UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2019.

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from __________ to __________.

Commission File Number 001-34658

BWX TECHNOLOGIES, INC.
(Exact name of registrant as specified in its charter)

Delaware	**80-0558025**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
800 Main Street, 4th Floor	
Lynchburg, Virginia	**24504**
(Address of principal executive offices)	**(Zip Code)**

Registrant's Telephone Number, Including Area Code: (980) 365-4300

Securities Registered Pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.01 par value	BWXT	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes ☐ No ☒

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
Emerging growth company	☐		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the registrant's common stock held by nonaffiliates of the registrant on the last business day of the registrant's most recently completed second fiscal quarter (based on the closing sales price on the New York Stock Exchange on June 30, 2019) was approximately $5.0 billion.

The number of shares of the registrant's common stock outstanding at February 20, 2020 was 95,083,647.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for the 2020 Annual Meeting of Stockholders to be held on May 1, 2020 are incorporated by reference into Part III of this Form 10-K.

BWX TECHNOLOGIES, INC.
INDEX – FORM 10-K

Statements we make in this Annual Report on Form 10-K ("Report"), which express a belief, expectation or intention, as well as those that are not historical fact, are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are subject to various risks, uncertainties and assumptions, including those to which we refer under the headings "Cautionary Statement Concerning Forward-Looking Statements" and "Risk Factors" in Items 1 and 1A of Part I of this Report. In this Report, unless the context otherwise indicates, "we," "us" and "our" mean BWX Technologies, Inc. ("BWXT" or the "Company") and its consolidated subsidiaries.

PART I

Item 1. BUSINESS

General

BWX Technologies, Inc. is a specialty manufacturer of nuclear components, a developer of nuclear technologies and a service provider with an operating history of more than 100 years. Our core businesses focus on the design, engineering and manufacture of precision naval nuclear components, reactors and nuclear fuel for the U.S. Government. We also provide special nuclear materials processing, environmental site restoration services, and a variety of products and services to customers in the nuclear power industry, as well as critical medical radioisotopes and radiopharmaceuticals. While we provide a wide range of products and services, our business segments are heavily focused on major projects. At any given time, a relatively small number of projects can represent a significant part of our operations.

On June 30, 2015, we completed the spin-off of our former Power Generation business (the "spin-off") into an independent, publicly traded company named Babcock & Wilcox Enterprises, Inc. ("BWE"). We have presented the notes to our consolidated financial statements on the basis of continuing operations, unless otherwise stated.

Business Segments

We operate in three reportable segments: Nuclear Operations Group, Nuclear Power Group and Nuclear Services Group. For financial information regarding each of our segments and financial information regarding geographic areas, see Note 15 to our consolidated financial statements included in this Report. For further details regarding each segment's facilities, see Item 2, "Properties." In general, we operate in capital-intensive industries and rely on large contracts for a substantial amount of our revenues. We are currently exploring growth strategies across our segments through strategic investments and acquisitions to expand and complement our existing businesses. We would expect to fund these opportunities with cash generated from operations or by raising additional capital through debt, equity or some combination thereof.

Nuclear Operations Group

Through this segment, we engineer, design and manufacture precision naval nuclear components, reactors and nuclear fuel for the U.S. Department of Energy ("DOE")/National Nuclear Security Administration's ("NNSA") Naval Nuclear Propulsion Program. In addition, we perform development and fabrication activities for missile launch tubes for U.S. Navy submarines.

Our Nuclear Operations Group segment specializes in the design and manufacture of close-tolerance and high-quality equipment for nuclear applications. In addition, we are a leading manufacturer of critical nuclear components, fuels and assemblies for government and limited other uses. We have supplied nuclear components for DOE programs since the 1950s and are the largest domestic supplier of research reactor fuel elements for colleges, universities and national laboratories. We also convert or downblend high-enriched uranium into low-enriched fuel for use in commercial reactors to generate electricity. In addition, we have over 100 years of experience in supplying components for defense applications.

We work closely with the DOE-supported nuclear non-proliferation program. Currently, this program is assisting in the development of a high-density, low-enriched uranium fuel required for high-enriched uranium test reactor conversions. We have also been a leader in the receipt, storage, characterization, dissolution, recovery and purification of a variety of uranium-bearing materials. All phases of uranium downblending and uranium recovery are performed at our Lynchburg, Virginia and Erwin, Tennessee sites.

The demand for nuclear components by the U.S. Government determines a substantial portion of this segment's backlog. We expect that orders for nuclear components will continue to be a significant part of backlog for the foreseeable future. In addition, the U.S. Navy issued its fiscal year 2020 long-range shipbuilding plan in March 2019, which includes recommendations to increase the size of its fleet of ships to include additional submarines and aircraft carriers beyond the number disclosed in long-range shipbuilding plans issued prior to February 2018. We expect the U.S. Navy's new shipbuilding plan will require us to make additional capital expenditures and investment in personnel to meet this growth in demand.

Nuclear Power Group

Through this segment, we design and manufacture commercial nuclear steam generators, heat exchangers, pressure vessels, reactor components and other auxiliary equipment, including containers for the storage of spent nuclear fuel and other high-level nuclear waste. We have supplied the nuclear industry with more than 1,300 large, heavy components worldwide and we are the only commercial heavy nuclear component manufacturer in North America. This segment is also a leading supplier of nuclear fuel, fuel handling systems, tooling delivery systems and related services for CANDU nuclear power plants. This segment also provides a variety of engineering and in-plant services and is a significant supplier to nuclear power utilities undergoing major refurbishment and plant life extension projects. Our in-depth knowledge comes from over 50 years of experience in the design, manufacturing, commissioning and service of nuclear power generation equipment. Additionally, this segment is a leading global manufacturer and supplier of critical medical radioisotopes and radiopharmaceuticals.

The Nuclear Power Group segment specializes in performing full-scope, prototype design work coupled with manufacturing integration. This segment's capabilities include:

- steam generation and separation equipment design and development;
- thermal-hydraulic design of reactor plant components;
- commercial nuclear fuel manufacturing and design;
- nuclear fuel handling system design, manufacturing, delivery, installation and commissioning;
- containers for the storage of spent nuclear fuel and other high-level waste;
- structural and thermal-hydraulic design and vibration analysis for heat exchangers;
- structural component design for precision manufacturing;
- materials expertise in high-strength, low-alloy steels and nickel-based materials;
- material procurement of tubing, forgings and weld wire;
- metallographic and chemical analysis; and
- manufacture and supply of critical medical radioisotopes and radiopharmaceuticals for research, diagnostic and therapeutic uses.

Our Nuclear Power Group segment's overall activity primarily depends on the demand and competitiveness of nuclear energy. A significant portion of our Nuclear Power Group segment's operations depend on the timing of maintenance outages, principally in the Canadian market, and the cyclical nature of capital expenditures and major refurbishments for nuclear utility customers, which could cause variability in our financial results.

Nuclear Services Group

Through this segment, we provide various services to the U.S. Government, including special nuclear materials processing, environmental site restoration services and management and operating services for various U.S. Government-owned facilities. These services are provided primarily to the DOE, including the NNSA, the Office of Nuclear Energy, the Office of Science and the Office of Environmental Management, and NASA.

This segment's principal operations include:

- managing and operating environmental management sites;
- managing spent nuclear fuel and transuranic waste for the DOE;
- managing and operating nuclear production facilities;
- providing critical skills and resources for DOE sites; and
- managing and operating space flight hardware and test facilities for NASA.

This segment is also engaged in inspection and maintenance services for the commercial nuclear industry primarily in the U.S. These services include steam generator, heat exchanger and balance of plant inspection and servicing as well as high pressure water lancing, non-destructive examination and the development of customized tooling solutions. This segment also develops technology for a variety of applications, including advanced nuclear power sources, and offers complete advanced nuclear fuel and reactor design and engineering, licensing and manufacturing services for new advanced nuclear reactors.

Our Nuclear Services Group segment's overall activity depends primarily on authorized spending levels of the DOE, including the NNSA, the Office of Nuclear Energy, the Office of Science and the Office of Environmental Management, and NASA. We manage and operate complex, high-consequence nuclear and national security operations for the DOE and the NNSA, primarily through our joint ventures, as further discussed under the caption "Joint Ventures" below. In addition, this segment's activities associated with the U.S. commercial nuclear industry depend on the demand and competitiveness of nuclear power in the U.S. and our ability to successfully obtain commercial nuclear contracts.

Acquisitions

Laker Energy Products Ltd.

On January 2, 2020, our subsidiary BWXT Canada Ltd. acquired Laker Energy Products Ltd. ("Laker Energy Products"). Laker Energy Products is a global supplier of nuclear-grade materials and precisely machined components for CANDU nuclear power utilities and employs approximately 140 personnel. Laker Energy Products will be reported as part of our Nuclear Power Group segment.

Nordion Medical Isotope Business

On July 30, 2018, our subsidiary BWXT ITG Canada, Inc. acquired the Nordion medical isotope business (the "MI business"). The MI business is a leading global manufacturer and supplier of critical medical radioisotopes and radiopharmaceuticals for research, diagnostic and therapeutic uses. Its customers include radiopharmaceutical companies, hospitals and radiopharmacies. Its primary operations are located in Kanata, Ontario, Canada and Vancouver, British Columbia, Canada. This acquisition added approximately 150 highly trained and experienced personnel, two specialized production centers and a uniquely licensed infrastructure. In addition to the growing portfolio of radioisotope products we acquired, the MI business will be the platform from which we plan to launch our Molybdenum-99 product line and a number of future radioisotope-based imaging, diagnostic and therapeutic products. This business is reported as part of our Nuclear Power Group segment.

See Note 2 to our consolidated financial statements included in this Report for additional information on acquisitions.

Contracts

We execute our contracts through a variety of methods, including fixed-price incentive fee, cost-plus, cost-reimbursable, firm fixed-price or some combination of these methods. We generally recognize our contract revenues and related costs on an over time basis. Accordingly, we review contract price and cost estimates regularly as the work progresses and reflect adjustments in profit proportionate to the percentage of completion in the period when we revise those estimates. To the extent that these adjustments result in a reduction or an elimination of previously reported profits with respect to a project, we would recognize a charge against current earnings, which could be material.

We have contracts that extend beyond one year. Most of our long-term contracts have provisions for progress payments. We attempt to cover anticipated increases in labor, material and service costs of our long-term contracts either through an estimate of such changes, which is reflected in the original price, or through risk-sharing mechanisms, such as escalation or price adjustments for items such as labor and commodity prices.

In the event of a contract deferral or cancellation, we generally would be entitled to recover costs incurred, settlement expenses and profit on work completed prior to deferral or termination. Significant or numerous cancellations could adversely affect our business, financial condition, results of operations and cash flows.

Nuclear Operations Group

The majority of the revenue generated by this segment is from long-term contracts with the U.S. DOE/NNSA's Naval Nuclear Propulsion Program. Unless otherwise specified in a contract, allowable and allocable costs are billed to contracts with the U.S. Government in accordance with the Federal Acquisition Regulation (the "FAR") and the related U.S. Government Cost

Accounting Standards ("CAS"). Examples of costs that may be incurred by us and not billable to the U.S. Government in accordance with the requirements of the FAR and CAS regulations include, but are not limited to, unallowable employee compensation and benefit costs, lobbying costs, interest, certain legal costs and charitable donations.

Most of our contracts in this segment are fixed-price incentive fee contracts that provide for reimbursement of allowable costs incurred plus a fee and generally require that we use our best efforts to accomplish the scope of the work within some specified time and stated dollar limitation. Fees can be established in terms of dollar value or percentage of costs. Award and incentive fees are determined and earned based on customer evaluation of our performance against negotiated criteria, primarily related to cost, and are intended to provide motivation for excellence in contract performance. Incentive fees that are based on cost provide for an initially negotiated fee to be adjusted later, typically using a formula to measure performance against the associated criteria, based on the relationship of total allowable costs to total target costs. Award and incentive fees represent variable consideration that we include in revenue when there is sufficient evidence to determine that the variable consideration is not constrained.

Certain of our U.S. Government contracts span one or more base years and multiple option years. The U.S. Government generally has the right not to exercise option periods and may not exercise an option period for various reasons including, but not limited to, annual funding determinations. In addition, contracts between the U.S. Government and its prime contractors usually contain standard provisions for termination at the convenience of the U.S. Government or the prime contractor. As a U.S. Government contractor, we are subject to federal regulations under which our right to receive future awards of new federal contracts would be unilaterally suspended or barred if we were convicted of a crime or indicted based on allegations of a violation of specific federal statutes. In addition, some of our contracts with the U.S. Government require us to provide advance notice in connection with any contemplated sale or shut down of the relevant facility. In each of those situations, the U.S. Government has an exclusive right to negotiate a mutually acceptable purchase of the facility.

Nuclear Power Group

Contracts in this segment are usually awarded through a competitive bid process. Factors that customers may consider include price, plant or equipment availability, technical capabilities of equipment and personnel, efficiency, safety record and reputation. Certain of these contracts are fixed-price contracts in which the specified scope of work is agreed to for a pre-determined price that is generally not subject to adjustment, regardless of costs incurred by the contractor, unless changes in scope are authorized by the customer. Fixed-price contracts entail more risk to us because they require us to predetermine both the quantities of work to be performed and the costs associated with executing the work. Remaining contracts are primarily time-and-materials contracts, which result in us recovering costs incurred in accordance with the contract plus a fee.

Our arrangements with customers may require us to provide letters of credit, bid and performance bonds or guarantees to secure bids or performance under contracts, which may involve significant amounts for contract security.

Nuclear Services Group

This segment's principal operations include the management and operation of nuclear production facilities, environmental management sites and the management of spent nuclear fuel and transuranic waste for the DOE. These activities are primarily accomplished through our participation in joint ventures with other contractors as further discussed under the caption "Joint Ventures" below.

The contracts for the management and operation of U.S. Government facilities are awarded through a complex and protracted procurement process. These contracts are generally structured as five-year contracts with options for up to five additional years, which are exercisable by the customer, or include provisions whereby the contract durations can be extended as a result of the achievement of certain performance metrics. These are generally cost-reimbursement contracts that include an award fee that is primarily based on annual performance, with monthly provisional fee payments and annual true-up payments. Depending on the type of contract, the contractor may be required to supply working capital, which is reimbursed by the U.S. Government through regular invoicing.

This segment also serves the U.S. commercial nuclear industry and customers for our advanced technology platforms primarily through the use of fixed-price contracts that are awarded following a competitive bid process. Fixed-price contracts entail more risk to us because the price has been pre-determined and is generally not subject to adjustment, regardless of costs incurred, unless authorized by the customer.

Backlog

Backlog represents the dollar amount of revenue we expect to recognize in the future from contracts awarded and in progress. Not all of our expected revenue from a contract award is recorded in backlog for a variety of reasons, including that some projects are awarded and completed within the same reporting period.

Our backlog is equal to our remaining performance obligations under contracts that meet the criteria in Financial Accounting Standards Board ("FASB") Topic *Revenue from Contracts with Customers*, as discussed in Note 3 to our consolidated financial statements included in this Report. It is possible that our methodology for determining backlog may not be comparable to methods used by other companies.

We are subject to the budgetary and appropriations cycle of the U.S. Government as it relates to our Nuclear Operations Group and Nuclear Services Group segments. Backlog may not be indicative of future operating results, and projects in our backlog may be cancelled, modified or otherwise altered by customers.

Our backlog at December 31, 2019 and 2018 was as follows:

	December 31, 2019		December 31, 2018	
	(In approximate millions)			
Nuclear Operations Group	$ 4,515	85%	$ 2,637	76%
Nuclear Power Group	730	14%	804	23%
Nuclear Services Group	43	1%	38	1%
Total Backlog	$ 5,288	100%	$ 3,479	100%

We do not include the value of our unconsolidated joint venture contracts in backlog. These unconsolidated joint ventures are included in our Nuclear Services Group segment. See Note 4 to our consolidated financial statements included in this Report for financial information on our equity method investments.

Of the backlog at December 31, 2019, we expect to recognize revenues as follows:

	2020	2021	Thereafter	Total
	(In approximate millions)			
Nuclear Operations Group	$ 1,396	$ 1,013	$ 2,106	$ 4,515
Nuclear Power Group	217	174	339	730
Nuclear Services Group	32	1	10	43
Total Backlog	$ 1,645	$ 1,188	$ 2,455	$ 5,288

As of December 31, 2019, our Nuclear Operations Group segment's backlog with the U.S. Government was $4,046.6 million, $427.4 million of which had not yet been funded.

As of December 31, 2019, our Nuclear Power Group segment had no backlog with the U.S. Government.

As of December 31, 2019, our Nuclear Services Group segment's backlog with the U.S. Government was $9.5 million, $0.1 million of which had not yet been funded.

Major new awards from the U.S. Government are typically received following Congressional approval of the budget for the U.S. Government's next fiscal year, which starts October 1, and may not be awarded to us before the end of the calendar year. Due to the fact that most contracts awarded by the U.S. Government are subject to these annual funding approvals, the total values of the underlying programs are significantly larger. In 2019, we received awards from the U.S. Government with a combined value in excess of $3.9 billion, inclusive of unexercised options, approximately $2.8 billion of which had been added to backlog as of December 31, 2019. The value of unexercised options excluded from backlog as of December 31, 2019 was approximately $1.1 billion, which is expected to be exercised through 2025, subject to annual Congressional appropriations.

Competition

The competitive environments in which each segment operates are described below.

Nuclear Operations Group. We have specialized technical capabilities that have allowed us to be a valued supplier of nuclear components and fuel for the U.S. Government's naval nuclear fleet since the 1950s. Because of the technical and regulatory standards required to meet U.S. Government contracting requirements for nuclear components and fuel and the barriers to entry present in this type of environment, competition in this segment is limited. The primary bases of limited competition for this segment are price, high capital investment, technical capabilities, high regulatory licensing costs and quality of products and services. In addition, a significant portion of the designs, processing and final product are classified by the U.S. Government, requiring applicable personnel to obtain and maintain U.S. Government security clearances.

Nuclear Power Group. Our Nuclear Power Group segment supplies heavy nuclear components, specialized engineering and maintenance services, nuclear fuel, fuel handling systems and tooling delivery systems for CANDU reactors. This segment competes with a number of companies specializing in nuclear capabilities including, but not limited to, Framatome, Cameco Corporation, Doosan Heavy Industries & Construction, E.S. Fox Limited, AECON Group Inc., Bechtel National, Inc., Westinghouse Electric Corporation and SNC-Lavalin Group, Inc. The primary bases of competition for this segment are price, technical capabilities, quality, timeliness of performance, breadth of products and services and willingness to accept project risks.

Nuclear Services Group. Through this segment, we are engaged in the management and operation of U.S. Government facilities and the delivery of environmental remediation services (decontamination and decommissioning) associated with U.S. Government-owned nuclear facilities. Many of our government contracts are bid as a joint venture with one or more companies, in which we have a majority or a minority position. The performance of the prime or lead contractor can impact our reputation and our future competitive position with respect to that particular project and customer. Our primary competitors in the delivery of goods and services to the U.S. Government and the operation of U.S. Government facilities include, but are not limited to, Bechtel National, Inc., Amentum, Fluor Corporation, Lockheed Martin Corporation, Jacobs Engineering Group, Inc., Northrop Grumman Corporation, Huntington Ingalls Industries, Inc., Honeywell International, Inc. and Leidos, Inc. The primary bases of competition for this segment are experience, past performance, availability of key personnel and technical capabilities.

The Nuclear Services Group segment is also engaged in the commercial nuclear industry primarily in the U.S. This portion of the segment competes with a number of companies specializing in commercial nuclear engineering and maintenance services including Framatome, Westinghouse Electric Corporation and other third-tier service suppliers. The primary bases of competition for this segment are price, technical capabilities, quality, timeliness of performance, breadth of products and services and willingness to accept project risks.

Joint Ventures

We share in the ownership of a variety of entities with third parties, primarily through corporations, limited liability companies and partnerships, which we refer to as "joint ventures." Through these joint venture arrangements, our Nuclear Services Group segment primarily manages and operates nuclear facilities and associated plant infrastructure, constructs large capital facilities, provides safeguards and security for inventory and assets, supports and conducts research and development for advanced energy technology and manages environmental programs for the DOE, the NNSA and NASA. We generally account for our investments in joint ventures under the equity method of accounting. Certain of our Nuclear Services Group segment unconsolidated joint ventures are described below.

- **Los Alamos Legacy Cleanup Contract.** Newport News Nuclear BWXT – Los Alamos, LLC, a limited liability company formed in 2017 by Stoller Newport News Nuclear, Inc., a subsidiary of Huntington Ingalls Industries, Inc.'s Technical Solutions division, and BWXT Technical Services Group, Inc. ("BWXT TSG"), was awarded a contract to perform environmental monitoring and remediation, waste management and disposition, and decontamination and decommissioning at the Los Alamos National Laboratory site and surrounding private and government-owned lands.
- **Lawrence Livermore National Laboratory.** Lawrence Livermore National Security, LLC, a limited liability company formed in 2006 by the University of California, Bechtel National, Inc., Amentum and BWXT Government Group, Inc., manages and operates Lawrence Livermore National Laboratory located in Livermore, California. The laboratory serves as a national resource in science and engineering, focused on national security, energy, the environment and bioscience, with special responsibility for nuclear devices.
- **Savannah River Liquid Waste Disposition Program.** Savannah River Remediation LLC, a limited liability company formed in 2009 by Amentum, Bechtel National, Inc., CH2M Hill Constructors, Inc. and BWXT TSG, became the liquid waste contractor for the DOE's Savannah River Site located in Aiken, South Carolina. The objective of this program is to achieve closure of the Savannah River Site liquid waste tanks in compliance with the Federal Facilities Agreement, utilizing the Defense Waste Processing Facility and Saltstone Facility.

- **Portsmouth Gaseous Diffusion Plant D&D.** Fluor-BWXT Portsmouth LLC is a limited liability company formed by Fluor Federal Services, Inc. and BWXT TSG to provide nuclear operations, decontamination and decommissioning services at the Portsmouth Gaseous Diffusion Plant in Portsmouth, Ohio.
- **West Valley Demonstration Project Phase I Decommissioning and Facility Disposition.** CH2M Hill-BWXT West Valley, LLC is a limited liability company formed by CH2M Hill Constructors, Inc., BWXT TSG and Environmental Chemical Corporation. Services provided include project management and support services, site operations, maintenance, utilities, high-level waste canister relocation, facility disposition, waste tank farm management, U.S. Nuclear Regulatory Commission ("NRC") licensed disposal area management, waste management and nuclear materials disposition, and safeguards and security.
- **Waste Isolation Pilot Plant.** Nuclear Waste Partnership, LLC is a limited liability company formed by Amentum, BWXT TSG and Areva Federal Services, LLC as the major subcontractor that manages and operates the DOE's Waste Isolation Pilot Plant in Carlsbad, New Mexico.
- **Synergy Achieving Consolidated Operations & Maintenance (SACOM).** Syncom Space Services, LLC is a limited liability company formed by PAE Applied Technologies, LLC and BWXT Nuclear Operations Group, Inc. to provide facility operations and maintenance services for institutional and technical facilities, and perform test and manufacturing support services at two NASA facilities – the Stennis Space Center in Hancock County, Mississippi and the Michoud Assembly Facility in New Orleans, Louisiana.
- **Paducah Gaseous Diffusion Plant Deactivation and Remediation Project.** Four Rivers Nuclear Partnership, LLC is a limited liability company formed by BWXT TSG, CH2M Hill Constructors, Inc. and Fluor Federal Services, Inc. to provide nuclear operations, deactivation and remediation services at the Paducah Gaseous Diffusion Plant in Paducah, Kentucky.

Customers

We provide our products and services to a diverse customer base, including the U.S. Government, utilities and other customers in the nuclear power and radiopharmaceutical industries. Our largest customer during the years ended December 31, 2019, 2018 and 2017 was the U.S. Government, representing approximately 77%, 79% and 81% of our total consolidated revenues, respectively. No individual non-U.S. Government customer accounted for more than 10% of our consolidated revenues in the years ended December 31, 2019, 2018 or 2017.

The U.S. Government is the primary customer of our Nuclear Operations Group and Nuclear Services Group segments. Revenues from U.S. Government contracts comprised 96%, 99% and 99% of revenues in our Nuclear Operations Group segment for the years ended December 31, 2019, 2018 and 2017, respectively. Revenues from U.S. Government contracts comprised 85%, 90% and 83% of revenues in our Nuclear Services Group segment for the years ended December 31, 2019, 2018 and 2017, respectively.

Raw Materials and Suppliers

Our operations use raw materials, such as carbon and alloy steels in various forms and components and accessories for assembly, which are available from numerous sources. We generally purchase these raw materials and components as needed for individual contracts. Although shortages of some raw materials have existed occasionally, no serious shortage exists at the present time.

Our Nuclear Operations Group segment relies on several single-source suppliers for materials used in its products. We believe these suppliers are reliable, and we and the U.S. Government expend significant effort to monitor and maintain the supplier base for our Nuclear Operations Group segment. Our Nuclear Power Group and Nuclear Services Group segments do not depend on single sources of supply for materials used in their products. We have limited supply options for certain raw materials used in our Nuclear Power Group segment; however, we believe the suppliers of these materials are reliable.

Employees

At December 31, 2019, we employed approximately 6,450 persons worldwide. Approximately 1,750 of our employees were members of labor unions at December 31, 2019. Many of our operations are subject to union contracts, which we customarily renew periodically. We consider our relationships with our employees to be satisfactory.

Patents and Technology Licenses

We currently hold a large number of U.S. and foreign patents and have patent applications pending. We acquire patents and technology licenses and grant licenses to others when we consider it advantageous for us to do so. Although in the aggregate our patents and technology licenses are important to us, we do not regard any single patent or license or group of related patents or licenses as critical or essential to our business as a whole. In general, we depend on our technological capabilities and the application of know-how, rather than patents and technology licenses, in the conduct of our various businesses.

Research and Development Activities

Our research and development activities are related to the development and improvement of new and existing products and equipment, as well as conceptual and engineering evaluation for translation into practical applications. These activities include the development of medical radioisotope technology and a variety of advanced technologies in the areas of additive manufacturing, machine learning, modular reactors, nuclear thermal propulsion and high temperature gas reactors, among others. These projects are sponsored and funded through internal research and development and by a number of commercial and government customers.

We charge the costs of research and development unrelated to specific contracts as incurred. Excluding customer-sponsored research and development, the majority of our activities in this area for the years ended December 31, 2019, 2018 and 2017 related to the development of technologies in the area of medical and industrial radioisotopes. Contractual arrangements for customer-sponsored research and development can vary on a case-by-case basis and include contracts, cooperative agreements and grants.

See Note 1 to our consolidated financial statements included in this Report for further information on research and development.

Hazard Risks and Insurance

Our operations present risks of injury to or death of people, loss of or damage to property and damage to the environment. We have created loss control systems and processes to assist us in the identification and treatment of the hazard risks presented by our operations, and we endeavor to make sure these systems are effective.

As loss control measures will not always be successful, we seek to establish various means of funding losses and transferring financial liability related to incidents or occurrences. We primarily seek to do this through contractual protections, including waivers of consequential damages, indemnities, caps on liability, liquidated damages provisions and access to the insurance of other parties. We also procure insurance, operate our own captive insurance company and/or establish funded or unfunded reserves. However, none of these methods will eliminate all risks.

Depending on competitive conditions, the nature of the work, industry custom and other factors, we may not be successful in obtaining adequate contractual protection from our customers and other parties against losses and liabilities arising out of or related to the performance of our work. The scope of the protection may be limited, may be subject to conditions and may not be supported by adequate insurance or other means of financing. In addition, we may have difficulty enforcing our contractual rights with others following a material loss.

Similarly, insurance for certain potential losses or liabilities may not be available or may only be available at a cost or on terms we consider not to be economical. Insurers frequently react to market losses by ceasing to write or severely limiting coverage for certain exposures. Risks that we have frequently found difficult to cost-effectively insure against include, but are not limited to, property losses from wind, flood and earthquake events, nuclear hazards and war, pollution liability, liabilities related to occupational health exposures (including asbestos), liability related to our executives, professional liability/errors and omissions coverage, the failure, misuse or unavailability of our information technology systems, the failure of security measures designed to protect our information technology systems from security breaches and liability related to risk of loss of our work in progress. In cases where we purchase insurance, we are subject to the credit worthiness of the relevant insurer(s), the available limits of the coverage, our retention under the relevant policy, exclusions in the policy and gaps in coverage.

