our adoption of ASU No. 2015-07 effective January 1, 2016 did not have an impact on our consolidated financial condition and results of operations.
In November 2015, the FASB issued ASU No. 2015-17, Balance Sheet Classification of Deferred Taxes to simplify the presentation of deferred income taxes. The ASU requires that deferred tax liabilities and assets be classified as noncurrent on the balance sheet. We adopted ASU No. 2015-17 effective January 1, 2016 and as a result, prior period amounts have been reclassified to conform to the current period presentation. As of December 31, 2015, $156.0 million of current deferred tax assets and $11.4 million of current deferred tax liabilities were reclassified from current with an increase of $43.1 million in noncurrent deferred tax assets and a decrease of $101.5 million in noncurrent deferred tax liabilities on our balance sheet. Our adoption of ASU No. 2015-17 effective January 1, 2016 did not have an impact on our consolidated results of operations.
In March 2016, the FASB issued ASU No. 2016-09, "Compensation - Stock Compensation (Topic 718), Improvements to Employee Share-Based Payment Accounting." The ASU affects the accounting for employee share-based payment transactions as it relates to accounting for income taxes, accounting for forfeitures, and statutory tax withholding requirements.We adopted the provisions of ASU 2016-09 as of January 1, 2017. This ASU is effective for annual periods beginning after December 15, 2016, including interim periods within those fiscal years with early adoption permitted. This adoption resulted in retrospective adjustments to the classification of specific items in our statement of cash flows that are reflected in this Form 10-K/A. Specifically, we reclassified cash outflows for employee taxes paid from operating to financing and elected to reclassify the cash impacts due to excess tax deficiencies and benefits from financing to operating, which resulted in a net reclassification of cash flows used from operating to financing of approximately $12.9 million , $22.7 million and $24.3 million for the years ended December 31, 2016 , December 31, 2015 and December 31, 2014 , respectively.

Pronouncements Not Yet Implemented

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)" which supersedes most of the revenue recognition requirements in "Revenue Recognition (Topic 605)." The standard is principle-based and provides a five-step model to determine when and how revenue is recognized. The core principle is that a company should

recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. Companies are permitted to adopt the new standard using one of two transition methods. Under the full retrospective method, the requirements of the new standard are applied to contracts for each prior reporting period presented and the cumulative effect of applying the standard is recognized in the earliest period presented. Under the modified retrospective method the requirements of the new standard are applied to contracts that are open as of January 1, 2018, the required date of adoption and the cumulative effect of applying the standard is recognized as an adjustment to beginning retained earnings in that same year. The standard also includes significantly expanded disclosure requirements for revenue. Since 2014, the FASB has issued several updates to Topic 606.

We are currently evaluating the impact of ASU No. 2014-09 and all related ASU's on our consolidated financial condition and results of operations. We plan to adopt the new revenue guidance effective January 1, 2018 using the modified retrospective method for transition. In 2015, we established a cross-functional implementation team consisting of representatives from across all of our reportable segments to begin the process of analyzing the impact of the standard on our contracts. The preliminary results of our evaluation, which is still in process, indicate that one of the changes upon adoption may be potentially increased “over-time” revenue recognition. Currently, revenue recognized under the percentage of completion method is less than 5% of our consolidated sales. We also anticipate changes to the consolidated balance sheet related to accounts receivable, contract assets and contract liabilities. Additionally, we are in the process of evaluating and designing the necessary changes to our business processes, systems and controls to support recognition and disclosure under the new standard. We are continuing our evaluation to determine the impact on our consolidated financial condition and results of operations.

In July 2015, the FASB issued ASU No. 2015-11, "Inventory (Topic 330): Simplifying the Measurement of Inventory." The ASU updates represent changes to simplify the subsequent measurement of inventory. Previous to the issuance of this ASU, ASC 330 required that an entity measure inventory at the lower of cost or market. The amendments of ASU 2015-11 update narrows that “market” requirement to “net realizable value,” which is defined by the ASU as the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. This ASU is effective for fiscal years, and for interim periods within those fiscal years, beginning after December 15, 2016. Application of this ASU is to be made prospectively and early application is permitted as of the beginning of an interim or annual reporting period. The adoption of ASU No. 2015-11 is not expected to have a material impact on our consolidated financial condition and results of operations.

In January 2016, the FASB issued ASU No. 2016-01, "Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities." The ASU requires entities to measure equity investments that do not result in consolidation and are not accounted for under the equity method at fair value with changes in fair value recognized in net income. The ASU also requires an entity to present separately in other comprehensive income the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk when the entity has elected to measure the liability at fair value in accordance with the fair value option for financial instruments. The requirement to disclose the method(s) and significant assumptions used to estimate the fair value for financial instruments measured at amortized cost on the balance sheet has been eliminated by this ASU. This ASU is effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. We are currently evaluating the impact of ASU No. 2016-01 on our consolidated financial condition and results of operations.

In February 2016, the FASB issued ASU No. 2016-02, “Leases (Topic 842)”. The ASU requires that organizations that lease assets recognize assets and liabilities on the balance sheet for the rights and obligations created by those leases. The ASU will affect the presentation of lease related expenses on the income statement and statement of cash flows and will increase the required disclosures related to leases. This ASU is effective for annual periods beginning after December 15, 2018, including interim periods within those fiscal years with early adoption permitted. We are currently evaluating the impact of ASU No. 2016-02 on our consolidated financial condition and results of operations. Although we are continuing to evaluate, upon initial qualitative evaluation, we believe a key change upon adoption will be the balance sheet recognition of leased assets and liabilities. Based on our qualitative evaluation to date, we believe that any changes in income statement recognition will not be material.

In June 2016, the FASB issued ASU No. 2016-13, "Financial Instruments-Credit Losses (Topic 326), Measurement of Credit Losses on Financial Instruments." The amendments in this ASU replace the current incurred loss impairment methodology with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. This ASU is effective for fiscal years beginning after December

15, 2019, including interim periods within those fiscal years. We are currently evaluating the impact of ASU No. 2016-13 on our consolidated financial condition and results of operations.

In August 2016, the FASB issued ASU No. 2016-15, “Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments - A consensus of the FASB Emerging Issues Task Force.” The update was issued with the objective of reducing the existing diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows under Topic 230 and other topics. This ASU is effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. We are currently evaluating the impact of ASU No. 2016-15 on our consolidated financial condition and results of operations.

In October 2016, the FASB issued ASU No. 2016-16, "Income Taxes (Topic 740) Intra-Entity Transfers of Assets Other Than Inventory." The ASU guidance requires the recognition of the income tax consequences of an intercompany asset transfer, other than transfers of inventory, when the transfer occurs. For intercompany transfers of inventory, the income tax effects will continue to be deferred until the inventory has been sold to a third party. The ASU is effective for reporting periods beginning after December 15, 2017, with early adoption permitted. We are currently evaluating the impact of ASU No. 2016-16 on our consolidated financial condition and results of operations.

In October 2016, the FASB issued ASU No. 2016-17, "Consolidation (Topic 810): Interests Held through Related Parties That Are Under Common Control." The amendments in this ASU affect the consolidation guidance regarding how a reporting entity that is the single decision maker of variable interest entity ("VIE") should treat indirect interests in the entity held through related parties that are under common control with the reporting entity when determining whether it is the primary beneficiary of the VIE. The ASU is effective for reporting periods beginning after December 15, 2016, including interim periods with those fiscal years. The adoption of ASU No. 2016-17 is not expected to have a material impact on our consolidated financial condition and results of operations.

In November 2016, the FASB issued ASU No. 2016-18, "Statement of Cash Flows (Topic 230): Restricted Cash." The amendments in this ASU require that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. The ASU is effective for reporting periods beginning after December 15, 2017, including interim periods with those fiscal years. The adoption of ASU No. 2016-18 is not expected to have a material impact on our consolidated financial condition and results of operations.

In December 2016, the FASB issued ASU No. 2016-19, “Technical Corrections and Improvements.” The ASU makes minor changes to several topics in the FASB Accounting Standards Codification for U.S. GAAP. The amendments of the ASU require transition guidance that are effective for annual and interim reporting periods beginning after December 15, 2016. Early adoption is permitted for the amendments that require transition guidance. All other amendments were effective immediately. We are currently evaluating the impact of ASU No. 2016- 19 on our consolidated financial condition and results of operations.

In January 2017, the FASB issued ASU No. 2017-01, "Business Combinations (Topic 805): "Clarifying the Definition of a Business." The ASU clarifies the definition of a business and provides guidance on evaluating as to whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The definition clarification as outlined in this ASU affects many areas of accounting including acquisitions, disposals, goodwill, and consolidation. The amendments of the ASU are effective for annual periods beginning after December 15, 2017, including interim periods within those annual periods. We are currently evaluating the impact of ASU No. 2017- 01 on our consolidated financial condition and results of operations.

In January 2017, the FASB issued ASU No. 2017-04, "Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment." The amendments in this ASU allow companies to apply a one-step quantitative test and record the amount of goodwill impairment as the excess of a reporting unit’s carrying amount over its fair value, not to exceed the total amount of goodwill allocated to the reporting unit. The amendments of the ASU are effective for annual or interim goodwill impairment tests in fiscal years beginning after December 15, 2019. Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. We are currently evaluating the impact of ASU No. 2017- 04 on our consolidated financial condition and results of

operations.

2. REVISION TO PREVIOUSLY REPORTED FINANCIAL INFORMATION

In the second quarter of 2017, we identified accounting errors focused mainly at two of our non-U.S. sites in the inventory, accounts receivable, cost of sales and selling, general and administrative expense balances for prior periods through the first quarter of 2017. We have assessed these errors, individually and in the aggregate, and concluded that they are not material to any prior annual or interim period. However, to facilitate comparisons among periods we have revised our previously issued audited consolidated financial information for the fiscal years ended December 31, 2014, 2015 and 2016 and unaudited condensed consolidated financial information for the interim periods of 2016 and the three months ended March 31, 2017. We also corrected the timing of immaterial previously recorded out-of-period adjustments and reflected them in the revised prior period financial statements, where applicable. Prior periods not presented herein will be revised, as applicable, in future filings.

The following table presents the effect of the prior period revisions on the affected line items of our consolidated balance sheet as of December 31, 2016 :

	December 31, 2016		
(Amounts in thousands)	As Reported	Adjustments	As Revised
Accounts receivable, net (1)	894,749	(12,111)	882,638
Inventories, net (2)	919,251	(21,561)	897,690
Total current assets	2,331,361	(33,672)	2,297,689
Property, plant and equipment, net	723,628	1,177	724,805
Deferred taxes (3)	87,178	(3,456)	83,722
Other assets, net	181,014	2,112	183,126
Total assets	$4,742,762	$ (33,839)	$4,708,923
Accrued liabilities	680,689	297	680,986
Total current liabilities	1,178,141	297	1,178,438
Retirement obligations and other liabilities	410,168	(2,329)	407,839
Retained earnings (4)	3,632,163	(33,767)	3,598,396
Accumulated other comprehensive loss	(626,748)	1,960	(624,788)
Total Flowserve Corporation shareholders' equity	1,648,234	(31,807)	1,616,427
Total equity	1,669,195	(31,807)	1,637,388
Total liabilities and equity	$4,742,762	$ (33,839)	$4,708,923

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(1) The adjustments to accounts receivable, net are primarily related to receivables at one non-U.S. manufacturing site of $(9.5) million from our primary Venezuelan customer. These receivables should have been classified as long-term receivables and included in the charge that we recorded in the third quarter of 2016 to fully reserve all the potentially uncollectible receivables. This adjustment related to our EPD segment.

(2) The inventory adjustments primarily include corrections of errors at one non-U.S. manufacturing site related to inventory manufacturing cost variances of $(5.9) million , excess and obsolete reserve of $(2.5) million , inappropriate costs capitalized to projects in process of $(8.3) million and the write-off of non-recoverable work in process of $(3.3) million . The inventory manufacturing cost variances are capitalized to reflect inventory balances at actual cost, however, the non-U.S. site inappropriately overstated the costs subject to capitalization, primarily during 2016 . The excess and obsolete reserve did not consider all inventory items resulting in an understatement of the reserve. The inappropriate costs were attributable to multiple projects over multiple periods for which no costs had been incurred or for which costs were incurred for warranty items that should have been expensed. The non-recoverable work in process related to projects which had previously shipped but the related costs were not appropriately removed from inventory. These adjustments were attributable to our IPD segment other than $(3.6) million of the inappropriate capitalized cost and $(2.8) million of write-off of non-recoverable work in progress that were attributable to our EPD segment.

(3) The deferred tax asset adjustments primarily related to deferred tax assets of $(6.4) million that previously were determined to be more likely than not realizable, partially offset by the deferred tax effect of other revision adjustments. However, as a result of the adjustments described above, it was determined the deferred tax assets would

not be realized.

(4) The adjustment to retained earnings represents the cumulative effect of the errors that were corrected in the current and prior periods.

The following table presents the effect of the prior period revisions on the affected line items of our consolidated balance sheet as of December 31, 2015 :

	December 31, 2015		
(Amounts in thousands)	As Reported	Adjustments	As Revised
Accounts receivable, net	988,391	(2,619)	985,772
Inventories, net (1)	995,565	(16,924)	978,641
Prepaid expenses and other	125,410	1,055	126,465
Total current assets	2,475,810	(18,488)	2,457,322
Deferred taxes	69,327	937	70,264
Total assets	$4,980,657	$ (17,551)	$4,963,106
Accrued liabilities	796,764	1,800	798,564
Total current liabilities	1,348,576	1,800	1,350,376
Retained earnings (2)	3,587,120	(21,162)	3,565,958
Accumulated other comprehensive loss	(540,043)	1,811	(538,232)
Total Flowserve Corporation shareholders' equity	1,666,477	(19,351)	1,647,126
Total equity	1,683,733	(19,351)	1,664,382
Total liabilities and equity	$4,980,657	$ (17,551)	$4,963,106

(1) The inventory adjustments primarily include corrections for errors at one non-U.S. manufacturing site related to inventory manufacturing cost variances of $(2.8) million , excess and obsolete reserve of $(2.4) million and inappropriate costs capitalized to projects in process of $(2.6) million . The inventory manufacturing cost variances are capitalized to reflect inventory balances at actual cost, however, the non-U.S. site inappropriately overstated the costs subject to capitalization. The excess and obsolete reserve did not consider all inventory items resulting in an understatement of the reserve. The inappropriate costs were attributable to multiple projects over multiple periods for which no costs had been incurred or for which costs were incurred for warranty items that should have been expensed. Additionally, adjustments of $(6.3) million relate to the write-off of non-recoverable work in progress that was attributable to our EPD segment and related to projects which had previously shipped but the related costs were not appropriately removed from inventory.