Our operations in designing, engineering, manufacturing, constructing and servicing nuclear power equipment and components for our commercial nuclear utility customers subject us to various risks, including, without limitation, damage to our customers' property and third-party claims for personal injury, environmental liability, death and property damage. To protect against liability for damage to a customer's property, we endeavor to obtain waivers of liability and subrogation from the customer and its insurer. We also attempt to cap our overall liability in our contracts. To protect against liability from claims brought by third parties, we seek to be insured under the utility customer's nuclear liability policies and have the benefit of the indemnity and limitation of any applicable liability provision of the Price-Anderson Act. The Price-Anderson Act limits the public liability of U.S. manufacturers and operators of licensed nuclear facilities and other parties who may be liable in respect of, and indemnifies them against, all claims in excess of a certain amount. This amount is determined by the sum of commercially available liability insurance plus certain retrospective premium assessments payable by operators of commercial nuclear reactors. For those sites where we provide environmental remediation services, we seek the same protection from our customers as we do for our other nuclear activities. The Price-Anderson Act, as amended, includes a sunset provision and requires renewal each time that it expires. Contracts that were entered into during a period of time that the Price-Anderson Act was in full force and effect continue to receive the benefit of the Price-Anderson Act's nuclear indemnity. The Price-Anderson Act is set to expire on December 31, 2025. We also provide nuclear fabrication and other services to the nuclear power industry in Canada. Canada's Nuclear Liability and Compensation Act ("NLCA") generally conforms to international conventions and is conceptually similar to the Price-Anderson Act in the U.S. Accordingly, indemnification protections and the possibility of exclusions under Canada's NLCA are similar to those under the Price-Anderson Act in the U.S.

We supply commercial nuclear equipment and services to certain customers in countries other than the U.S. and Canada that are party to international treaties and in countries that are not signatory to international treaties but have their own nuclear liability laws that, in general, have regulations in place whereby nuclear operators are solely liable for nuclear damage claims, which would exclude nuclear suppliers from any such exposure. BWXT does retain some level of risk in the event of future changes to the legal landscape in these countries regarding international third-party nuclear liability.

In 2008, the U.S. ratified the Convention on Supplementary Compensation for Nuclear Damage ("CSC") with the International Atomic Energy Agency. The CSC is an international treaty developed to create a global legal framework for allocating responsibility and assuring prompt and equitable compensation in the unlikely event of certain nuclear incidents. The ratification by the U.S. authorizes the Secretary of Energy to issue regulations establishing a retrospective risk pooling program whereby, in the event that the U.S. must make a contribution to the CSC international fund, U.S. nuclear suppliers, including BWXT, would pay the full cost of this contribution by the U.S.

Although we do not own or operate any nuclear reactors, we have some coverage under commercially available nuclear liability and property insurance for our facilities that are currently licensed to possess special nuclear materials. Substantially all of our Nuclear Operations Group segment contracts involving nuclear materials are covered by and subject to the nuclear indemnity provisions of either the Price-Anderson Act or Public Law 85-804, which, among other things, authorizes the DOE to indemnify certain contractors when such acts would facilitate national defense. However, to the extent the value of the nuclear materials in our care, custody or control exceeds the commercially available limits of our insurance, we potentially have underinsured risk of loss for such nuclear material.

Our Nuclear Services Group segment participates in the management and operation of various U.S. Government facilities. This participation is customarily accomplished through the participation in joint ventures with other contractors for any given facility. These activities involve, among other things, handling nuclear devices and their components. Insurable liabilities arising from these sites are rarely protected by our or our partners' corporate insurance programs. Instead, we rely on government contractual agreements and insurance purchased specifically for a site. The U.S. Government has historically fulfilled its contractual agreement to reimburse its contractors for covered claims, and we expect it to continue this process during our participation in the administration of these facilities. However, in most of these situations in which the U.S. Government is contractually obligated to pay, the payment obligation is subject to the availability of authorized government funds. The reimbursement obligation of the U.S. Government is also conditional, and provisions of the relevant contract or applicable law may preclude reimbursement.

Our wholly owned captive insurance subsidiary provides primary workers' compensation, employer's liability, commercial general liability and automotive liability insurance to support our operations. We may also have business reasons in the future to have our insurance subsidiary accept other risks that we cannot or do not wish to transfer to outside insurance companies. These risks may be considerable in any given year or cumulatively. Our insurance subsidiary does not provide insurance to unrelated parties. Claims as a result of our operations could adversely impact the ability of our insurance subsidiary to respond to all claims presented.

Additionally, upon the February 22, 2006 effectiveness of the settlement relating to the Chapter 11 proceedings involving several of our former subsidiaries, most of our subsidiaries contributed substantial insurance rights to the asbestos personal injury trust, including rights to (1) certain pre-1979 primary and excess insurance coverages and (2) certain of our 1979-1986 excess insurance coverage. These insurance rights provided coverage for, among other things, asbestos and other personal injury claims, subject to the terms and conditions of the policies. The contribution of these insurance rights was made in exchange for the agreement on the part of the representatives of the asbestos claimants, including the representative of future claimants, to the entry of a permanent injunction, pursuant to Section 524(g) of the U.S. Bankruptcy Code, to channel to the asbestos trust all asbestos-related general liability claims against our subsidiaries and former subsidiaries arising out of, resulting from or attributable to their operations, and the implementation of related releases and indemnification provisions protecting those subsidiaries and their affiliates from future liability for such claims. Although we are not aware of any significant, unresolved claims against our subsidiaries and former subsidiaries that are not subject to the channeling injunction and that relate to the periods during which such excess insurance coverage related, with the contribution of these insurance rights to the asbestos personal injury trust, it is possible that we could have underinsured or uninsured exposure for non-derivative asbestos claims or other personal injury or other claims that would have been insured under these coverages had the insurance rights not been contributed to the asbestos personal injury trust. In conjunction with the spin-off, claims and liabilities associated with the asbestos personal injury, property damage and indirect property damage claims mentioned above have been expressly assumed by BWE pursuant to the master separation agreement between us and BWE.

Governmental Regulations and Environmental Matters

Governmental Regulations

Many aspects of our operations and properties are affected by political developments and are subject to both domestic and foreign governmental regulations, including those relating to:

- possessing and processing special nuclear materials;
- workplace health and safety;
- constructing and equipping electric power facilities;
- currency conversions and repatriation;
- taxation of earnings; and
- protecting the environment.

We are required by various governmental and quasi-governmental agencies to obtain certain permits, licenses and certificates with respect to our operations. The kinds of permits, licenses and certificates required in our operations depend upon a number of factors.

We cannot determine the extent to which new legislation, new regulations or changes in existing laws or regulations may affect our future operations.

Environmental

Our operations and properties are subject to a wide variety of increasingly complex and stringent federal, foreign, state and local environmental laws and regulations, including those governing discharges into the air and water, the handling and disposal of solid and hazardous wastes, the remediation of soil and groundwater contaminated by hazardous substances and the health and safety of employees. Sanctions for non-compliance may include revocation of permits, corrective action orders, administrative or civil penalties and criminal prosecution. Some environmental laws provide for strict, joint and several liability for remediation of spills and other releases of hazardous substances, as well as damage to natural resources. In addition, companies may be subject to claims alleging personal injury or property damage as a result of alleged exposure to hazardous substances. Such laws and regulations may also expose us to liability for the conduct of or conditions caused by others or for our acts that were in compliance with all applicable laws at the time such acts were performed.

These laws and regulations include the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act and similar laws that provide for responses to, and liability for, releases of hazardous substances into the environment. These laws and regulations also include similar foreign, state or local counterparts to these federal laws, which regulate air emissions, water discharges, hazardous substances and waste and require public disclosure related to the use of various hazardous substances. Our operations are also governed by laws and regulations relating to workplace safety and worker health, including the U.S. Occupational Safety and Health Act and regulations promulgated thereunder.

We are currently in the process of investigating and remediating some of our current and former operating sites. Although we have recorded reserves in connection with certain of these environmental matters, due to the uncertainties associated with environmental remediation, there can be no assurance that the actual costs resulting from these remediation matters will not exceed the recorded reserves.

Our compliance with federal, foreign, state and local environmental control and protection regulations resulted in pre-tax charges of approximately $15.9 million, $14.7 million and $14.1 million in the years ended December 31, 2019, 2018 and 2017, respectively. In addition, compliance with existing environmental regulations necessitated capital expenditures of $1.4 million, $1.7 million and $0.9 million in the years ended December 31, 2019, 2018 and 2017, respectively. We expect to spend another $20.8 million on such capital expenditures over the next five years. We cannot predict all of the environmental requirements or circumstances that will exist in the future, but we anticipate that environmental control and protection standards will become increasingly stringent and costly. Based on our experience to date, we do not currently anticipate any material adverse effect on our business or consolidated financial condition as a result of future compliance with existing environmental laws and regulations. However, future events, such as changes in existing laws and regulations or their interpretation, more vigorous enforcement policies of regulatory agencies or stricter or different interpretations of existing laws and regulations, may require additional expenditures by us, which may be material. Accordingly, we can provide no assurance that we will not incur significant environmental compliance costs in the future.

We have been identified as a potentially responsible party at various cleanup sites under CERCLA. CERCLA and other environmental laws can impose liability for the entire cost of cleanup on any of the potentially responsible parties, regardless of fault or the lawfulness of the original conduct. Generally, however, where there are multiple responsible parties, a final allocation of costs is made based on the amount and type of wastes disposed of by each party and the number of financially viable parties, although this may not be the case with respect to any particular site. We have not been determined to be a major contributor of wastes to any of these sites. On the basis of our relative contribution of waste to each site, we expect our share of the ultimate liability for the various sites will not have a material adverse effect on our consolidated financial condition, results of operations or cash flows in any given year.

Environmental remediation projects have been and continue to be undertaken at certain of our current and former facilities. In 2002, Congress directed the U.S. Army Corps of Engineers ("Army Corps") to clean up radioactive waste at the Shallow Land Disposal Area located in Parks Township, Armstrong County, Pennsylvania (the "SLDA"), consistent with the Memorandum of Understanding between the NRC and the Army Corps for Coordination on Cleanup and Decommissioning of the Formerly Utilized Sites Remedial Action Program Sites with NRC-Licensed Facilities, dated July 5, 2001 (the "MOU"). From 1961 to 1970, the SLDA was operated by the Nuclear Materials and Equipment Corporation ("NUMEC") pursuant to Atomic Energy Commission ("AEC") License SNM-145. The AEC was the predecessor to the NRC. The SLDA was used for the disposal of waste from NUMEC's nuclear fuels fabrication facility in Apollo, Pennsylvania. Both radioactive and non-radioactive waste was disposed in a series of trenches at the SLDA. NUMEC, a former subsidiary of Atlantic Richfield Company ("ARCO") was acquired by BWXT in November 1971. Shortly after the Army Corps' contractor commenced cleanup operations in 2011, the Army Corps ceased excavation activities because the contractor deviated from accepted field procedures, and the excavated material was found to be complex and beyond the Army Corps' characterization and management procedures. The MOU was modified in late 2014 to add the DOE and the NNSA as parties to deal with "special nuclear materials." In December 2014, the Army Corps issued a Proposed Record of Decision Amendment, which reflects a revised cost estimate of $350 million, in addition to the $62 million expended through September 2014, to implement the selected remedy. In October 2018, the Army Corps confirmed award of the previously protested remediation contract as amended to the original contractor. In March 2019, the Army Corps issued a notice-to-proceed to this contractor. The federal legislation directing the Army Corps to clean up the SLDA also directs the Army Corps to seek to recover response costs from appropriate responsible parties in accordance with CERCLA. In connection with BWXT's acquisition of NUMEC from ARCO in November 1971, ARCO assumed and agreed to indemnify and hold harmless BWXT with respect to claims and liabilities arising as a result of transactions or operations of NUMEC prior to the acquisition date. Although this ARCO indemnity would cover claims by the Army Corps to seek recovery from BWXT for SLDA cleanup costs, no assurance can be given that this indemnity will be available or sufficient in the event such claims are asserted. For additional discussion of environmental matters, see "Note 10 – Commitments and Contingencies" to our consolidated financial statements included in this Report.

We perform significant amounts of work for the U.S. Government under both prime contracts and subcontracts and operate certain facilities that are licensed to possess and process special nuclear materials. As a result of these activities, we are subject to continuing reviews by governmental agencies, including the U.S. Environmental Protection Agency (the "EPA") and the NRC. We are also involved in manufacturing activities at licensed facilities in Canada that are also subject to continuing reviews by governmental agencies in Canada, including the Canadian Nuclear Safety Commission ("CNSC").

The NRC's decommissioning regulations require our Nuclear Operations Group segment to provide financial assurance that it will be able to pay the expected cost of decommissioning its two licensed facilities at the end of their service lives. We provided financial assurance totaling $61.8 million and $56.2 million during the years ended December 31, 2019 and 2018, respectively, with surety bonds for the ultimate decommissioning of these licensed facilities. These facilities have provisions in their government contracts pursuant to which substantially all of our decommissioning costs and financial assurance obligations are covered by the DOE, including the costs to complete the decommissioning projects underway at the facility in Erwin, Tennessee. These surety bonds are to cover decommissioning required pursuant to work not subject to this DOE obligation.

In Canada, the CNSC's decommissioning regulations require our Nuclear Power Group segment to provide financial assurance that it will be able to pay the expected cost of decommissioning its CNSC-licensed facilities at the end of their service lives. We provided financial assurance totaling $47.0 million and $45.1 million during the years ended December 31, 2019 and 2018, respectively, with letters of credit and surety bonds for the ultimate decommissioning of these licensed facilities.

At December 31, 2019 and 2018, we had total environmental accruals, including asset retirement obligations, of $90.8 million and $104.9 million, respectively. Of our total environmental accruals at December 31, 2019 and 2018, $10.4 million and $18.5 million, respectively, were included in current liabilities. Inherent in the estimates of these accruals are our expectations regarding the levels of contamination, decommissioning costs and recoverability from other parties, which may vary significantly as decommissioning activities progress. Accordingly, changes in estimates could result in material adjustments to our operating results, and the ultimate loss may differ materially from the amounts we have provided for in our consolidated financial statements.

Cautionary Statement Concerning Forward-Looking Statements

From time to time, our management or persons acting on our behalf make forward-looking statements to inform existing and potential security holders about our Company. Statements and assumptions regarding expectations and projections of specific projects, our future backlog, revenues, income and capital spending, strategic investments, acquisitions or divestitures, return of capital activities or margin improvement initiatives are examples of forward-looking statements. Forward-looking statements are generally accompanied by words such as "estimate," "project," "predict," "believe," "expect," "anticipate," "plan," "seek," "goal," "could," "intend," "may," "should" or other words that convey the uncertainty of future events or outcomes. In addition, sometimes we will specifically describe a statement as being a forward-looking statement and refer to this cautionary statement.

Statements in this Report, including those that express a belief, expectation or intention, as well as those that are not statements of historical fact, are forward-looking statements. Those forward-looking statements appear in Item 1 – "Business" and Item 3 – "Legal Proceedings" in Part I of this Report, in Item 7 – "Management's Discussion and Analysis of Financial Condition and Results of Operations" and in the notes to our consolidated financial statements in Item 8 of Part II of this Report and elsewhere in this Report.

We have based our forward-looking statements on information currently available to us and our current expectations, estimates and projections about our industries and our Company. We caution that these statements are not guarantees of future performance, and you should not rely unduly on them as they involve risks, uncertainties and assumptions that we cannot predict. In addition, we have based many of these forward-looking statements on assumptions about future events that may prove to be inaccurate. While our management considers these statements and assumptions to be reasonable, they are inherently subject to numerous factors, including potentially the risk factors described in the section labeled Item 1A, "Risk Factors" of this Report, most of which are difficult to predict and many of which are beyond our control. Accordingly, our actual results may differ materially from the future performance that we have expressed or forecast in our forward-looking statements.

We have discussed many of these factors in more detail elsewhere in this Report. These factors are not necessarily all the factors that could affect us. Unpredictable or unanticipated factors we have not discussed in this Report could also have material adverse effects on actual results of matters that are the subject of our forward-looking statements. We do not intend to update or review any forward-looking statement or our description of important factors, whether as a result of new information, future events or otherwise, except as required by applicable laws.

Available Information

Our website address is *www.bwxt.com*. We make available through the Investors section of this website under "SEC Filings," free of charge, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, our proxy statement, statements of beneficial ownership of securities on Forms 3, 4 and 5 and amendments to those reports as soon as reasonably practicable after we electronically file those materials with, or furnish those materials to, the Securities and Exchange Commission (the "SEC"). The SEC maintains a website at *www.sec.gov* that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. We have also posted on our website our: Corporate Governance Principles; Code of Business Conduct; Code of Ethics for our Chief Executive Officer and Senior Financial Officers; Board of Directors Conflicts of Interest Policies and Procedures; Amended and Restated Bylaws; and charters for the Audit and Finance, Governance and Compensation Committees of our Board of Directors.

Item 1A. RISK FACTORS

Risk Factors Related to Our Business

We rely on U.S. Government contracts for a substantial percentage of our revenue, and some of those contracts are subject to continued appropriations by Congress and may be terminated or delayed if future funding is not made available. In addition, the U.S. Government may not renew or may seek to modify or terminate our existing contracts.

For the year ended December 31, 2019, U.S. Government contracts comprised approximately 77% of our total consolidated revenues. Government contracts are subject to various uncertainties, restrictions and regulations, including oversight audits, which could result in withholding or delaying payments to us, and termination or modification at the U.S. Government's convenience. In addition, some of our large, multi-year contracts with the U.S. Government are subject to annual funding determinations and the continuing availability of Congressional appropriations. Although multi-year operations may be planned in connection with major procurements, Congress generally appropriates funds on a fiscal-year basis even though a program may continue for several years. Consequently, programs often are only partially funded initially and additional funds are committed only as Congress makes further appropriations. When the U.S. Government does not complete its budget process before the end of its fiscal year on September 30, government operations typically are funded through a continuing resolution that authorizes agencies of the U.S. Government to continue to operate, but does not authorize new spending initiatives. When the U.S. Government operates under a continuing resolution or there are other disruptions in the funding process, delays can occur in the procurement of products and services. As a result, we are subject to ongoing uncertainties associated with U.S. Government budget restraints and other factors affecting government funding. The reduction or termination of funding, or changes in the timing of funding, for a U.S. Government program in which we provide products or services would result in a reduction or loss of anticipated future revenues attributable to that program and could have a negative impact on our financial condition, results of operations and cash flows.

In addition, our Nuclear Operations Group and Nuclear Services Group segments depend on U.S. Government funding, particularly funding levels at the DOE. Significant changes in the level of funding (for example, the annual budget of the DOE) or specifically mandated levels for individual programs that are important to our business could have an unfavorable impact on us. Any reduction in the level of U.S. Government funding, particularly at the DOE, may result in, among other things, a reduction in the number and scope of projects put out for bid by the U.S. Government or the curtailment of existing U.S. Government programs, either of which may result in a reduction in the number of contract award opportunities available to us, a reduction of activities at DOE sites and an increase in costs, including the costs of obtaining contract awards.

The U.S. Government typically can terminate or modify any of its contracts with us either for its convenience or if we default by failing to perform under the terms of the applicable contract. A termination arising out of our default could expose us to liability and have an adverse effect on our ability to compete for future contracts and orders. If any of our contracts reflected in backlog are terminated by the U.S. Government, our backlog would be reduced by the expected value of the remaining work under such contracts. In addition, on those contracts for which we are teamed with others and are not the prime contractor, the U.S. Government could terminate a prime contract under which we are a subcontractor, irrespective of the quality of our products and services as a subcontractor. Furthermore, certain of our U.S. Government contracts span one or more base years and multiple option years. The U.S. Government generally has the right not to exercise option periods and may not exercise an option period for various reasons.

We also have several significant contracts with the U.S. Government that are subject to periodic renewal and rebidding through a competitive process. If the U.S. Government fails to renew these contracts or modifies key terms, our results of operations and cash flows would be adversely affected.

As a result of these and other factors, the termination of one or more of our significant government contracts, our suspension from government contract work, the failure of the U.S. Government to renew our existing contracts or the disallowance of the payment of our contract costs could have a material adverse effect on our financial condition, results of operations and cash flows.

Federal budget sequestration and other delays or reductions in government spending could adversely impact government spending for the products and services we provide.

In August 2011, Congress enacted the Budget Control Act, which committed the U.S. Government to significantly reducing the federal deficit over ten years. The Budget Control Act established reductions in discretionary spending through 2021. If these spending reductions were not met, it called for substantial automatic spending cuts, or sequestration, split between defense and non-defense programs scheduled to start in March 2013 and continue over a nine-year period.

Federal government spending reductions, including through sequestration, could adversely impact U.S. Government programs for which we provide products or services. Additionally, while we believe many of our programs are well aligned with national defense and other strategic priorities, government spending on these programs can be subject to negative publicity, political factors and public scrutiny. The risk of future sequestration cuts is uncertain, and it is possible that spending cuts may be applied to U.S. Government programs across the board, regardless of how programs align with those priorities. There are many variables in how budget reductions could be implemented that will determine its specific impact; however, reductions in federal government spending and sequestration, as currently provided for under the Budget Control Act, could adversely impact programs in which we provide products or services. In addition, these cuts could adversely affect the viability of the suppliers and subcontractors under our programs. We may also be required to maintain operations of our joint ventures if the U.S. Government can no longer meet its debt obligations.

Demand for our products and services is vulnerable to economic downturns, the competitiveness of alternative energy sources and industry conditions.

Demand for our products and services has been, and we expect that demand will continue to be, subject to significant fluctuations due to a variety of factors beyond our control, including economic and industry conditions. These factors include, but are not limited to inflation, geopolitical issues, the availability and cost of credit, the demand for and competitiveness of nuclear power with other energy sources, the cyclical nature of the power generation industry, low business and consumer confidence, high unemployment and energy conservation measures and decisions of utilities that operate nuclear power plants.

Unfavorable economic conditions may lead customers to delay, curtail or cancel proposed or existing projects, which may decrease the overall demand for our products and services and adversely affect our results of operations.

Our customers may also find it more difficult to raise capital in the future due to limitations on the availability of credit, increases in interest rates and other factors affecting the federal, municipal and corporate credit markets. Additionally, our customers may demand more favorable pricing terms and find it increasingly difficult to timely pay invoices for our products and services, which would impact our future cash flows and liquidity. Inflation or significant changes in interest rates could reduce the demand for our products and services. Any inability to timely collect our invoices may lead to an increase in our accounts receivables and potentially to increased write-offs of uncollectable invoices. If the economy weakens, or customer spending declines, then our backlog, revenues, net income and overall financial condition could deteriorate.

Our future business prospects in Canada are dependent upon the continued operation of Canadian nuclear plants and refurbishment of the majority of the plants in Ontario to extend their operating lives. Unfavorable economic conditions, competition from other forms of power generation, increased competition for refurbishment contracts, changes in government policy or operational or project execution issues may lead nuclear plant operators in Canada to cease operations or delay, curtail or cancel proposed or existing life-extension projects, which may decrease the overall demand for our products and services in Canada and adversely affect our financial condition, results of operations and cash flows.

Our backlog is subject to unexpected adjustments and cancellations and may not be a reliable indicator of future revenues or earnings.

There can be no assurance that the revenues projected in our backlog will be realized or, if realized, will result in profits. Because of project cancellations or changes in project scope and schedule, we cannot predict with certainty when or if backlog will be performed. In addition, even where a project proceeds as scheduled, it is possible that contracted parties may default and fail to pay amounts owed to us or poor project performance could increase the cost associated with a project. Delays, suspensions, cancellations, payment defaults, scope changes and poor project execution could materially reduce or eliminate the revenues and profits that we actually realize from projects in backlog.

Reductions in our backlog due to cancellation or modification by a customer or for other reasons may adversely affect, potentially to a material extent, the revenues and earnings we actually receive from contracts included in our backlog. Many of the contracts in our backlog provide for cancellation fees in the event customers cancel projects. These cancellation fees usually provide for reimbursement of our out-of-pocket costs, revenues for work performed prior to cancellation and a varying percentage of the profits we would have realized had the contract been completed. However, we typically have no contractual right upon cancellation to the total revenues reflected in our backlog. Projects may remain in our backlog for extended periods of time. If we experience significant project terminations, suspensions or scope adjustments to contracts reflected in our backlog, our financial condition, results of operations and cash flows may be adversely impacted.

We are subject to risks associated with contractual pricing in our industries, including the risk that, if our actual costs exceed the costs we estimate on our fixed-price contracts, our profitability will decline and we may suffer losses.

We are engaged in a number of highly competitive industries and we have priced a number of our projects on a fixed-price basis. Our actual costs could exceed our projections, which may result in reduced profit or loss. We attempt to cover the increased costs of anticipated changes in labor, material and service costs of long-term contracts, either through estimates of cost increases, which are reflected in the original contract price, or through price escalation clauses. Despite these attempts, the cost and gross profit we realize on a fixed-price contract could vary materially from the estimated amounts because of supplier, contractor and subcontractor performance, execution issues, changes in job conditions, variations in labor and equipment productivity and increases in the cost of labor and raw materials, particularly steel, over the term of the contract.

These variations and the risks generally inherent in our industries may result in actual revenues or costs being different from those we originally estimated and may result in reduced profitability or losses on projects. Some of these risks include:

- difficulties encountered on our large-scale projects related to the procurement of materials or due to schedule disruptions, equipment performance failures, unforeseen site conditions, rejection clauses in customer contracts or other factors that may result in additional costs to us, reductions in revenue, claims or disputes;
- our inability to obtain compensation for additional work we perform or expenses we incur as a result of our customers providing deficient design, engineering information, equipment or materials;
- requirements to pay liquidated damages upon our failure to meet schedule or performance requirements of our contracts; and
- difficulties in engaging third-party subcontractors, equipment manufacturers or materials suppliers or failures by third-party subcontractors, equipment manufacturers or materials suppliers to perform could result in project delays and cause us to incur additional costs.

We recognize a large portion of our revenue on an over time basis which could result in volatility in our results of operations.

We generally recognize revenues and profits under our long-term contracts on an over time basis. Accordingly, we review contract price and cost estimates regularly as the work progresses and reflect adjustments proportionate to our progress made towards completion in income in the period when we revise those estimates. To the extent these adjustments result in a reduction or an elimination of previously reported profits with respect to a project, we would recognize a charge against current earnings, which could be material. Our current estimates of our contract costs and the profitability of our long-term projects, although reasonably reliable when made, could change as a result of the uncertainties associated with these types of contracts, and if adjustments to overall contract costs are significant, the reductions or reversals of previously recorded revenue and profits could be material in future periods.

If we fail to comply with government procurement laws and regulations, we could lose business and be liable for various penalties or sanctions.

We must comply with laws and regulations relating to the formation, administration, and performance of U.S. Government contracts. These laws and regulations include the FAR, Defense Federal Acquisition Regulations, the Truth in Negotiations Act, CAS, and laws, regulations, and orders restricting the use and dissemination of classified information under the U.S. export control laws and the export of certain products and technical information. Certain government contracts provide audit rights by government agencies, including with respect to performance, costs, internal controls and compliance with applicable laws and regulations. In complying with these laws and regulations, we may incur significant costs, and non-compliance may result in the imposition of fines and penalties, including contractual damages. If we fail to comply with these laws and regulations or if a government audit, review, or investigation uncovers improper or illegal activities, we may be subject to civil penalties, criminal penalties, or administrative sanctions, including suspension or debarment from contracting with the U.S. Government. Our reputation could suffer harm if allegations of impropriety were made or found against us, which could adversely affect our operating performance and may result in additional expenses and possible loss of revenue.

Changes in our effective tax rate and tax positions may vary.

We are subject to income taxes primarily in the U.S. and Canada. A change in tax laws, treaties or regulations, or their interpretation, in any jurisdiction in which we operate could significantly impact our provision for income taxes, which could have a material impact on our earnings, cash flows from operations and value of our deferred tax assets or liabilities.

In addition, significant judgment is required in determining our provision for income taxes. In the ordinary course of our business, there are many transactions and calculations where the ultimate tax determination is uncertain, and we are regularly subject to audit by tax authorities. Although we believe that our tax estimates and tax positions are reasonable, they could be materially affected by many factors including the final outcome of tax audits and related litigation, the introduction of new tax accounting standards, legislation, regulations and related interpretations, the realizability of deferred tax assets and changes in uncertain tax positions. A significant increase in our tax rate could have a material adverse effect on our profitability and liquidity. A significant decrease in our tax rate could have a material adverse effect on our financial results in the implementation year due to the need to revalue our deferred tax assets to adjust for the lower future tax savings expected with the new tax rate and other potential charges. For example, on December 22, 2017, H.R. 1, the Tax Cuts and Jobs Act, was enacted, which reduced future tax rates resulting in a reduction in the value of our deferred tax assets.

Our business could be negatively impacted by security threats, including physical and cybersecurity threats, and other disruptions.

We face various security threats, including cyber threats, threats to the physical security of our facilities and infrastructure (including those that we manage and operate for our customers), and threats from terrorist acts, as well as the potential for business disruptions associated with these threats. Although we utilize a combination of tailored and industry standard security measures and technology to monitor and mitigate these threats, we cannot guarantee that these measures and technology will be sufficient to prevent security threats from materializing.

We have been, and will likely continue to be, subject to cyber-based attacks and other attempts to threaten our information technology systems, including attempts to gain unauthorized access to our proprietary and sensitive information and attacks from computer hackers, viruses, malicious code, internal threats and other security problems. As a U.S. Government contractor, we may be prone to a greater number of those threats than companies in other industries. These threats range from attacks common to most industries to more advanced and persistent threats from highly-organized adversaries targeting us because we are a U.S. Government contractor. We are required to maintain minimum security standards for handling information under our government contracts and failure to do so could result in termination of those contracts. From time to time, we experience system interruptions and delays; however, prior cyber-based attacks directed at us have not had a material adverse impact on our results of operations. Due to the evolving nature of these security threats, the impact of any future incident cannot be predicted. If we are unable to protect our proprietary and sensitive information, our customers could question the adequacy of our threat mitigation and detection processes and procedures, which could negatively impact our reputation and present and future business.

The costs related to cyber or other security threats or disruptions may not be fully insured or indemnified by other means. Occurrence of any of these events could adversely affect our internal operations, the services we provide to customers, the value of our investment in research and development efforts and other intellectual property, our future financial results, our reputation or our stock price.

In addition, we maintain, replace and/or upgrade current financial, human resources and other information technology systems. These activities subject us to inherent costs and risks associated with replacing and updating these systems, including potential disruption of our internal control structure, substantial capital expenditures, demands on management time and other risks of delays or difficulties in transitioning to new systems or of integrating new systems into our current systems. Our systems implementations and upgrades may not result in productivity improvements at the levels anticipated, or at all. In addition, the implementation of new technology systems may cause disruptions in our business operations. Such disruptions and any other information technology system disruptions, and our ability to mitigate those disruptions, if not anticipated and appropriately mitigated, could have a material adverse effect on our business.

We rely on intellectual property law and confidentiality agreements to protect our intellectual property. We also rely on intellectual property we license from third parties. Our failure to protect our intellectual property rights, our infringement of third party intellectual property or our inability to obtain or renew licenses to use intellectual property of third parties, could adversely affect our business.

Our success depends, in part, on our ability to protect our proprietary information and other intellectual property. Our intellectual property could be stolen, challenged, invalidated, circumvented or rendered unenforceable. In addition, effective intellectual property protection may be limited or unavailable in some foreign countries where we operate.

Our failure to protect our intellectual property rights may result in the loss of valuable technologies or adversely affect our competitive business position. We rely significantly on proprietary technology, information, processes and know-how that are not subject to patent or copyright protection. We seek to protect this information through trade secret or confidentiality agreements with our employees, consultants, subcontractors or other parties, as well as through other security measures. These agreements and security measures may be inadequate to deter or prevent misappropriation of our confidential information. In the event of an infringement of our intellectual property rights, a breach of a confidentiality agreement or divulgence of proprietary information, we may not have adequate legal remedies to protect our intellectual property. In addition, third parties may allege that we have infringed their intellectual property rights, which could result in litigation. Litigation to protect, defend or determine the scope of intellectual property rights, even if ultimately successful, could be costly and could divert management's attention away from other aspects of our business. In addition, our trade secrets may otherwise become known or be independently developed by competitors.

In some instances, we have augmented our technology base by licensing the proprietary intellectual property of third parties. In the future, we may not be able to obtain necessary licenses on commercially reasonable terms, which could have a material adverse effect on our operations.

We are involved in a number of legal proceedings. We cannot predict the outcome of litigation and other contingencies with certainty.

Our business may be adversely affected by the outcome of legal proceedings, disputes and other contingencies that cannot be predicted with certainty. As required by GAAP, we estimate loss contingencies and establish reserves based on our assessment of contingencies where liability is deemed probable and reasonably estimable in light of the facts and circumstances known to us at a particular point in time. Subsequent developments in legal proceedings may affect our assessment and estimates of the loss contingency recorded as a liability or as a reserve against assets in our financial statements. For a description of current legal proceedings, see "Note 10 – Commitments and Contingencies" to our consolidated financial statements included in this Report.

Maintaining adequate bonding and letter of credit capacity is necessary for us to successfully bid on and win various contracts.

In line with industry practice, we are often required to post standby letters of credit and surety bonds to support contractual obligations to customers as well as other obligations. These letters of credit and bonds generally indemnify customers should we fail to perform our obligations under the applicable contracts. If a letter of credit or bond is required for a particular project and we are unable to obtain it due to insufficient liquidity or other reasons, we will not be able to pursue that project. We utilize bonding facilities, but, as is typically the case, the issuance of bonds under each of those facilities is at the surety's sole discretion. In addition, we have capacity limits under our credit facility for letters of credit. Moreover, due to events that affect the insurance and bonding and credit markets generally, bonding and letters of credit may be more difficult to obtain in the future or may only be available at significant additional cost. There can be no assurance that letters of credit or bonds will continue to be available to us on reasonable terms. Our inability to obtain adequate letters of credit and bonding and, as a result, to bid on new work could have a material adverse effect on our business, financial condition and results of operations. As of December 31, 2019, we had $67.6 million in letters of credit and $73.3 million in surety bonds outstanding.

Our debt exposes us to certain risks.

As of December 31, 2019, the Company had $832.2 million in aggregate principal amount of debt outstanding. The terms of our credit facility and indenture impose various restrictions and covenants on us that could have adverse consequences, including:

- limiting our ability to react to changing economic, regulatory and industry conditions;

- limiting our ability to compete and our flexibility in planning for, or reacting to, changes in our business and the industry;
- exposing us to the risk of higher interest rates on borrowings under our credit facility, which are subject to variable rates of interest;
- limiting our ability to invest in joint ventures or acquire other companies;
- limiting our ability to pay dividends to our stockholders or repurchase shares of our common stock; and
- limiting our ability to borrow additional funds.

Our failure to comply with these restrictions and covenants could adversely affect our liquidity and operations.

In addition, the London Interbank Offered Rate ("LIBOR") and the Canadian Dollar Offered Rate ("CDOR") are used as interest rate benchmarks for establishing the variable rates of interest under our credit facility. LIBOR has been the subject of recent national, international and other regulatory guidance and proposals for reform. In 2017, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced that it intends to stop persuading or compelling banks to submit the rates to calculate LIBOR after 2021. These reforms and other pressures may in the future cause LIBOR, or CDOR, to cease to exist or to perform differently than in the past. The consequences of these developments cannot be entirely predicted, but could result in new interest rate benchmarks being used for our credit facility, which could result in an increase in our variable rates of interest and interest expense.

Our business strategy includes acquisitions and strategic investments to support our growth, which can create certain risks and uncertainties.

We intend to pursue growth through the acquisition of, or strategic investments in, businesses or assets that we believe will enable us to strengthen our existing businesses and expand into adjacent industries. We may be unable to execute this growth strategy if we cannot identify suitable businesses or assets, reach agreement on potential strategic acquisitions on acceptable terms or for other reasons. Business acquisitions involve certain risks, including:

- difficulties relating to the assimilation of personnel, services and systems of an acquired business and the assimilation of marketing and other operational capabilities;
- challenges resulting from unanticipated changes in customer relationships after the acquisition;
- additional financial and accounting challenges and complexities in areas such as tax planning, treasury management, forecasting, financial reporting and internal controls;
- assumption of liabilities of an acquired business, including liabilities that were unknown at the time the acquisition transaction was negotiated;
- diversion of management's attention from day-to-day operations;
- failure to realize anticipated benefits, such as cost savings and revenue enhancements;
- potentially substantial transaction costs associated with business combinations; and
- potential impairment of goodwill or other intangible assets resulting from the overpayment for an acquisition.

Acquisitions may be funded by the issuance of additional equity or debt financing, which may not be available on attractive terms. Our ability to secure such financing will depend in part on prevailing capital market conditions, as well as conditions in our business and operating results. Moreover, to the extent an acquisition transaction financed by non-equity consideration results in goodwill, it will reduce our tangible net worth, which might have an adverse effect on potential credit and bonding capacity.

Additionally, an acquisition may bring us into businesses we have not previously conducted and expose us to additional business risks that are different than those we have historically experienced.

Our business strategy also includes development and commercialization of new technologies to support our growth, which requires significant investment and involves various risks and uncertainties. These new technologies may not achieve desired commercial or financial results.

Our future growth will depend on our ability to continue to innovate by developing and commercializing new product and service offerings. Investments in new technologies involve varying degrees of uncertainties and risk. Commercial success depends on many factors, including the levels of innovation, the development costs and the availability of capital resources to fund those costs, the levels of competition from others developing similar or other competing technologies, our ability to obtain or maintain government permits or certifications, the effectiveness of production, distribution and marketing efforts, market acceptance and the costs to customers to deploy and provide support for the new technologies. We may not achieve significant revenue from new product and service investments for a number of years, if at all. Additionally, there can be no assurance that the current technologies that our businesses rely upon will remain competitive, or that competing technologies will not disrupt our business. Moreover, new products and services may not be profitable, and, even if they are profitable, our operating margins from new products and services may not be as high as the margins we have experienced historically. Lastly, new technologies may not be patentable and, as a result, we may face increased competition.

Among our opportunities involving new technologies, we are developing new medical isotope technology. The costs to develop and commercialize this technology require a substantial amount of investment over a period of years, and commercialization of this technology also requires authorizations from government agencies, including the U.S. Food and Drug Administration ("FDA"), Health Canada and the CNSC. There can be no assurance that we will be successful in addressing all of the technological challenges to developing and commercializing this technology or in obtaining the required authorizations from the FDA, Health Canada or the CNSC. In addition, commercialization of the medical radioisotope technology could subject us to product liability claims. The potential also exists for competitors to emerge with alternative technologies. We can provide no assurance that those competitors will not develop and commercialize similar or superior technologies sooner than we can or at a significant cost or price advantage.

Our operations are subject to operating risks, which could expose us to potentially significant professional liability, product liability, warranty and other claims. Our insurance coverage may be inadequate to cover all of our significant risks or our insurers may deny coverage of material losses we incur, which could adversely affect our profitability and overall financial condition.

We operate large manufacturing facilities and perform services in large commercial power plants where accidents or system failures can have significant consequences. Risks inherent in our operations include:

- accidents resulting in injury or the loss of life or property;
- environmental or toxic tort claims, including delayed manifestation claims for personal injury or loss of life;
- pollution or other environmental mishaps;
- adverse weather conditions;
- mechanical or design failures;
- property losses;
- business interruption due to political action in foreign countries or other reasons; and
- labor stoppages.

Any accident or failure at a site where we have provided products or services could result in significant professional liability, product liability, warranty and other claims against us, regardless of whether our products or services caused the incident. We have been, and in the future we may be, named as defendants in lawsuits asserting large claims as a result of litigation arising from events such as those listed above.

We endeavor to identify and obtain, in established markets, insurance agreements to cover significant risks and liabilities. Insurance against some of the risks inherent in our operations is either unavailable or available only at rates or on terms that we consider uneconomical. Also, catastrophic events customarily result in decreased coverage limits, more limited coverage, additional exclusions in coverage, increased premium costs and increased deductibles and self-insured retentions. Risks that we have frequently found difficult to cost-effectively insure against include, but are not limited to, business interruption, property losses from wind, flood and earthquake events, nuclear hazards and war, pollution liability, liabilities related to occupational health exposures (including asbestos), professional liability/errors and omissions coverage, the failure, misuse or unavailability of our information systems, the failure of security measures designed to protect our information systems from security breaches, and liability related to risk of loss of our work in progress and customer-owned materials in our care, custody and control. Depending on competitive conditions and other factors, we endeavor to obtain contractual protection against certain uninsured risks from our customers. When obtained, such contractual indemnification protection may not be as broad as we desire or may not be supported by adequate insurance maintained by the customer. Such insurance or contractual indemnity protection may not be sufficient or effective under all circumstances or against all hazards to which we may be subject. A successful claim for which we are not insured or for which we are underinsured could have a material adverse effect on us. Additionally, disputes with insurance carriers over coverage may affect the timing of cash flows and, if litigation with the carrier becomes necessary, an outcome unfavorable to us may have a material adverse effect on our results of operations.

We are also involved in management and operating activities for the U.S. Government. These activities involve, among other things, handling nuclear devices and their components for the U.S. Government. Most insurable liabilities arising from these sites are not protected in our corporate insurance program. Instead, we rely on government contractual agreements, some insurance purchased specifically for the sites and certain specialized self-insurance programs funded by the U.S. Government. The U.S. Government has historically fulfilled its contractual agreement to reimburse for insurable claims, and we expect it to continue this process. However, it should be noted that, in most situations, the U.S. Government is contractually obligated to pay subject to the availability of authorized government funds. The reimbursement obligation of the U.S. Government is also conditional, and provisions of the relevant contract or applicable law may preclude reimbursement.

We have a captive insurance company subsidiary that provides us with various insurance coverages. Claims, as a result of our operations, could adversely impact the ability of our captive insurance company subsidiary to respond to all claims presented.

Although we have product liability insurance coverage, with policy limits that we believe are customary for the medical radioisotope industry, such coverage may not be adequate, requiring that we pay judgments or settlement amounts in excess of policy limits. We may not be able to maintain insurance coverage at adequate levels. Any product liability claims could be costly to defend, time-consuming and result in adverse judgments, which could result in a material adverse effect on our business, reputation and results.

Additionally, upon the February 22, 2006 effectiveness of the settlement relating to the Chapter 11 proceedings involving several of our former subsidiaries, most of our subsidiaries contributed substantial insurance rights providing coverage for, among other things, asbestos and other personal injury claims, to an asbestos personal injury trust. With the contribution of these insurance rights to the asbestos personal injury trust, we may have underinsured or uninsured exposure for non-derivative asbestos claims or other personal injury or other claims that would have been insured under these coverages had the insurance rights not been contributed to the asbestos personal injury trust. In conjunction with the spin-off, claims and liabilities associated with the asbestos personal injury, property damage and indirect property damage claims mentioned above have been expressly assumed by BWE pursuant to the master separation agreement between us and BWE.

Our nuclear operations subject us to various environmental, regulatory, financial and other risks.

Our operations in designing, engineering, manufacturing, supplying, constructing and maintaining nuclear fuel and nuclear power equipment and components subject us to various risks, including:

- potential liabilities relating to harmful effects on the environment and human health resulting from nuclear operations and the storage, handling and disposal of radioactive materials;
- unplanned expenditures relating to maintenance, operation, security, defects, upgrades and repairs required by the NRC and other government agencies;
- limitations on the amounts and types of insurance commercially available to cover losses that might arise in connection with nuclear operations; and
- potential liabilities arising out of a nuclear, radiological or criticality incident, whether or not it is within our control.

Our nuclear operations are subject to various safety-related requirements imposed by the U.S. Government, the DOE and the NRC. In the event of non-compliance, these agencies might increase regulatory oversight, impose fines or shut down our operations, depending upon the assessment of the severity of the situation. Revised security and safety requirements promulgated by these agencies could necessitate substantial capital and other expenditures. In addition, we must comply with and are affected by laws and regulations relating to the award, administration and performance of U.S. Government contracts. Government contract laws and regulations affect how we do business with our customers and, in some instances, impose added costs on our business. A violation of specific laws and regulations could result in the imposition of fines and penalties or the termination of our contracts or debarment from bidding on contracts.

Limitations or modifications to indemnification regulations of the U.S. or foreign countries could adversely affect our business.

The Price-Anderson Act partially indemnifies the nuclear industry against liability arising from nuclear incidents in the U.S., while ensuring compensation for the general public. The Price-Anderson Act comprehensively regulates the manufacture, use and storage of radioactive materials, while promoting the nuclear industry by offering broad indemnification to commercial nuclear power plant operators and DOE contractors. Because we provide nuclear fabrication and other services to the DOE relating to its nuclear devices, facilities and other programs and the nuclear power industry in the ongoing maintenance and modifications of its nuclear power plants, including the manufacture of equipment and other components for use in such nuclear power plants, we may be entitled to some of the indemnification protections under the Price-Anderson Act against liability arising from nuclear incidents in the U.S. The indemnification authority under the Price-Anderson Act was extended through December 2025 by the Energy Policy Act of 2005. We also provide nuclear fabrication and other services to the nuclear power industry in Canada and other countries. Canada's NLCA generally conforms to international conventions and is conceptually similar to the Price-Anderson Act in the U.S. Accordingly, indemnification protections and the possibility of exclusions under Canada's NLCA are similar to those under the Price-Anderson Act in the U.S.

The Price-Anderson Act and Canada's NLCA indemnification provisions may not apply to all liabilities that we might incur while performing services as a contractor for the DOE and the nuclear power industry. If an incident or evacuation is not covered under the Price-Anderson Act's or Canada's NLCA's indemnification provisions, we could be held liable for damages, regardless of fault, which could have an adverse effect on our results of operations and financial condition. In connection with the international transportation of toxic, hazardous and radioactive materials, it is possible for a claim to be asserted that may not fall within the indemnification provided by the Price-Anderson Act or Canada's NLCA. If such indemnification authority is not applicable in the future, our business could be adversely affected if the owners and operators of nuclear power plants fail to retain our services in the absence of commercially adequate insurance and indemnification.

Moreover, because we manufacture nuclear components for the U.S. Government's defense program, we may be entitled to some of the indemnification protections afforded by Public Law 85-804 for certain of our nuclear operations risks. Public Law 85-804 authorizes certain agencies of the U.S. Government, such as the DOE and the U.S. Department of Defense, to indemnify their contractors against unusually hazardous or nuclear risks when such action would facilitate the national defense. However, because the indemnification protections afforded by Public Law 85-804 are granted on a discretionary basis, situations could arise where the U.S. Government elects not to offer such protections. In such situations, our business could be adversely affected by either our inability to obtain commercially adequate insurance or indemnification or our refusal to pursue such operations in the absence of such protections.

Our operations involve the handling, transportation and disposal of radioactive and hazardous materials, and environmental laws and regulations and civil liability for contamination of the environment or related personal injuries may result in increases in our operating costs and capital expenditures and decreases in our earnings and cash flows.

Our operations involve the handling, transportation and disposal of radioactive and hazardous materials, including nuclear devices and their components. Failure to properly handle these materials could pose a health risk to humans or wildlife and could cause personal injury and property damage (including environmental contamination). If an accident were to occur, its severity could be significantly affected by the volume of the materials and the speed of corrective action taken by emergency response personnel, as well as other factors beyond our control, such as weather and wind conditions. Actions taken in response to an accident could result in significant costs.

Governmental requirements relating to the protection of the environment, including solid waste management, air quality, water quality, the decontamination and decommissioning of nuclear manufacturing and processing facilities and cleanup of contaminated sites, have had a substantial impact on our operations. These requirements are complex and subject to frequent change. In some cases, they can impose liability for the entire cost of cleanup on any responsible party without regard to negligence or fault and impose liability on us for the conduct of others or conditions others have caused, or for our acts that complied with all applicable requirements when we performed them. Our compliance with amended, new or more stringent requirements, stricter interpretations of existing requirements or the future discovery of contamination may require us to make material expenditures or subject us to liabilities that we currently do not anticipate. Such expenditures and liabilities may adversely affect our business, financial condition, results of operations and cash flows. In addition, some of our operations and the operations of predecessor owners of some of our properties have exposed us to civil claims by third parties for liability resulting from alleged contamination of the environment or personal injuries caused by releases of hazardous substances into the environment. See Item 1, "Business - Governmental Regulations and Environmental Matters."

In our contracts, we seek to protect ourselves from liability associated with accidents, but there can be no assurance that such contractual limitations on liability will be effective in all cases or that our or our customers' insurance will cover all the liabilities we have assumed under those contracts. The costs of defending against a claim arising out of a nuclear incident or precautionary evacuation, and any damages awarded as a result of such a claim, could adversely affect our results of operations and financial condition.

We maintain insurance coverage as part of our overall risk management strategy and due to requirements to maintain specific coverage in our financing agreements and in many of our contracts. These policies do not protect us against all liabilities associated with accidents or for unrelated claims. In addition, comparable insurance may not continue to be available to us in the future at acceptable prices, or at all.

We are subject to domestic and international laws and regulations, violations of which may adversely affect our future operations.

Many aspects of our operations and properties are affected by political developments and are subject to both domestic and foreign governmental regulations, including those relating to:

- constructing and manufacturing nuclear components;
- currency conversions and repatriation;
- environmental protection legislation;
- export control;
- taxation of earnings;
- transactions in or with certain foreign countries or officials, such as those designated by the Office of Foreign Assets Control of the U.S. Department of the Treasury; and
- use of local employees and suppliers.

Failure by us, our sales representatives, or consultants to comply with these laws and regulations could result in administrative, civil, or criminal liabilities and could, in the extreme case, result in suspension or debarment from government contracts or suspension of our export privileges, which could have a material adverse effect on our business.

In addition, a portion of the demand for our products and services is from electric power generating companies and other customers. The demand for power generation products and services can be influenced by state and federal governmental legislation setting requirements for utilities related to operations, emissions and environmental impacts. The legislative process is unpredictable and includes a platform that continuously seeks to increase the restrictions on power producers.

We cannot determine the extent to which our future operations and earnings may be affected by new legislation, new regulations or changes in existing regulations.

Our business requires us to obtain, and to comply with, national, state and local government permits and approvals.

Our business is required to obtain, and to comply with, national, state and local government permits and approvals. Any of these permits or approvals may be subject to denial, revocation or modification under various circumstances. Failure to obtain or comply with the conditions of permits or approvals may adversely affect our operations by temporarily suspending our activities or curtailing our work and may subject us to penalties and other sanctions. Although existing licenses are routinely renewed by various regulators, renewal could be denied or jeopardized by various factors, including:

- failure to provide adequate financial assurance for decommissioning or closure;
- failure to comply with environmental and safety laws and regulations or permit conditions;
- local community, political or other opposition;
- executive action; and
- legislative action.

As a result of our acquisition of the MI business in 2018, we are also subject to regulatory oversight by the FDA and Health Canada. The commercialization of our medical radioisotope technology will require the review and approval of these and other government agencies. Any delay or denial of such approvals could have a material adverse effect on our MI business.

In addition, if new legislation or regulations are enacted or implemented, or if existing laws or regulations are amended or are interpreted or enforced differently, we may be required to obtain additional operating permits or approvals. Our inability to obtain, and to comply with, the permits and approvals required for our business could have a material adverse effect on us.

Employee, agent or partner misconduct or our overall failure to comply with laws, regulations or government contracts could weaken our ability to win contracts, lead to the suspension of our operations and result in reduced revenues and profits.

Misconduct, fraud, or other improper activities by one or more of our employees, agents or partners as well as our failure to comply with applicable laws and regulations, could have a significant negative impact on our business and reputation. Such misconduct could include the failure to comply with government procurement regulations, regulations regarding the protection of classified and other information, regulations regarding the pricing of labor and other costs in government contracts, regulations on lobbying or similar activities, regulations pertaining to the internal controls over financial reporting and various other applicable laws or regulations. For example, we regularly provide services that may be highly sensitive or that are related to critical national security matters; if a security breach were to occur, our ability to procure future government contracts could be severely limited. The precautions we take to prevent and detect these activities may not be effective, and we could face unknown risks or losses.

We are routinely audited and reviewed by the U.S. Government and its agencies. These agencies review our performance under our contracts, our cost structure and our compliance with applicable laws, regulations and standards, as well as the adequacy of, and our compliance with, our internal control systems and policies. Systems that are subject to review include our purchasing systems, billing systems, property management and control systems, cost estimating systems, compensation systems and management information systems. Any costs found to be improperly allocated to a specific contract will not be reimbursed or must be refunded if already reimbursed. If an audit or review uncovers improper or illegal activities, we could be subject to civil and criminal penalties and administrative sanctions, including termination of contracts, forfeiture of profits, suspension of payments, fines, loss of security clearance and suspension or debarment from contracting with the U.S. Government. In addition, we could suffer serious reputational harm if allegations of impropriety were made against us.

We conduct a portion of our operations through joint venture entities, over which we may have limited ability to influence.

We currently have equity interests in several joint ventures and may enter into additional joint venture arrangements in the future. Our influence over some of these entities may be limited. Even in those joint ventures over which we do exercise significant influence, we are often required to consider the interests of our joint venture partners in connection with major decisions concerning the operations of the joint ventures. In any case, differences in views among the joint venture participants may result in delayed decisions or disputes. We also cannot control the actions of our joint venture partners. We sometimes have joint and several liabilities with our joint venture partners under the applicable contracts for joint venture projects and we cannot be certain that our partners will be able to satisfy any potential liability that could arise. These factors could potentially harm the business and operations of a joint venture and, in turn, our business and operations.

Operating through joint ventures in which we are minority holders results in us having limited control over many decisions made with respect to projects and internal controls relating to projects. These joint ventures may not be subject to the same requirements regarding internal controls and internal control over financial reporting that we follow. As a result, internal control problems may arise with respect to the joint ventures that could adversely affect our ability to respond to requests or contractual obligations to customers or to meet the internal control requirements to which we are otherwise subject.

In addition, our arrangements involving joint ventures may restrict us from gaining access to the cash flows or assets of these entities. In some cases, our joint ventures have governmentally imposed restrictions on their abilities to transfer funds to us.

If our co-venturers fail to perform their contractual obligations on a project or if we fail to coordinate effectively with our co-venturers, we could be exposed to legal liability, loss of reputation and reduced profit on the project.

We often perform projects jointly with third parties. For example, we enter into contractual arrangements to bid for and perform jointly on large projects. Success on these joint projects depends in part on whether our co-venturers fulfill their contractual obligations satisfactorily. If any one or more of these third parties fail to perform their contractual obligations satisfactorily, we may be required to make additional investments and provide added services in order to compensate for that failure. If we are unable to adequately address any such performance issues, then our customer may exercise its right to terminate a joint project, exposing us to legal liability, loss of reputation and reduced profit.

Our collaborative arrangements also involve risks that participating parties may disagree on business decisions and strategies. These disagreements could result in delays, additional costs and risks of litigation. Our inability to successfully maintain existing collaborative relationships or enter into new collaborative arrangements could have a material adverse effect on our results of operations.

The loss of the services of one or more of our key personnel, or our failure to attract, assimilate and retain trained personnel in the future, could disrupt our operations and result in loss of revenues.

Our success depends on the continued active participation of our executive officers and key operating personnel. The unexpected loss of the services of any one of these persons could adversely affect our operations.

Our operations require the services of employees having the technical training and experience necessary to obtain the proper operational results. Certain of our operations also require personnel who are eligible to obtain and maintain U.S. Government security clearances. As such, our operations depend, to a considerable extent, on the continuing availability of such employees and personnel. Additionally, the process of obtaining the requisite security clearances for some of our personnel can be subject to delays and other factors beyond our control. If we should suffer any material loss of personnel to competitors, retirement or other reasons, or experience difficulties employing additional or replacement personnel with the requisite level of training, experience and qualifications to adequately operate our business, our operations could be adversely affected.

While we believe our wage rates are competitive and our relationships with our employees are satisfactory, a significant increase in the wages paid by other employers could result in a reduction in our workforce, increases in wage rates, or both.

Negotiations with labor unions and possible work stoppages and other labor problems could divert management's attention and disrupt operations. In addition, new collective bargaining agreements or amendments to agreements could increase our labor costs and operating expenses.