(2) The adjustment to retained earnings represents the cumulative effect of the errors that were corrected in the current and prior periods.

The following table presents the effect of the prior period revisions on the affected line items of our consolidated statement of income for the year ended December 31, 2016 :

(Amounts in thousands, except per share data)	Year Ended December 31, 2016		
	As Reported	Adjustments	As Revised
Sales	$3,991,462	$ (975)	$3,990,487
Cost of sales	(2,759,908)	654	(2,759,254)
Gross profit	1,231,554	(321)	1,231,233
Selling, general and administrative expense (1)	(965,322)	(10,872)	(976,194)
Net earnings from affiliates	11,223	1,703	12,926
Operating income	277,455	(9,490)	267,965
Other (expense) income, net	3,301	(1,021)	2,280
Earnings before income taxes	223,423	(10,511)	212,912
Provision for income taxes (2)	(75,286)	(2,094)	(77,380)
Net earnings, including noncontrolling interests	148,137	(12,605)	135,532
Net earnings attributable to Flowserve Corporation	$145,060	$ (12,605)	$132,455
Net earnings per share attributable to Flowserve Corporation common shareholders:			
Basic	$1.11	$ (0.09)	$1.02
Diluted	1.11	(0.1)	1.01

(1) The selling, general and administrative expense adjustments primarily include amounts related to the matters described in footnote (1) to the 2016 balance sheet table above.
(2) The provision for income taxes adjustments primarily related to recording a valuation allowance on deferred tax assets, see footnote (3) to the balance sheet table above, partially offset by the tax effect of adjustments to earnings before income tax.

The following table presents the effect of the prior period revisions on the affected line items of our consolidated statement of income for the year ended December 31, 2015 :

(Amounts in thousands, except per share data)	Year Ended December 31, 2015		
	As Reported	Adjustments	As Revised
Sales (1)	$4,561,030	$ (3,239)	$4,557,791
Cost of sales (1)	(3,073,712)	(6,542)	(3,080,254)
Gross profit	1,487,318	(9,781)	1,477,537
Selling, general and administrative expense	(971,611)	(1,122)	(972,733)
Operating income	525,568	(10,903)	514,665
Other expense, net	(40,167)	1,074	(39,093)
Earnings before income taxes	422,196	(9,829)	412,367
Provision for income taxes	(148,922)	571	(148,351)
Net earnings, including noncontrolling interests	273,274	(9,258)	264,016
Net earnings attributable to Flowserve Corporation	$267,669	$ (9,258)	$258,411
Net earnings per share attributable to Flowserve Corporation common shareholders:			
Basic	$2.01	$ (0.07)	$1.94
Diluted	2.00	(0.07)	1.93

(1) The sales and cost of sales adjustments primarily relate to inappropriate costs capitalized to percentage of completion projects in process in inventory described in footnote (1) to the 2015 balance sheet table above.

The following table presents the effect of the prior period revisions on the affected line items of our consolidated statement of income for the year ended December 31, 2014 :

(Amounts in thousands, except per share data)	Year Ended December 31, 2014		
	As Reported	Adjustments	As Revised
Cost of sales (1)	(3,163,268)	(4,446)	(3,167,714)
Gross profit	1,714,617	(4,446)	1,710,171
Operating income	789,832	(4,446)	785,386
Earnings before income taxes	733,190	(4,446)	728,744
Provision for income taxes	(208,305)	(1,006)	(209,311)
Net earnings, including noncontrolling interests	524,885	(5,452)	519,433
Net earnings attributable to Flowserve Corporation	$518,824	$ (5,452)	$513,372
Net earnings per share attributable to Flowserve Corporation common shareholders:			
Basic	$3.79	$ (0.04)	$3.75
Diluted	3.76	(0.04)	3.72

(1) The cost of sales adjustments primarily relate to $(7.1) million of inventory manufacturing cost variances and excess and obsolete reserves (see further discussion in note (1) above) offset by $3.6 million for items that were recorded in 2014 as out of period adjustments but that have now been pushed back to prior years as a part of the revision.

The effect of the prior period revisions on the consolidated statements of cash flows was not material to cash flows from operating activities, investing activities or financing activities. The effect was limited primarily to the change in net earnings presented above for the years ended December 31, 2016 , 2015 and 2014 , respectively, as well as the changes in inventory, accounts receivable and deferred tax movements for those years. Additionally, we adopted ASU 2016-09 on January 1, 2017, see Note 1 for further discussion of the impact of that adoption on our statements of cash flows.

The impacts of the revisions have been reflected throughout the financial statements, including the applicable footnotes, as appropriate.

3. ACQUISITION AND DISPOSITION

SIHI Group B.V.

Effective January 7, 2015, we acquired for inclusion in Industrial Product Division ("IPD"), 100% of SIHI Group B.V. ("SIHI"), a global provider of engineered vacuum and fluid pumps and related services, primarily servicing the chemical market, as well as the pharmaceutical, food & beverage and other process industries, in a stock purchase for €286.7 million ($341.5 million based on exchange rates in effect at the time the acquisition closed and net of cash acquired) in cash. The acquisition was funded using approximately $110 million in available cash and approximately $255 million in initial borrowings from our Revolving Credit Facility (as defined and discussed in Note 11), which was subsequently paid down with a portion of the net proceeds from our March 2015 offering of the 2022 EUR Senior Notes (as defined and discussed in Note 11). SIHI, based in The Netherlands, had operations primarily in Europe and, to a lesser extent, the Americas and Asia.

The allocation of the purchase price is summarized below:

(Amounts in millions)	January 7, 2015
Current assets	$151.0
Intangible assets	78.6
Property, plant and equipment	94.5
Long-term deferred tax asset	11.7
Investments in affiliates	7.3
Current liabilities	(88.0)
Noncurrent liabilities	(114.7)
Net tangible and intangible assets	140.4
Goodwill	201.1
Purchase price, net of cash acquired of $23.4	$341.5

The excess of the acquisition date fair value of the total purchase price over the estimated fair value of the net assets was recorded as goodwill. Goodwill of $201.1 million represents the value expected to be obtained from strengthening our portfolio of products and services through the addition of SIHI's engineered vacuum and fluid pumps, as well as the associated aftermarket services and parts. The goodwill related to this acquisition is recorded in the IPD segment and is not expected to be deductible for tax purposes. Subsequent to January 7, 2015, the revenues and expenses of SIHI have been included in our consolidated statement of income.

Naval OY

Effective March 31, 2014, we sold our Flow Control Division's ("FCD") Naval OY ("Naval") business to a Finnish valve manufacturer. The sale included Naval's manufacturing facility located in Laitila, Finland and a service and support center located in St. Petersburg, Russia. The cash proceeds for the sale totaled $46.8 million, net of cash divested, and resulted in a $13.4 million pre-tax gain recorded in selling, general and administrative expense in the consolidated statements of income. Net sales related to the Naval business totaled $8.2 million in the first quarter of 2014.

4. GOODWILL AND OTHER INTANGIBLE ASSETS

The changes in the carrying amount of goodwill for the years ended December 31, 2016 and 2015 are as follows:

	EPD	IPD	FCD	Total
	(Amounts in thousands)			
Balance as of January 1, 2015	$439,740	$164,742	$462,773	$1,067,255
Acquisition(1)	5,253	201,149	—	206,402
Segment composition change(2)	41,072	(41,072)	—	—
Currency translation	(8,006)	(23,703)	(17,962)	(49,671)
Balance as of December 31, 2015	$478,059	$301,116	$444,811	$1,223,986
Currency translation and other	(4,228)	(1,351)	(13,353)	(18,932)
Balance as of December 31, 2016	$473,831	$299,765	$431,458	$1,205,054

(1) Goodwill addition is primarily related to the acquisition of SIHI. See Note 3 for additional information.

(2) Movement of goodwill from IPD to EPD due to segment composition change. See Note 17 for additional information.

The following table provides information about our intangible assets for the years ended December 31, 2016 and 2015:

		December 31, 2016		December 31, 2015	
	Useful Life (Years)	Ending Gross Amount	Accumulated Amortization	Ending Gross Amount	Accumulated Amortization
	(Amounts in thousands, except years)				
Finite-lived intangible assets:					
Engineering drawings(1)	10-22	$92,135	$(69,881)	$92,694	$(66,345)
Existing customer relationships(2)	5-10	78,610	(31,671)	80,270	(25,747)
Patents	9-16	26,529	(25,318)	27,277	(25,242)
Other	4-40	83,171	(30,949)	80,305	(28,092)
		$280,445	$(157,819)	$280,546	$(145,426)
Indefinite-lived intangible assets(3)		$93,475	$(1,573)	$95,220	$(1,563)

(1) Engineering drawings represent the estimated fair value associated with specific acquired product and component schematics.

(2) Existing customer relationships acquired prior to 2011 had a useful life of five years.

(3) Accumulated amortization for indefinite-lived intangible assets relates to amounts recorded prior to the implementation date of guidance issued in ASC 350.

The following schedule outlines actual amortization expense recognized during 2016 and an estimate of future amortization based upon the finite-lived intangible assets owned at December 31, 2016:

	Amortization Expense (Amounts in thousands)
Actual for year ended December 31, 2016	$ 13,888
Estimated for year ending December 31, 2017	14,562
Estimated for year ending December 31, 2018	14,372
Estimated for year ending December 31, 2019	13,914
Estimated for year ending December 31, 2020	13,679
Estimated for year ending December 31, 2021	14,712
Thereafter	51,386

Amortization expense for finite-lived intangible assets was $22.0 million in 2015 and $14.0 million in 2014.

5. INVENTORIES

Inventories, net consisted of the following:

	December 31,	
	2016	2015
	(Amounts in thousands)	
Raw materials	$348,012	$390,998
Work in process	629,766	738,688
Finished goods	206,086	221,335
Less: Progress billings	(216,783)	(285,582)
Less: Excess and obsolete reserve	(69,391)	(86,798)
Inventories, net	$897,690	$978,641

During 2016 , 2015 and 2014 , we recognized expenses of $14.6 million , $20.2 million and $17.9 million , respectively, for excess and obsolete inventory. These expenses are included in cost of sales ("COS") in our consolidated statements of income.

6. STOCK-BASED COMPENSATION PLANS

We maintain the Flowserve Corporation Equity and Incentive Compensation Plan (the "2010 Plan"), which is a shareholder-approved plan authorizing the issuance of up to 8,700,000 shares of our common stock in the form of incentive stock options, non-statutory stock options, restricted shares, restricted share units and performance-based units (collectively referred to as "Restricted Shares"), stock appreciation rights and bonus stock. Of the 8,700,000 shares of common stock authorized under the 2010 Plan, 3,240,638 were available for issuance as of December 31, 2016. The long-term incentive program was amended to allow Restricted Shares granted after January 1, 2016 to employees who retire and have achieved at least 55 years of age and ten years of service to continue to vest over the original vesting period. No stock options have been granted since 2006.

Stock Options — Options granted to officers, other employees and directors allow for the purchase of common shares at the market value of our stock on the date the options are granted. Options generally become exercisable over a staggered period ranging from one to five years (most typically from one to three years). At December 31, 2016, all outstanding options were fully vested. Options generally expire ten years from the date of the grant or within a short period of time following the termination of employment or cessation of services by an option holder. No options were granted during 2016, 2015 or 2014. Information related to stock options issued to officers, other employees and directors under all plans is presented in the following table:

	2016		2015		2014	
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
Number of shares under option:						
Outstanding — beginning of year	84,261	$ 17.42	97,962	$ 16.61	97,962	$ 16.61
Exercised	(84,261)	17.42	(13,701)	11.66	—	—
Canceled	—	—	—	—	—	—
Outstanding — end of year	—	$ —	84,261	$ 17.42	97,962	$ 16.61
Exercisable — end of year	—	$ —	84,261	$ 17.42	97,962	$ 16.61

The weighted average remaining contractual life of options outstanding at December 31, 2015 and 2014 was one year and 1.8 years, respectively. The total intrinsic value of stock options exercised during the year ended December 31, 2016 was $2.4 million and was less than $1 million for the same period in both 2015 and 2014. No stock options vested during the years ended December 31, 2016, 2015 and 2014.

Restricted Shares — Generally, the restrictions on Restricted Shares do not expire for a minimum of one year and a maximum of three years , and shares are subject to forfeiture during the restriction period. Most typically, Restricted Share grants have staggered vesting periods over one to three years from grant date. The intrinsic value of the Restricted Shares, which is typically the product of share price at the date of grant and the number of Restricted Shares granted, is amortized on a straight-line basis to compensation expense over the periods in which the restrictions lapse.

Unearned compensation is amortized to compensation expense over the vesting period of the Restricted Shares. As of December 31, 2016 and 2015, we had $15.2 million and $30.2 million, respectively, of unearned compensation cost related to unvested Restricted Shares, which is expected to be recognized over a weighted-average period of approximately one year. These amounts will be recognized into net earnings in prospective periods as the awards vest. The total fair value of Restricted Shares vested during the years ended December 31, 2016, 2015 and 2014 was $38.8 million, $41.3 million and $34.8 million, respectively.

We recorded stock-based compensation for restricted shares as follows:

	Year Ended December 31,		
	2016	2015	2014
	(Amounts in millions)		
Stock-based compensation expense	$30.2	$34.8	$42.7
Related income tax benefit	(10.4)	(11.8)	(14.6)
Net stock-based compensation expense	$19.8	$23.0	$28.1

The following table summarizes information regarding Restricted Shares:

	Year Ended December 31, 2016	
	Shares	Weighted Average Grant-Date Fair Value
Number of unvested Restricted Shares:		
Outstanding — beginning of year	1,540,843	$ 58.14
Granted	634,019	37.27
Vested	(708,831)	54.72
Canceled	(206,756)	50.75
Outstanding — ending of year	1,259,275	$ 50.77

Unvested Restricted Shares outstanding as of December 31, 2016, includes approximately 831,000 units with performance-based vesting provisions. Performance-based units are issuable in common stock and vest upon the achievement of pre-defined performance targets, primarily based on our average annual return on net assets over a three-year period as compared with the same measure for a defined peer group for the same period. Most units were granted in three annual grants since January 1, 2014 and have a vesting percentage between 0% and 200% depending on the achievement of the specific performance targets. Compensation expense is recognized ratably over a cliff-vesting period of 36 months based on the fair market value of our common stock on the date of grant, as adjusted for anticipated forfeitures. During the performance period, earned and unearned compensation expense is adjusted based on changes in the expected achievement of the performance targets. Vesting provisions range from 0 to approximately 1,593,000 shares based on performance targets. As of December 31, 2016, we estimate vesting of

approximately 601,000 shares based on expected achievement of performance targets.