A significant number of our employees are members of labor unions. If we are unable to negotiate acceptable new contracts with our unions from time to time, we could experience strikes or other work stoppages by the affected employees. If any such strikes or other work stoppages were to occur, we could experience a significant disruption of operations. In addition, negotiations with unions could divert management attention. New union contracts could result in increased operating costs, as a result of higher wages or benefit expenses, for both union and nonunion employees. If nonunion employees were to unionize, we would experience higher ongoing labor costs.

Pension and medical expenses associated with our retirement benefit plans may fluctuate significantly depending on changes in actuarial assumptions, future market performance of plan assets, future trends in health care costs and legislative or other regulatory actions.

A substantial portion of our current and retired employee population is covered by pension and postretirement benefit plans, the costs and funding requirements of which depend on our various assumptions, including estimates of rates of return on benefit-related assets, discount rates for future payment obligations, rates of future cost growth, mortality assumptions and trends for future costs. Service accruals for salaried participants ceased as of December 31, 2015. Variances from these estimates could have a material adverse effect on us. In addition, our policy to recognize these variances annually through mark to market accounting could result in volatility in our results of operations, which could be material. As of December 31, 2019, we had underfunded defined benefit pension and postretirement benefit plans with obligations totaling approximately $(199.8) million. A substantial portion of our postretirement benefit plan costs are recoverable on our U.S. Government contracts. See Note 7 to our consolidated financial statements included in this Report for additional information regarding our pension and postretirement benefit plan obligations.

Our internal controls over financial reporting may not be sufficient to achieve all stated goals and objectives.

Our internal controls and procedures were developed through a process in which our management applied its judgment in assessing the costs and benefits of such controls and procedures, which, by their nature, can provide only reasonable assurance regarding the control objectives. The design of any system of internal controls and procedures is based in part upon various assumptions about the likelihood of future events, and we cannot provide assurance that any design will succeed in achieving its stated goals under all potential future conditions, regardless of how remote.

We rely on single-source suppliers, which could, under certain circumstances, adversely affect our revenues and operating results.

We rely on several single-source suppliers for materials used in our products in our Nuclear Operations Group segment. If the supply of a single-sourced material is delayed or ceases, we may not be able to produce the related product in a timely manner or in sufficient quantities, if at all, which could adversely affect our revenues and operating results. In addition, a single-source supplier of a key component could potentially exert significant bargaining power over price, quality, warranty claims or other terms relating to the single-sourced materials, which could have a material adverse effect on our financial condition, results of operations and cash flows.

We could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act.

The U.S. Foreign Corrupt Practices Act (the "FCPA") generally prohibits companies and their intermediaries from making improper payments to non-U.S. officials. Our training program and policies mandate compliance with the FCPA. We operate in some parts of the world that have experienced governmental corruption to some degree, and, in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices. If we are found to be liable for violations of the FCPA (either due to our own acts or our inadvertence, or due to the acts or inadvertence of others, including employees of our joint ventures), we could suffer from civil and criminal penalties or other sanctions.

We may not be able to compete successfully against current and future competitors.

Some of our competitors or potential competitors have greater financial or other resources than we have and in some cases are government-supported. Our operations may be adversely affected if our current competitors or new market entrants introduce new products or services with better features, technology, performance, prices or other characteristics than those of our products and services. Furthermore, we operate in industries where capital investment is critical. We may not be able to obtain as much purchasing and borrowing leverage and access to capital for investment as other companies, which may impair our ability to compete against competitors or potential competitors.

Our international operations may be subject to political, economic and other uncertainties not generally encountered in our domestic operations.

For the year ended December 31, 2019, our revenues from international operations comprised approximately 17% of our total consolidated revenues. Operating in international markets requires significant resources and management attention and subjects us to political, economic and regulatory risks that are not generally encountered in our U.S. operations. These include:

- renegotiation or nullification of our existing contracts;
- changing political conditions and changing laws and policies affecting trade and investment; and
- changes in foreign currency exchange rates.

In addition, we rely on some international suppliers for some of the materials used in our products. Disruptions or changes to the economics of supply arrangements due to international market risks could have a material impact on our financial condition, results of operations and cash flows.

Our international operations sometimes face the additional risks of fluctuating currency values, hard currency shortages and controls of foreign currency exchange.

See Note 15 to our consolidated financial statements included in this Report for additional information about our operations in different geographic areas.

Natural disasters or other events beyond our control could adversely impact our business.

We rely on our highly specialized facilities and information technology systems to manufacture products, provide services and otherwise perform our contracts. Natural disasters, such as earthquakes, tsunamis, hurricanes, floods, tornados, or other events could cause disruption to our facilities, systems or projects, which could interrupt operational processes and performance on our contracts and adversely impact our ability to manufacture our products and provide services and support to our customers, which could have a material impact on our financial condition, results of operations and cash flows.

War, other armed conflicts or terrorist attacks could have a material adverse effect on our business.

War, terrorist attacks and unrest have caused and may continue to cause instability in the world's financial and commercial markets and have significantly increased political and economic instability in some of the geographic areas in which we operate. Threats of war or other armed conflict may cause further disruption to financial and commercial markets. In addition, continued unrest could lead to acts of terrorism in the U.S. or elsewhere, and acts of terrorism could be directed against companies such as ours. Also, acts of terrorism and threats of armed conflicts in or around various areas in which we operate could limit or disrupt our markets and operations, including disruptions from evacuation of personnel, cancellation of contracts or the loss of personnel or assets. Armed conflicts, terrorism and their effects on us or our markets may significantly affect our business and results of operations in the future.

Risks Relating to the Spin-Off of Our Former Power Generation Business

Potential indemnification liabilities relating to the spin-off could materially adversely affect us.

In connection with the spin-off, we entered into agreements with BWE to provide for, among other things, the principal corporate transactions required to effect the planned spin-off, certain conditions to the spin-off and provisions governing the relationship between us and BWE with respect to and resulting from the spin-off. Among other things, these agreements provided for indemnification obligations designed to make us financially responsible for substantially all liabilities that may exist relating to our business activities, whether incurred prior to or after the spin-off. If we are required to indemnify BWE, we may be subject to substantial liabilities.

BWE agreed to indemnify us for certain liabilities in connection with the spin-off. However, there can be no assurance that the indemnity will be sufficient to insure us against the full amount of such liabilities, or that BWE will be able to satisfy its indemnification obligations.

In connection with the spin-off, BWE agreed to indemnify us for certain liabilities. However, third parties could seek to hold us responsible for any of the liabilities that BWE will agree to retain, and there can be no assurance that the indemnity from BWE will be sufficient to protect us against the full amount of such liabilities, or that BWE will be able to fully satisfy its indemnification obligations. Moreover, even if we ultimately succeed in recovering from BWE any amounts for which we are held liable, we may be temporarily required to bear these losses.

The BWE spin-off could result in substantial tax liability.

Upon completion of the spin-off, we received an opinion of counsel substantially to the effect that, for U.S. federal income tax purposes, the spin-off will qualify under Section 355 of the Code and certain transactions related to the spin-off will qualify under Sections 355 and/or 368 of the Code. The opinion relied on, among other things, various assumptions and representations as to factual matters made by us and BWE, which, if inaccurate or incomplete in any material respect, could jeopardize the conclusions reached by such counsel in its opinion. The opinion is not binding on the IRS or the courts, and there can be no assurance that the IRS or the courts will not challenge the conclusions stated in the opinion or that any such challenge would not prevail.

We are not aware of any facts or circumstances that would cause the assumptions or representations that were relied on in the opinion to be inaccurate or incomplete in any material respect. If, notwithstanding receipt of the opinion, the spin-off were subsequently determined not to qualify under Section 355 of the Code, each U.S. holder of our common stock who received shares of BWE common stock in the spin-off would generally be treated as receiving a taxable distribution of property in an amount equal to the fair market value of the shares of BWE common stock received. That distribution would be taxable to each such stockholder as a dividend to the extent of our current and accumulated earnings and profits. For each such stockholder, any amount that exceeded our earnings and profits would be treated first as a non-taxable return of capital to the extent of such stockholder's tax basis in its shares of our common stock with any remaining amount being taxed as a capital gain. In addition, if certain related preparatory transactions were to fail to qualify for tax-free treatment, they would be treated as taxable sales and/or distributions to the Company.

We entered into a tax sharing agreement with BWE in connection with the spin-off. Pursuant to this agreement, we agreed with BWE on the allocation of spin-off related tax liabilities and the indemnification provisions relating to these liabilities. If we are liable for taxes under the tax sharing agreement, that liability could have a material adverse effect on us.

Additionally, there can be no assurance that any indemnities from BWE will be sufficient to protect us against any potential tax liabilities.

Risks Relating to Ownership of Our Common Stock

Provisions in our corporate documents and Delaware law could delay or prevent a change in control of our company, even if that change may be considered beneficial by some stockholders.

The existence of some provisions of our certificate of incorporation and bylaws and Delaware law could discourage, delay or prevent a change in control of our company that a stockholder may consider favorable. These include provisions:

- providing that our Board of Directors fixes the number of members of the board;
- limiting who may call special meetings of stockholders;
- prohibiting stockholder action by written consent, thereby requiring stockholder action to be taken at a meeting of the stockholders;
- establishing advance notice requirements for nominations of candidates for election to our Board of Directors or for proposing matters that can be acted on by stockholders at stockholder meetings;
- establishing supermajority vote requirements for certain amendments to our certificate of incorporation and bylaws;
- limiting the right of stockholders to remove directors;
- authorizing a large number of shares of common stock that are not yet issued, which would allow our Board of Directors to issue shares to persons friendly to current management, thereby protecting the continuity of our management, or which could be used to dilute the stock ownership of persons seeking to obtain control of us; and
- authorizing the issuance of "blank check" preferred stock, which could be issued by our Board of Directors to increase the number of outstanding shares and thwart a takeover attempt.

In addition, we are subject to Section 203 of the Delaware General Corporation Law, which may have an anti-takeover effect with respect to transactions not approved in advance by our Board of Directors, including discouraging takeover attempts that might result in a premium over the market price for shares of our common stock.

We believe these provisions protect our stockholders from coercive or otherwise unfair takeover tactics by requiring potential acquirers to negotiate with our Board of Directors and by providing our Board of Directors with more time to assess any acquisition proposal, and are not intended to make our company immune from takeovers. However, these provisions apply even if the offer may be considered beneficial by some stockholders and could delay or prevent an acquisition that our Board of Directors determines is not in the best interests of our company and our stockholders.

We may issue preferred stock that could dilute the voting power or reduce the value of our common stock.

Our certificate of incorporation authorizes us to issue, without the approval of our stockholders, one or more classes or series of preferred stock having such designation, powers, preferences and relative, participating, optional and other special rights, including preferences over our common stock respecting dividends and distributions, as our Board of Directors generally may determine. The terms of one or more classes or series of preferred stock could dilute the voting power or reduce the value of our common stock. For example, we could grant holders of preferred stock the right to elect some number of our directors in all events or on the happening of specified events or the right to veto specified transactions. Similarly, the repurchase or redemption rights or liquidation preferences we could assign to holders of preferred stock could affect the residual value of the common stock.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Table of Contents

Item 2. PROPERTIES

The following table provides the segment name, location and general use of each of our principal properties at December 31, 2019 that we own or lease:

Business Segment and Location	Principal Use	Owned/Leased (Lease Expiration)
Nuclear Operations Group		
Lynchburg, Virginia	Manufacturing facility (1) (4)	Owned
Barberton, Ohio	Manufacturing facility	Owned
Euclid, Ohio	Manufacturing facility	Owned
Mount Vernon, Indiana	Manufacturing facility	Owned
Erwin, Tennessee	Manufacturing facility (2) (4)	Owned
Nuclear Power Group		
Cambridge, Ontario, Canada	Manufacturing facility	Owned
Peterborough, Ontario, Canada	Manufacturing facility (3) (4)	Leased (2036)
Toronto, Ontario, Canada	Manufacturing facility (3) (4)	Leased (2036)
Kanata, Ontario, Canada	Manufacturing facility (3) (4)	Leased (2038)
Vancouver, British Columbia, Canada	Manufacturing facility (3) (4)	Leased (2031)
Nuclear Services Group		
Lynchburg, Virginia	Administrative office	Leased (2020)
Lynchburg, Virginia	Engineering office	Leased (2020)
Corporate		
Lynchburg, Virginia	Administrative office	Leased (2020)
Charlotte, North Carolina	Administrative office	Leased (2022)

(1) This facility is our Nuclear Operations Group segment's primary manufacturing plant and is the nation's largest commercial high-enriched uranium processing facility. The site is also the largest commercial International Atomic Energy Agency certified facility in the U.S.

(2) Nuclear Fuel Services, Inc. ("NFS") operates this facility, which manufactures fuel for naval nuclear reactors and converts Cold War-era government stockpiles of high-enriched uranium into material suitable for further processing into commercial nuclear reactor fuel. NFS is the sole provider of nuclear fuel for the U.S. Navy.

(3) These facilities are licensed by the CNSC in order to allow us to fabricate natural uranium fuel and produce medical radioisotopes.

(4) This site is subject to review by either the NRC or the CNSC for licensee performance. The performance reviews determine the safe and secure conduct of operations of the facility.

We consider each of our significant properties to be suitable and adequate for its intended use. For further details regarding our properties, see Item 1, "Business."

Item 3. LEGAL PROCEEDINGS

The information set forth under the heading "Investigations and Litigation" in Note 10 to our consolidated financial statements included in this Report is incorporated by reference into this Item 3.

Item 4. MINE SAFETY DISCLOSURES

None.

PART II

Item 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is traded on the New York Stock Exchange under the symbol BWXT. As of February 20, 2020, there were approximately 1,794 holders of record of our common stock.

Since November 2012, we have periodically announced that our Board of Directors has authorized share repurchase programs. The following table provides information on our purchases of equity securities during the quarter ended December 31, 2019. Any shares purchased that were not part of a publicly announced plan or program are related to repurchases of common stock pursuant to the provisions of employee benefit plans that permit the repurchase of shares to satisfy statutory tax withholding obligations.

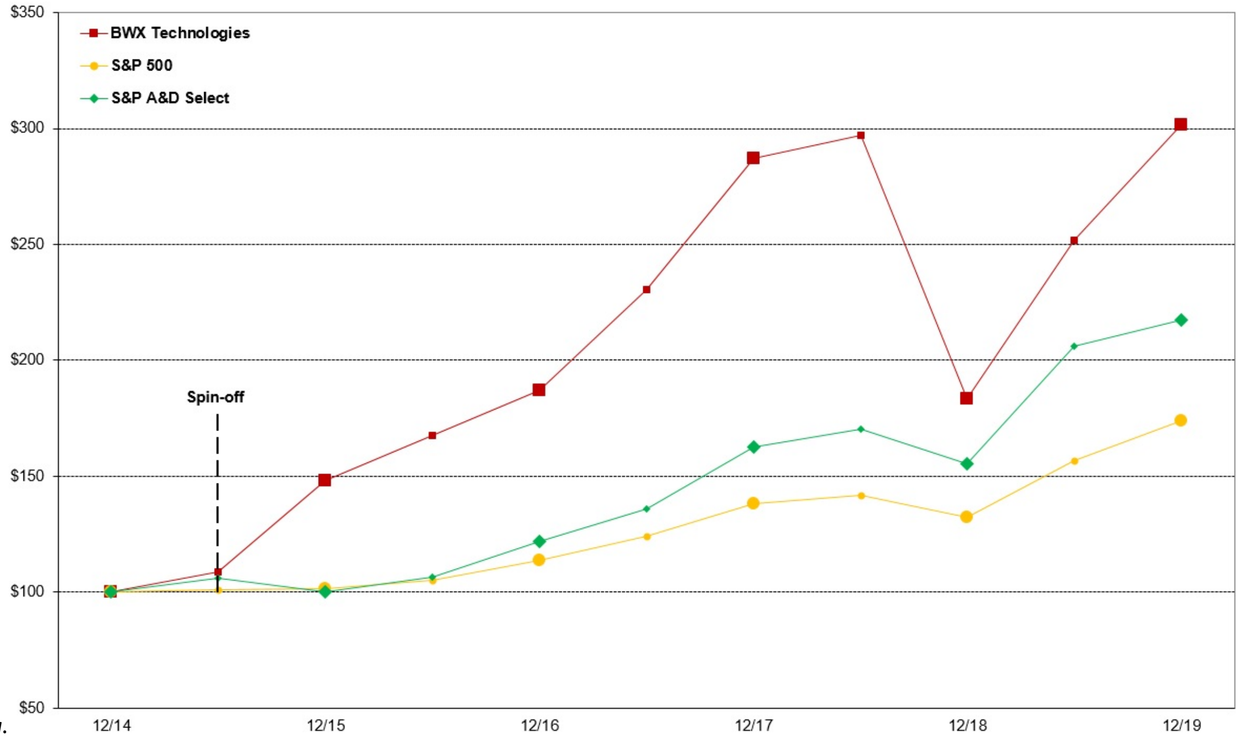
Issuer Purchases of Equity Securities

Period	Total number of shares purchased (1)	Average price paid per share	Total number of shares purchased as part of publicly announced plans or programs	Approximate dollar value of shares that may yet be purchased under the plans or programs (in millions) (2)
October 1, 2019 – October 31, 2019	92	$ 55.91	—	$ 165.3
November 1, 2019 – November 30, 2019	8,849	$ 60.62	—	$ 165.3
December 1, 2019 – December 31, 2019	—	—	—	$ 165.3
Total	8,941	$ 60.57	—	

(1) Includes 92 and 8,849 shares repurchased during October and November, respectively, pursuant to the provisions of employee benefit plans that permit the repurchase of shares to satisfy statutory tax withholding obligations.

(2) On November 6, 2018, we announced that our Board of Directors authorized us to repurchase an indeterminate number of shares of our common stock at an aggregate market value of up to $250 million during a three-year period that expires on November 6, 2021.

The following graph provides a comparison of our cumulative total shareholder return over five years to the return of the S&P 500 Composite Index ("S&P 500 Index") and the return of the S&P Aerospace and Defense Select Index ("S&P A&D Select Index"). *The following graph shall not be deemed to be "soliciting material" or "filed" with the SEC or be subject to Regulation 14A or 14C (other than as provided in Item 201 of Regulation S-K) or to the liabilities of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent that BWXT specifically incorporates it by reference into such filing.*



(1) Assumes initial investment of $100 on December 31, 2014 and reinvestment of dividends. The value of the BWE shares distributed in the spin-off is reflected in the cumulative total return as a reinvested dividend.

Item 6. SELECTED FINANCIAL DATA

	For the Years Ended December 31,				
	2019	*2018*	*2017*	*2016*	*2015*
	(In thousands, except per share amounts)				
Statement of Income Data (1)(2):					
Revenues	$ 1,894,920	$ 1,799,889	$ 1,687,738	$ 1,550,573	$ 1,415,529
Income from Continuing Operations before Provision for Income Taxes and Noncontrolling Interest	$ 313,742	$ 280,145	$ 295,780	$ 257,268	$ 221,065
Income from Continuing Operations, Net of Tax	$ 244,115	$ 226,958	$ 147,844	$ 183,057	$ 140,774
Income (Loss) from Discontinued Operations, Net of Tax	—	—	—	—	(9,309)
Net Income Attributable to BWX Technologies, Inc.	$ 244,115	$ 226,958	$ 147,844	$ 183,057	$ 131,465
Basic Earnings per Common Share:					
Income from Continuing Operations	$ 2.56	$ 2.29	$ 1.49	$ 1.79	$ 1.32
Income (Loss) from Discontinued Operations	—	—	—	—	(0.09)
Net Income Attributable to BWX Technologies, Inc.	$ 2.56	$ 2.29	$ 1.49	$ 1.79	$ 1.23
Diluted Earnings per Common Share:					
Income from Continuing Operations	$ 2.55	$ 2.27	$ 1.47	$ 1.76	$ 1.31
Income (Loss) from Discontinued Operations	—	—	—	—	(0.09)
Net Income Attributable to BWX Technologies, Inc.	$ 2.55	$ 2.27	$ 1.47	$ 1.76	$ 1.22
Dividends Declared Per Share	$ 0.68	$ 0.64	$ 0.42	$ 0.36	0.32
Balance Sheet Data:					
Total Assets (2)(3)	$ 1,908,913	$ 1,655,096	$ 1,712,339	$ 1,579,815	$ 1,375,398
Current Maturities of Long-Term Debt	$ 14,711	$ 14,227	$ 27,870	$ 27,370	$ 15,000
Long-Term Debt (3)	$ 809,442	$ 753,617	$ 481,059	$ 497,724	$ 278,259

(1) Statement of income data prior to December 31, 2015 has been restated to reflect the June 30, 2015 spin-off, which is presented as income (loss) from discontinued operations.

(2) On January 1, 2018, we adopted FASB Topic *Revenue from Contracts with Customers*. As a result, we recognized $58.4 million and $15.8 million more revenue and net income, respectively, under the current method compared to the historical method which impacted basic and diluted earnings per share by $0.16 for the year ended December 31, 2018. Information presented for years ending prior to December 31, 2018 may not be comparable.

(3) On January 1, 2016, we adopted an update to FASB Topic *Interest – Imputation of Interest,* which resulted in the retrospective reclassification of unamortized debt issuance costs related to the Company's Credit Agreement from other non-current assets to a reduction in long-term debt of $6.7 million as of December 31, 2015.

We immediately recognize actuarial gains (losses) for our pension and postretirement benefit plans in earnings primarily in the fourth quarter each year as a component of net periodic benefit cost. The effect of this adjustment for 2019, 2018, 2017, 2016 and 2015 on pre-tax income was $(3.6) million, $(32.6) million, $(11.1) million, $(21.3) million and $(54.7) million, respectively.

In the year ended December 31, 2018, we recognized $13.5 million of benefit in our provision for income taxes related to the remeasurement of our deferred tax assets as a result of accelerating additional contributions to certain of our domestic pension plans for inclusion in our 2017 U.S. tax return.

In the year ended December 31, 2017, we recognized $53.0 million of expense in our provision for income taxes related to significant changes to existing U.S. tax laws.

In the year ended December 31, 2016, we recorded a gain of approximately $13.6 million related to the deconsolidation of Generation mPower LLC ("GmP") and we recorded a $30.0 million loss contingency pursuant to the terms of the mPower

Framework Agreement. We also recorded a gain of approximately $9.3 million related to the release from performance guarantees for various projects executed by our former Power Generation business. In addition, we reversed a $16.1 million loss contingency resulting from a favorable ruling in a lawsuit involving commercial nuclear contracts.

In the year ended December 31, 2015, we incurred $26.0 million of charges related to the spin-off. We also incurred $16.6 million of charges related to restructuring activities. In addition, we recorded income related to litigation proceeds of $94.8 million, including pre- and post-judgment interest totaling $29.1 million.

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

Statements we make in the following discussion, which express a belief, expectation or intention, as well as those that are not historical fact, are forward-looking statements that are subject to risks, uncertainties and assumptions. Our actual results, performance or achievements, or industry results, could differ materially from those we express in the following discussion as a result of a variety of factors, including the risks and uncertainties we have referred to under the headings "Cautionary Statement Concerning Forward-Looking Statements" and "Risk Factors" in Items 1 and 1A of Part I of this Report.

GENERAL

We are a leading supplier of nuclear components and fuel to the U.S. Government; provide technical, management and site services to support governments in the operation of complex facilities and environmental remediation activities; supply precision manufactured components, nuclear fuel and services for the commercial nuclear power industry; supply critical medical radioisotopes and radiopharmaceuticals; and develop nuclear technologies for a variety of applications, including medical radioisotopes, advanced nuclear power sources and advanced nuclear reactors. In general, we operate in capital-intensive industries and rely on large contracts for a substantial amount of our revenues. We operate in three reportable segments: Nuclear Operations Group, Nuclear Power Group and Nuclear Services Group. We are currently exploring growth strategies across our segments through strategic investments and acquisitions to expand and complement our existing businesses. We would expect to fund these opportunities with cash generated from operations or by raising additional capital through debt, equity or some combination thereof.

Outlook

Nuclear Operations Group

We expect the backlog of our Nuclear Operations Group segment of approximately $4,515 million at December 31, 2019 to produce revenues of approximately $1,396 million in 2020, not including any change orders or new contracts that may be awarded during the year.

The revenues of our Nuclear Operations Group segment are largely a function of defense spending by the U.S. Government. As a supplier of major nuclear components for certain U.S. Government programs, we are a significant participant in the defense industry and have not been negatively impacted by sequestration or federal budget reductions to date. We believe many of our programs are well-aligned with national defense and other strategic priorities as we supply high-end equipment for submarines and aircraft carriers for the U.S. Navy. However, it is possible that reductions in federal government spending and sequestration could have an adverse impact on the operating results and cash flows of our Nuclear Operations Group and Nuclear Services Group segments in the future.

We expect that orders for nuclear components will continue to be a significant part of backlog for the foreseeable future. In addition, the U.S. Navy issued its fiscal year 2020 long-range shipbuilding plan in March 2019, which continues to include recommendations to increase the size of its fleet of ships to include additional submarines and aircraft carriers beyond the number disclosed in long-range shipbuilding plans issued prior to February 2018. We expect the U.S. Navy's new shipbuilding plan will require us to make additional capital expenditures and investment in personnel to meet this growth in demand.

Nuclear Power Group

We expect the backlog of our Nuclear Power Group segment of approximately $730 million at December 31, 2019 to produce revenues of approximately $217 million in 2020, not including any change orders or new contracts that may be awarded during the year. The revenues in this segment primarily depend on the demand and competitiveness of nuclear energy. The activity of this segment depends on the timing of maintenance and refueling outages, the cyclical nature of capital expenditures and major refurbishment and plant life extension projects, as well as the demand for nuclear fuel and fuel handling equipment primarily in the Canadian market, which could cause variability in our financial results.

Our acquisition of the MI business in July 2018 expanded our Nuclear Power Group segment's offerings to include medical radioisotope products. The MI business will be the platform from which we plan to launch our Molybdenum-99 product line and a number of future radioisotope-based imaging, diagnostic and therapeutic products.

Nuclear Services Group

A significant portion of this segment's operations is conducted through joint ventures, which typically earn fees, and we account for them following the equity method of accounting. See Note 4 to our consolidated financial statements included in this Report for financial information on our equity method investments. As a result, this segment reports minimal backlog and revenues.

Given our specialized capabilities of full life-cycle management of special materials, facilities and technologies, we believe our Nuclear Services Group segment is well-positioned to participate in the continuing cleanup, operation and management of critical government-owned nuclear sites, laboratories and manufacturing complexes maintained by the DOE, NASA and other federal agencies. Additionally, the Nuclear Services Group segment supports the commercial nuclear industry in the U.S., which depends on the timing of maintenance outages for nuclear utility customers, which could cause variability in our financial results.

This segment also specializes in the development of advanced technologies. The nature, timing and duration of any related contracts are dependent on the demand and funding availability for such technologies.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our financial statements and accompanying notes are prepared in accordance with accounting principles generally accepted in the United States ("GAAP"). Preparing financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses. These estimates and assumptions are affected by management's application of accounting policies. We believe the following are our most critical accounting policies that we apply in the preparation of our financial statements. These policies require our most difficult, subjective and complex judgments, often as a result of the need to make estimates of matters that are inherently uncertain.

Contracts and Revenue Recognition. We determine the appropriate accounting method for each of our long-term contracts before work on the project begins. We generally recognize contract revenues and related costs over time for individual performance obligations based on a cost-to-cost method in accordance with FASB Topic *Revenue from Contracts with Customers*. We recognize estimated contract revenue and resulting income based on the measurement of the extent of progress toward completion as a percentage of the total project. Certain costs may be excluded from the cost-to-cost method of measuring progress, such as significant costs for uninstalled materials, if such costs do not depict our performance in transferring control of goods or services to the customer. We review contract price and cost estimates periodically as the work progresses and reflect adjustments proportionate to the percentage-of-completion in income in the period when those estimates are revised. Certain of our contracts recognize revenue at a point in time, and revenue on these contracts is recognized when control transfers to the customer. The majority of our revenue that is recognized at a point in time is related to parts and certain medical radioisotopes and radiopharmaceuticals in our Nuclear Power Group segment. For all contracts, if a current estimate of total contract cost indicates a loss on a contract, the projected loss is recognized in full when determined. It is possible that current estimates could materially change for various reasons, including, but not limited to, fluctuations in forecasted labor productivity or steel and other raw material prices. We routinely review estimates related to our contracts, and revisions to profitability are reflected in the quarterly and annual earnings we report. In the years ended December 31, 2019, 2018 and 2017, we recognized net favorable changes in estimates related to long-term contracts that increased operating income by approximately $71.6 million, $46.3 million and $35.2 million, respectively.

Although we continually strive to improve our ability to estimate our contract costs and profitability, adjustments to overall contract costs due to unforeseen events could be significant in future periods. We recognize contract change orders or changes in scope of work in contract revenues, to the extent of costs incurred, when we believe collection is probable and can be reasonably estimated. We recognize income from claims when formally agreed with the customer. We regularly assess the collectability of contract revenues and receivables from customers.

Pension Plans and Postretirement Benefits. We utilize actuarial and other assumptions in calculating the cost and benefit obligations of our pension and postretirement benefits. The assumptions utilized in the determination of our benefit cost and obligations include assumptions regarding discount rates, expected returns on plan assets, mortality and health care cost trends. The assumptions utilized represent our best estimates based on historical experience and other factors.

We calculate the majority of our pension costs under both financial accounting standards ("FAS") in accordance with GAAP and CAS in accordance with the FAR. We have prepared our consolidated financial statements and segment reporting disclosures utilizing pension costs calculated under FAS. Pension costs calculated under CAS are utilized as the basis for recovery of pension costs on our U.S. Government contracts. For the years ended December 31, 2019, 2018 and 2017, our CAS pension costs attributed to U.S. Government contracts totaled $46.7 million, $44.0 million and $56.1 million, respectively. The amount of recoverable CAS pension costs recognized as revenue on an annual basis may differ from the amounts noted above. See further discussion of our accounting for contracts and revenue recognition above and in Note 1 to our consolidated financial statements included in this Report.

Actual experience that differs from these assumptions or future changes in assumptions will affect our recognized benefit obligations and related costs. We immediately recognize net actuarial gains and losses in earnings in the fourth quarter as a component of net periodic benefit cost. Net actuarial gains and losses occur when actual experience differs from any of the various assumptions used to value our pension and postretirement benefit plans or when assumptions, which are revisited annually through our update of our actuarial valuations, change due to current market conditions or underlying demographic changes. The primary factors contributing to net actuarial gains and losses are changes in the discount rate used to value the obligations as of the measurement date each year, the difference between the actual return on plan assets and the expected return on plan assets and changes in health care cost trends. The effect of changes in the discount rate and expected rate of return on plan assets assumptions in combination with the actual return on plan assets can result in significant changes in our estimated pension and postretirement benefit cost and our consolidated financial condition.

The following sensitivity analysis shows the impact of a 25 basis point change in the assumed discount rate, return on assets and health care cost trend rate on our FAS pension and postretirement benefit plan obligations and expense for the year ended December 31, 2019:

	.25% Increase	.25% Decrease
	(In millions)	
Pension Plans		
Discount Rate:		
Effect on ongoing net periodic benefit cost [(1)]	$ 0.7	$ (0.8)
Effect on projected benefit obligation	$ (37.4)	$ 40.2
Return on Assets:		
Effect on ongoing net periodic benefit cost	$ (2.5)	$ 2.5
Postretirement Plans		
Discount Rate:		
Effect on ongoing net periodic benefit cost [(1)]	$ 0.1	$ (0.1)
Effect on projected benefit obligation	$ (1.7)	$ 1.8
Return on Assets:		
Effect on ongoing net periodic benefit cost	$ 0.1	$ (0.1)
Health Care Cost Trend Rate:		
Effect on ongoing net periodic benefit cost	$ 0.1	$ (0.1)
Effect on projected benefit obligation	$ 1.4	$ (1.2)

(1) Excludes effect of annual mark to market adjustment.

Goodwill and Intangible Assets. Each year, we evaluate goodwill at each reporting unit to assess recoverability, and impairments, if any, are recognized in earnings. We perform a qualitative analysis when we believe that there is sufficient excess fair value over carrying value based on our most recent quantitative assessment, adjusted for relevant facts and circumstances that could affect fair value. Deterioration in macroeconomic, industry and market conditions, cost factors, overall financial performance, share price decline or entity and reporting unit specific events could cause us to believe a qualitative test is no longer appropriate.

When we determine that it is appropriate to test goodwill for impairment utilizing a quantitative test, the first step of the test compares the fair value of a reporting unit to its carrying amount, including goodwill. We utilize both the income and market valuation approaches to provide inputs into the estimate of the fair value of our reporting units, which would be considered by market participants.

Under the income valuation approach, we employ a discounted cash flow model to estimate the fair value of each reporting unit. This model requires the use of significant estimates and assumptions regarding future revenues, costs, margins, capital expenditures, changes in working capital, terminal year growth rate and cost of capital. Our cash flow models are based on our forecasted results for the applicable reporting units. Actual results could differ materially from our projections. Some assumptions, such as future revenues, costs and changes in working capital are company driven and could be affected by a loss of one or more significant contracts or customers, failure to control costs on certain contracts, a decline in U.S. Government funding or a decline in demand based on changing economic or regulatory conditions. Changes in external market conditions may affect certain other assumptions, such as the cost of capital. Market conditions can be volatile and are outside of our control.

Under the market valuation approach, we employ the guideline publicly traded company method, which indicates the fair value of the equity of each reporting unit by comparing it to publicly traded companies in similar lines of business. After identifying and selecting guideline companies, we analyze their business and financial profiles for relative similarity. Factors such as size, growth, risk and profitability are analyzed and compared to each of our reporting units. Assumptions include the selection of our peer companies and use of market multiples, which could deteriorate or increase based on the profitability of our competitors and performance of their stock, which is often dependent on the performance of the stock market and general economy as a whole.

Adverse changes in these assumptions utilized within the first step of our impairment test could cause a reduction or elimination of excess fair value over carrying value, resulting in potential recognition of impairment. If the carrying amount of a reporting unit exceeds its fair value, the second step of the goodwill impairment test is performed to measure the amount of the impairment loss, if any. The second step compares the implied fair value of the reporting unit's goodwill with the carrying amount of that goodwill.

We completed our annual review of goodwill for each of our reporting units for the year ended December 31, 2019, which indicated that we had no impairment of goodwill. The fair value of our reporting units was substantially in excess of carrying value.

Each year, we evaluate indefinite-lived intangible assets to assess recoverability, and impairments, if any, are recognized in earnings. We perform a qualitative assessment when testing indefinite-lived intangible assets for impairment to determine whether events or circumstances that could affect the significant inputs used in determining fair value have occurred that indicate that it is more likely than not that the indefinite-lived intangible asset is impaired. Deterioration in macroeconomic, industry and market conditions, cost factors or overall financial performance could cause us to believe a qualitative test is no longer appropriate. When quantitative assessments are performed, we primarily utilize income-based valuation approaches. Under the income-based valuation approach, we employ a relief from royalty method of valuation. This method requires significant assumptions, including assumed royalty rate, future revenues and cost of capital. Assumptions related to operating performance, such as future revenues, could be affected by loss of a customer contract, a decline in U.S. Government funding or a decline in demand based on changing economic or regulatory conditions. Changes in external market conditions may affect certain other assumptions, such as the cost of capital. Market conditions can be volatile and are outside of our control.

Adverse changes in these assumptions utilized within our indefinite-lived intangible asset impairment test could cause a reduction or elimination of excess fair value over carrying value, resulting in potential recognition of impairment.

We have completed our annual review of our indefinite-lived intangible assets for the year ended December 31, 2019, which indicated that we had no impairment. The fair value of our indefinite-lived intangible assets was substantially in excess of carrying value.

Asset Retirement Obligations and Environmental Cleanup Costs. We accrue for future decommissioning of our nuclear facilities that will permit the release of these facilities to unrestricted use at the end of each facility's service life, which is a requirement of our licenses from the NRC and the CNSC. In accordance with the FASB Topic *Asset Retirement and Environmental Obligations*, we record the fair value of a liability for an asset retirement obligation in the period in which it is incurred. In estimating fair value, we use present value of cash flows expected to be incurred in settling our obligations. To the extent possible, we perform a marketplace assessment of the cost and timing of performing the retirement activities. We apply a credit-adjusted risk-free interest rate to our expected cash flows in our determination of fair value. When we initially record such a liability, we capitalize a cost by increasing the carrying amount of the related long-lived asset. When we acquire a business that has an asset retirement obligation, the asset retirement obligation is recognized at fair value without a corresponding increase to the related long-lived asset. Over time, the liability is accreted to its present value each period, and the capitalized cost is depreciated over the useful life of the related asset. Actual costs incurred to decommission our facilities may differ from the accreted liability. As a result, upon completion of a decommissioning activity, we will either settle the obligation for its recorded amount or incur a gain or loss. This topic applies to environmental liabilities associated with assets that we currently operate and are obligated to remove from service. For environmental liabilities associated with assets that we no longer operate, we have accrued amounts based on the estimated costs of cleanup activities, net of the anticipated effect of any applicable cost-sharing arrangements. We adjust the estimated costs as further information develops or circumstances change. An exception to this accounting treatment relates to the work we perform for two facilities for which the U.S. Government is obligated to pay substantially all the decommissioning costs.

See Note 1 to our consolidated financial statements included in this Report for further discussion of recently adopted accounting standards.

RESULTS OF OPERATIONS – YEARS ENDED DECEMBER 31, 2019, 2018 and 2017

Selected financial highlights are presented in the table below:

	Year Ended December 31,		
	2019	**2018**	**2017**
		(In thousands)	
REVENUES:			
Nuclear Operations Group	$ 1,428,587	$ 1,319,170	$ 1,271,861
Nuclear Power Group	352,640	365,911	285,831
Nuclear Services Group	131,339	122,438	137,249
Adjustments and Eliminations	(17,646)	(7,630)	(7,203)
	$ 1,894,920	$ 1,799,889	$ 1,687,738
OPERATING INCOME:			
Nuclear Operations Group	$ 298,328	$ 271,405	$ 267,930
Nuclear Power Group	53,815	52,270	36,548
Nuclear Services Group	14,226	20,374	22,083
Other	(23,099)	(18,074)	(10,688)
	$ 343,270	$ 325,975	$ 315,873
Unallocated Corporate	(17,749)	(20,998)	(23,650)
Total Operating Income	$ 325,521	$ 304,977	$ 292,223

This section discusses our 2019 and 2018 results of operations and contains year-to-year comparisons between 2019 and 2018. Discussions of our 2017 results and year-to-year comparisons between 2018 and 2017 that are not included in this Report can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2018.

Consolidated Results of Operations

Consolidated revenues increased 5.3%, or $95.0 million, to $1,894.9 million in the year ended December 31, 2019 compared to $1,799.9 million for the corresponding period of 2018, due to increases in revenue from our Nuclear Operations Group and Nuclear Services Group segments totaling $109.4 million and $8.9 million, respectively. These increases were partially offset by a decrease in our Nuclear Power Group segment of $13.3 million.

Consolidated operating income increased $20.5 million to $325.5 million in the year ended December 31, 2019 compared to $305.0 million for the corresponding period of 2018. Operating income in our Nuclear Operations Group and Nuclear Power Group segments increased by $26.9 million and $1.5 million, respectively. We also experienced lower Unallocated Corporate expenses of $3.2 million when compared to the corresponding period of 2018. These increases were partially offset by decreases in operating income in our Nuclear Services Group and Other segments of $6.1 million and $5.0 million, respectively.

Nuclear Operations Group

	Year Ended December 31,		
	2019	2018	$ Change
		(In thousands)	
Revenues	$ 1,428,587	$ 1,319,170	$ 109,417
Operating Income	$ 298,328	$ 271,405	$ 26,923
% of Revenues	20.9%	20.6%	

Revenues increased by 8.3%, or $109.4 million, to $1,428.6 million in the year ended December 31, 2019 compared to $1,319.2 million for the corresponding period of 2018. This increase was primarily attributable to increased activity in the manufacture of nuclear components for U.S. Government programs as well as the timing of the procurement of certain long-lead materials when compared to the corresponding period of 2018. These increases were partially offset by lower activity in our downblending operations.

Operating income increased $26.9 million to $298.3 million in the year ended December 31, 2019 compared to $271.4 million for the corresponding period of 2018. The increase was due to the operating income impact of the net changes in revenue noted above as well as the unfavorable contract adjustments recorded in the prior year resulting from rework issues related to the manufacture of non-nuclear components of $29.2 million.

Nuclear Power Group

	Year Ended December 31,		
	2019	2018	$ Change
		(In thousands)	
Revenues	$ 352,640	$ 365,911	$ (13,271)
Operating Income	$ 53,815	$ 52,270	$ 1,545
% of Revenues	15.3%	14.3%	

Revenues decreased by 3.6%, or $13.3 million, to $352.6 million in the year ended December 31, 2019 compared to $365.9 million for the corresponding period of 2018. The decrease was primarily attributable to a decline in revenues resulting from a lower volume of in-plant inspection, refurbishment and maintenance and modification services when compared to the same period in the prior year. This decrease was partially offset by a $23.9 million increase in revenues associated with our MI business and increased activity in our nuclear components business.

Operating income increased $1.5 million to $53.8 million in the year ended December 31, 2019 compared to $52.3 million for the corresponding period of 2018. This increase was primarily attributable to our nuclear fuel manufacturing business which contains a $5.2 million favorable change in estimate associated with an asset retirement obligation for one of our nuclear fuel fabrication facilities. This increase was partially offset by the operating income impact of the decrease in revenues noted above.

Nuclear Services Group

	Year Ended December 31,		
	2019	2018	$ Change
		(In thousands)	
Revenues	$ 131,339	$ 122,438	$ 8,901
Operating Income	$ 14,226	$ 20,374	$ (6,148)
% of Revenues	10.8%	16.6%	

Revenues increased by 7.3%, or $8.9 million, to $131.3 million in the year ended December 31, 2019 compared to $122.4 million for the corresponding period of 2018. The increase was primarily attributable to an increase in the volume of commercial nuclear inspection and maintenance outage work in the U.S. when compared to the same period in the prior year.

Operating income decreased $6.1 million to $14.2 million in the year ended December 31, 2019 compared to $20.4 million for the corresponding period of 2018. The decrease was primarily attributable to higher selling, general and administrative expenses related to business development activities caused by the timing of proposal activities and lower levels of income at a site in New Mexico that we exited in the prior year. These decreases were partially offset by improved operational performance at several of our sites and the operating income impact of the increase in revenue related to our U.S. commercial nuclear services business noted above.

Other

	Year Ended December 31,		
	2019	2018	$ Change
		(In thousands)	
Operating Income	$ (23,099)	$ (18,074)	$ (5,025)

Operating income decreased $5.0 million to a loss of $23.1 million in the year ended December 31, 2019 compared to a loss of $18.1 million for the corresponding period of 2018, primarily due to an increase in expenses related to research and development and commercialization activities related to our medical and industrial radioisotope capabilities and other advanced technologies when compared to the corresponding period of the prior year.

Unallocated Corporate

Unallocated corporate expenses decreased $3.2 million to $17.7 million in the year ended December 31, 2019 compared to $21.0 million for the corresponding period of 2018, primarily due to higher levels of legal and consulting costs associated with due diligence activities conducted in the prior year.

Other Income (Expense)

During the year ended December 31, 2019, other income (expense) increased $13.1 million to a loss of $11.8 million compared to a loss of $24.8 million for the corresponding period of 2018. A component of other income (expense) is net periodic benefit cost inclusive of mark to market adjustments due to our immediate recognition of net actuarial gains (losses) for our pension and postretirement benefit plans. Net periodic benefit cost changed to income of $17.5 million in the year ended December 31, 2019 compared to expense of $0.7 million in the corresponding period of 2018. This increase in income was partially offset by an increase in interest expense of $7.5 million associated with higher levels of long-term debt when compared to the prior year.

Provision for Income Taxes

	Year Ended December 31,		
	2019	2018	$ Change
		(In thousands)	
Income before Provision for Income Taxes	$ 313,742	$ 280,145	$ 33,597
Provision for Income Taxes	$ 69,065	$ 52,840	$ 16,225
Effective Tax Rate	22.0%	18.9%	

On December 22, 2017, H.R. 1, the Tax Cuts and Jobs Act (the "Act") was enacted, making significant changes to existing U.S. tax laws that impact BWXT, including, but not limited to, a reduction to the U.S. corporate income tax rate from 35% to 21% for tax years beginning after December 31, 2017, the taxation of global intangible low-taxed income ("GILTI") and additional deduction limitations related to executive compensation. Our Canadian operations continue to be subject to tax at a local statutory rate of approximately 25%.

For the year ended December 31, 2019, our provision for income taxes increased $16.2 million to $69.1 million, while income before provision for income taxes increased $33.6 million to $313.7 million. Our effective tax rate was approximately 22.0% for 2019, as compared to 18.9% for 2018. Our effective tax rate for 2019 was higher than the U.S. corporate income tax rate of 21% primarily due to state income taxes within the U.S. and the unfavorable rate differential associated with our Canadian earnings. These unfavorable rate impacts were partially offset by benefits recognized for excess tax benefits related to employee share-based payments of $2.4 million. Our effective tax rate for 2018 was lower than the U.S. corporate income tax rate of 21% primarily due to remeasurement adjustments to our deferred tax assets as a result of accelerating additional contributions made in August 2018 to certain of our domestic pension plans for inclusion in our 2017 U.S. tax return.

See Note 5 to our consolidated financial statements included in this Report for further information on income taxes.

EFFECTS OF INFLATION AND CHANGING PRICES

Our financial statements are prepared in accordance with GAAP, using historical U.S. dollar accounting ("historical cost"). Statements based on historical cost, however, do not adequately reflect the cumulative effect of increasing costs and changes in the purchasing power of the U.S. dollar, especially during times of significant and continued inflation.

In order to minimize the negative impact of inflation on our operations, we attempt to cover the increased cost of anticipated changes in labor, material and service costs, either through an estimate of those changes, which we reflect in the original price, or through price escalation clauses in our contracts. However, there can be no assurance we will be able to cover all changes in cost using this strategy.

LIQUIDITY AND CAPITAL RESOURCES

Our overall liquidity position, which we generally define as our unrestricted cash and cash equivalents and short-term investments plus amounts available for borrowings under our credit facility, decreased by approximately $5.2 million to $364.8 million at December 31, 2019 compared to $370.0 million at December 31, 2018. We experienced net cash generated from operations in each of the years ended December 31, 2019, 2018 and 2017. Typically, the fourth quarter has been the period of highest cash flows from operating activities because of the timing of payments received from the U.S. Government on accounts receivable retainages and cash dividends received from our joint ventures.

Credit Facility

On May 24, 2018, we and certain of our subsidiaries entered into a credit agreement (the "Credit Facility") with Wells Fargo Bank, N.A., as administrative agent, and the other lenders party thereto. The Credit Facility includes a $500.0 million senior secured revolving credit facility (the "Revolving Credit Facility"), a $50.0 million U.S. dollar senior secured term loan A made available to the Company (the "USD Term Loan") and a $250.0 million (U.S. dollar equivalent) Canadian dollar senior secured term loan A made available to BWXT Canada Ltd. (the "CAD Term Loan"). All obligations under the Credit Facility are scheduled to mature on May 24, 2023. The proceeds of loans under the Credit Facility are available for working capital needs and other general corporate purposes.

The Credit Facility allows for additional parties to become lenders and, subject to certain conditions, for the increase of the commitments under the Credit Facility, subject to an aggregate maximum for all additional commitments of (1) the greater of (a) $250 million and (b) 65% of EBITDA, as defined in the Credit Facility, for the last four full fiscal quarters, plus (2) all voluntary prepayments of term loans, plus (3) additional amounts provided the Company is in compliance with a pro forma first lien leverage ratio test of less than or equal to 2.50 to 1.00.

The Company's obligations under the Credit Facility are guaranteed, subject to certain exceptions, by substantially all of the Company's present and future wholly owned domestic restricted subsidiaries. The obligations of BWXT Canada Ltd. under the Credit Facility are guaranteed, subject to certain exceptions, by substantially all of the Company's present and future wholly owned Canadian and domestic restricted subsidiaries.

The Credit Facility is secured by first-priority liens on certain assets owned by the Company (other than its subsidiaries comprising its Nuclear Operations Group segment and a portion of its Nuclear Services Group segment); provided that (1) the Company's domestic obligations are only secured by assets and property of the domestic loan parties and (2) the obligations of BWXT Canada Ltd. and the Canadian guarantors are secured by assets and property of the Canadian guarantors and the domestic loan parties.

The Credit Facility requires interest payments on revolving loans on a periodic basis until maturity. We began making quarterly amortization payments on the USD Term Loan and the CAD Term Loan in amounts equal to 1.25% of the initial aggregate principal amount of each term loan in the third quarter of 2018. We may prepay all loans under the Credit Facility at any time without premium or penalty (other than customary Eurocurrency breakage costs), subject to notice requirements.

The Credit Facility includes financial covenants that are tested on a quarterly basis, based on the rolling four-quarter period that ends on the last day of each fiscal quarter. The maximum permitted leverage ratio is 4.00 to 1.00, which may be increased to 4.50 to 1.00 for up to four consecutive fiscal quarters after a material acquisition. The minimum consolidated interest coverage ratio is 3.00 to 1.00. In addition, the Credit Facility contains various restrictive covenants, including with respect to debt, liens, investments, mergers, acquisitions, dividends, equity repurchases and asset sales. As of December 31, 2019, we were in compliance with all covenants set forth in the Credit Facility.

Outstanding loans under the Credit Facility will bear interest at our option at either (1) the Eurocurrency rate plus a margin ranging from 1.25% to 2.0% per year or (2) the base rate or Canadian index rate, as applicable (described in the Credit Facility as the highest of (a) with respect to the base rate only, the federal funds rate plus 0.5%, (b) the one-month Eurocurrency rate plus 1.0% and (c) the administrative agent's prime rate or the Canadian prime rate, as applicable), plus, in each case, a margin ranging from 0.25% to 1.0% per year. We are charged a commitment fee on the unused portion of the Revolving Credit Facility, and that fee ranges from 0.15% to 0.275% per year. Additionally, we are charged a letter of credit fee of between 1.25% and 2.0% per year with respect to the amount of each financial letter of credit issued under the Credit Facility, and a letter of credit fee of between 0.75% and 1.2% per year with respect to the amount of each performance letter of credit issued under the Credit Facility. The applicable margin for loans, the commitment fee and the letter of credit fees set forth above will vary quarterly based on our leverage ratio. Based on the leverage ratio applicable at December 31, 2019, the margin for Eurocurrency rate and base rate or Canadian index rate loans was 1.375% and 0.375%, respectively, the letter of credit fee for financial letters of credit and performance letters of credit was 1.375% and 0.825%, respectively, and the commitment fee for the unused portion of the Revolving Credit Facility was 0.175%.

As of December 31, 2019, borrowings outstanding totaled $272.2 million and $160.0 million under our term loans and revolving line of credit, respectively, and letters of credit issued under the Credit Facility totaled $67.6 million. As a result, we had $272.4 million available for borrowings or to meet letter of credit requirements as of December 31, 2019. As of December 31, 2019, the weighted-average interest rate on outstanding borrowings under our Credit Facility was 3.29%.

The Credit Facility generally includes customary events of default for a secured credit facility, some of which allow for an opportunity to cure. Under the Credit Facility, (1) if an event of default relating to bankruptcy or other insolvency events occurs, all related obligations will immediately become due and payable; (2) if any other event of default exists, the lenders will be permitted to accelerate the maturity of the related obligations outstanding; and (3) if any event of default exists, the lenders will be permitted to terminate their commitments thereunder and exercise other rights and remedies, including the commencement of foreclosure or other actions against the collateral.

If any default occurs under the Credit Facility, or if we are unable to make any of the representations and warranties in the Credit Facility, we will be unable to borrow funds or have letters of credit issued under the Credit Facility.

Senior Notes

We issued $400.0 million aggregate principal amount of 5.375% senior notes due 2026 (the "Senior Notes") pursuant to an indenture dated May 24, 2018 (the "Indenture"), among the Company, certain of our subsidiaries, as guarantors, and U.S. Bank National Association, as trustee. The Senior Notes are guaranteed by each of the Company's present and future direct and indirect wholly owned domestic subsidiaries that is a guarantor under the Credit Facility.

Interest on the Senior Notes is payable semi-annually in cash in arrears on January 15 and July 15 of each year, which commenced on July 15, 2018, at a rate of 5.375% per annum. The Senior Notes will mature on July 15, 2026.

On and after July 15, 2021, the Company may redeem the Senior Notes, in whole or in part, at a redemption price equal to (i) 102.688% of the principal amount to be redeemed if the redemption occurs during the twelve-month period beginning on July 15, 2021, (ii) 101.344% of the principal amount to be redeemed if the redemption occurs during the twelve-month period beginning on July 15, 2022 and (iii) 100.0% of the principal amount to be redeemed if the redemption occurs on or after July 15, 2023, in each case plus accrued and unpaid interest, if any, to, but excluding, the redemption date. At any time prior to July 15, 2021, the Company may also redeem up to 40.0% of the Senior Notes with net cash proceeds of certain equity offerings at a redemption price equal to 105.375% of the principal amount of the Senior Notes to be redeemed, plus accrued and unpaid interest, if any, to, but excluding, the redemption date. In addition, at any time prior to July 15, 2021, the Company may redeem the Senior Notes, in whole or in part, at a redemption price equal to 100.0% of the principal amount of the Senior Notes to be redeemed, plus accrued and unpaid interest, if any, to, but excluding, the redemption date plus an applicable "make-whole" premium.

The Indenture contains customary events of default, including, among other things, payment default, failure to comply with covenants or agreements contained in the Indenture or the Senior Notes and certain provisions related to bankruptcy events. The Indenture also contains customary negative covenants. As of December 31, 2019, we were in compliance with all covenants and agreements set forth in the Indenture and the Senior Notes.

Other Arrangements

We have posted surety bonds to support regulatory and contractual obligations for certain decommissioning responsibilities, projects and legal matters. We utilize bonding facilities to support such obligations, but the issuance of bonds under those facilities is typically at the surety's discretion. Although there can be no assurance that we will maintain our surety bonding capacity, we believe our current capacity is adequate to support our existing requirements for the next twelve months. In addition, these bonds generally indemnify the beneficiaries should we fail to perform our obligations under the applicable agreements. We, and certain of our subsidiaries, have jointly executed general agreements of indemnity in favor of surety underwriters relating to surety bonds those underwriters issue. As of December 31, 2019, bonds issued and outstanding under these arrangements totaled approximately $73.3 million.

OTHER

Cash, Cash Equivalents, Restricted Cash and Investments

In the aggregate, our cash and cash equivalents, restricted cash and cash equivalents and investments increased by approximately $58.5 million to $105.9 million at December 31, 2019 from $47.4 million at December 31, 2018, primarily due to the items discussed below. Our domestic and foreign cash and cash equivalents, restricted cash and cash equivalents and investments as of December 31, 2019 and 2018 were as follows:

	December 31,	
	2019	2018
	(In thousands)	
Domestic	$ 76,337	$ 37,108
Foreign	29,526	10,279
Total	$ 105,863	$ 47,387

Our working capital increased by $59.9 million to $225.0 million at December 31, 2019 from $165.1 million at December 31, 2018, primarily attributable to increases in cash and cash equivalents and changes in net contracts in progress and advance billings due to the timing of project cash flows. These increases were partially offset by an increase in accounts payable caused by the timing of vendor payments.

Our net cash provided by operating activities increased by $110.1 million to $279.4 million in the year ended December 31, 2019, compared to cash provided by operating activities of $169.3 million in the year ended December 31, 2018. The increase in cash provided by operating activities was primarily attributable to a $153.3 million decrease in pension contributions when compared to the prior year, partially offset by the timing of project cash flows.

Our net cash used in investing activities decreased by $146.7 million to $180.0 million in the year ended December 31, 2019, compared to $326.7 million in the year ended December 31, 2018. The decrease in cash used in investing activities was primarily attributable to our acquisition of the MI business for $213.0 million during the prior year, partially offset by an increase in purchases of property, plant and equipment of $72.8 million during the year ended December 31, 2019.