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7. DERIVATIVES AND HEDGING ACTIVITIES

Our risk management and foreign currency derivatives and hedging policy specifies the conditions under which we may enter into derivative contracts. See Note 1 for additional information on our purpose for entering into derivatives and our overall risk management strategies. We enter into foreign exchange forward contracts to hedge our cash flow risks associated with transactions denominated in currencies other than the local currency of the operation engaging in the transaction. All designated foreign exchange hedging instruments are highly effective.

In 2013 we elected to designate and apply hedge accounting to certain forward exchange contracts. Foreign exchange contracts designated as hedging instruments had notional values of $0.6 million and $21.0 million at December 31, 2016 and 2015, respectively. Foreign exchange contracts not designated as hedging instruments had notional values of $393.2 million and $376.3 million at December 31, 2016 and 2015, respectively. At December 31, 2016, the length of foreign exchange contracts currently in place ranged from 13 days to 23 months.

We are exposed to risk from credit-related losses resulting from nonperformance by counterparties to our financial instruments. We perform credit evaluations of our counterparties under forward exchange contracts and expect all counterparties to meet their obligations. We have not experienced credit losses from our counterparties.

The fair value of foreign exchange contracts not designated as hedging instruments are summarized below:

	Year Ended December 31,	
	2016	2015
	(Amounts in thousands)	
Current derivative assets	$ 682	$ 2,364
Current derivative liabilities	6,878	3,196
Noncurrent derivative liabilities	355	441

Current and noncurrent derivative assets are reported in our consolidated balance sheets in prepaid expenses and other and other assets, net, respectively. Current and noncurrent derivative liabilities are reported in our consolidated balance sheets in accrued liabilities and retirement obligations and other liabilities, respectively.

The impact of net changes in the fair values of foreign exchange contracts are summarized below:

	Year Ended December 31,		
	2016	2015	2014
	(Amounts in thousands)		
Gain recognized in income	$ 5,693	$ 23,900	$ 8,464

Gains and losses recognized in our consolidated statements of income for foreign exchange contracts are classified as other income (expense), net.

In March 2015, we designated €255.7 million of our €500.0 million 2022 EUR Senior Notes discussed in Note 11 as a net investment hedge of our investments in certain of our international subsidiaries that use the Euro as their functional currency. We used the spot method to measure the effectiveness of our net investment hedge. Under this method, for each reporting period, the change in the carrying value of the 2022 EUR Senior Notes due to remeasurement of the effective portion is reported in accumulated other comprehensive loss on our consolidated balance sheet and the remaining change in the carrying value of the ineffective portion, if any, is recognized in other income (expense), net in our consolidated statements of income. We evaluate the effectiveness of our net investment hedge on a prospective basis at the beginning of each quarter. We did not record any ineffectiveness for the year ended December 31, 2016.

8. FAIR VALUE OF FINANCIAL INSTRUMENTS

The fair value of our debt, excluding the Senior Notes (as described in Note 11), was estimated using interest rates on similar debt recently issued by companies with credit metrics similar to ours and is classified as Level II under the fair

value hierarchy. The carrying value of our debt is included in Note 11 and, except for the Senior Notes, approximates fair value.

The estimated fair value of the Senior Notes is based on Level I quoted market rates. The estimated fair value of our Senior Notes at December 31, 2016 was $1,327.2 million compared to the carrying value of $1,313.1 million. The carrying amounts of our other financial instruments (i.e., cash and cash equivalents, accounts receivable, net and accounts payable) approximated fair value due to their short-term nature at December 31, 2016 and December 31, 2015.

9. DETAILS OF CERTAIN CONSOLIDATED BALANCE SHEET CAPTIONS

The following tables present financial information of certain consolidated balance sheet captions.

Accounts Receivable, net — Accounts receivable, net were:

	December 31,	
	2016	2015
	(Amounts in thousands)	
Accounts receivable	$934,558	$1,029,707
Less: allowance for doubtful accounts	(51,920)	(43,935)
Accounts receivable, net	$882,638	$985,772

As disclosed in Note 1, we reclassified a portion of our accounts receivable to long-term within other assets, net on our December 31, 2016 and 2015 consolidated balance sheets of which 100% has been fully reserved at December 31, 2016.

Property, Plant and Equipment, net — Property, plant and equipment, net were:

	December 31,	
	2016	2015
	(Amounts in thousands)	
Land	$81,022	$83,475
Buildings and improvements	442,756	430,267
Machinery, equipment and tooling	669,639	690,566
Software, furniture and fixtures and other	413,540	409,333
Gross property, plant and equipment	1,606,957	1,613,641
Less: accumulated depreciation	(882,152)	(855,214)
Property, plant and equipment, net	$724,805	$758,427

Accrued Liabilities — Accrued liabilities were:

	December 31,	
	2016	2015
	(Amounts in thousands)	
Wages, compensation and other benefits	$148,481	$161,800
Commissions and royalties	27,767	30,574
Customer advance payments	253,325	315,510
Progress billings in excess of accumulated costs	7,052	8,085
Warranty costs and late delivery penalties	48,946	51,894
Sales and use tax	14,969	18,110
Income tax	15,755	38,747
Other	164,691	173,844
Accrued liabilities	$680,986	$798,564

"Other" accrued liabilities include professional fees, lease obligations, insurance, interest, freight, accrued cash dividends payable, legal and environmental matters, derivative liabilities, restructuring reserves and other items, none of which individually exceed 5% of current liabilities.

Retirement Obligations and Other Liabilities — Retirement obligations and other liabilities were:

	December 31,	
	2016	2015
	(Amounts in thousands)	
Pension and postretirement benefits	$216,772	$203,150
Deferred taxes(1)	20,086	39,081
Legal and environmental	32,546	26,538
Uncertain tax positions and other tax liabilities	93,524	73,459
Other	44,911	45,558
Retirement obligations and other liabilities	$407,839	$387,786

(1) Prior period was retrospectively adjusted to reflect the adoption of ASU No. 2015-17, "Balance Sheet Classification of Deferred Taxes."

10. EQUITY METHOD INVESTMENTS

We occasionally enter into joint venture arrangements with local country partners as our preferred means of entry into countries where barriers to entry may exist. Similar to our consolidated subsidiaries, these unconsolidated joint ventures generally operate within our primary businesses of designing, manufacturing, assembling and distributing fluid motion and control products and services. We have agreements with certain of these joint ventures that restrict us from otherwise entering the respective market and certain joint ventures produce and/or sell our products as part of their broader product offering. Net earnings from investments in unconsolidated joint ventures is reported in net earnings from affiliates in our consolidated statements of income. Given the integrated role of the unconsolidated joint ventures in our business, net earnings from affiliates is presented as a component of operating income.

As of December 31, 2016, we had investments in eight joint ventures (one located in each of Chile, India, Japan, Saudi Arabia, South Korea and the United Arab Emirates and two located in China) that were accounted for using the equity method and are immaterial for disclosure purposes.

11. DEBT AND LEASE OBLIGATIONS

Debt, including capital lease obligations, consisted of:

	December 31,	
	2016	2015(1)
	(Amounts in thousands)	
1.25% EUR Senior Notes due March 17, 2022, net of unamortized discount and debt issuance costs of $5,748 and $7,034 at December 31, 2016 and 2015, respectively	$519,902	$535,966
4.00% USD Senior Notes due November 15, 2023, net of unamortized discount and debt issuance costs of $2,972 and $3,339 at December 31, 2016 and 2015, respectively	297,028	296,661
3.50% USD Senior Notes due September 15, 2022, net of unamortized discount and debt issuance costs of $3,848 and $4,445 at December 31, 2016 and 2015, respectively	496,152	495,555
Term Loan Facility, interest rate of 2.25% and 1.86% at December 31, 2016 and 2015, net of debt issuance costs of $745 and $1,181, respectively	224,255	283,819
Capital lease obligations and other borrowings	33,286	8,995
Debt and capital lease obligations	1,570,623	1,620,996
Less amounts due within one year	85,365	60,434
Total debt due after one year	$1,485,258	$1,560,562

(1)Prior period information has been updated to conform to presentation requirements as prescribed by ASU No. 2015-03, "Interest - Imputation of Interest (Subtopic 835-30)."

Scheduled maturities of the Senior Credit Facility (as described below), as well as our Senior Notes and other debt, are:

	Term Loan	Senior Notes and other debt	Total
	(Amounts in thousands)		
2017	$60,000	$25,365	$85,365
2018	59,430	7,921	67,351
2019	59,864	—	59,864
2020	44,961	—	44,961
2021	—	—	—
Thereafter	—	1,313,082	1,313,082
Total	$224,255	$1,346,368	$1,570,623

Senior Notes

On March 17, 2015, we completed a public offering of €500.0 million of Euro senior notes in aggregate principal amount due March 17, 2022 ("2022 EUR Senior Notes"). The 2022 EUR Senior Notes bear an interest rate of 1.25% per year, payable each year on March 17, commencing on March 17, 2016. The 2022 EUR Senior Notes were priced at 99.336% of par value, reflecting a discount to the aggregate principal amount. The proceeds of the offering were €496.7 million ($526.3 million based on exchange rates in effect at the time the offering closed). We used a portion of the proceeds of the 2022 EUR Senior Notes to ultimately fund the acquisition of SIHI described in Note 3 and utilized the remaining portion for other general corporate purposes.

On November 1, 2013 we completed the public offering of $300.0 million in aggregate principal amount of senior notes due November 15, 2023 ("2023 Senior Notes"). The 2023 Senior Notes bear an interest rate of 4.00% per year, payable on May 15 and November 15 of each year. The 2023 Senior Notes were priced at 99.532% of par value, reflecting a discount to the aggregate principal amount.

On September 11, 2012, we completed the public offering of $500.0 million in aggregate principal amount of senior notes due September 15, 2022 ("2022 Senior Notes"). The 2022 Senior Notes bear an interest rate of 3.50% per year, payable on March 15 and September 15 of each year. The 2022 Senior Notes were priced at 99.615% of par value, reflecting a discount to the aggregate principal amount.

We have the right to redeem the 2022 Senior Notes and 2023 Senior Notes at any time prior to June 15, 2022 and August 15, 2023, respectively, in whole or in part, at our option, at a redemption price equal to the greater of: (1) 100% of the principal amount of the senior notes being redeemed; or (2) the sum of the present values of the remaining scheduled payments of principal and interest in respect of the Senior Notes being redeemed discounted to the redemption date on a semi-annual basis, at the applicable Treasury Rate plus 30 basis points for the 2022 Senior Notes and plus 25 basis points for the 2023 Senior Notes. In addition, at any time on or after June 15, 2022 for the 2022 Senior Notes and August 15, 2023 for the 2023 Senior Notes, we may redeem the Senior Notes at a redemption price equal to 100% of the principal amount of the Senior Notes being redeemed. In each case, we will also pay the accrued and unpaid interest on the principal amount being redeemed to the redemption date. Similarly, we have the right to redeem the 2022 EUR Senior Notes on or after December 17, 2021, in whole or in part, at our option, at a redemption price equal to the greater of: (1) 100% of the principal amount of the senior notes being redeemed; or (2) the sum of the present values of the remaining scheduled payments of principal and interest in respect of the Senior Notes being redeemed (exclusive of interest accrued to, but excluding, the date of redemption) discounted to the redemption date on an annual basis, at the Comparable German Government Bond Rate plus 25 basis points.

Senior Credit Facility

Our credit agreement provides for a $400.0 million term loan (“Term Loan Facility”) and a $1.0 billion revolving credit facility (“Revolving Credit Facility” and, together with the Term Loan Facility, the “Senior Credit Facility”). On October 14,

2015 we amended our Senior Credit Facility. The amendment extended the maturity of our Senior Credit Facility by two years to October 14, 2020, lowered the sublimits for the issuance of letters of credit and reduced the commitment fee from 0.175% to 0.15% on the daily unused portions of the Senior Credit Facility. The amended Senior Credit Facility also increased the maximum permitted leverage ratio from 3.25 to 3.5 times debt to total Consolidated EBITDA (as defined in the Senior Credit Facility). Pursuant to the terms of the Senior Credit Facility and the indentures governing the Senior Notes, our obligations will no longer carry a conditional guarantee by certain of our 100% owned domestic subsidiaries. Subject to certain conditions, we have the right to increase the amount of the Term Loan Facility or the Revolving Credit Facility by an aggregate amount not to exceed $400.0 million. All other existing terms under the Senior Credit Facility remained unchanged.

As of December 31, 2016 and December 31, 2015, we had no revolving loans outstanding under the Revolving Credit Facility. We had outstanding letters of credit of $102.6 million and $105.2 million at December 31, 2016 and December 31, 2015, respectively. As of December 31, 2016, due to a financial covenant in the Senior Credit Facility, the amount available for borrowings under our Revolving Credit Facility was effectively limited to $553.5 million. The amount available for borrowings under our Revolving Credit Facility was $894.8 million at December 31, 2015. The Senior Credit Facility contains, among other things, covenants defining our and our subsidiaries' ability to dispose of assets, merge, pay dividends, repurchase or redeem capital stock and indebtedness, incur indebtedness and guarantees, create liens, enter into agreements with negative pledge clauses, make certain investments or acquisitions, enter into transactions with affiliates or engage in any business activity other than our existing business. Our compliance with these financial covenants under the Senior Credit Facility is tested quarterly. We were in compliance with the covenants as of December 31, 2016.
Repayment of Obligations —We may prepay loans under our Senior Credit Facility in whole or in part, without premium or penalty, at any time. A commitment fee, which is payable quarterly on the daily unused portions of the Senior Credit Facility, was 0.15% (per annum) at December 31, 2016. We made scheduled principal repayments under our Term Loan Facility of $60.0 million, $45.0 million and $40.0 million in 2016, 2015 and 2014, respectively. We have scheduled principal repayments of $15.0 million due in each of the next four quarters of 2017 under our Term Loan Facility.