Our net cash used in financing activities increased by $34.4 million to $43.7 million in the year ended December 31, 2019, compared to $9.3 million in the year ended December 31, 2018. The increase in net cash used in financing activities was primarily attributable to a decrease in net borrowings of $237.1 million as compared to the prior year, partially offset by a decrease in repurchases of common shares of $194.8 million.

At December 31, 2019, we had restricted cash and cash equivalents totaling $5.9 million, $2.8 million of which was held for future decommissioning of facilities (which is included in other assets on our consolidated balance sheets) and $3.1 million of which was held to meet reinsurance reserve requirements of our captive insurer.

At December 31, 2019, we had short-term and long-term investments with a fair value of $13.5 million. Our investment portfolio consists primarily of U.S. Government and agency securities, corporate bonds and equities and mutual funds.

Based on our liquidity position, we believe we have sufficient cash and letter of credit and borrowing capacity to fund our operating requirements for at least the next 12 months.

CONTRACTUAL OBLIGATIONS

Our cash requirements as of December 31, 2019 under current contractual obligations were as follows:

	Total	Less than 1 Year	1-3 Years	3-5 Years	After 5 Years
			(In thousands)		
Long-term debt principal	$ 832,159	$ 14,711	$ 29,422	$ 388,026	$ 400,000
Interest payments	$ 178,998	$ 30,330	$ 58,972	$ 46,696	$ 43,000
Lease payments	$ 8,409	$ 3,505	$ 3,110	$ 725	$ 1,069

We expect cash requirements totaling approximately $6.7 million for contributions to our pension plans in 2020. In addition, we anticipate cash requirements totaling approximately $1.3 million for contributions to our other postretirement benefit plans in 2020.

Our contingent commitments under letters of credit and surety bonds currently outstanding expire as follows:

Total	Less than 1 Year	1-3 Years	3-5 Years	Thereafter
		(In thousands)		
$ 140,874	$ 129,028	$ 3,053	$ 1,157	$ 7,636

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Our exposure to market risk from changes in interest rates relates primarily to our debt instruments. Our borrowings include both fixed and variable interest rate debt. At December 31, 2019, we had (i) $432.2 million in outstanding borrowings and $272.4 million available under the Credit Facility and (ii) an aggregate principal amount of $400.0 million of Senior Notes due 2026. See Item 7 – "Management's Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital Resources" for additional information on our debt instruments.

We also have exposure from changes in interest rates related to our cash equivalents and our investment portfolio, which consists primarily of U.S. Government and agency securities, corporate bonds and equities and mutual funds. We are averse to principal loss and seek to ensure the safety and preservation of our invested funds by limiting default risk, market risk and reinvestment risk.

We have operations in foreign locations, and, as a result, our financial results could be significantly affected by factors such as changes in foreign currency exchange ("FX") rates or weak economic conditions in those foreign markets. In order to manage the operational risks associated with FX rate fluctuations, we attempt to hedge those risks with FX derivative instruments. Historically, we have hedged those risks with FX forward contracts. At December 31, 2019, the fair values of our outstanding derivative instruments were not significant. We do not enter into speculative derivative positions.

Interest Rate Sensitivity

The following tables provide information about our financial instruments that are sensitive to changes in interest rates. The tables present principal cash flows and related weighted-average interest rates by expected maturity dates.

At December 31, 2019:	Principal Amount by Expected Maturity (In thousands)							Fair Value at December 31,
	Years Ending December 31,							
	2020	2021	2022	2023	2024	Thereafter	Total	2019
Investments	$ 3,663	—	—	—	—	$ 7,016	$ 10,679	$ 13,463
Average Interest Rate	1.94%	—	—	—	—	1.41%		
Fixed Interest Rate Debt	—	—	—	—	—	$ 400,000	$ 400,000	$ 423,462
Average Interest Rate	—	—	—	—	—	5.38%		
Variable Interest Rate Debt	$ 14,711	$ 14,711	$ 14,711	$ 388,026	—	—	$ 432,159	$ 431,644
Average Interest Rate	3.26%	3.20%	3.25%	3.11%	—	—		

At December 31, 2018:	Years Ending December 31,							Fair Value at December 31,
	2019	2020	2021	2022	2023	Thereafter	Total	2018
Investments	$ 3,587	—	—	—	—	$ 7,230	$ 10,817	$ 10,979
Average Interest Rate	1.53%	—	—	—	—	2.28%		
Fixed Interest Rate Debt	—	—	—	—	—	$ 400,000	$ 400,000	$ 384,940
Average Interest Rate	—	—	—	—	—	5.38%		
Variable Interest Rate Debt	$ 14,227	$ 14,227	$ 14,227	$ 14,227	$ 320,519	—	$ 377,427	$ 376,843
Average Interest Rate	3.63%	3.52%	3.50%	3.54%	3.68%	—		

Exchange Rate Sensitivity

The following table provides information about our FX forward contracts outstanding at December 31, 2019 and presents such information in U.S. dollar equivalents. The table presents notional amounts and related weighted-average FX rates by expected (contractual) maturity dates and constitutes a forward-looking statement. These notional amounts generally are used to calculate the contractual payments to be exchanged under the contract. The average contractual FX rates are expressed using market convention, which is dependent on the currencies being bought and sold under the forward contract.

Forward Contracts to Purchase Foreign Currencies in U.S. Dollars (in thousands)

Foreign Currency	Year Ending December 31, 2020	Fair Value at December 31, 2019	Average Contractual Exchange Rate
Canadian dollar	$ 3,795	$ (97)	1.2641
U.S. dollar (selling Canadian dollar)	$ 39,735	$ (213)	1.3052
Euro (selling Canadian dollar)	$ 18,936	$ (388)	1.5015

Foreign Currency	Year Ending December 31, 2021	Fair Value at December 31, 2019	Average Contractual Exchange Rate
Canadian dollar	$ 3,795	$ (113)	1.2608
U.S. dollar (selling Canadian dollar)	$ 1,803	$ (10)	1.3075

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of BWX Technologies, Inc.:

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of BWX Technologies, Inc. and subsidiaries (the "Company") as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2019, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 24, 2020 expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue Recognition – Estimating Costs at Completion – Refer to Note 1 and Note 3 to the Financial Statements.

Critical Audit Matter Description

The Company generally recognizes contract revenues and related costs over time for individual performance obligations based on a cost-to-cost method in accordance with Financial Accounting Standards Board Topic Revenue from Contracts with Customers. The Company recognizes estimated contract revenue and resulting income based on the measurement of the extent of progress toward completion as a percentage of the total project. The Company reviews contract price and cost estimates periodically as the work progresses and reflect adjustments proportionate to the percentage-of-completion in income in the period in which those estimates are revised. The accounting for these contracts involves judgment, particularly as it relates to the process of estimating total costs at completion for the performance obligation.

Given the significance of revenue and the level of judgment involved in estimating total costs at completion for the performance obligations used to recognize revenue for long-term contracts, auditing such estimates involved especially subjective judgment.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to management's estimates of contract costs to complete for its performance obligations included the following, among others:

- We tested the effectiveness of controls over revenue recognized over time, including those over cost estimates at completion for performance obligations.
- We performed a retrospective review on prior percentage-of-completion estimates to assess management's ability to estimate costs.
- We tested the recorded revenue using analytical procedures, regression analysis, and detailed contract testing.
- For a selection of contracts with customers recognized over time, our detail testing performed included the following:
  - Read the contract to understand the contract terms and evaluated the appropriateness of the accounting treatment in accordance with generally accepted accounting principles.
  - Compared the transaction price to the consideration expected to be received based on current rights and obligations under the contract and any modifications that were agreed upon with the customer.
  - Tested management's identification of distinct performance obligations.
  - Tested the mathematical accuracy of management’s calculation of the percent complete, the profit margin and the revenue recognized over time.
  - Evaluated the estimates of total costs for the performance obligation as follows:
    - Tested the accuracy and completeness of the costs incurred to date used in the calculation of the total cost estimates for the performance obligation by agreeing the tested amounts to the actual costs incurred to date recorded in the general ledger.
    - Compared costs incurred to date to the costs management estimated to be incurred to date.
    - Evaluated management's ability to achieve the estimates of total cost by performing corroborating inquiries with the Company's project managers and engineers, comparing the estimates to management's work plans, engineering specifications and supplier contracts, and when considered necessary, observation of the work site to evaluate project status.
    - Compared management's estimates for the selected contract to costs of similar performance obligations, when applicable.
    - Tested key inputs of the estimates (e.g., material cost estimates are compared to purchase orders, supplier contracts or other source documents).

/S/ DELOITTE & TOUCHE LLP

Charlotte, North Carolina
February 24, 2020

We have served as the Company's auditor since 2009.

BWX TECHNOLOGIES, INC.
CONSOLIDATED BALANCE SHEETS

ASSETS

	December 31, 2019	December 31, 2018
	(In thousands)	
Current Assets:		
Cash and cash equivalents	$ 86,540	$ 29,871
Restricted cash and cash equivalents	3,056	3,834
Investments	5,843	3,597
Accounts receivable – trade, net	56,721	71,574
Accounts receivable – other	13,426	13,374
Retainages	46,670	57,885
Contracts in progress	376,037	318,454
Other current assets	41,462	43,859
Total Current Assets	629,755	542,448
Property, Plant and Equipment, Net	580,241	439,239
Investments	7,620	7,382
Goodwill	275,502	274,082
Deferred Income Taxes	58,689	63,908
Investments in Unconsolidated Affiliates	70,116	63,746
Intangible Assets	191,392	228,676
Other Assets	95,598	35,615
TOTAL	$ 1,908,913	$ 1,655,096

See accompanying notes to consolidated financial statements.

BWX TECHNOLOGIES, INC.
CONSOLIDATED BALANCE SHEETS

LIABILITIES AND STOCKHOLDERS' EQUITY

	December 31, 2019	December 31, 2018
	(In thousands, except share and per share amounts)	
Current Liabilities:		
Current maturities of long-term debt	$ 14,711	$ 14,227
Accounts payable	170,678	114,751
Accrued employee benefits	82,640	77,386
Accrued liabilities – other	52,213	62,163
Advance billings on contracts	75,425	98,477
Accrued warranty expense	9,042	10,344
Total Current Liabilities	404,709	377,348
Long-Term Debt	809,442	753,617
Accumulated Postretirement Benefit Obligation	23,259	19,236
Environmental Liabilities	80,368	86,372
Pension Liability	172,508	173,469
Other Liabilities	14,515	9,353
Commitments and Contingencies (Note 10)		
Stockholders' Equity:		
Common stock, par value $0.01 per share, authorized 325,000,000 shares; issued 126,579,285 and 125,871,866 shares at December 31, 2019 and December 31, 2018, respectively	1,266	1,259
Preferred stock, par value $0.01 per share, authorized 75,000,000 shares; no shares issued	—	—
Capital in excess of par value	134,069	115,725
Retained earnings	1,344,383	1,166,762
Treasury stock at cost, 31,266,670 and 30,625,074 shares at December 31, 2019 and December 31, 2018, respectively	(1,068,164)	(1,037,795)
Accumulated other comprehensive income (loss)	(7,448)	(10,289)
Stockholders' Equity – BWX Technologies, Inc.	404,106	235,662
Noncontrolling interest	6	39
Total Stockholders' Equity	404,112	235,701
TOTAL	$ 1,908,913	$ 1,655,096

See accompanying notes to consolidated financial statements.

BWX TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF INCOME

	Year Ended December 31,		
	2019	2018	2017
	(In thousands, except share and per share amounts)		
Revenues	$ 1,894,920	$ 1,799,889	$ 1,687,738
Costs and Expenses:			
Cost of operations	1,361,056	1,295,876	1,191,983
Research and development costs	17,672	15,223	7,190
Losses (gains) on asset disposals and impairments, net	2,824	64	(194)
Selling, general and administrative expenses	216,771	214,092	210,148
Total Costs and Expenses	1,598,323	1,525,255	1,409,127
Equity in Income of Investees	28,924	30,343	13,612
Operating Income	325,521	304,977	292,223
Other Income (Expense):			
Interest income	942	2,479	1,405
Interest expense	(35,320)	(27,823)	(14,879)
Other – net	22,599	512	17,031
Total Other Income (Expense)	(11,779)	(24,832)	3,557
Income before Provision for Income Taxes	313,742	280,145	295,780
Provision for Income Taxes	69,065	52,840	147,415
Net Income	$ 244,677	$ 227,305	$ 148,365
Net Income Attributable to Noncontrolling Interest	(562)	(347)	(521)
Net Income Attributable to BWX Technologies, Inc.	$ 244,115	$ 226,958	$ 147,844
Earnings per Common Share:			
Basic:			
Net Income Attributable to BWX Technologies, Inc.	$ 2.56	$ 2.29	$ 1.49
Diluted:			
Net Income Attributable to BWX Technologies, Inc.	$ 2.55	$ 2.27	$ 1.47
Shares used in the computation of earnings per share (Note 17):			
Basic	95,377,414	99,062,087	99,334,472
Diluted	95,810,538	100,019,053	100,369,190

See accompanying notes to consolidated financial statements.

BWX TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year Ended December 31,		
	2019	2018	2017
	(In thousands)		
Net Income	$ 244,677	$ 227,305	$ 148,365
Other Comprehensive Income (Loss):			
Currency translation adjustments	5,263	(9,642)	6,237
Derivative financial instruments:			
Unrealized (losses) gains arising during the period, net of tax benefit (provision) of $442, $(167) and $(264), respectively	(1,586)	450	757
Reclassification adjustment for losses (gains) included in net income, net of tax (benefit) provision of $(310), $47 and $21, respectively	888	(118)	(64)
Benefit obligations:			
Unrecognized losses arising during the period, net of tax benefit of $1,274, $2,290 and $532, respectively	(4,249)	(8,444)	(987)
Recognition of benefit plan costs, net of tax benefit of $(562), $(410) and $(618), respectively	2,030	1,500	1,142
Investments:			
Unrealized gains (losses) arising during the period, net of tax provision of $(3), $(6) and $(382), respectively	418	(102)	(930)
Reclassification adjustment for gains included in net income, net of tax provision of $0, $1 and $223, respectively	—	(2)	(512)
Other Comprehensive Income (Loss)	2,764	(16,358)	5,643
Total Comprehensive Income	247,441	210,947	154,008
Comprehensive Income Attributable to Noncontrolling Interest	(562)	(347)	(521)
Comprehensive Income Attributable to BWX Technologies, Inc.	$ 246,879	$ 210,600	$ 153,487

See accompanying notes to consolidated financial statements.

BWX TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Common Stock								
	Shares	Par Value	Capital In Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock	Stockholders' Equity	Noncontrolling Interest	Total Stockholders' Equity
	(In thousands, except share and per share amounts)								
Balance December 31, 2016	124,149,609	$ 1,241	$ 22,018	$ 885,117	$ 3,811	$ (762,169)	$ 150,018	$ 392	$ 150,410
Net income	—	—	—	147,844	—	—	147,844	521	148,365
Dividends declared ($0.42 per share)	—	—	—	(42,309)	—	—	(42,309)	—	(42,309)
Currency translation adjustments	—	—	—	—	6,237	—	6,237	—	6,237
Derivative financial instruments	—	—	—	—	693	—	693	—	693
Defined benefit obligations	—	—	—	—	155	—	155	—	155
Available-for-sale investments	—	—	—	—	(1,442)	—	(1,442)	—	(1,442)
Exercises of stock options	921,040	10	21,699	—	—	—	21,709	—	21,709
Shares placed in treasury	—	—	39,907	—	—	(52,640)	(12,733)	—	(12,733)
Stock-based compensation charges	310,942	3	15,219	—	—	—	15,222	—	15,222
Distributions to noncontrolling interests	—	—	—	—	—	—	—	(550)	(550)
Balance December 31, 2017	125,381,591	$ 1,254	$ 98,843	$ 990,652	$ 9,454	$ (814,809)	$ 285,394	$ 363	$ 285,757
Recently adopted accounting standards	—	—	—	13,311	(3,385)	—	9,926	—	9,926
Net income	—	—	—	226,958	—	—	226,958	347	227,305
Dividends declared ($0.64 per share)	—	—	—	(64,159)	—	—	(64,159)	—	(64,159)
Currency translation adjustments	—	—	—	—	(9,642)	—	(9,642)	—	(9,642)
Derivative financial instruments	—	—	—	—	332	—	332	—	332
Defined benefit obligations	—	—	—	—	(6,944)	—	(6,944)	—	(6,944)
Available-for-sale investments	—	—	—	—	(104)	—	(104)	—	(104)
Exercises of stock options	210,311	2	5,002	—	—	—	5,004	—	5,004
Shares placed in treasury	—	—	—	—	—	(222,986)	(222,986)	—	(222,986)
Stock-based compensation charges	279,964	3	11,880	—	—	—	11,883	—	11,883
Distributions to noncontrolling interests	—	—	—	—	—	—	—	(671)	(671)
Balance December 31, 2018	125,871,866	$ 1,259	$ 115,725	$ 1,166,762	$ (10,289)	$ (1,037,795)	$ 235,662	$ 39	$ 235,701
Recently adopted accounting standards	—	—	—	(1,219)	77	—	(1,142)	—	(1,142)
Net income	—	—	—	244,115	—	—	244,115	562	244,677
Dividends declared ($0.68 per share)	—	—	—	(65,275)	—	—	(65,275)	—	(65,275)
Currency translation adjustments	—	—	—	—	5,263	—	5,263	—	5,263
Derivative financial instruments	—	—	—	—	(698)	—	(698)	—	(698)
Defined benefit obligations	—	—	—	—	(2,219)	—	(2,219)	—	(2,219)
Available-for-sale investments	—	—	—	—	418	—	418	—	418
Exercises of stock options	246,967	2	5,623	—	—	—	5,625	—	5,625
Shares placed in treasury	—	—	—	—	—	(30,369)	(30,369)	—	(30,369)
Stock-based compensation charges	460,452	5	12,721	—	—	—	12,726	—	12,726
Distributions to noncontrolling interests	—	—	—	—	—	—	—	(595)	(595)
Balance December 31, 2019	126,579,285	$ 1,266	$ 134,069	$ 1,344,383	$ (7,448)	$ (1,068,164)	$ 404,106	$ 6	$ 404,112

See accompanying notes to consolidated financial statements.

BWX TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2019	2018	2017
	(In thousands)		
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net Income	$ 244,677	$ 227,305	$ 148,365
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	61,722	60,097	56,557
Income of investees, net of dividends	(7,969)	(8,106)	2,520
Provision for deferred taxes	3,794	17,446	93,461
Recognition of losses for pension and postretirement plans	6,222	34,554	12,823
Stock-based compensation expense	12,726	11,883	15,222
Other, net	963	(2,238)	(194)
Changes in assets and liabilities, net of effects from acquisitions:			
Accounts receivable	15,605	37,282	(34,459)
Accounts payable	44,592	1,888	(7,476)
Retainages	11,477	24,911	(8,344)
Contracts in progress and advance billings on contracts	(78,645)	(34,012)	35,272
Income taxes	(3,833)	(23,257)	15,124
Accrued and other current liabilities	(14,135)	11,596	(26,610)
Pension liabilities, accrued postretirement benefit obligations and employee benefits	(8,822)	(187,425)	(79,311)
Other, net	(9,006)	(2,634)	(990)
NET CASH PROVIDED BY OPERATING ACTIVITIES	279,368	169,290	221,960
CASH FLOWS FROM INVESTING ACTIVITIES:			
Purchases of property, plant and equipment	(182,124)	(109,338)	(96,880)
Acquisition of businesses	—	(212,993)	(715)
Purchases of securities	(4,208)	(4,520)	(3,237)
Sales and maturities of securities	5,874	3,933	12,852
Investments, net of return of capital, in equity method investees	255	(9,059)	(2,789)
Other, net	208	5,253	1,088
NET CASH USED IN INVESTING ACTIVITIES	(179,995)	(326,724)	(89,681)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Borrowings of long-term debt	699,600	1,158,800	109,400
Repayments of long-term debt	(654,095)	(876,206)	(137,053)
Payment of debt issuance costs	—	(9,443)	—
Repurchases of common shares	(20,000)	(214,759)	—
Dividends paid to common shareholders	(65,374)	(63,821)	(42,043)
Exercises of stock options	4,446	3,573	17,117
Cash paid for shares withheld to satisfy employee taxes	(9,190)	(6,796)	(8,049)
Other, net	900	(671)	(550)
NET CASH USED IN FINANCING ACTIVITIES	(43,713)	(9,323)	(61,178)
EFFECTS OF EXCHANGE RATE CHANGES ON CASH	332	(9,979)	7,443
TOTAL INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS AND RESTRICTED CASH AND CASH EQUIVALENTS	55,992	(176,736)	78,544
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH AND CASH EQUIVALENTS AT BEGINNING OF PERIOD	36,408	213,144	134,600
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH AND CASH EQUIVALENTS AT END OF PERIOD	$ 92,400	$ 36,408	$ 213,144
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:			
Cash paid during the period for:			
Interest	$ 39,670	$ 16,993	$ 14,252
Income taxes (net of refunds)	$ 70,056	$ 58,715	$ 38,425
SCHEDULE OF NON-CASH INVESTING ACTIVITY:			
Accrued capital expenditures included in accounts payable	$ 39,528	$ 29,470	$ 8,454

See accompanying notes to consolidated financial statements.

BWX TECHNOLOGIES, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2019

NOTE 1 – BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES

We have presented the consolidated financial statements of BWX Technologies, Inc. ("BWXT") in U.S. dollars in accordance with accounting principles generally accepted in the United States ("GAAP").

We use the equity method to account for investments in entities that we do not control, but over which we have the ability to exercise significant influence. We generally refer to these entities as "joint ventures." We have eliminated all intercompany transactions and accounts. We have reclassified certain amounts previously reported to conform to the presentation at December 31, 2019 and for the year ended December 31, 2019. On June 30, 2015, we completed the spin-off of our former Power Generation business (the "spin-off") into an independent, publicly traded company named Babcock & Wilcox Enterprises, Inc. ("BWE"). We present the notes to our consolidated financial statements on the basis of continuing operations, unless otherwise stated.

Unless the context otherwise indicates, "we," "us" and "our" mean BWXT and its consolidated subsidiaries.

Reportable Segments

We operate in three reportable segments: Nuclear Operations Group, Nuclear Power Group and Nuclear Services Group. Our reportable segments are further described as follows:

- Our Nuclear Operations Group segment manufactures naval nuclear reactors for the U.S. Naval Nuclear Propulsion Program for use in submarines and aircraft carriers. Through this segment, we own and operate manufacturing facilities located in Lynchburg, Virginia; Barberton, Ohio; Mount Vernon, Indiana; Euclid, Ohio; and Erwin, Tennessee. The Lynchburg operations fabricate fuel-bearing precision components that range in weight from a few grams to hundreds of tons. In-house capabilities also include wet chemistry uranium processing, advanced heat treatment to optimize component material properties and a controlled, clean-room environment with the capacity to assemble railcar-size components. The Barberton and Mount Vernon locations specialize in the design and manufacture of heavy components inclusive of development and fabrication activities for submarine missile launch tubes. The Euclid facility fabricates electro-mechanical equipment and performs design, manufacturing, inspection, assembly and testing activities. Fuel for the naval nuclear reactors is provided by Nuclear Fuel Services, Inc. ("NFS"), one of our wholly owned subsidiaries. Located in Erwin, NFS also downblends Cold War-era government stockpiles of high-enriched uranium into material suitable for further processing into commercial nuclear reactor fuel.
- Our Nuclear Power Group segment fabricates commercial nuclear steam generators, nuclear fuel, fuel handling systems, pressure vessels, reactor components, heat exchangers, tooling delivery systems and other auxiliary equipment, including containers for the storage of spent nuclear fuel and other high-level waste, for nuclear utility customers. BWXT has supplied the nuclear industry with more than 1,300 large, heavy components worldwide and is the only commercial heavy nuclear component manufacturer in North America. This segment also provides specialized engineering services that include structural component design, 3-D thermal-hydraulic engineering analysis, weld and robotic process development, electrical and controls engineering and metallurgy and materials engineering. In addition, this segment offers in-plant inspection, maintenance and modification services for nuclear steam generators, heat exchangers, reactors, fuel handling systems and balance of plant equipment, as well as specialized non-destructive examination and tooling/repair solutions. This segment is also a leading global manufacturer and supplier of critical medical radioisotopes and radiopharmaceuticals for research, diagnostic and therapeutic uses.
- Our Nuclear Services Group segment provides various services to the U.S. Government and the commercial nuclear industry. Services provided to the U.S. Government include nuclear materials management and operation, environmental management and administrative and operating services for various U.S. Government-owned facilities. These services are provided to the U.S. Department of Energy ("DOE"), including the National Nuclear Security Administration ("NNSA"), the Office of Nuclear Energy, the Office of Science and the Office of Environmental Management, and NASA. Through this segment we deliver services and management solutions to nuclear and high-consequence operations. A significant portion of this segment's operations are conducted through joint ventures.

  Our Nuclear Services Group segment also provides inspection and maintenance services primarily for the U.S. commercial nuclear industry including steam generator and heat exchanger inspection services, high pressure water lancing, non-destructive examination and customized tooling solutions. This segment also develops technology for a variety of applications, including advanced nuclear power sources, and offers complete advanced nuclear fuel and reactor design and engineering, licensing and manufacturing services for new advanced nuclear reactors.

See Note 15 for financial information about our segments.

Recently Adopted Accounting Standards

On January 1, 2019, we adopted the update to the Financial Accounting Standards Board ("FASB") Topic *Leases*. This update requires that a lessee recognize on its balance sheets the assets and liabilities for all leases with lease terms of more than 12 months, along with additional qualitative and quantitative disclosures. We adopted this update using the modified retrospective method, which resulted in the recognition of right-of-use assets totaling $45.1 million and lease liabilities totaling $11.9 million. The difference between the right-of-use assets and lease liabilities of $33.2 million was primarily the result of reclassifications from Intangible Assets of favorable leases related to recent acquisitions. In addition, we elected the package of practical expedients permitted under the transition guidance, which allowed us to carry forward our historical lease classifications, among other things. The adoption of the provisions in this update did not have an impact on our consolidated statements of income or cash flows.

Use of Estimates

We use estimates and assumptions to prepare our financial statements in conformity with GAAP. Some of our more significant estimates include estimates of costs to complete long-term contracts and the associated revenues, estimates of the fair value of acquired intangible and other assets, estimates we make in selecting assumptions related to the valuations of our pension and postretirement benefit plans, including the selection of our discount rates, mortality and expected rates of return on our pension plan assets and estimates we make in evaluating our asset retirement obligations. These estimates and assumptions affect the amounts we report in our financial statements and accompanying notes. Our actual results could differ from these estimates. Variances could result in a material effect on our financial condition and results of operations in future periods.

Contracts and Revenue Recognition

We generally recognize contract revenues and related costs over time for individual performance obligations based on a cost-to-cost method in accordance with FASB Topic *Revenue from Contracts with Customers*. We recognize estimated contract revenue and resulting income based on the measurement of the extent of progress toward completion as a percentage of the total project. Certain costs may be excluded from the cost-to-cost method of measuring progress, such as significant costs for uninstalled materials, if such costs do not depict our performance in transferring control of goods or services to the customer. We review contract price and cost estimates periodically as the work progresses and reflect adjustments proportionate to the percentage-of-completion in income in the period when those estimates are revised. Certain of our contracts recognize revenue at a point in time, and revenue on these contracts is recognized when control transfers to the customer. The majority of our revenue that is recognized at a point in time is related to parts and certain medical radioisotopes and radiopharmaceuticals in our Nuclear Power Group segment. For all contracts, if a current estimate of total contract cost indicates a loss on a contract, the projected loss is recognized in full when determined.

On January 1, 2019, certain of our joint ventures within our Nuclear Services Group segment adopted the provisions of FASB Topic *Revenue from Contracts with Customers*. This resulted in a decrease to Investments in Unconsolidated Affiliates of $1.1 million with an offsetting decrease to Retained earnings on our consolidated balance sheet.

Warranty Expense

We accrue estimated warranty expense, included in Cost of operations on our consolidated statements of income, to satisfy contractual warranty requirements when we recognize the associated revenue on the related contracts. In addition, we record specific provisions or reductions where we expect the actual warranty costs to significantly differ from the accrued estimates. Such changes could have a material effect on our consolidated financial condition, results of operations and cash flows.