Operating Leases
We have non-cancelable operating leases for certain offices, service and quick response centers, certain manufacturing and operating facilities, machinery, equipment and automobiles. Rental expense relating to operating leases was $54.7 million, $53.1 million and $56.2 million in 2016, 2015 and 2014, respectively.
The future minimum lease payments due under non-cancelable operating leases are (amounts in thousands):

Year Ended December 31,	
2017	$48,640
2018	38,028
2019	29,368
2020	23,385
2021	19,476
Thereafter	65,271
Total minimum lease payments	$224,168

12. PENSION AND POSTRETIREMENT BENEFITS
We sponsor several noncontributory defined benefit pension plans, covering substantially all U.S. employees and certain non-U.S. employees, which provide benefits based on years of service, age, job grade levels and type of compensation. Retirement benefits for all other covered employees are provided through contributory pension plans, cash balance pension plans and government-sponsored retirement programs. All funded defined benefit pension plans receive funding based on independent actuarial valuations to provide for current service and an amount sufficient to amortize unfunded prior service over periods not to exceed 30 years, with funding falling within the legal limits prescribed by prevailing regulation. We also maintain unfunded defined benefit plans that, as permitted by local

regulations, receive funding only when benefits become due.

Our defined benefit plan strategy is to ensure that current and future benefit obligations are adequately funded in a cost-effective manner. Additionally, our investing objective is to achieve the highest level of investment performance that is compatible with our risk tolerance and prudent investment practices. Because of the long-term nature of our defined benefit plan liabilities, our funding strategy is based on a long-term perspective for formulating and implementing investment policies and evaluating their investment performance.

The asset allocation of our defined benefit plans reflect our decision about the proportion of the investment in equity and fixed income securities, and, where appropriate, the various sub-asset classes of each. At least annually, we complete a comprehensive review of our asset allocation policy and the underlying assumptions, which includes our long-term capital markets rate of return assumptions and our risk tolerances relative to our defined benefit plan liabilities.

The expected rates of return on defined benefit plan assets are derived from review of the asset allocation strategy, expected long-term performance of asset classes, risks and other factors adjusted for our specific investment strategy. These rates are impacted by changes in general market conditions, but because they are long-term in nature, short-term market changes do not significantly impact the rates.

Our U.S. defined benefit plan assets consist of a balanced portfolio of primarily U.S. equity and fixed income securities. Our non-U.S. defined benefit plan assets include a significant concentration of United Kingdom ("U.K.") fixed income securities. We monitor investment allocations and manage plan assets to maintain acceptable levels of risk.

For all periods presented, we used a measurement date of December 31 for each of our U.S. and non-U.S. pension plans and postretirement medical plans.

U.S. Defined Benefit Plans

We maintain qualified and non-qualified defined benefit pension plans in the U.S. The qualified plan provides coverage for substantially all full-time U.S. employees who receive benefits, up to an earnings threshold specified by the U.S. Department of Labor. The non-qualified plans primarily cover a small number of employees including current and former members of senior management, providing them with benefit levels equivalent to other participants, but that are otherwise limited by U.S. Department of Labor rules. The U.S. plans are designed to operate as "cash balance" arrangements, under which the employee has the option to take a lump sum payment at the end of their service. The total accumulated benefit obligation is equivalent to the total projected benefit obligation ("Benefit Obligation").

The following are assumptions related to the U.S. defined benefit pension plans:

	Year Ended December 31,		
	2016	2015	2014
Weighted average assumptions used to determine Benefit Obligations:			
Discount rate	4.00%	4.75%	4.00%
Rate of increase in compensation levels	4.00	4.00	4.25
Weighted average assumptions used to determine net pension expense:			
Long-term rate of return on assets	6.00%	6.25%	6.00%
Discount rate	4.75	4.00	4.50
Rate of increase in compensation levels	4.00	4.25	4.25

At December 31, 2016 as compared with December 31, 2015, we decreased our discount rate from 4.75% to 4.00% based on an analysis of publicly-traded investment grade U.S. corporate bonds, which had a lower yield due to current market conditions. In determining 2016 expense, the expected rate of return on U.S. plan assets decreased to 6.00%, primarily based on our target allocations and expected long-term asset returns. The long-term rate of return assumption is calculated using a quantitative approach that utilizes unadjusted historical returns and asset allocation as inputs for the calculation. For all US plans, we adopted the RP-2006 mortality tables and the MP-2016 improvement scale published in October 2016. We applied the RP-2006 tables based on the constituency of our plan population for union and non-union participants. We adjusted the improvement scale to utilize 75% of the ultimate improvement rate, consistent with assumptions adopted by the Social Security Administration trustees, based on long-term historical experience. Currently, we believe this approach provides the best estimate of our future obligation. Most plan participants elect to receive plan benefits as a lump sum at the end of service, rather than an annuity. As such, the updated mortality tables had an immaterial effect on our pension obligation.

Net pension expense for the U.S. defined benefit pension plans (including both qualified and non-qualified plans) was:

	Year Ended December 31,		
	2016	2015	2014
	(Amounts in thousands)		
Service cost	$22,583	$24,113	$22,981
Interest cost	19,072	17,072	17,429
Expected return on plan assets	(23,997)	(24,185)	(21,985)
Settlement cost	91	—	—
Amortization of unrecognized prior service cost	488	509	475
Amortization of unrecognized net loss	4,999	9,178	8,428
U.S. net pension expense	$23,236	$26,687	$27,328

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The estimated prior service cost and the estimated net loss for the U.S. defined benefit pension plans that will be amortized from accumulated other comprehensive loss into pension expense in 2017 is $0.1 million and $6.0 million, respectively. We amortize estimated prior service benefits and estimated net losses over the remaining expected service period.

The following summarizes the net pension liability for U.S. plans:

	December 31,	
	2016	2015
	(Amounts in thousands)	
Plan assets, at fair value	$418,854	$408,218
Benefit Obligation	(449,601)	(426,248)
Funded status	$(30,747)	$(18,030)

The following summarizes amounts recognized in the balance sheet for U.S. plans:

	December 31,	
	2016	2015
	(Amounts in thousands)	
Current liabilities	(273)	(248)
Noncurrent liabilities	(30,474)	(17,782)
Funded status	$(30,747)	$(18,030)

The following is a summary of the changes in the U.S. defined benefit plans' pension obligations:

	2016	2015
	(Amounts in thousands)	
Balance — January 1	$426,248	$447,552
Service cost	22,583	24,113
Interest cost	19,072	17,072
Plan amendments and settlements	(3,221)	—
Actuarial loss (gain)(1)	22,706	(28,052)
Benefits paid	(37,787)	(34,437)
Balance — December 31	$449,601	$426,248
Accumulated benefit obligations at December 31	$449,601	$426,248

(1) The actuarial loss in 2016 and gain in 2015 primarily reflect the impact of changes in the discount rate.

The following table summarizes the expected cash benefit payments for the U.S. defined benefit pension plans in the future (amounts in millions):

2017	$38.6
2018	40.1
2019	40.4
2020	40.9
2021	45.4
2022-2026	206.0

The following table shows the change in accumulated other comprehensive loss attributable to the components of the net cost and the change in Benefit Obligations for U.S. plans, net of tax:

	2016	2015	2014
	(Amounts in thousands)		
Balance — January 1	$(61,647)	$(66,903)	$(55,110)
Amortization of net loss	3,136	5,750	5,277
Amortization of prior service cost	306	318	297
Net loss arising during the year	(11,618)	(812)	(17,367)
Settlement gain	57	—	—
Prior service cost	634	—	—
Balance — December 31	$(69,132)	$(61,647)	$(66,903)

Amounts recorded in accumulated other comprehensive loss consist of:

	December 31, 2016	December 31, 2015
	(Amounts in thousands)	
Unrecognized net loss	$(68,476)	$(60,034)
Unrecognized prior service cost	(656)	(1,613)
Accumulated other comprehensive loss, net of tax	$(69,132)	$(61,647)

The following is a reconciliation of the U.S. defined benefit pension plans' assets:

	2016	2015
	(Amounts in thousands)	
Balance — January 1	$408,218	$426,784
Return on plan assets	28,182	(5,160)
Company contributions	22,450	21,031
Benefits paid	(37,787)	(34,437)
Settlements	(2,209)	—
Balance — December 31	$418,854	$408,218

We contributed $22.5 million and $21.0 million to the U.S. defined benefit pension plans during 2016 and 2015, respectively. These payments exceeded the minimum funding requirements mandated by the U.S. Department of Labor rules. Our estimated contribution in 2017 is expected to be approximately $20 million, excluding direct benefits paid.

All U.S. defined benefit plan assets are held by the qualified plan. The asset allocations for the qualified plan at the end of 2016 and 2015 by asset category, are as follows:

	Target Allocation at December 31,		Percentage of Actual Plan Assets at December 31,	
Asset category	2016	2015	2016	2015
U.S. Large Cap	19 %	19 %	20 %	19 %
U.S. Small Cap	4 %	4 %	4 %	4 %
International Large Cap	14 %	14 %	14 %	14 %
Emerging Markets	5 %	5 %	5 %	5 %
World Equity	8 %	8 %	8 %	8 %
Equity securities	50 %	50 %	51 %	50 %
Liability Driven Investment	40 %	39 %	39 %	39 %
Long-Term Government / Credit	10 %	11 %	10 %	11 %
Fixed income	50 %	50 %	49 %	50 %

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None of our common stock is directly held by our qualified plan. Our investment strategy is to earn a long-term rate of return consistent with an acceptable degree of risk and minimize our cash contributions over the life of the plan, while taking into account the liquidity needs of the plan. We preserve capital through diversified investments in high quality securities. Our current allocation target is to invest approximately 50% of plan assets in equity securities and 50% in fixed income securities. Within each investment category, assets are allocated to various investment strategies. A professional money management firm manages our assets, and we engage a consultant to assist in evaluating these activities. We periodically review the allocation target, generally in conjunction with an asset and liability study and in consideration of our future cash flow needs. We regularly rebalance the actual allocation to our target investment allocation.

Plan assets are invested in commingled funds and the individual funds are actively managed with the intent to outperform specified benchmarks. Our "Pension and Investment Committee" is responsible for setting the investment strategy and the target asset allocation, as well as selecting individual funds. As the qualified plan approached fully funded status, we implemented a Liability-Driven Investing ("LDI") strategy, which more closely aligns the duration of the assets with the duration of the liabilities. The LDI strategy results in an asset portfolio that more closely matches the behavior of the liability, thereby protecting the funded status of the plan.

The plan's financial instruments, shown below, are presented at fair value. See Note 1 for further discussion on how the hierarchical levels of the fair values of the Plan's investments are determined. The fair values of our U.S. defined benefit plan assets were:

	At December 31, 2016				At December 31, 2015			
		Hierarchical Levels				Hierarchical Levels		
	Total	I	II	III	Total	I	II	III
	(Amounts in thousands)				(Amounts in thousands)			
Cash and cash equivalents	$848	$848	$—	$ —	$31	$31	$—	$ —
Commingled Funds:								
Equity securities								
U.S. Large Cap(a)	81,953	—	81,953	—	77,765	—	77,765	—
U.S. Small Cap(b)	17,738	—	17,738	—	16,160	—	16,160	—
International Large Cap(c)	59,435	—	59,435	—	57,174	—	57,174	—
Emerging Markets(d)	20,014	—	20,014	—	19,888	—	19,888	—
World Equity(e)	34,261	—	34,261	—	32,680	—	32,680	—
Fixed income securities								
Liability Driven Investment (f)	164,384	—	164,384	—	159,900	—	159,900	—
Long-Term Government/Credit(g)	40,221	—	40,221	—	44,620	—	44,620	—
	$418,854	$848	$418,006	$ —	$408,218	$31	$408,187	$ —

(a) U.S. Large Cap funds seek to outperform the Russell 1000 (R) Index with investments in large and medium capitalization U.S. companies represented in the Russell 1000 (R) Index, which is composed of the largest 1,000 U.S. equities as determined by market capitalization.

(b) U.S. Small Cap funds seek to outperform the Russell 2000 (R) Index with investments in medium and small capitalization U.S. companies represented in the Russell 2000 (R) Index, which is composed of the smallest 2,000 U.S. equities as determined by market capitalization.

(c) International Large Cap funds seek to outperform the MSCI Europe, Australia, and Far East Index with investments in most of the developed nations of the world so as to maintain a high degree of diversification among countries and currencies.

(d) Emerging Markets funds represent a diversified portfolio that seeks high, long-term returns comparable to investments in emerging markets by investing in stocks from newly developed emerging market economies.

(e) World Equity funds seek to outperform the Russell Developed Large Cap Index Net over a full market cycle. The fund's goal is to provide a favorable total return relative to the benchmark, primarily through long-term capital appreciation.

(f) LDI funds seek to outperform the Barclays-Russell LDI Index by investing in high quality, mostly corporate bonds and fixed income securities that closely match those found in discount curves used to value the plan's liabilities.

(g) Long-Term Government/Credit funds seek to outperform the Barclays Capital U.S. Long-Term Government/Credit Index by generating excess return through a variety of diversified strategies in securities with longer durations, such as sector rotation, security selection and tactical use of high-yield bonds.

Non-U.S. Defined Benefit Plans

We maintain defined benefit pension plans, which cover some or all of our employees in the following countries: Austria, Belgium, Canada, France, Germany, India, Italy, Mexico, The Netherlands, Sweden, Switzerland and the U.K. The assets in the U.K. (two plans), The Netherlands and Canada represent 94% of the total non-U.S. plan assets ("non-U.S. assets"). Details of other countries' plan assets have not been provided due to immateriality.

The following are assumptions related to the non-U.S. defined benefit pension plans:

	Year Ended December 31,		
	2016	2015	2014
Weighted average assumptions used to determine Benefit Obligations:			
Discount rate	2.34%	3.13%	3.40%
Rate of increase in compensation levels	3.22	3.61	3.95
Weighted average assumptions used to determine net pension expense:			
Long-term rate of return on assets	4.68%	5.03%	5.51%
Discount rate	3.13	3.40	4.22
Rate of increase in compensation levels	3.61	3.95	3.83

At December 31, 2016 as compared with December 31, 2015, we decreased our average discount rate for non-U.S. plans from 3.13% to 2.34% based on analysis of bonds and other publicly-traded instruments, by country, which had lower yields due to market conditions. To determine 2016 pension expense, we decreased our average expected rate of return on plan assets from 5.03% at December 31, 2015 to 4.68% at December 31, 2016, primarily based on our target allocations and expected long-term asset returns. As the expected rate of return on plan assets is long-term in nature, short-term market changes do not significantly impact the rate.