The following summarizes the changes in the carrying amount of Accrued warranty expense:

	Year Ended December 31,		
	2019	2018	2017
	(In thousands)		
Balance at beginning of period	$ 10,344	$ 13,428	$ 11,477
Additions	2,232	1,494	3,783
Expirations and other changes [1]	(2,728)	(3,367)	(2,213)
Payments	(1,065)	(663)	(70)
Translation	259	(548)	451
Balance at end of period	$ 9,042	$ 10,344	$ 13,428

(1) Includes discounts provided to customers in satisfaction of warranty obligations totaling $1.2 million in each of the years ended December 31, 2019, 2018 and 2017.

Stock-Based Compensation

We expense stock-based compensation in accordance with FASB Topic *Compensation – Stock Compensation.* Under this topic, the fair value of equity-classified awards, such as restricted stock, performance shares and stock options, is determined on the date of grant and is not remeasured. The fair value of liability-classified awards, such as cash-settled stock appreciation rights, restricted stock units and performance units, is determined on the date of grant and is remeasured at the end of each reporting period through the date of settlement. Grant date fair values for restricted stock, restricted stock units, performance shares and performance units are determined using the closing price of our common stock on the date of grant.

Under the provisions of this FASB topic, we recognize expense for all share-based awards granted on a straight-line basis over the requisite service periods of the awards, which is generally equivalent to the vesting term. This topic requires compensation expense to be recognized such that compensation expense is recorded only for those awards expected to vest. As a result, we periodically review the amount of actual forfeitures and record any adjustments deemed necessary each reporting period. We also recognize excess tax benefits in our provision for income taxes. These excess tax benefits result from tax deductions in excess of the cumulative compensation expense recognized for options exercised and other equity-classified awards.

Additionally, this FASB topic amended FASB Topic *Statement of Cash Flows* to require excess tax benefits to be classified along with other income tax cash flows as an operating activity. In addition, cash flows related to employee taxes paid for withheld shares are classified as a financing activity.

See Note 9 for a further discussion of stock-based compensation.

Research and Development

Our research and development activities are related to the development and improvement of new and existing products and equipment, as well as conceptual and engineering evaluation for translation into practical applications. We charge the costs of research and development unrelated to specific contracts as incurred. Contractual arrangements for customer-sponsored research and development can vary on a case-by-case basis and include contracts, cooperative agreements and grants.

Research and development activities totaled $66.9 million, $63.4 million and $50.4 million in the years ended December 31, 2019, 2018 and 2017, respectively. This includes amounts paid for by our customers of $49.2 million, $48.2 million and $43.2 million, in the years ended December 31, 2019, 2018 and 2017, respectively.

Capitalization of Interest Cost

We capitalize interest in accordance with FASB Topic *Interest*. We incurred total interest of $41.4 million, $31.5 million and $16.5 million in the years ended December 31, 2019, 2018 and 2017, respectively, of which we capitalized $6.1 million, $3.7 million and $1.6 million in the years ended December 31, 2019, 2018 and 2017, respectively.

Income Taxes

Income tax expense for federal, foreign, state and local income taxes is calculated on pre-tax income based on current tax law and includes the cumulative effect of any changes in tax rates from those used previously in determining deferred tax assets and liabilities. We record a valuation allowance to reduce our deferred tax assets to the amount that is more likely than not to be realized. We assess deferred taxes and the adequacy of the valuation allowance on a quarterly basis. In the ordinary course of business, there is inherent uncertainty in quantifying our income tax positions. We assess our income tax positions and record tax benefits for all years subject to examination based upon management's evaluation of the facts, circumstances and information available at the reporting date. For those tax positions where it is more likely than not that a tax benefit will be sustained, we have recorded the largest amount of tax benefit with a greater than 50% likelihood of being realized upon ultimate settlement with a taxing authority that has full knowledge of all relevant information. For those income tax positions where it is not more likely than not that a tax benefit will be sustained, no tax benefit has been recognized in the financial statements. We record interest and penalties (net of any applicable tax benefit) related to income taxes as a component of Provision for Income Taxes on our consolidated statements of income.

We would be subject to withholding taxes if we were to distribute earnings from certain foreign subsidiaries, and unrecognized deferred income tax liabilities, including withholding taxes, would be payable upon distribution of these earnings. We consider the earnings of our non-U.S. subsidiaries to be permanently reinvested.

Earnings Per Share

We have computed earnings per common share on the basis of the weighted-average number of common shares, and, where dilutive, common share equivalents, outstanding during the indicated periods. We issue a number of forms of stock-based compensation periodically, including incentive and non-qualified stock options, restricted stock, restricted stock units and performance shares and performance units, subject to satisfaction of specific performance goals. We include the shares applicable to these plans in our computation of diluted earnings per share when related performance criteria have been met.

Cash and Cash Equivalents and Restricted Cash and Cash Equivalents

Our cash equivalents are highly liquid investments with maturities of three months or less when we purchase them.

We record cash and cash equivalents as restricted when we are unable to freely use such cash and cash equivalents for our general operating purposes. At December 31, 2019, we had restricted cash and cash equivalents totaling $5.9 million, $2.8 million of which was held for future decommissioning of facilities (which is included in Other Assets on our consolidated balance sheets) and $3.1 million of which was held to meet reinsurance reserve requirements of our captive insurer.

The following table provides a reconciliation of cash and cash equivalents and restricted cash and cash equivalents on our consolidated balance sheets to the totals presented on our consolidated statements of cash flows:

	December 31,	
	2019	2018
	(In thousands)	
Cash and cash equivalents	$ 86,540	$ 29,871
Restricted cash and cash equivalents	3,056	3,834
Restricted cash and cash equivalents included in Other Assets	2,804	2,703
Total cash and cash equivalents and restricted cash and cash equivalents as presented on our consolidated statements of cash flows	$ 92,400	$ 36,408

Investments

Our investment portfolio consists primarily of U.S. Government and agency securities, corporate bonds and equities and mutual funds. Our debt securities are carried at fair value and are either classified as trading, with unrealized gains and losses reported in earnings, or as available-for-sale, with the unrealized gains and losses, net of tax, reported as a component of Accumulated other comprehensive income. Our equity securities are carried at fair value with the unrealized gains and losses reported in earnings. We classify investments available for current operations in the consolidated balance sheets as current assets, while we classify investments held for long-term purposes as non-current assets. We adjust the amortized cost of debt securities for amortization of premiums and accretion of discounts to maturity. That amortization is included in Interest income. We include realized gains and losses on our investments in Other – net. The cost of securities sold is based on the specific identification method. We include interest on securities in Interest income.

Inventories

We carry our inventory at the lower of cost or net realizable value using either the weighted average or first-in, first-out methods. At December 31, 2019 and 2018, Other current assets included inventories totaling $17.1 million and $16.0 million, respectively, consisting entirely of raw materials and supplies.

Property, Plant and Equipment

We carry our property, plant and equipment at depreciated cost, less any impairment provisions. We depreciate our property, plant and equipment using the straight-line method over estimated economic useful lives of eight to 40 years for buildings and three to 14 years for machinery and equipment. Our depreciation expense was $51.0 million, $48.6 million and $47.3 million for the years ended December 31, 2019, 2018 and 2017, respectively. We expense the costs of maintenance, repairs and renewals that do not materially prolong the useful life of an asset as we incur them.

Property, plant and equipment is stated at cost and is set forth below:

	December 31,	
	2019	2018
	(In thousands)	
Land	$ 8,919	$ 8,784
Buildings	221,462	205,552
Machinery and equipment	775,997	770,876
Property under construction	265,715	147,180
	1,272,093	1,132,392
Less: Accumulated depreciation	691,852	693,153
Net Property, Plant and Equipment	$ 580,241	$ 439,239

Goodwill

Goodwill represents the excess of the cost of our acquired businesses over the fair value of the net assets acquired. We perform testing of goodwill for impairment annually. We may elect to perform a qualitative test when we believe that there is sufficient excess fair value over carrying value based on our most recent quantitative assessment, adjusted for relevant events and circumstances that could affect fair value during the current year. If we conclude based on this assessment that it is more likely than not that the reporting unit is not impaired, we do not perform a quantitative impairment test. In all other circumstances, we utilize a two-step quantitative impairment test to identify potential goodwill impairment and measure the amount of any goodwill impairment. The first step of the test compares the fair value of a reporting unit with its carrying amount, including goodwill. If the carrying amount of a reporting unit exceeds its fair value, the second step of the goodwill impairment test is performed to measure the amount of the impairment loss, if any. The second step compares the implied fair value of the reporting unit's goodwill with the carrying amount of that goodwill.

The following summarizes the changes in the carrying amount of Goodwill:

	Nuclear Operations Group	Nuclear Power Group	Nuclear Services Group	Total
	(In thousands)			
Balance at December 31, 2017	$ 110,939	$ 62,392	$ 45,000	$ 218,331
Acquisition of the MI business (Note 2)	—	62,495	—	62,495
Translation	—	(6,744)	—	(6,744)
Balance at December 31, 2018	$ 110,939	$ 118,143	$ 45,000	$ 274,082
Translation and other [(1)]	—	1,420	—	1,420
Balance at December 31, 2019	$ 110,939	$ 119,563	$ 45,000	$ 275,502

(1) Includes an adjustment of $(3.2) million, net of tax, to correct the business combination accounting for our 2016 acquisition.

Investments in Unconsolidated Affiliates

We use the equity method of accounting for affiliates in which we are able to exert significant influence. Currently, all of our material investments in affiliates that are not consolidated are recorded using the equity method. Affiliates in which we are unable to exert significant influence are carried at fair value.

Intangible Assets

Intangible assets are recognized at fair value when acquired. Intangible assets with definite lives are amortized to Costs and Expenses using the straight-line method over their estimated useful lives and tested for impairment when events or changes in circumstances indicate that their carrying amounts may not be recoverable. Intangible assets with indefinite lives are not amortized and are subject to annual impairment testing. We may elect to perform a qualitative assessment when testing indefinite-lived intangible assets for impairment to determine whether events or circumstances affecting significant inputs related to the most recent quantitative evaluation have occurred, indicating that it is more likely than not that the indefinite-lived intangible asset is impaired. Otherwise, we test indefinite-lived intangible assets for impairment by quantitatively determining the fair value of the indefinite-lived intangible asset and comparing the fair value of the intangible asset to its carrying amount. If the carrying amount of the intangible asset exceeds its fair value, we recognize impairment for the amount of the difference.

Our Intangible Assets were as follows:

	December 31,		
	2019	2018	2017
	(In thousands)		
Amortized intangible assets:			
Gross cost:			
Technical support agreement	$ 67,423	$ 64,749	$ —
Customer relationships	39,555	38,771	30,339
Unpatented technology	36,785	35,327	8,379
Favorable operating leases	—	35,161	8,832
CNSC class 1B nuclear facility license	26,002	24,971	27,055
Acquired backlog	—	8,079	13,527
Patented technology	765	734	796
Tradename	—	—	1,500
All other	2,200	2,200	2,200
Total	$ 172,730	$ 209,992	$ 92,628
Accumulated amortization:			
Technical support agreement	$ (4,153)	$ (1,173)	$ —
Customer relationships	(13,841)	(11,767)	(11,505)
Unpatented technology	(2,805)	(1,194)	(4,456)
Favorable operating leases	—	(1,295)	(459)
CNSC class 1B nuclear facility license	(2,635)	(1,698)	(938)
Acquired backlog	—	(6,581)	(6,113)
Patented technology	(212)	(136)	(75)
Tradename	—	—	(1,425)
All other	(1,522)	(1,302)	(1,082)
Total	$ (25,168)	$ (25,146)	$ (26,053)
Net amortized intangible assets	$ 147,562	$ 184,846	$ 66,575
Unamortized intangible assets:			
NRC category 1 license	$ 43,830	$ 43,830	$ 43,830

The following summarizes the changes in the carrying amount of Intangible Assets:

	Year Ended December 31,		
	2019	2018	2017
	(In thousands)		
Balance at beginning of period	$ 228,676	$ 110,405	$ 114,748
Acquisitions (Note 2)	—	139,257	746
Amortization expense	(9,128)	(11,490)	(9,210)
Reclassification of right-of-use assets	(33,866)	—	—
Translation	5,710	(9,496)	4,121
Balance at end of period	$ 191,392	$ 228,676	$ 110,405

Estimated amortization expense for the next five fiscal years is as follows (amounts in thousands):

Year Ended December 31,	Amount
2020	$ 7,881
2021	$ 7,881
2022	$ 7,881
2023	$ 7,679
2024	$ 7,661

Leases

We lease certain manufacturing facilities, office space and equipment under operating leases with terms of one to 20 years. Certain of the leases include options to renew for periods of one to 10 years. We include lease options in our determination of the right-of-use asset and lease liability if it is reasonably certain that we will exercise one or more of the options. Leases with initial terms of 12 months or less are excluded from our right-of-use assets and lease liabilities. Our right-of-use assets are included in Other Assets on our consolidated balance sheet. Our current lease liabilities are included in Accrued liabilities – other, and our noncurrent lease liabilities are included in Other Liabilities on our consolidated balance sheet. We use discount rates based on our incremental borrowing rate as most of our leases do not provide an implicit rate that can be readily determined.

During the year ended December 31, 2019, we recognized lease expense of $8.1 million, which included $1.6 million related to the amortization of favorable lease agreements, and paid cash of $7.0 million for our operating leases. During the years ended December 31, 2018 and 2017, we recognized lease expense of $6.2 million and $5.1 million, respectively. At December 31, 2019, our weighted-average remaining lease term was 4.3 years, and for the purpose of measuring the present value of our lease liabilities, the weighted-average discount rate was 4.96%. The maturities of our lease liabilities at December 31, 2019 were as follows (amounts in thousands):

2020	$ 3,505
2021	1,912
2022	1,198
2023	553
2024	172
Thereafter	1,069
Total lease payments	$ 8,409
Less: Interest	(846)
Present value of lease liabilities (1)	$ 7,563

(1) Includes current lease liabilities of $3.4 million.

At December 31, 2019, our right-of-use assets totaled $41.0 million. The difference between the right-of-use assets and lease liabilities was primarily the result of our adoption of the update to the FASB Topic *Leases* on January 1, 2019, which resulted in reclassifications from Intangible Assets of favorable leases related to recent acquisitions.

Future minimum payments required under operating leases that had initial or remaining noncancellable lease terms in excess of one year at December 31, 2018 were as follows (amounts in thousands):

2019	$	5,650
2020	$	2,655
2021	$	1,969
2022	$	1,216
2023	$	511
Thereafter	$	1,231

Deferred Debt Issuance Costs

We have included deferred debt issuance costs in the consolidated balance sheets as a direct deduction from the carrying amount of our debt liability. We amortize deferred debt issuance costs as interest expense over the life of the related debt. The following summarizes the changes in the carrying amount of these assets:

	Year Ended December 31,		
	2019	2018	2017
		(In thousands)	
Balance at beginning of period	$ 9,583	$ 4,202	$ 5,892
Additions	—	9,443	—
Interest expense [(1)]	(1,577)	(4,062)	(1,690)
Balance at end of period	$ 8,006	$ 9,583	$ 4,202

(1) Includes the recognition of prior deferred debt issuance costs associated with a former credit facility of $2.4 million for the year ended December 31, 2018.

Pension Plans and Postretirement Benefits

We sponsor various defined benefit pension and postretirement benefit plans covering certain employees of our U.S. and Canadian subsidiaries. We utilize actuarial valuations to calculate the cost and benefit obligations of our pension and postretirement benefits. The actuarial valuations utilize significant assumptions in the determination of our benefit cost and obligations, including assumptions regarding discount rates, expected returns on plan assets, mortality and health care cost trends. We determine our discount rate based on a yield curve comprised of rates of return on high-quality, fixed-income investments currently available and expected to be available during the period to maturity of our pension and postretirement benefit plan obligations. The expected rate of return on plan assets assumption is based on capital market assumptions of the long-term expected returns for the investment mix of assets currently in the portfolio. The expected rate of return on plan assets is determined to be the weighted-average of the nominal returns based on the weightings of the classes within the total asset portfolio. Expected health care cost trends represent expected annual rates of change in the cost of health care benefits and are estimated based on analysis of health care cost inflation.

The components of benefit cost related to service cost, interest cost, expected return on plan assets and prior service cost amortization are recorded on a quarterly basis based on actuarial assumptions. In the fourth quarter of each year, or as interim remeasurements are required, we immediately recognize net actuarial gains and losses in earnings as a component of net periodic benefit cost. Recognized net actuarial gains and losses consist primarily of our reported actuarial gains and losses and the difference between the actual return on plan assets and the expected return on plan assets.

We recognize the funded status of each plan as either an asset or a liability in the consolidated balance sheets. The funded status is the difference between the fair value of plan assets and the present value of its benefit obligation, determined on a plan-by-plan basis. Our pension plan assets can include assets that are difficult to value. See Note 7 for detailed information regarding our plan assets.

Asset Retirement Obligations and Environmental Cleanup Costs

We accrue for future decommissioning of our nuclear facilities that will permit the release of these facilities to unrestricted use at the end of each facility's service life, which is a requirement of our licenses from the U.S. Nuclear Regulatory Commission ("NRC") and the Canadian Nuclear Safety Commission ("CNSC"). In accordance with the FASB Topic *Asset Retirement and Environmental Obligations*, we record the fair value of a liability for an asset retirement obligation in the period in which it is incurred. When we initially record such a liability, we capitalize a cost by increasing the carrying amount of the related long-lived asset. When we acquire a business that has an asset retirement obligation, the asset retirement obligation is recognized at fair value without a corresponding increase to the related long-lived asset. Over time, the liability is accreted to its present value each period and the capitalized cost is depreciated over the useful life of the related asset. Upon settlement of a liability, we will settle the obligation for its recorded amount or incur a gain or loss. This topic applies to environmental liabilities associated with assets that we currently operate and are obligated to remove from service. For environmental liabilities associated with assets that we no longer operate, we have accrued amounts based on the estimated costs of cleanup activities for which we are responsible, net of any cost-sharing arrangements. We adjust the estimated costs as further information develops or circumstances change. An exception to this accounting treatment relates to the work we perform for two facilities for which the U.S. Government is obligated to pay substantially all of the decommissioning costs.

Substantially all of our asset retirement obligations relate to the remediation of our nuclear analytical laboratory and the NFS facility in our Nuclear Operations Group segment as well as certain facilities in our Nuclear Power Group segment. The following summarizes the changes in the carrying amount of these liabilities:

	Year Ended December 31,		
	2019	2018	2017
	(In thousands)		
Balance at beginning of period	$ 90,822	$ 78,036	$ 71,899
Costs incurred	(10,380)	(1,011)	(2)
Additions/adjustments	(5,030)	8,000	—
Acquisitions	—	2,062	—
Accretion	5,379	5,523	4,728
Translation and other [(1)]	(3,503)	(1,788)	1,411
Balance at end of period [(2)]	$ 77,288	$ 90,822	$ 78,036

(1) Includes an adjustment of $(4.3) million to correct the business combination accounting for our 2016 acquisition.

(2) Includes current asset retirement obligations of $5.7 million, $13.8 million and $8.1 million at December 31, 2019, 2018 and 2017, respectively.

Self-Insurance

We have a wholly owned insurance subsidiary that provides employer's liability, general and automotive liability and primary workers' compensation insurance and, from time to time, builder's risk insurance (within certain limits) to our companies. We may also, in the future, have this insurance subsidiary accept other risks that we cannot or do not wish to transfer to outside insurance companies. Included in Other Liabilities on our consolidated balance sheets are reserves for self-insurance totaling $5.2 million and $5.6 million at December 31, 2019 and 2018, respectively.

Loss Contingencies

We accrue liabilities for loss contingencies when it is probable that a liability has been incurred and the amount of loss is reasonably estimable. We provide disclosure when there is a reasonable possibility that the ultimate loss will exceed the recorded provision or if such probable loss is not reasonably estimable. Due to the nature of our business, we are, from time to time, involved in investigations, litigation, disputes or claims related to our business activities, as discussed in Note 10. Our losses are typically resolved over long periods of time and are often difficult to assess and estimate due to, among other reasons, the possibility of multiple actions by third parties; the attribution of damages, if any, among multiple defendants; plaintiffs, in most cases involving personal injury claims, do not specify the amount of damages claimed; the discovery process may take multiple years to complete; during the litigation process, it is common to have multiple complex unresolved procedural and substantive issues; the potential availability of insurance and indemnity coverages; the wide-ranging outcomes reached in similar cases, including the variety of damages awarded; the likelihood of settlements for *de minimus* amounts prior to trial; the likelihood of success at trial; and the likelihood of success on appeal. Consequently, it is possible future earnings could be affected by changes in our assessments of the probability that a loss has been incurred in a material pending litigation against us and/or changes in our estimates related to such matters.

Accumulated Other Comprehensive Income

The components of Accumulated other comprehensive income included in Stockholders' Equity are as follows:

	December 31,	
	2019	2018
	(In thousands)	
Currency translation adjustments	$ 8,769	$ 3,506
Net unrealized gain on derivative financial instruments	64	685
Unrecognized prior service cost on benefit obligations	(16,614)	(14,395)
Net unrealized gain (loss) on available-for-sale investments	333	(85)
Accumulated other comprehensive income	$ (7,448)	$ (10,289)

Upon adopting the FASB update to the Topic *Derivatives*, we reclassified $0.1 million from Retained earnings to Accumulated other comprehensive income on January 1, 2019.

The amounts reclassified out of Accumulated other comprehensive income by component and the affected consolidated statements of income line items are as follows:

	Year Ended December 31,			
	2019	2018	2017	
Accumulated Other Comprehensive Income (Loss) Component Recognized	(In thousands)			Line Item Presented
Realized (loss) gain on derivative financial instruments	$ (132)	$ (242)	$ 169	Revenues
	(1,066)	407	(84)	Cost of operations
	(1,198)	165	85	Total before tax
	310	(47)	(21)	Provision for Income Taxes
	$ (888)	$ 118	$ 64	Net Income
Amortization of prior service cost on benefit obligations	$ (2,592)	$ (1,910)	$ (1,760)	Other – net
	562	410	618	Provision for Income Taxes
	$ (2,030)	$ (1,500)	$ (1,142)	Net Income
Realized gains on investments	$ —	$ 3	$ 735	Other – net
	—	(1)	(223)	Provision for Income Taxes
	$ —	$ 2	$ 512	Net Income
Total reclassification for the period	$ (2,918)	$ (1,380)	$ (566)	

Foreign Currency Translation

We translate assets and liabilities of our foreign operations into U.S. dollars at current exchange rates, and we translate income statement items at average exchange rates for the periods presented. We record adjustments resulting from the translation of foreign currency financial statements as a component of Accumulated other comprehensive income. We report foreign currency transaction gains and losses in income. We have included in Other – net transaction gains (losses) of $1.0 million, $2.0 million and $(0.7) million for the years ended December 31, 2019, 2018 and 2017, respectively.

Derivative Financial Instruments

Our operations give rise to exposure to market risks from changes in foreign currency exchange ("FX") rates. We use derivative financial instruments, primarily FX forward contracts, to reduce the impact of changes in FX rates on our operating results. We use these instruments to hedge our exposure associated with revenues or costs on our long-term contracts and other transactions that are denominated in currencies other than our operating entities' functional currencies. We do not hold or issue derivative financial instruments for trading or other speculative purposes.

We enter into derivative financial instruments primarily as hedges of certain firm purchase and sale commitments denominated in foreign currencies. We record these contracts at fair value on our consolidated balance sheets. Based on the hedge designation at inception of the contract, the related gains and losses on these contracts are deferred in stockholders' equity as a component of Accumulated other comprehensive income until the hedged item is recognized in earnings. The gain or loss on a derivative instrument not designated as a hedging instrument is immediately recognized in earnings. Gains and losses on derivative financial instruments that require immediate recognition are included as a component of Other – net on our consolidated statements of income.

We have designated the majority of our FX forward contracts that qualify for hedge accounting as cash flow hedges. The hedged risk is the risk of changes in functional-currency-equivalent cash flows attributable to changes in FX spot rates of forecasted transactions primarily related to long-term contracts. We exclude from our assessment of effectiveness the portion of the fair value of the FX forward contracts attributable to the difference between FX spot rates and FX forward rates. At December 31, 2019, we had deferred approximately $0.1 million of net gains on these derivative financial instruments. Assuming market conditions continue, we expect to recognize the majority of this amount in the next twelve months. For the year ended December 31, 2018, we recognized $4.7 million of gains associated with FX forward contracts not designated as hedges, which we recorded as an investing activity in the consolidated statement of cash flows.

At December 31, 2019, our derivative financial instruments consisted of FX forward contracts with a total notional value of $68.1 million with maturities extending to December 2021. These instruments consist primarily of FX forward contracts to purchase or sell Canadian dollars and Euros. We are exposed to credit-related losses in the event of non-performance by counterparties to derivative financial instruments. We attempt to mitigate this risk by using major financial institutions with high credit ratings. Our counterparties to derivative financial instruments have the benefit of the same collateral arrangements and covenants as described under our credit facility.

New Accounting Standards

In June 2016, the FASB issued Topic *Financial Instruments – Credit Losses*. This update requires entities to recognize expected credit losses immediately in the financial statements. We expect to adopt the provisions of this update on January 1, 2020. We do not expect the adoption of this update to have a material impact on our financial statements.

In January 2017, the FASB issued an update to the Topic *Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*. This update eliminates the two-step process that requires the identification of a potential impairment and a separate analysis to measure the amount of the impairment. Our annual assessment of goodwill impairment will be now determined by comparing the fair value of a reporting unit with its carrying amount. We expect to adopt the provisions of this update on January 1, 2020. We do not expect the adoption of this update to have a material impact on our financial statements.

NOTE 2 – ACQUISITIONS

Laker Energy Products Ltd.

On January 2, 2020, our subsidiary BWXT Canada Ltd. acquired Laker Energy Products Ltd. ("Laker Energy Products") for CAD 21.1 million ($16.2 million U.S. dollar equivalent), subject to contingent consideration of up to an additional CAD 12.0 million. Laker Energy Products is a global supplier of nuclear-grade materials and precisely machined components for CANDU nuclear power utilities and employs approximately 140 personnel. Laker Energy Products will be reported as part of our Nuclear Power Group segment.

Nordion Medical Isotope Business

On July 30, 2018, our subsidiary BWXT ITG Canada, Inc. acquired the Nordion medical isotope business (the "MI business") for $213.0 million. The MI business is a leading global manufacturer and supplier of critical medical radioisotopes and radiopharmaceuticals for research, diagnostic and therapeutic uses. Its customers include radiopharmaceutical companies, hospitals and radiopharmacies. Its primary operations are located in Kanata, Ontario, Canada and Vancouver, British Columbia, Canada. This acquisition added approximately 150 highly trained and experienced personnel, two specialized production centers and a uniquely licensed infrastructure. In addition to the growing portfolio of radioisotope products we acquired, the MI business will be the platform from which we plan to launch our Molybdenum-99 product line and a number of future radioisotope-based imaging, diagnostic and therapeutic products. This business is reported as part of our Nuclear Power Group segment.

The purchase price of the acquisition has been allocated among assets acquired and liabilities assumed at fair value, with the excess purchase price recorded as goodwill. Our purchase price allocation is as follows (amounts in thousands):

Accounts receivable – trade	$	7,732
Contracts in progress		51
Inventories		2,113
Other current assets		97
Property, plant and equipment		12,948
Goodwill		62,495
Deferred Income Taxes		3,006
Intangible assets		139,257
Total assets acquired	$	227,699
Accounts payable	$	654
Accrued employee benefits		579
Accrued liabilities – other		1,665
Environmental liabilities		2,062
Pension liability		9,746
Total liabilities assumed	$	14,706
Net assets acquired	$	212,993
Amount of tax deductible goodwill	$	53,693

The intangible assets included above consist of the following (dollar amounts in thousands):

		Amount	Amortization Period
Technical support agreement	$	67,500	23 years
Unpatented technology	$	33,000	23 years
Favorable operating leases	$	28,157	13-30 years
Customer relationship	$	10,600	23 years

The following unaudited pro forma financial information presents our results of operations for the years ended December 31, 2018 and 2017 as if the acquisition of the MI business had occurred on January 1, 2017. The unaudited pro forma financial information below is not intended to represent or be indicative of our actual consolidated results had we completed the acquisition at January 1, 2017. This information is presented for comparative purposes only and should not be taken as representative of our future consolidated results of operations.