Many of our non-U.S. defined benefit plans are unfunded, as permitted by local regulation. The expected long-term rate of return on assets for funded plans was determined by assessing the rates of return for each asset class and is calculated using a quantitative approach that utilizes unadjusted historical returns and asset allocation as inputs for the calculation. We work with our actuaries to determine the reasonableness of our long-term rate of return assumptions by looking at several factors including historical returns, expected future returns, asset allocation, risks by asset class and other items.

Net pension expense for non-U.S. defined benefit pension plans was:

	Year Ended December 31,		
	2016	2015	2014
	(Amounts in thousands)		
Service cost	$7,131	$7,832	$6,857
Interest cost	11,623	11,770	14,576
Expected return on plan assets	(10,013)	(11,693)	(10,581)
Amortization of unrecognized net loss	4,751	4,949	6,962
Amortization of unrecognized prior service cost (benefit)	4	(12)	—
Settlement and other	780	570	314
Non-U.S. net pension expense	$14,276	$13,416	$18,128

In 2017, there is no significant estimated prior service cost that will be amortized from accumulated other comprehensive loss into pension expense for the non-U.S. defined benefit pension plans. The estimated net loss for the non-U.S. defined benefit pension plans that will be amortized from accumulated other comprehensive loss into pension expense in 2017 is $3.5 million. We amortize estimated net losses over the remaining expected service period or over the remaining expected lifetime of inactive participants for plans with only inactive participants.

The following summarizes the net pension liability for non-U.S. plans:

	December 31,	
	2016	2015
	(Amounts in thousands)	
Plan assets, at fair value	$223,491	$230,827
Benefit Obligation	(383,947)	(386,175)
Funded status	$(160,456)	$(155,348)

The following summarizes amounts recognized in the balance sheet for non-U.S. plans:

\	December 31, 2016	2015
	(Amounts in thousands)	
Noncurrent assets	$4,905	$9,570
Current liabilities	(7,932)	(9,950)
Noncurrent liabilities	(157,429)	(154,968)
Funded status	$(160,456)	$(155,348)

The following is a reconciliation of the non-U.S. plans' defined benefit pension obligations:

	2016	2015
	(Amounts in thousands)	
Balance — January 1	$386,175	$361,351
Acquisition	—	65,920
Service cost	7,131	7,832
Interest cost	11,623	11,770
Employee contributions	219	312
Plan amendments and other	(10,347)	(1,254)
Actuarial loss (gain) (1)	49,826	(6,407)
Net benefits and expenses paid	(21,735)	(16,476)
Currency translation impact(2)	(38,945)	(36,873)
Balance — December 31	$383,947	$386,175
Accumulated benefit obligations at December 31	$362,618	$363,918

(1) The 2016 actuarial loss primarily reflects the decrease in the discount rates for U.K. and the Euro-zone.

(2) The currency translation impact reflects the strengthening of the U.S. dollar against our significant currencies, primarily the Euro and British pound.

The following table summarizes the expected cash benefit payments for the non-U.S. defined benefit plans in the future (amounts in millions):

2017	$16.5
2018	14.3
2019	14.7
2020	15.0
2021	15.4
2022-2026	84.3

The following table shows the change in accumulated other comprehensive loss attributable to the components of the net cost and the change in Benefit Obligations for non-U.S. plans, net of tax:

	2016	2015	2014
	(Amounts in thousands)		
Balance — January 1	$(59,993)	$(69,598)	$(78,863)
Amortization of net loss	3,673	3,776	5,262
Net loss arising during the year	(20,071)	(2,673)	(3,709)
Settlement loss	610	390	216
Prior service (cost) benefit arising during the year	—	(14)	141
Currency translation impact and other	7,521	8,126	7,355
Balance — December 31	$(68,260)	$(59,993)	$(69,598)

Amounts recorded in accumulated other comprehensive loss consist of:

	December 31,	
	2016	2015
	(Amounts in thousands)	
Unrecognized net loss	$(68,194)	$(59,878)
Unrecognized prior service cost	(66)	(115)
Accumulated other comprehensive loss, net of tax	$(68,260)	$(59,993)

The following is a reconciliation of the non-U.S. plans' defined benefit pension assets:

	2016	2015
	(Amounts in thousands)	
Balance — January 1	$230,827	$215,360
Acquisition	—	23,333
Return on plan assets	33,073	3,017
Employee contributions	219	312
Company contributions	20,004	22,785
Settlements	(4,511)	(1,485)
Currency translation impact and other	(34,386)	(16,019)
Net benefits and expenses paid	(21,735)	(16,476)
Balance — December 31	$223,491	$230,827

Our contributions to non-U.S. defined benefit pension plans in 2017 are expected to be approximately $6 million, excluding direct benefits paid.

The asset allocations for the non-U.S. defined benefit pension plans at the end of 2016 and 2015 are as follows:

	Target Allocation at December 31,		Percentage of Actual Plan Assets at December 31,	
Asset category	2016	2015	2016	2015
North American Companies	7 %	6 %	7 %	6 %
U.K. Companies	— %	8 %	— %	8 %
European Companies	— %	4 %	— %	3 %
Asian Pacific Companies	— %	2 %	— %	2 %
Global Equity	8 %	9 %	8 %	8 %
Equity securities	15 %	29 %	15 %	27 %
U.K. Government Gilt Index	31 %	27 %	31 %	27 %
U.K. Corporate Bond Index	1 %	20 %	1 %	19 %
Global Fixed Income Bond	2 %	18 %	2 %	18 %
Liability Driven Investment	11 %	— %	11 %	— %
Fixed income	45 %	65 %	45 %	64 %
Multi-asset	25 %	— %	25 %	— %
Buy-in Contract	9 %	— %	9 %	— %
Other	6 %	6 %	6 %	9 %
Other Types	40 %	6 %	40 %	9 %

None of our common stock is held directly by these plans. In all cases, our investment strategy for these plans is to earn a long-term rate of return consistent with an acceptable degree of risk and minimize our cash contributions over the life of the plan, while taking into account the liquidity needs of the plan and the legal requirements of the particular country. We preserve capital through diversified investments in high quality securities.

Asset allocation differs by plan based upon the plan's Benefit Obligation to participants, as well as the results of asset and liability studies that are conducted for each plan and in consideration of our future cash flow needs. Professional money management firms manage plan assets and we engage consultants in the U.K. to assist in evaluation of these activities. The assets of the U.K. plans are overseen by a group of Trustees who review the investment strategy, asset allocation and fund selection. These assets are passively managed as they are invested in index funds that attempt to match the performance of the specified benchmark index.

The fair values of the non-U.S. assets were:

	At December 31, 2016				At December 31, 2015			
		Hierarchical Levels				Hierarchical Levels		
	Total	I	II	III	Total	I	II	III
	(Amounts in thousands)				(Amounts in thousands)			
Cash	$10,396	$10,396	$—	$—	$5,641	$5,641	$—	$—
Commingled Funds:								
Equity securities								
North American Companies(a)	5,945	—	5,945	—	13,737	—	13,737	—
U.K. Companies(b)	—	—	—	—	18,003	—	18,003	—
European Companies (c)	—	—	—	—	8,035	—	8,035	—
Asian Pacific Companies(d)	—	—	—	—	5,378	—	5,378	—
Global Equity(e)	16,774	—	16,774	—	19,581	—	19,581	—
Fixed income securities								
U.K. Government Gilt Index(f)	68,227	—	68,227	—	60,478	—	60,478	—
U.K. Corporate Bond Index(g)	2,785	—	2,785	—	44,318	—	44,318	—
Global Fixed Income Bond(h)	5,259	—	5,259	—	41,325	—	41,325	—
Liability Driven Investment (i)	25,348	—	25,348	—	—	—	—	—
Other Types of Investments:								
Multi-asset (j)	54,880	—	54,880	—	—	—	—	—
Buy-in Contract (k)	20,931	—	—	20,931	—	—	—	—
Other(I)	12,946	—	—	12,946	14,331	—	—	14,331
	$223,491	$10,396	$179,218	$33,877	$230,827	$5,641	$210,855	$14,331

(a) North American Companies represents U.S. and Canadian large cap equity funds, which are managed and track their respective benchmarks (FTSE All-World USA Index and FTSE All-World Canada Index).

(b) U.K. Companies represents a U.K. equity index fund, which is passively managed and tracks the FTSE All-Share Index.

(c) European companies represents a European equity index fund, which is passively managed and tracks the FTSE All-World Developed Europe Ex-U.K. Index.

(d) Asian Pacific Companies represents Japanese and Pacific Rim equity index funds, which are passively managed and track their respective benchmarks (FTSE All-World Japan Index and FTSE All-World Developed Asia Pacific Ex-Japan Index).

(e) Global Equity represents actively managed, global equity funds taking a top-down strategic view on the different regions by analyzing companies based on fundamentals, market-driven, thematic and quantitative factors to generate alpha.

(f) U.K. Government Gilt Index represents U.K. government issued fixed income investments which are passively managed and track the respective benchmarks (FTSE U.K. Gilt Index-Linked Over 5 Years Index, FTSE U.K. Gilt Over 15 Years Index and FTSE UK Gilt Index-Linked Over 25 Years Index).

(g) U.K. Corporate Bond Index represents U.K. corporate bond investments, which are passively managed and track the iBoxx Over 15 years £ Non-Gilt Index.

(h) Global Fixed Income Bond represents investment funds that are actively managed, diversified and invested in traditional government bonds, high-quality corporate bonds, asset backed securities and emerging market debt.

(i) Liability Driven Investment seeks to invest in fixed income securities that closely match those found in discount curves used to value the plan's liabilities.

(j) Multi-asset seeks an attractive risk-adjusted return by investing in a diversified portfolio of strategies, including equities and fixed income.

(k) Buy-in contract represents an asset held by the Netherlands plan, whereby the cost of providing benefits is funded by the contract. The initial investment in this contract of $19.7 million was made on January 1, 2016 and fair value and currency adjustments resulted in a fair value of $20.9 million at December 31, 2016. The fair value of this

asset is based on the current present value of accrued benefits and will fluctuate based on changes in the obligations associated with covered plan members as well as the assumptions used in the present value calculation.

(1) Includes assets held by plans outside the United Kingdom and the Netherlands. Details, including Level III rollforward details are not material.

Defined Benefit Pension Plans with Accumulated Benefit Obligations in Excess of Plan Assets

The following summarizes key pension plan information regarding U.S. and non-U.S. plans whose accumulated benefit obligations exceed the fair value of their respective plan assets.

	December 31,	
	2016	2015
	(Amounts in thousands)	
Benefit Obligation	$802,456	$629,402
Accumulated benefit obligation	784,337	614,172
Fair value of plan assets	607,705	449,818

Postretirement Medical Plans

We sponsor several defined benefit postretirement medical plans covering certain current retirees and a limited number of future retirees in the U.S. These plans provide for medical and dental benefits and are administered through insurance companies and health maintenance organizations. The plans include participant contributions, deductibles, co-insurance provisions and other limitations and are integrated with Medicare and other group plans. We fund the plans as benefits and health maintenance organization premiums are paid, such that the plans hold no assets in any period presented. Accordingly, we have no investment strategy or targeted allocations for plan assets. Benefits under our postretirement medical plans are not available to new employees or most existing employees.

The following are assumptions related to postretirement benefits:

	Year Ended December 31,		
	2016	2015	2014
Weighted average assumptions used to determine Benefit Obligation:			
Discount rate	3.75%	4.25%	3.75%
Weighted average assumptions used to determine net expense:			
Discount rate	4.25%	3.75%	4.00%

The assumed ranges for the annual rates of increase in medical costs used to determine net expense were 7.5% for 2016, 2015 and 2014, with a gradual decrease to 5.0% for 2025 and future years.

Net postretirement benefit cost (income) for postretirement medical plans was:

	Year Ended December 31,		
	2016	2015	2014
	(Amounts in thousands)		
Service cost	$1	$2	$3
Interest cost	1,154	1,155	1,200
Amortization of unrecognized prior service cost	122	122	—
Amortization of unrecognized net gain	(355)	(539)	(1,220)
Net postretirement benefit expense (income)	$922	$740	$(17)

The estimated prior service cost expected to be amortized from accumulated other comprehensive loss into U.S. pension expense in 2017 is $0.1 million. The estimated net loss for postretirement medical plans that will be amortized from accumulated other comprehensive loss into U.S. expense in 2017 is $0.1 million.

The following summarizes the accrued postretirement benefits liability for the postretirement medical plans:

	December 31,	
	2016	2015
	(Amounts in thousands)	
Postretirement Benefit Obligation	$27,317	$28,614
Funded status	$(27,317)	$(28,614)

The following summarizes amounts recognized in the balance sheet for postretirement Benefit Obligation:

	December 31,	
	2016	2015
	(Amounts in thousands)	
Current liabilities	$(3,442)	$(3,582)
Noncurrent liabilities	(23,875)	(25,032)
Funded status	$(27,317)	$(28,614)

The following is a reconciliation of the postretirement Benefit Obligation:

	2016	2015
	(Amounts in thousands)	
Balance — January 1	$28,614	$33,019
Service cost	1	2
Interest cost	1,154	1,155
Employee contributions	856	789
Medicare subsidies receivable	117	71
Actuarial loss	1,907	127
Plan Amendments	—	(625)
Net benefits and expenses paid	(5,332)	(5,924)
Balance — December 31	$27,317	$28,614

The following presents expected benefit payments for future periods (amounts in millions):

	Expected Payments	Medicare Subsidy
2017	$ 3.5	$ 0.1
2018	3.2	0.1
2019	3.0	0.1
2020	2.7	0.1
2021	2.4	0.1
2022-2026	9.3	0.3

The following table shows the change in accumulated other comprehensive loss attributable to the components of the net cost and the change in Benefit Obligations for postretirement benefits, net of tax:

	2016	2015	2014
	(Amounts in thousands)		
Balance — January 1	$1,179	$1,103	$4,445
Amortization of net gain	(223)	(338)	(764)
Amortization of prior service cost	77	76	(1,464)
Net (loss) gain arising during the year	(1,196)	338	(1,114)
Balance — December 31	$(163)	$1,179	$1,103

Amounts recorded in accumulated other comprehensive loss consist of:

	December 31,	
	2016	2015
	(Amounts in thousands)	
Unrecognized net (loss) gain	$(455)	$2,344
Unrecognized prior service gain (cost)	292	(1,165)
Accumulated other comprehensive (loss) income, net of tax	$(163)	$1,179

We made contributions to the postretirement medical plans to pay benefits of $4.4 million in 2016, $5.1 million in 2015 and $3.8 million in 2014. Because the postretirement medical plans are unfunded, we make contributions as the covered individuals' claims are approved for payment. Accordingly, contributions during any period are directly correlated to the benefits paid.

Assumed health care cost trend rates have an effect on the amounts reported for the postretirement medical plans. A one-percentage point change in assumed health care cost trend rates would have the following effect on the 2016 reported amounts (in thousands):

	1% Increase	1% Decrease
Effect on postretirement Benefit Obligation	$ 149	$ (142)
Effect on service cost plus interest cost	4	(4)

Defined Contribution Plans

We sponsor several defined contribution plans covering substantially all U.S. and Canadian employees and certain other non-U.S. employees. Employees may contribute to these plans, and these contributions are matched in varying amounts by us, including opportunities for discretionary matching contributions by us. Defined contribution plan expense was $17.2 million in 2016, $19.6 million in 2015 and $20.4 million in 2014.

13. LEGAL MATTERS AND CONTINGENCIES

Asbestos-Related Claims

We are a defendant in a substantial number of lawsuits that seek to recover damages for personal injury allegedly caused by exposure to asbestos-containing products manufactured and/or distributed by our heritage companies in the past. While the overall number of asbestos-related claims has generally declined in recent years, there can be no assurance that this trend will continue, or that the average cost per claim will not further increase. Asbestos-containing materials incorporated into any such products were encapsulated and used as internal components of process equipment, and we do not believe that any significant emission of asbestos fibers occurred during the use of this equipment.

Our practice is to vigorously contest and resolve these claims, and we have been successful in resolving a majority of claims with little or no payment. Historically, a high percentage of resolved claims have been covered by applicable insurance or indemnities from other companies, and we believe that a substantial majority of existing claims should continue to be covered by insurance or indemnities. Accordingly, we have recorded a liability for our estimate of the

most likely settlement of asserted claims and a related receivable from insurers or other companies for our estimated recovery, to the extent we believe that the amounts of recovery are probable and not otherwise in dispute. While unfavorable rulings, judgments or

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settlement terms regarding these claims could have a material adverse impact on our business, financial condition, results of operations and cash flows, we currently believe the likelihood is remote.

Additionally, we have claims pending against certain insurers that, if resolved more favorably than reflected in the recorded receivables, would result in discrete gains in the applicable quarter. We are currently unable to estimate the impact, if any, of unasserted asbestos-related claims, although future claims would also be subject to then existing indemnities and insurance coverage.

United Nations Oil-for-Food Program

In mid-2006, the French authorities began an investigation of over 170 French companies, of which one of our French subsidiaries was included, concerning suspected inappropriate activities conducted in connection with the United Nations Oil for Food Program. As previously disclosed, the French investigation of our French subsidiary was formally opened in the first quarter of 2010, and our French subsidiary filed a formal response with the French court. In July 2012, the French court ruled against our procedural motions to challenge the constitutionality of the charges and quash the indictment. Hearings occurred on April 1-2, 2015, and the Company presented its defense and closing arguments. On June 18, 2015, the French court issued its ruling dismissing the case against the Company and the other defendants. However, on July 1, 2015, the French prosecutor lodged an appeal. We currently do not expect to incur additional case resolution costs of a material amount in this matter. However, if the French authorities ultimately take enforcement action against our French subsidiary regarding its investigation, we may be subject to monetary and non-monetary penalties, which we currently do not believe will have a material adverse financial impact on our company.

Other

We are currently involved as a potentially responsible party at five former public waste disposal sites in various stages of evaluation or remediation. The projected cost of remediation at these sites, as well as our alleged "fair share" allocation, will remain uncertain until all studies have been completed and the parties have either negotiated an amicable resolution or the matter has been judicially resolved. At each site, there are many other parties who have similarly been identified. Many of the other parties identified are financially strong and solvent companies that appear able to pay their share of the remediation costs. Based on our information about the waste disposal practices at these sites and the environmental regulatory process in general, we believe that it is likely that ultimate remediation liability costs for each site will be apportioned among all liable parties, including site owners and waste transporters, according to the volumes and/or toxicity of the wastes shown to have been disposed of at the sites. We believe that our financial exposure for existing disposal sites will not be materially in excess of accrued reserves.

As previously disclosed, we terminated an employee of an overseas subsidiary after uncovering actions that violated our Code of Business Conduct and may have violated the Foreign Corrupt Practices Act. We completed our internal investigation into the matter, self-reported the potential violation to the United States Department of Justice (the “DOJ”) and the SEC, and continue to cooperate with the DOJ and SEC. We previously received a subpoena from the SEC requesting additional information and documentation related to the matter and have completed our response to the subpoena. We currently believe that this matter will not have a material adverse financial impact on the Company, but there can be no assurance that the Company will not be subjected to monetary penalties and additional costs.

We are also a defendant in a number of other lawsuits, including product liability claims, that are insured, subject to the applicable deductibles, arising in the ordinary course of business, and we are also involved in other uninsured routine litigation incidental to our business. We currently believe none of such litigation, either individually or in the aggregate, is material to our business, operations or overall financial condition. However, litigation is inherently unpredictable, and resolutions or dispositions of claims or lawsuits by settlement or otherwise could have an adverse impact on our financial position, results of operations or cash flows for the reporting period in which any such resolution or disposition occurs.

Although none of the aforementioned potential liabilities can be quantified with absolute certainty except as otherwise indicated above, we have established reserves covering exposures relating to contingencies, to the extent believed to be reasonably estimable and probable based on past experience and available facts. While additional exposures beyond these reserves could exist, they currently cannot be estimated. We will continue to evaluate and update the reserves as necessary and appropriate.

14. WARRANTY RESERVE

We have recorded reserves for product warranty claims that are included in current liabilities. The following is a summary of the activity in the warranty reserve:

	2016	2015	2014
	(Amounts in thousands)		
Balance — January 1	$34,574	$31,095	$37,828
Accruals for warranty expense, net of adjustments	28,364	33,113	24,909
Settlements made	(32,479)	(29,634)	(31,642)
Balance — December 31	$30,459	$34,574	$31,095

15. SHAREHOLDERS' EQUITY

Dividends - On February 15, 2016, our Board of Directors authorized an increase in the payment of quarterly dividends on our common stock from $0.18 per share to $0.19 per share payable beginning on April 8, 2016. On February 16, 2015, our Board of Directors authorized an increase in the payment of quarterly dividends on our common stock from $0.16 per share to $0.18 per share payable beginning on April 10, 2015. On February 17, 2014, our Board of Directors authorized an increase in the payment of quarterly dividends on our common stock from $0.14 per share to $0.16 per share payable beginning on April 11, 2014. Generally, our dividend date-of-record is in the last month of the quarter, and the dividend is paid the following month. Any subsequent dividends will be reviewed by our Board of Directors and declared at its discretion dependent on its assessment of our financial situation and business outlook at the applicable time.

Share Repurchase Program – On November 13, 2014, our Board of Directors approved a $500.0 million share repurchase authorization. Our share repurchase program does not have an expiration date, and we reserve the right to limit or terminate the repurchase program at anytime without notice.

We had no repurchases of shares of our outstanding common stock for the year ended December 31, 2016 compared to share repurchases of 6,047,839 for $303.7 million and 3,420,656 for $246.5 million during 2015 and 2014, respectively. As of December 31, 2016, we have $160.7 million of remaining capacity under our current share repurchase program.

16. INCOME TAXES

The provision for income taxes consists of the following:

	Year Ended December 31,		
	2016	2015	2014
	(Amounts in thousands)		
Current:			
U.S. federal	$20,569	$62,032	$62,301
Non-U.S.	75,227	78,489	123,052
State and local	2,612	4,947	7,422
Total current	98,408	145,468	192,775
Deferred:			
U.S. federal	22,249	(3,509)	1,270
Non-U.S.	(45,577)	4,972	14,022
State and local	2,300	1,420	1,244
Total deferred	(21,028)	2,883	16,536
Total provision	$77,380	$148,351	$209,311

The expected cash payments for the current income tax expense for 2016 , 2015 and 2014 were reduced by $0.2 million , $6.4 million and $8.6 million , respectively, as a result of tax deductions related to the vesting of restricted stock and the exercise of non-qualified employee stock options. The income tax benefit resulting from these stock-based compensation plans has increased capital in excess of par value.

The provision for income taxes differs from the statutory corporate rate due to the following:

	Year Ended December 31,		
	2016	2015	2014
	(Amounts in millions)		
Statutory federal income tax at 35%	$74.5	$144.3	$255.1
Foreign impact, net	(13.9)	(22.1)	(54.6)
Change in valuation allowance	14.2	11.6	(1.6)
State and local income taxes, net	4.9	6.4	8.7
Other	(2.3)	8.2	1.7
Total	$77.4	$148.4	$209.3
Effective tax rate	36.3 %	36.0 %	28.7 %

The 2016 tax rate differed from the federal statutory rate of 35% primarily due to the net impact of foreign operations, tax impacts from our Realignment Programs and losses in certain foreign jurisdictions for which no tax benefit was provided. Our effective tax rate of 36.3% for the year ended December 31, 2016 increased from 36.0% in 2015 due primarily to the tax impacts described above. The 2015 tax rate differed from the federal statutory rate of 35% primarily due to tax impacts of the realignment programs, the non-deductible Venezuelan exchange rate remeasurement loss, and the establishment of a valuation allowance against our deferred tax assets in Brazil in the amount of $12.6 million, partially offset by the net impact of foreign operations, which included the impacts of lower foreign tax rates and changes in our reserves established for uncertain tax positions. The 2014 tax rate differed from the federal statutory rate of 35% primarily due to the net impact of foreign operations, which included the impacts of lower foreign tax rates and changes in our reserves established for uncertain tax positions.

We assert permanent reinvestment on the majority of invested capital and unremitted foreign earnings in our foreign subsidiaries. However, we do not assert permanent reinvestment on a limited number of foreign subsidiaries where future

distributions may occur. The cumulative amount of undistributed earnings considered permanently reinvested is $1.5 billion . Should these permanently reinvested earnings be repatriated in a future period in the form of dividends or otherwise, our provision for income taxes may increase materially in that period. Quantification of the deferred tax liability, if any, associated with indefinitely reinvested differences is not practicable due to the complexities with its hypothetical calculation. During each of the three years reported in the period ended December 31, 2016 , we have not recognized any net deferred tax assets attributable to excess foreign tax credits on unremitted earnings or foreign currency translation adjustments in our foreign subsidiaries with excess financial reporting basis.

For those subsidiaries where permanent reinvestment was not asserted, we had cash and deemed dividend distributions that resulted in the recognition of $4.6 million , $2.4 million and $6.9 million of income tax benefit in December 31, 2016 , 2015 and 2014 , respectively. As we have not recorded a benefit for the excess foreign tax credits associated with deemed repatriation of unremitted earnings, these credits are not available to offset the liability associated with these dividends.

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the consolidated deferred tax assets and liabilities were:

	December 31,	
	2016	2015
	(Amounts in thousands)	
Deferred tax assets related to:		
Retirement benefits	$39,644	$36,845
Net operating loss carryforwards	48,180	29,473
Compensation accruals	30,299	36,695
Inventories	43,445	50,142
Credit carryforwards	64,251	50,380
Warranty and accrued liabilities	35,039	30,897
Other	64,236	41,544
Total deferred tax assets	325,094	275,976
Valuation allowances	(36,191)	(24,725)
Net deferred tax assets	288,903	251,251
Deferred tax liabilities related to:		
Property, plant and equipment	(47,616)	(43,348)
Goodwill and intangibles	(176,935)	(175,748)
Other	(716)	(972)
Total deferred tax liabilities	(225,267)	(220,068)
Deferred tax assets, net	$63,636	$31,183

We have $225.0 million of U.S. and foreign net operating loss carryforwards at December 31, 2016 . Of this total, $35.0 million are state net operating losses. Net operating losses generated in the U.S., if unused, will expire in 2017 through 2027. The majority of our non-U.S. net operating losses carry forward without expiration. Additionally, we have $60.0 million of foreign tax credit carryforwards at December 31, 2016 , expiring in 2020 through 2026 for which a valuation allowance of $0.6 million has been recorded.

Earnings before income taxes comprised:

	Year Ended December 31,		
	2016	2015	2014
	(Amounts in thousands)		
U.S.	$170,681	$215,719	$230,898
Non-U.S.	42,231	196,647	497,844
Total	$212,912	$412,366	$728,742

A tabular reconciliation of the total gross amount of unrecognized tax benefits, excluding interest and penalties, is as follows (in millions):

	2016	2015	2014
Balance — January 1	$56.1	$51.5	$59.3
Gross amount of increases in unrecognized tax benefits resulting from tax positions taken:			
During a prior year	1.9	9.8	2.7
During the current period	14.3	8.6	7.2
Decreases in unrecognized tax benefits relating to:			
Settlements with taxing authorities	(4.0)	(1.1)	(3.9)
Lapse of the applicable statute of limitations	(7.3)	(7.4)	(10.0)
Decreases in unrecognized tax benefits relating to foreign currency translation adjustments	(1.7)	(5.3)	(3.8)
Balance — December 31	$59.3	$56.1	$51.5

The amount of gross unrecognized tax benefits at December 31, 2016 was $75.1 million , which includes $15.8 million of accrued interest and penalties. Of this amount $66.5 million , if recognized, would favorably impact our effective tax rate. During the years ended December 31, 2016 we recognized net interest and penalty income of $1.6 million , for the same period in 2015 we recognized no net interest and penalty income and in 2014 we recognized $1.5 million .

With limited exception, we are no longer subject to U.S. federal income tax audits for years through 2014, state and local income tax audits for years through 2010 or non-U.S. income tax audits for years through 2009. We are currently under examination for various years in Austria, Canada, Germany, India, Italy, Singapore, the U.S. and Venezuela.

It is reasonably possible that within the next 12 months the effective tax rate will be impacted by the resolution of some or all of the matters audited by various taxing authorities. It is also reasonably possible that we will have the statute of limitations close in various taxing jurisdictions within the next 12 months. As such, we estimate we could record a reduction in our tax expense up to approximately $17 million within the next 12 months.

17. BUSINESS SEGMENT INFORMATION

Our business segments share a focus on industrial flow control technology and have a high number of common customers. These segments also have complementary product offerings and technologies that are often combined in applications that provide us a net competitive advantage. Our segments also benefit from our global footprint and our economies of scale in reducing administrative and overhead costs to serve customers more cost effectively.

We conduct our operations through these three business segments based on type of product and how we manage the business:

- EPD for long lead time, custom and other highly-engineered pumps and pump systems, mechanical seals, auxiliary systems and replacement parts and related services;
- IPD for engineered and pre-configured industrial pumps and pump systems and related products and services; and
- FCD for engineered and industrial valves, control valves, actuators and controls and related services.

For decision-making purposes, our Chief Executive Officer ("CEO") and other members of senior executive management use financial information generated and reported at the reportable segment level. Our corporate headquarters does not constitute a separate division or business segment. We evaluate segment performance and allocate resources based on each reportable segment's operating income. Amounts classified as "Eliminations and All Other" include corporate headquarters costs and other minor entities that do not constitute separate segments. Intersegment sales and transfers are recorded at cost plus a profit margin, with the sales and related margin on such sales eliminated in consolidation.

During the first quarter of 2015, we made composition changes to our EPD and IPD reportable segments to take into consideration the acquisition of SIHI that was closed on January 7, 2015. Effective January 1, 2015, certain activities, primarily related to engineered pumps and seals, that were previously included in the IPD business segment are now reported in the EPD business segment. These changes did not materially impact segment results or segment assets. We did not change our business segments, management structure, chief operating decision maker or how we evaluate segment performance and allocate resources. Prior periods were retrospectively adjusted to conform to the new reportable segment composition. The following is a summary of the financial information of our reportable segments as of and for the years ended December 31, 2016 , 2015 and 2014 reconciled to the amounts reported in the consolidated financial statements.

	EPD	IPD	FCD	Subtotal—Reportable Segments	Eliminations and All Other	Consolidated Total
	(Amounts in thousands)					
Year Ended December 31, 2016:						
Sales to external customers	$1,963,086	$799,923	$1,227,478	$ 3,990,487	$ —	$3,990,487
Intersegment sales	32,873	35,156	6,234	74,263	(74,263)	—
Segment operating income (loss)	167,420	(6,370)	198,620	359,670	(91,705)	267,965
Depreciation and amortization	48,957	28,824	28,189	105,970	10,782	116,752
Identifiable assets	2,082,729	1,010,107	1,310,273	4,403,109	305,814	4,708,923
Capital expenditures	29,426	17,336	26,467	73,229	16,470	89,699

	EPD	IPD	FCD	Subtotal—Reportable Segments	Eliminations and All Other	Consolidated Total
	(Amounts in thousands)					
Year Ended December 31, 2015:						
Sales to external customers	$2,209,809	$937,756	$1,410,226	$ 4,557,791	$ —	$4,557,791
Intersegment sales	46,821	44,137	5,276	96,234	(96,234)	—
Segment operating income	319,980	29,128	233,616	582,724	(68,059)	514,665
Depreciation and amortization	50,289	36,826	30,404	117,519	9,568	127,087
Identifiable assets(1)	2,230,134	1,056,400	1,323,758	4,610,292	352,814	4,963,106
Capital expenditures	88,496	19,446	63,569	171,511	10,350	181,861

	EPD	IPD	FCD	Subtotal—Reportable Segments	Eliminations and All Other	Consolidated Total
	(Amounts in thousands)					
Year Ended December 31, 2014:						
Sales to external customers	$2,507,708	$760,923	$1,609,254	$ 4,877,885	$ —	$4,877,885
Intersegment sales	56,902	44,958	6,474	108,334	(108,334)	—
Segment operating income	446,170	103,574	322,845	872,589	(87,203)	785,386
Depreciation and amortization	51,047	14,718	35,458	101,223	9,054	110,277
Identifiable assets(1)	2,333,895	620,038	1,425,555	4,379,488	465,179	4,844,667
Capital expenditures	69,107	15,165	37,496	121,768	10,851	132,619

(1) Prior period information has been updated to conform to presentation requirements as prescribed by ASU No. 2015-03,

"Interest - Imputation of Interest (Subtopic 835-30)" and ASU No. 2015-17, "Balance Sheet Classification of Deferred Taxes."

Geographic Information — We attribute sales to different geographic areas based on the facilities' locations. Long-lived assets are classified based on the geographic area in which the assets are located and exclude deferred taxes, goodwill and intangible assets. Prior period information has been updated to conform to current year presentation. Sales and long-lived assets by geographic area are as follows:

	Year Ended December 31, 2016					
	Sales	Percentage		Long-Lived Assets	Percentage	
	(Amounts in thousands, except percentages)					
United States(5)	$1,537,779	38.5	%	$ 338,038	31.5	%
EMA(1)	1,541,984	38.6	%	288,903	31.8	%
Asia(2)	500,424	12.5	%	144,599	15.9	%
Other(3)(5)	410,300	10.4	%	136,391	20.8	%
Consolidated total	$3,990,487	100.0	%	$ 907,931	100.0	%

	Year Ended December 31, 2015					
	Sales	Percentage		Long-Lived Assets	Percentage	
	(Amounts in thousands, except percentages)					
United States(4)(5)	$1,679,075	36.9	%	$ 338,556	33.6	%
EMA(1)	1,773,281	38.9	%	326,728	33.2	%
Asia(2)	562,792	12.3	%	143,767	14.6	%
Other(3)(5)	542,643	11.9	%	173,706	18.6	%
Consolidated total	$4,557,791	100.0	%	$ 982,757	100.0	%

	Year Ended December 31, 2014					
	Sales	Percentage		Long-Lived Assets	Percentage	
	(Amounts in thousands, except percentages)					
United States(4)(5)	$1,724,392	35.4	%	$ 330,217	36.0	%
EMA(1)	1,991,638	40.8	%	263,411	28.6	%
Asia(2)	571,195	11.7	%	126,878	13.8	%
Other(3)(5)	590,660	12.1	%	199,072	21.6	%
Consolidated total	$4,877,885	100.0	%	$ 919,578	100.0	%

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(1) "EMA" includes Europe, the Middle East and Africa. In 2016, 2015 and 2014, Germany accounted for approximately 10% , 11% and 7% , respectively, of consolidated long-lived assets. No other individual country within this group represents 10% or more of consolidated totals for any period presented.

(2) "Asia" includes Asia and Australia. No individual country within this group represents 10% or more of consolidated totals for any period presented.

(3) "Other" includes Canada and Latin America. No individual country within this group represents 10% or more of consolidated totals for any period presented.

(4) Prior period Long-Lived Assets information has been updated to conform to presentation requirements as prescribed by ASU No. 2015-03, "Interest - Imputation of Interest (Subtopic 835-30)."

(5) The Company corrected the classification between the United States and Other for Sales of $77.3 million and $111.0 million for the years ended December 31, 2016 and 2015 , respectively, and Long-Lived Assets of $51.9 million , $8.9 million and $47.0 million for the years ended December 31, 2016 , 2015 and 2014 , respectively.

Net sales to international customers, including export sales from the U.S., represented approximately 64% of total sales in 2016 , 66% in 2015 and 68% in 2014 .
Major Customer Information — We have a large number of customers across a large number of manufacturing and service facilities and do not believe that we have sales to any individual customer that represent 10% or more of consolidated sales for any of the years presented.

18. ACCUMULATED OTHER COMPREHENSIVE LOSS
The following presents the components of accumulated other comprehensive loss (AOCL), net of related tax effects:

(Amounts in thousands)	2016 Foreign currency translation items(1)	Pension and other post-retirement effects	Cash flow hedging activity	Total(1)	2015 Foreign currency translation items(1)	Pension and other post-retirement effects	Cash flow hedging activity	Total(1)
Balance - January 1	$(411,615)	$(120,461)	$(3,458)	$(535,534)	$(238,230)	$(135,398)	$(5,210)	$(378,838)
Other comprehensive (loss) income before reclassifications	(71,994)	(23,939)	1,064	(94,869)	(173,385)	4,977	(6,382)	(174,790)
Amounts reclassified from AOCL	—	7,870	1,156	9,026	—	9,960	8,134	18,094
Net current-period other comprehensive (loss) income	(71,994)	(16,069)	2,220	(85,843)	(173,385)	14,937	1,752	(156,696)
Balance - December 31	$(483,609)	$(136,530)	$(1,238)	$(621,377)	$(411,615)	$(120,461)	$(3,458)	$(535,534)

(1) Includes foreign currency translation adjustments attributable to noncontrolling interests of $3.4 million , $2.7 million and $1.3 million for December 31, 2016 , 2015 and 2014 , respectively. Foreign currency translation impact primarily represents the weakening of the British pound, Euro, and Mexican peso exchange rates versus the U.S. dollar for the period. Includes net investment hedge gain of $1.4 million and loss of $4.2 million [2] , net of deferred taxes, for the year ended December 31, 2016 and 2015 , respectively. Amounts in parentheses indicate debits.
(2) Previously disclosed as a gain of $5.6 million . No incremental impact on our consolidated financial condition or result of operation.

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The following table presents the reclassifications out of AOCL:

(Amounts in thousands)	Affected line item in the statement of income	2016(1)	2015(1)
Cash flow hedging activity			
Foreign exchange contracts	Other income (expense), net	$—	$(3,327)
	Sales	(1,531)	(7,920)
	Tax benefit	375	3,113
	Net of tax	$(1,156)	$(8,134)
Pension and other postretirement effects			
Amortization of actuarial losses(2)		$(9,750)	$(13,587)
Prior service costs(2)		(492)	(619)
Settlement(2)		(871)	(570)
	Tax benefit	3,243	4,816
	Net of tax	$(7,870)	$(9,960)

(1) Amounts in parentheses indicate decreases to income. None of the reclassification amounts have a noncontrolling interest component.
(2) These accumulated other comprehensive loss components are included in the computation of net periodic pension cost. See Note 12 for additional details.

At December 31, 2016 , we expect to recognize losses of $0.1 million , net of deferred taxes, into earnings in the next twelve months related to designated cash flow hedges based on their fair values at December 31, 2016 .

19. REALIGNMENT PROGRAMS

In the first quarter of 2015, we initiated a realignment program ("R1 Realignment Program") to reduce and optimize certain non-strategic QRCs and manufacturing facilities from the SIHI acquisition. In the second quarter of 2015, we initiated a second realignment program ("R2 Realignment Program") to better align costs and improve long-term efficiency, including further manufacturing optimization through the consolidation of facilities, a reduction in our workforce, the transfer of activities from high-cost regions to lower-cost facilities and the divestiture of certain non-strategic assets.

The R1 Realignment Program and the R2 Realignment Program (collectively the "Realignment Programs") consist of both restructuring and non-restructuring charges. Restructuring charges represent costs associated with the relocation or reorganization of certain business activities and facility closures and include related severance costs. Non-restructuring charges are primarily employee severance associated with workforce reductions to reduce redundancies. Expenses are primarily reported in COS or SG&A, as applicable, in our condensed consolidated statements of income. We anticipate a total investment in these programs of approximately $400 million, including projects still under final evaluation. We anticipate that the majority of any remaining charges will be incurred throughout 2017.

Generally, the aforementioned charges will be paid in cash, except for asset write-downs, which are non-cash charges. The following is a summary of total charges, net of adjustments, related to the Realignment Programs:

	December 31, 2016					
(Amounts in thousands)	Engineered Product Division	Industrial Product Division	Flow Control Division	Subtotal–Reportable Segments	Eliminations and All Other	Consolidated Total
Restructuring Charges						
COS	$24,748	$20,202	$4,688	$ 49,638	$ —	$ 49,638
SG&A	10,342	6,338	1,941	18,621	18	18,639
Income tax expense	6,000	2,800	600	9,400	—	9,400
	$41,090	$29,340	$7,229	$ 77,659	$ 18	$ 77,677
Non-Restructuring Charges						
COS	$5,894	$6,022	$3,350	$ 15,266	$ 8	$ 15,274
SG&A	3,462	2,062	1,426	6,950	4,432	11,382
	$9,356	$8,084	$4,776	$ 22,216	$ 4,440	$ 26,656
Total Realignment Charges						
COS	$30,642	$26,224	$8,038	$ 64,904	$ 8	$ 64,912
SG&A	13,804	8,400	3,367	25,571	4,450	30,021
Income tax expense	6,000	2,800	600	9,400	—	9,400
Total	$50,446	$37,424	$12,005	$ 99,875	$ 4,458	$ 104,333

(Amounts in thousands)	December 31, 2015 Engineered Product Division	Industrial Product Division	Flow Control Division	Subtotal–Reportable Segments	Eliminations and All Other	Consolidated Total
Restructuring Charges						
COS	$9,963	$20,446	$9,301	$ 39,710	$ —	$ 39,710
SG&A	7,475	9,259	7,611	24,345	—	24,345
Income tax expense(1)	3,400	6,500	1,200	11,100	—	11,100
	$20,838	$36,205	$18,112	$ 75,155	$ —	$ 75,155
Non-Restructuring Charges						
COS	10,266	8,161	$8,583	$ 27,010	$ —	$ 27,010
SG&A	6,531	6,148	3,413	16,092	—	16,092
	$16,797	$14,309	$11,996	$ 43,102	$ —	$ 43,102
Total Realignment Charges						
COS	$20,229	$28,607	$17,884	$ 66,720	$ —	$ 66,720
SG&A	14,006	15,407	11,024	40,437	—	40,437
Income tax expense(1)	3,400	6,500	1,200	11,100	—	11,100
Total	$37,635	$50,514	$30,108	$ 118,257	$ —	$ 118,257

(1) Income tax expense includes exit taxes as well as non-deductible costs.

The following is a summary of total inception to date charges, net of adjustments, related to the Realignment Programs:

(Amounts in thousands)	Inception to Date Engineered Product Division	Industrial Product Division (1)	Flow Control Division	Subtotal–Reportable Segments	Eliminations and All Other	Consolidated Total
Restructuring Charges						
COS	$34,711	$40,648	$13,989	$ 89,348	$ —	$ 89,348
SG&A	17,817	15,597	9,552	42,966	18	42,984
Income tax expense(2)	9,400	9,300	1,800	20,500	—	20,500
	$61,928	$65,545	$25,341	$ 152,814	$ 18	$ 152,832
Non-Restructuring Charges						
COS	$16,160	$14,183	$11,933	$ 42,276	$ 8	$ 42,284
SG&A	9,993	8,210	4,839	23,042	4,432	27,474
	$26,153	$22,393	$16,772	$ 65,318	$ 4,440	$ 69,758
Total Realignment Charges						
COS	$50,871	$54,831	$25,922	$ 131,624	$ 8	$ 131,632
SG&A	27,810	23,807	14,391	66,008	4,450	70,458
Income tax expense(2)	9,400	9,300	1,800	20,500	—	20,500
Total	$88,081	$87,938	$42,113	$ 218,132	$ 4,458	$ 222,590

(1) Includes $46.8 million of restructuring charges, primarily COS, related to the R1 Realignment Program.
(2) Income tax expense includes exit taxes as well as non-deductible costs.
Restructuring charges represent costs associated with the relocation or reorganization of certain business activities and facility closures and include costs related to employee severance at closed facilities, contract termination costs, asset write-downs and other costs. Severance costs primarily include costs associated with involuntary termination benefits. Contract termination costs include costs related to termination of operating leases or other contract termination costs. Asset write-downs include accelerated depreciation of fixed assets, accelerated amortization of intangible assets, divestiture of certain non-strategic assets and inventory write-downs. Other costs generally include costs related to employee relocation, asset relocation, vacant facility costs (i.e., taxes and insurance) and other charges.

The following is a summary of restructuring charges, net of adjustments, for the Realignment Programs:

	December 31, 2016				
(Amounts in thousands)	Severance	Contract Termination	Asset Write-Downs	Other	Total
COS	$37,972	$ —	$ 5,429	$6,237	$49,638
SG&A	7,247	—	1,384	10,008	18,639
Income tax expense(1)	—	—	—	9,400	9,400
Total	$45,219	$ —	$ 6,813	$25,645	$77,677

(1) Income tax expense includes exit taxes as well as non-deductible costs.

	December 31, 2015				
(Amounts in thousands)	Severance	Contract Termination	Asset Write-Downs	Other	Total
COS	$33,972	$ 609	$ 3,488	$1,641	$39,710
SG&A	23,520	43	44	738	24,345
Income tax expense(1)	—	—	—	11,100	11,100
Total	$57,492	$ 652	$ 3,532	$13,479	$75,155

(1) Income tax expense includes exit taxes as well as non-deductible costs.

The following is a summary of total inception to date restructuring charges, net of adjustments, related to the Realignment Programs:

	Inception to Date				
(Amounts in thousands)	Severance	Contract Termination	Asset Write-Downs	Other	Total (1)
COS(1)	$71,944	$ 609	$ 8,917	$7,878	$89,348
SG&A	30,767	43	1,428	10,746	42,984
Income tax expense(2)	—	—	—	20,500	20,500
Total	$102,711	$ 652	$ 10,345	$39,124	$152,832

(1) Includes $46.8 million of restructuring charges, primarily COS, related to the R1 Realignment Program.
(2) Income tax expense includes exit taxes as well as non-deductible costs.

The following represents the activity, primarily severance, related to the restructuring reserve for the Realignment Programs:

(Amounts in thousands)	R1 Realignment Program	R2 Realignment Program	Total
Balance at December 31, 2014	$ —	$ —	$—
Charges	29,705	34,350	64,055
Cash expenditures	(383)	(1,791)	(2,174)
Other non-cash adjustments, including currency	(4,166)	589	(3,577)
Balance at December 31,2015	$ 25,156	$ 33,148	$58,304
Charges	11,066	46,805	57,871
Cash expenditures	(24,087)	(38,869)	(62,956)
Other non-cash adjustments, including currency	459	6,649	7,108
Balance at December 31, 2016	$ 12,594	$ 47,733	$60,327

20. QUARTERLY FINANCIAL DATA (UNAUDITED)

The prior period consolidated financial information has been revised for errors identified in the second quarter of 2017, see Note 2 for further discussion. The following presents a summary of the unaudited quarterly data for 2016 and 2015 (amounts in millions, except per share data):

	2016			
Quarter	4th	3rd (2)	2nd	1st
Sales	$1,071.0	$945.9	$1,027.4	$946.2
Gross profit	327.3	278.0	320.7	305.2
Earnings (loss) before income taxes	89.7	(12.2)	83.9	51.5
Net earnings (loss) attributable to Flowserve Corporation	60.0	(15.8)	54.4	33.9
Earnings (loss) per share (1):				
Basic	$0.46	$(0.12)	$0.42	$0.26
Diluted	0.46	(0.12)	0.42	0.26

	2015			
Quarter	4th (3)	3rd	2nd	1st
Sales	$1,287.7	$1,094.2	$1,161.4	$1,014.5
Gross profit	389.8	386.5	368.5	332.7
Earnings before income taxes	102.6	144.2	106.7	58.9
Net earnings attributable to Flowserve Corporation	64.7	91.2	74.2	28.4
Earnings per share (1):				
Basic	$0.49	$0.69	$0.55	$0.21
Diluted	0.49	0.68	0.55	0.21

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(1) Earnings per share is computed independently for each of the quarters presented. The sum of the quarters may not equal the total year amount due to the impact of changes in weighted average quarterly shares outstanding.

(2) The increase in gross profit and decrease in net loss from the revision primarily relate to errors previously recorded out of period of $12.5 million in the aggregate, partially offset by the receivables from our primary Venezuelan customer which should have been included in the reserve.

(3) The gross profit and net earnings include a decrease from the revision adjustment primarily related to amounts previously recorded out of period of $6.7 million in the aggregate.

The significant fourth quarter impact to 2016 earnings before income taxes was to record $29.8 million in charges related to our Realignment Programs. See Note 19 for additional information on our Realignment Programs.
The significant fourth quarter impact to 2015 earnings before income tax was to record $52.4 million in charges related to our Realignment Programs. In addition, there was $31.5 million less broad-based annual incentive compensation expense in the fourth quarter of 2015 as compared to the same period in 2014.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) are designed to ensure that the information, which we are required to disclose in the reports that we file or submit under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the United States ("U.S.") Securities and Exchange Commission's ("SEC") rules and forms, and that such information is accumulated and communicated to our management, including our Principal Executive Officer and Principal Financial Officer, as appropriate to allow timely decisions regarding required disclosure.
Our management, with the participation of the Company's Principal Executive Officer and Principal Financial Officer evaluated the effectiveness of the Company's disclosure controls and procedures (as that term is defined in Rule 13a-15(e) of the Exchange Act) as of December 31, 2016 . At the time our Annual Report on Form 10-K for the year ended December 31, 2016 was filed on February 16, 2017, our Principal Executive Officer and Principal Financial Officer concluded that our disclosure controls and procedures were effective as of December 31, 2016. Subsequent to that evaluation, our Principal Executive Officer and Principal Financial Officer concluded that, as a result of the material weaknesses in internal control over financial reporting described below, our disclosure controls and procedures were not effective as of December 31, 2016 . The Company is amending Item 9A of its Annual Report on Form 10-K for 2016 , as well as Item 4 of its Quarterly Reports on Form 10-Q for the first quarter of fiscal 2017 to reflect the conclusion by management that there were material weaknesses in internal control over financial reporting as of the end of the periods covered by these reports.
Notwithstanding the material weaknesses described below, management has concluded that our consolidated financial statements included in our Form 10-K for the year ended December 31, 2016 and our condensed consolidated financial statements included in our Form 10-Q for the quarter ended March 31, 2017 were not materially misstated. However, management has determined such consolidated financial statements will be revised for the errors identified in the second quarter of 2017. The consolidated financial statements included in this Annual Report on Form 10-K/A include the disclosures of the revisions for the comparable periods and are fairly stated in all material respects in accordance with generally accepted accounting principles in the United States of America for each of the periods presented.

Management’s Report on Internal Control Over Financial Reporting (Restated)

Our management, under the supervision and with the participation of our Principal Executive Officer and Principal Financial Officer, is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States ("U.S. GAAP"). Internal control over financial reporting includes policies and procedures that: (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. GAAP, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.
A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not

be prevented or detected on a timely basis.

Under the supervision and with the participation of our Principal Executive Officer and Principal Financial Officer, our management conducted an assessment of our internal control over financial reporting as of December 31, 2016, based on the criteria established in Internal Control - Integrated Framework (2013), issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this assessment, our management identified control deficiencies as of December 31, 2016, that constituted material weaknesses:

- We did not maintain an effective control environment at one of our non-U.S. sites. Specifically, certain employees at one of our non-U.S. sites engaged in conduct that circumvented controls and resulted in the creation of unsupported analyses in various accounts, primarily in inventory or recording of manual journal entries without appropriate support or business rationale.
- We did not design and maintain effective business performance controls used to monitor the completeness and accuracy of the financial results of our subsidiaries and to identify potential breakdowns in lower level controls. Specifically, these controls did not detect errors on a timely basis that, when aggregated, could have been material to the interim or annual financial statements. The controls did not require that consistent criteria be applied when identifying items for further investigation and did not require verification of appropriate resolution.

The material weaknesses resulted in the revision of the Company's consolidated financial statements for the years ended 2016 and prior and each of the interim periods within 2016 and 2015 and the three months ended March 31, 2017. These material weaknesses could result in misstatements of the consolidated financial statements or disclosures that would result in a material misstatement to the annual or interim consolidated financial statements that would not be prevented or detected. Accordingly, our management has determined that these control deficiencies constitute material weaknesses.

In Management's Report on Internal Control Over Financial Reporting included in our original filing our management, including our Principal Executive Officer and Principal Financial Officer at that time, concluded that we maintained effective internal control over financial reporting as of December 31, 2016. Current management has subsequently concluded that the material weaknesses described above existed as of December 31, 2016. As a result, we have concluded that we did not maintain effective internal control over financial reporting as of December 31, 2016, based on the criteria in Internal Control - Integrated Framework (2013), issued by the Committee of Sponsoring Organizations of the Treadway Commission. Accordingly, management has restated its report on internal control over financial reporting.

The effectiveness of our internal control over financial reporting as of December 31, 2016 , has been audited by PricewaterhouseCoopers LLP, our independent registered public accounting firm, as stated in their report, which is included herein.

Remediation Plan

In the second quarter of fiscal 2017, management became actively engaged in the planning for, and implementation of, remediation efforts to address the material weaknesses in our internal control over financial reporting identified above. Management intends to implement the following steps:

- enhance the current business process review control procedures to include additional prior period comparisons and additional key ratios, metrics and risk based criteria as determined by management;
- enhance the detailed site and/or process balance sheet reviews based on criteria determined by management’s risk assessment including manual journal entries;
- conduct enhanced ethics, controls and policy training for employees at the one non-U.S. site where certain employees engaged in conduct that circumvented controls.

Management believes the measures described above and others that may be implemented will remediate the material weaknesses that we have identified. As management continues to evaluate and improve internal control over financial reporting, we may decide to take additional measures to address control deficiencies or determine to modify, or in appropriate circumstances not to complete, certain of the remediation measures identified.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) during the year ended December 31, 2016 that have materially affected, or are reasonably likely to materially affect our internal control over financial reporting.

Other

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Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with existing policies or procedures may deteriorate.

PART III

PART IV

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ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES
(a) Documents filed as a part of this Annual Report:
1. Consolidated Financial Statements
The following consolidated financial statements and notes thereto are filed as part of this Annual Report:
Report of Independent Registered Public Accounting Firm
Flowserve Corporation Consolidated Financial Statements:
Consolidated Balance Sheets at December 31, 2016 and 2015
For each of the three years in the period ended December 31, 2016:
Consolidated Statements of Income
Consolidated Statements of Comprehensive Income
Consolidated Statements of Shareholders' Equity
Consolidated Statements of Cash Flows
Notes to Consolidated Financial Statements
2. Consolidated Financial Statement Schedules
The following consolidated financial statement schedule is filed as part of this Annual Report:
Schedule II — Valuation and Qualifying Accounts.. 110
Financial statement schedules not included in this Annual Report have been omitted because they are not applicable or the required information is shown in the consolidated financial statements or notes thereto.
3. Exhibits
See Index to Exhibits to this Annual Report.

FLOWSERVE CORPORATION
Schedule II — Valuation and Qualifying Accounts

Description	Balance at Beginning of Year	Additions Charged to Cost and Expenses	Additions Charged to Other Accounts— Acquisitions and Related Adjustments	Deductions From Reserve	Balance at End of Year
	(Amounts in thousands)				
Year Ended December 31, 2016					
Allowance for doubtful accounts(a) (c):	$43,935	$ 12,045	$ —	$ (4,060)	$51,920
Deferred tax asset valuation allowance(b):	24,725	12,883	(67)	(1,350)	36,191
Year Ended December 31, 2015					
Allowance for doubtful accounts(a):	25,469	19,624	151	(1,309)	43,935
Deferred tax asset valuation allowance(b):	15,378	18,548	(3,596)	(5,605)	24,725
Year Ended December 31, 2014					
Allowance for doubtful accounts(a):	24,073	17,817	(443)	(15,978)	25,469
Deferred tax asset valuation allowance(b):	18,058	1,366	(996)	(3,050)	15,378

(a) Deductions from reserve represent accounts written off and recoveries.

(b) Deductions from reserve result from the expiration or utilization of net operating losses and foreign tax credits previously reserved.

(c) Excludes $73.5 million charge to fully reserve for accounts receivables with our primary Venezuelan customer that are classified as long-term within other assets, net on our consolidated balance sheet as disclosed in Note 1 of this Annual Report on Form 10-K/A for the year ended December 31, 2016.

INDEX TO EXHIBITS

Exhibit No.	Description
23.1+	Consent of PricewaterhouseCoopers LLP.
31.1+	Certification of Principal Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2+	Certification of Principal Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1++	Certification of Principal Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2++	Certification of Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document

+ Filed herewith.

++ Furnished herewith.

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