	Year Ended December 31,			
		2018		2017
	(In thousands, except per share amounts)			
Revenues	$	1,825,029	$	1,726,135
Net Income Attributable to BWX Technologies, Inc.	$	228,545	$	143,475
Basic Earnings per Common Share	$	2.31	$	1.44
Diluted Earnings per Common Share	$	2.29	$	1.43

The unaudited pro forma results include the following pre-tax adjustments to the historical results presented above:

- Increase in amortization expense related to timing of amortization of the fair value of identifiable intangible assets acquired of approximately $3.5 million and $6.0 million for the years ended December 31, 2018 and 2017, respectively.
- Additional interest expense associated with the incremental borrowings that would have been incurred to acquire the MI business as of January 1, 2017 of approximately $2.4 million and $5.2 million for the years ended December 31, 2018 and 2017, respectively.
- Elimination of $2.5 million in acquisition related costs recognized in the year ended December 31, 2018 that are not expected to be recurring.

NOTE 3 – REVENUE RECOGNITION

The initial impact of the adoption of the FASB Topic *Revenue from Contracts with Customers*, which was recognized in a cumulative catch-up adjustment on January 1, 2018, is illustrated below:

	January 1, 2018	December 31, 2017
	(In thousands)	
Assets:		
Contracts in progress	$ 260,932	$ 420,628
Deferred Income Taxes	$ 85,193	$ 86,740
Liabilities:		
Accrued liabilities – other	$ 66,371	$ 64,738
Advance billings on contracts	$ 73,390	$ 246,192
Stockholders' Equity:		
Retained earnings	$ 1,000,578	$ 990,652

Within our Nuclear Operations Group segment, we continue to recognize revenue over time and now measure progress on performance obligations using a cost-to-cost method. Prior to January 1, 2018, we utilized man-hours or a cost-to-cost method to measure progress on certain performance obligations within this segment. The performance obligations identified for recognizing revenue are similar to our historical units of account. As a result of the change to a cost-to-cost method, the timing of revenue recognition on affected contracts, in the aggregate, results in the recognition of revenue and cost of operations earlier in the process of satisfying performance obligations. This change impacted the life-to-date revenue and cost of operations recognized on performance obligations, and the adjustment to capture the impact of the new revenue recognition standard was recorded as a cumulative catch-up adjustment in Retained earnings. The new standard also resulted in a reduction in both our Contracts in progress and Advance billings on contracts account balances as a result of measuring the asset and liability at the contract level. Prior to January 1, 2018, contract assets and liabilities were measured at the unit of account, which we concluded was at a lower level than that of the contract.

The impact of the adoption of the new revenue standard on our Nuclear Power Group and Nuclear Services Group segments was not material.

Contracts and Revenue Recognition

Nuclear Operations Group

Our Nuclear Operations Group segment recognizes revenue over time for the manufacturing of naval nuclear reactor components and fuel, submarine missile launch tubes and the downblending of high-enriched uranium. Certain of our contracts contain two or more different types of components, each of which we identify as a separate performance obligation. We recognize revenue using a cost-to-cost method to measure progress as control is continually transferred to the customer as we incur costs on the performance obligations. We allocate revenue to the individual performance obligations within contracts with multiple performance obligations based on the stand-alone selling price of the individual performance obligations.

Our fixed-price incentive fee contracts include incentives that we concluded to be variable consideration. The amount of the variable consideration to which we are entitled is dependent on our actual costs incurred on the performance obligation compared to the target costs for that performance obligation and subject to incentive price revisions included within the contracts. We include these incentive fees in revenue when there is sufficient evidence to determine that the variable consideration is not constrained. The remaining contracts typically have immaterial amounts of variable consideration and have a single performance obligation. Our estimates of variable consideration and total estimated costs at completion are determined through a detailed process based on historical performance and our expertise using the most likely method. Variations from estimated contract performance could result in a material effect on our financial condition and results of operations in future periods.

Our Nuclear Operations Group segment's contracts primarily allow for billings as costs are incurred, subject to certain retainages on our fixed-price incentive fee contracts, that require milestones to be reached for the remaining consideration to be paid. Our fuel and downblending contracts allow billing when we achieve certain milestones related to our progress.

Nuclear Power Group

Our Nuclear Power Group segment recognizes revenue over time using a cost-to-cost method for the manufacturing of large components, non-standard parts, fuel bundles and service contracts as control continually transfers to the customers. For standard parts, revenue is recognized at the point in time control transfers to the customer, which is consistent with the transfer of ownership. For medical isotopes, we recognize revenue either at the point in time control transfers to the customer or over time using a unit of output method. This segment generates revenue primarily from firm-fixed-price contracts that do not contain variable consideration as well as time-and-materials based contracts. Certain of these contracts contain assurance warranties and/or provisions for liquidated damages, which are expected to have an immaterial impact to the contracts based on our historical experience. We are entitled to payment on the majority of our Nuclear Power Group segment contracts when we achieve certain milestones related to our progress.

Nuclear Services Group

Our contracts within our Nuclear Services Group segment are primarily cost-plus service contracts on which we recognize revenue over time based on a cost-to-cost method, which is consistent with the structure of the billings associated with these contracts. Ownership continuously transfers to the customer as we perform the services. The contracts within this segment do not contain significant variable consideration and contain a single performance obligation. Certain of these contracts contain assurance warranties and/or provisions for liquidated damages, which are expected to have an immaterial impact on the contracts based on our historical experience.

Disaggregated Revenues

Revenues by geographical area and customer type were as follows:

	Year Ended December 31, 2019				Year Ended December 31, 2018			
	Nuclear Operations Group	Nuclear Power Group	Nuclear Services Group	Total	Nuclear Operations Group	Nuclear Power Group	Nuclear Services Group	Total
	(In thousands)				(In thousands)			
United States:								
Government	$ 1,368,555	$ —	$ 111,236	$ 1,479,791	$ 1,311,886	$ —	$ 107,711	$ 1,419,597
Non-Government	51,802	38,058	17,907	107,767	4,146	16,059	11,831	32,036
	$ 1,420,357	$ 38,058	$ 129,143	$ 1,587,558	$ 1,316,032	$ 16,059	$ 119,542	$ 1,451,633
Canada:								
Non-Government	$ —	$ 287,948	$ 2,196	$ 290,144	$ 161	$ 294,781	$ 2,758	$ 297,700
Other:								
Non-Government	$ 8,230	$ 26,634	$ —	$ 34,864	$ 2,977	$ 55,071	$ 138	$ 58,186
Segment Revenues	$ 1,428,587	$ 352,640	$ 131,339	1,912,566	$ 1,319,170	$ 365,911	$ 122,438	1,807,519
Eliminations				(17,646)				(7,630)
Revenues				$ 1,894,920				$ 1,799,889

Revenues by timing of transfer of goods or services were as follows:

	Year Ended December 31, 2019				Year Ended December 31, 2018			
	Nuclear Operations Group	Nuclear Power Group	Nuclear Services Group	Total	Nuclear Operations Group	Nuclear Power Group	Nuclear Services Group	Total
	(In thousands)				(In thousands)			
Over time	$ 1,428,348	$ 305,075	$ 131,339	$ 1,864,762	$ 1,318,884	$ 335,430	$ 122,438	$ 1,776,752
Point-in-time	239	47,565	—	47,804	286	30,481	—	30,767
Segment Revenues	$ 1,428,587	$ 352,640	$ 131,339	1,912,566	$ 1,319,170	$ 365,911	$ 122,438	1,807,519
Eliminations				(17,646)				(7,630)
Revenues				$ 1,894,920				$ 1,799,889

Table of Contents

Revenues by contract type were as follows:

	Year Ended December 31, 2019				Year Ended December 31, 2018			
	Nuclear Operations Group	Nuclear Power Group	Nuclear Services Group	Total	Nuclear Operations Group	Nuclear Power Group	Nuclear Services Group	Total
	(In thousands)				(In thousands)			
Fixed-Price Incentive Fee	$ 1,137,883	$ 2,511	$ —	$ 1,140,394	$ 1,041,083	$ 16,165	$ —	$ 1,057,248
Firm-Fixed-Price	210,631	282,014	26,163	518,808	195,030	252,893	23,294	471,217
Cost-Plus Fee	79,741	755	102,726	183,222	80,880	45	96,566	177,491
Time-and-Materials	332	67,360	2,450	70,142	2,177	96,808	2,578	101,563
Segment Revenues	$ 1,428,587	$ 352,640	$ 131,339	1,912,566	$ 1,319,170	$ 365,911	$ 122,438	1,807,519
Eliminations				(17,646)				(7,630)
Revenues				$ 1,894,920				$ 1,799,889

Performance Obligations

As we progress on our contracts and the underlying performance obligations for which we recognize revenue over time, we refine our estimates of variable consideration and total estimated costs at completion, which impact the overall profitability on our contracts and performance obligations. Changes in these estimates result in the recognition of cumulative catch-up adjustments that impact our revenues and/or costs of contracts. During the years ended December 31, 2019 and 2018, we recognized net favorable changes in estimates that resulted in increases in revenues of $70.9 million and $58.6 million, respectively, as well as increases (decreases) in cost of operations of $(0.7) million and $12.3 million, respectively. Included in these 2018 amounts are contract adjustments resulting from rework issues related to the manufacture of non-nuclear components being produced within our Nuclear Operations Group segment. We recognized a decrease in operating income of $29.2 million for the year ended December 31, 2018 related to this matter, which resulted in a decrease in earnings per share of $0.23.

Contract Assets and Liabilities

We include revenues and related costs incurred, plus accumulated contract costs that exceed amounts invoiced to customers under the terms of the contracts, in Contracts in progress. We include in Advance billings on contracts billings that exceed accumulated contract costs and revenues and costs recognized over time. Amounts that are withheld on our fixed-price incentive fee contracts are classified within Retainages. Certain of these amounts require conditions other than the passage of time to be achieved, with the remaining amounts only requiring the passage of time. Most long-term contracts contain provisions for progress payments. Our unbilled receivables do not contain an allowance for credit losses as we expect to invoice customers and collect all amounts for unbilled revenues. Changes in Contracts in progress and Advance billings on contracts are primarily driven by differences in the timing of revenue recognition and billings to our customers. During the year ended December 31, 2019, our unbilled receivables increased $57.1 million and our Advance billings on contracts decreased $23.1 million, primarily as a result of revenue in excess of billings on certain fixed-price incentive fee contracts within our Nuclear Operations Group segment and the timing of milestone billings in our Nuclear Power Group segment. Our fixed-price incentive fee contracts for our Nuclear Operations Group segment include provisions that result in an increase in retainages on contracts during the first and third quarters of the year, with larger payments made during the second and fourth quarters. Retainages also vary as a result of timing differences between incurring costs and achieving milestones that allow us to recover these amounts.

	December 31, 2019	December 31, 2018
	(In thousands)	
Included in Contracts in progress:		
Unbilled receivables	$ 365,861	$ 308,723
Retainages	$ 46,670	$ 57,885
Included in Other Assets:		
Retainages	$ 1,412	$ 1,674
Advance billings on contracts	$ 75,425	$ 98,477

Retainages expected to be collected after one year are included in Other Assets. Of the long-term retainages at December 31, 2019, we anticipate collecting $0.3 million in 2021 and $1.1 million in 2022.

During the years ended December 31, 2019 and 2018, we recognized $62.3 million and $53.6 million of revenue that was in Advance billings on contracts at December 31, 2018 and January 1, 2018, respectively.

Remaining Performance Obligations

Remaining performance obligations represent the dollar amount of revenue we expect to recognize in the future from performance obligations on contracts previously awarded and in progress. Of the remaining performance obligations on our contracts with customers at December 31, 2019, we expect to recognize revenues as follows:

	2020	2021	Thereafter	Total
	(In approximate millions)			
Nuclear Operations Group	$ 1,396	$ 1,013	$ 2,106	$ 4,515
Nuclear Power Group	217	174	339	730
Nuclear Services Group	32	1	10	43
Total Remaining Performance Obligations	$ 1,645	$ 1,188	$ 2,455	$ 5,288

NOTE 4 – EQUITY METHOD INVESTMENTS

We have investments in entities that we account for using the equity method. Our share of the undistributed earnings of our equity method investees were $16.1 million and $16.1 million at December 31, 2019 and 2018, respectively.

The following tables summarize combined balance sheet and income statement information for investments accounted for under the equity method:

	December 31,	
	2019	2018
	(In thousands)	
Current assets	$ 442,253	$ 449,369
Noncurrent assets	1,285	1,621
Total Assets	$ 443,538	$ 450,990
Current liabilities	$ 219,702	$ 234,464
Owners' equity	223,836	216,526
Total Liabilities and Owners' Equity	$ 443,538	$ 450,990

	Year Ended December 31,		
	2019	2018	2017
	(In thousands)		
Revenues	$ 3,716,548	$ 5,685,015	$ 678,080
Gross profit	$ 133,170	$ 172,673	$ 35,081
Net income	$ 130,949	$ 162,095	$ 35,081

Reimbursable costs recorded in revenues by the unconsolidated joint ventures in our Nuclear Services Group segment totaled $3,516.1 million, $5,339.7 million and $638.4 million for the years ended December 31, 2019, 2018 and 2017, respectively. In 2018, we began to properly classify certain of our joint ventures as equity method investments resulting in the increases in the summarized financial information disclosed above.

Income taxes for the investees are the responsibility of the respective owners. Accordingly, no provision for income taxes has been recorded by the investees.

Reconciliations of net income per combined income statement information of our investees to equity in income of investees per our consolidated statements of income are as follows:

	Year Ended December 31,		
	2019	2018	2017
	(In thousands)		
Equity income based on stated ownership percentages	$ 28,272	$ 30,787	$ 13,412
Timing of GAAP and other adjustments	652	(444)	200
Equity in income of investees	$ 28,924	$ 30,343	$ 13,612

Our transactions with unconsolidated affiliates were as follows:

	Year Ended December 31,		
	2019	2018	2017
	(In thousands)		
Sales to	$ 14,668	$ 18,454	$ 22,259
Dividends received	$ 20,955	$ 22,237	$ 16,132
Capital contributions, net of returns	$ (255)	$ 9,059	$ 2,789

At December 31, 2019 and 2018, Other Assets included amounts due from unconsolidated affiliates of $2.6 million and $4.3 million, respectively.

NOTE 5 – INCOME TAXES

We are subject to federal income tax in the U.S. and Canada as well as income tax within multiple U.S. state jurisdictions. We provide for income taxes based on the enacted tax laws and rates in the jurisdictions in which we conduct our operations. These jurisdictions may have regimes of taxation that vary with respect to nominal rates and with respect to the basis on which these rates are applied. This variation, along with the changes in our mix of income within these jurisdictions, can contribute to shifts in our effective tax rate from period to period.

On December 22, 2017, H.R. 1, the Tax Cuts and Jobs Act (the "Act") was enacted, making significant changes to existing U.S. tax laws that impact us, including, but not limited to, a reduction to the U.S. corporate income tax rate from 35% to 21% for tax years beginning after December 31, 2017, the taxation of global intangible low-taxed income ("GILTI") and additional deduction limitations related to executive compensation. Our Canadian operations continue to be subject to tax at a local statutory rate of approximately 25%.

We are currently under audit by various state and international authorities. With few exceptions, we do not have any returns under examination for years prior to 2015.

We apply the provisions of FASB Topic *Income Taxes* regarding the treatment of uncertain tax positions. A reconciliation of unrecognized tax benefits (exclusive of interest and federal and state benefits) is as follows:

	Year Ended December 31,		
	2019	2018	2017
	(In thousands)		
Balance at beginning of period	$ 274	$ 1,680	$ 1,651
Increases based on tax positions taken in the current year	3,736	—	—
Increases based on tax positions taken in the prior years	—	—	—
Decreases based on tax positions taken in the prior years	—	—	—
Decreases due to settlements with tax authorities	—	—	—
Decreases due to lapse of applicable statute of limitation	(127)	(1,379)	—
Other, net	16	(27)	29
Balance at end of period	$ 3,899	$ 274	$ 1,680

The unrecognized tax benefits balance of $3.9 million at December 31, 2019 would reduce our effective tax rate if recognized.

We believe that, within the next 12 months, it is reasonably possible that our previously unrecognized tax benefits could decrease by $0.1 million.

Deferred income taxes reflect the net tax effects of temporary differences between the financial and tax bases of assets and liabilities. Significant components of deferred tax assets and liabilities as of December 31, 2019 and 2018 were as follows:

	December 31,	
	2019	2018
	(In thousands)	
Deferred tax assets:		
Pension liability	$ 36,791	$ 37,528
Accrued warranty expense	2,365	2,639
Accrued vacation pay	7,077	6,821
Accrued liabilities for self-insurance (including postretirement health care benefits)	2,991	4,352
Accrued liabilities for executive and employee incentive compensation	12,121	11,835
Environmental and products liabilities	20,100	24,805
Lease liabilities	1,856	—
Investments in joint ventures and affiliated companies	4,702	8,977
Long-term contracts	10,790	6,046
State tax credits and net operating loss carryforward	7,297	6,349
Foreign tax credit and net operating loss carryforward	5,848	1,683
Other	8,798	2,998
Total deferred tax assets	120,736	114,033
Valuation allowance for deferred tax assets	(13,578)	(13,257)
Deferred tax assets	107,158	100,776
Deferred tax liabilities:		
Property, plant and equipment	23,889	14,348
Right-of-use lease assets	10,446	—
Intangibles	14,134	24,358
Total deferred tax liabilities	48,469	38,706
Net deferred tax assets	$ 58,689	$ 62,070

The components of Income before Provision for Income Taxes were as follows:

	Year Ended December 31,		
	2019	2018	2017
		(In thousands)	
U.S.	$ 270,569	$ 231,721	$ 255,194
Other than U.S.	43,173	48,424	40,586
Income before Provision for Income Taxes	$ 313,742	$ 280,145	$ 295,780

The components of Provision for Income Taxes were as follows:

	Year Ended December 31, 2019	2018	2017
	(In thousands)		
Current:			
U.S. – federal	$ 47,693	$ 14,680	$ 26,632
U.S. – state and local	2,180	4,597	3,023
Other than U.S.	15,398	16,117	24,299
Total current	65,271	35,394	53,954
Deferred:			
U.S. – federal	7,975	20,327	107,844
U.S. – state and local	872	1,564	(158)
Other than U.S.	(5,053)	(4,445)	(14,225)
Total deferred	3,794	17,446	93,461
Provision for Income Taxes	$ 69,065	$ 52,840	$ 147,415

The following is a reconciliation of our income tax provision from the U.S. statutory federal tax rate to our consolidated effective tax rate:

	Year Ended December 31, 2019	2018	2017
U.S. federal statutory tax rate	21.0 %	21.0 %	35.0 %
State and local income taxes	1.0 %	2.1 %	1.2 %
Foreign rate differential	0.6 %	0.7 %	(1.4)%
Excess tax deductions on equity compensation	(0.7)%	(1.0)%	(2.0)%
Impact of U.S. Tax Cuts & Jobs Act	— %	(4.7)%	17.7 %
Manufacturing deduction	— %	— %	(1.4)%
Minority interest	— %	— %	(0.1)%
Other	0.1 %	0.8 %	0.8 %
Effective tax rate	22.0 %	18.9 %	49.8 %

As a result of the passage of the Act, during the year ended December 31, 2017, we recognized $53.0 million of expense in our provision for income taxes due primarily to the remeasurement of our U.S. deferred tax assets and liabilities. In the year ended December 31, 2018, we recognized $13.5 million of benefit in our provision for income taxes related to the remeasurement of our deferred tax assets as a result of accelerating additional contributions to certain of our domestic pension plans for inclusion in our 2017 U.S. tax return.

At December 31, 2019, we had a valuation allowance of $13.6 million for deferred tax assets, which we expect cannot be realized through carrybacks, future reversals of existing taxable temporary differences and our estimate of future taxable income. We believe that our remaining deferred tax assets are more likely than not realizable through carrybacks, future reversals of existing taxable temporary differences and our estimate of future taxable income. Any changes to our estimated valuation allowance could be material to our consolidated financial statements.

The following is an analysis of our valuation allowance for deferred tax assets:

	Beginning Balance	Charges To Costs and Expenses	Charged To Other Accounts	Ending Balance
	(In thousands)			
Year Ended December 31, 2019	$ (13,257)	(414)	93	$ (13,578)
Year Ended December 31, 2018	$ (15,252)	2,017	(22)	$ (13,257)
Year Ended December 31, 2017	$ (17,226)	2,544	(570)	$ (15,252)

We have state credits and state net operating losses of $9.2 million ($7.3 million net of federal tax benefit) available to offset future taxable income in various states. These state net operating loss carryforwards begin to expire in the year 2020. We are carrying a valuation allowance of $7.8 million ($6.2 million net of federal tax benefit) against the deferred tax asset related to the state credits and state loss carryforwards.

We would be subject to withholding taxes if we were to distribute earnings from certain foreign subsidiaries. As of December 31, 2019, the undistributed earnings of these subsidiaries were approximately $168.5 million, and our unrecognized deferred income tax liabilities of approximately $8.4 million would be payable upon the distribution of these earnings. All of our foreign earnings are considered indefinitely reinvested.

NOTE 6 – LONG-TERM DEBT

Our Long-Term Debt consists of the following:

	December 31,	
	2019	2018
	(In thousands)	
Secured Debt:		
Senior Notes	$ 400,000	$ 400,000
Credit Facility	432,159	377,427
Less: Amounts due within one year	14,711	14,227
Long-Term Debt, gross	817,448	763,200
Less: Deferred debt issuance costs	8,006	9,583
Long-Term Debt	$ 809,442	$ 753,617

Maturities of Long-Term Debt subsequent to December 31, 2019 are as follows: 2020 – $14.7 million; 2021 – $14.7 million; 2022 – $14.7 million; 2023 – $388.0 million; 2024 – $0.0 million; and thereafter – $400.0 million.

Credit Facility

On May 24, 2018, we and certain of our subsidiaries entered into a credit agreement (the "Credit Facility") with Wells Fargo Bank, N.A., as administrative agent, and the other lenders party thereto. The Credit Facility includes a $500.0 million senior secured revolving credit facility (the "Revolving Credit Facility"), a $50.0 million U.S. dollar senior secured term loan A made available to the Company (the "USD Term Loan") and a $250.0 million (U.S. dollar equivalent) Canadian dollar senior secured term loan A made available to BWXT Canada Ltd. (the "CAD Term Loan"). All obligations under the Credit Facility are scheduled to mature on May 24, 2023. The proceeds of loans under the Credit Facility are available for working capital needs and other general corporate purposes.

The Credit Facility allows for additional parties to become lenders and, subject to certain conditions, for the increase of the commitments under the Credit Facility, subject to an aggregate maximum for all additional commitments of (1) the greater of (a) $250 million and (b) 65% of EBITDA, as defined in the Credit Facility, for the last four full fiscal quarters, plus (2) all voluntary prepayments of term loans, plus (3) additional amounts provided the Company is in compliance with a pro forma first lien leverage ratio test of less than or equal to 2.50 to 1.00.

The Company's obligations under the Credit Facility are guaranteed, subject to certain exceptions, by substantially all of the Company's present and future wholly owned domestic restricted subsidiaries. The obligations of BWXT Canada Ltd. under the Credit Facility are guaranteed, subject to certain exceptions, by substantially all of the Company's present and future wholly owned Canadian and domestic restricted subsidiaries.

The Credit Facility is secured by first-priority liens on certain assets owned by the Company (other than its subsidiaries comprising its Nuclear Operations Group segment and a portion of its Nuclear Services Group segment); provided that (1) the Company's domestic obligations are only secured by assets and property of the domestic loan parties and (2) the obligations of BWXT Canada Ltd. and the Canadian guarantors are secured by assets and property of the Canadian guarantors and the domestic loan parties.

The Credit Facility requires interest payments on revolving loans on a periodic basis until maturity. We began making quarterly amortization payments on the USD Term Loan and the CAD Term Loan in amounts equal to 1.25% of the initial aggregate principal amount of each term loan in the third quarter of 2018. We may prepay all loans under the Credit Facility at any time without premium or penalty (other than customary Eurocurrency breakage costs), subject to notice requirements.

The Credit Facility includes financial covenants that are tested on a quarterly basis, based on the rolling four-quarter period that ends on the last day of each fiscal quarter. The maximum permitted leverage ratio is 4.00 to 1.00, which may be increased to 4.50 to 1.00 for up to four consecutive fiscal quarters after a material acquisition. The minimum consolidated interest coverage ratio is 3.00 to 1.00. In addition, the Credit Facility contains various restrictive covenants, including with respect to debt, liens, investments, mergers, acquisitions, dividends, equity repurchases and asset sales. As of December 31, 2019, we were in compliance with all covenants set forth in the Credit Facility.

Outstanding loans under the Credit Facility will bear interest at our option at either (1) the Eurocurrency rate plus a margin ranging from 1.25% to 2.0% per year or (2) the base rate or Canadian index rate, as applicable (described in the Credit Facility as the highest of (a) with respect to the base rate only, the federal funds rate plus 0.5%, (b) the one-month Eurocurrency rate plus 1.0% and (c) the administrative agent's prime rate or the Canadian prime rate, as applicable), plus, in each case, a margin ranging from 0.25% to 1.0% per year. We are charged a commitment fee on the unused portion of the Revolving Credit Facility, and that fee ranges from 0.15% to 0.275% per year. Additionally, we are charged a letter of credit fee of between 1.25% and 2.0% per year with respect to the amount of each financial letter of credit issued under the Credit Facility, and a letter of credit fee of between 0.75% and 1.2% per year with respect to the amount of each performance letter of credit issued under the Credit Facility. The applicable margin for loans, the commitment fee and the letter of credit fees set forth above will vary quarterly based on our leverage ratio. Based on the leverage ratio applicable at December 31, 2019, the margin for Eurocurrency rate and base rate or Canadian index rate loans was 1.375% and 0.375%, respectively, the letter of credit fee for financial letters of credit and performance letters of credit was 1.375% and 0.825%, respectively, and the commitment fee for the unused portion of the Revolving Credit Facility was 0.175%.

As of December 31, 2019, borrowings outstanding totaled $272.2 million and $160.0 million under our term loans and revolving line of credit, respectively, and letters of credit issued under the Credit Facility totaled $67.6 million. As a result, we had $272.4 million available for borrowings or to meet letter of credit requirements as of December 31, 2019. As of December 31, 2019, the weighted-average interest rate on outstanding borrowings under our Credit Facility was 3.29%.

The Credit Facility generally includes customary events of default for a secured credit facility, some of which allow for an opportunity to cure. Under the Credit Facility, (1) if an event of default relating to bankruptcy or other insolvency events occurs, all related obligations will immediately become due and payable; (2) if any other event of default exists, the lenders will be permitted to accelerate the maturity of the related obligations outstanding; and (3) if any event of default exists, the lenders will be permitted to terminate their commitments thereunder and exercise other rights and remedies, including the commencement of foreclosure or other actions against the collateral.

If any default occurs under the Credit Facility, or if we are unable to make any of the representations and warranties in the Credit Facility, we will be unable to borrow funds or have letters of credit issued under the Credit Facility.

Senior Notes

We issued $400.0 million aggregate principal amount of 5.375% senior notes due 2026 (the "Senior Notes") pursuant to an indenture dated May 24, 2018 (the "Indenture"), among the Company, certain of our subsidiaries, as guarantors, and U.S. Bank National Association, as trustee. The Senior Notes are guaranteed by each of the Company's present and future direct and indirect wholly owned domestic subsidiaries that is a guarantor under the Credit Facility.

Interest on the Senior Notes is payable semi-annually in cash in arrears on January 15 and July 15 of each year, which commenced on July 15, 2018, at a rate of 5.375% per annum. The Senior Notes will mature on July 15, 2026.

On and after July 15, 2021, the Company may redeem the Senior Notes, in whole or in part, at a redemption price equal to (i) 102.688% of the principal amount to be redeemed if the redemption occurs during the twelve-month period beginning on July 15, 2021, (ii) 101.344% of the principal amount to be redeemed if the redemption occurs during the twelve-month period beginning on July 15, 2022 and (iii) 100.0% of the principal amount to be redeemed if the redemption occurs on or after July 15, 2023, in each case plus accrued and unpaid interest, if any, to, but excluding, the redemption date. At any time prior to July 15, 2021, the Company may also redeem up to 40.0% of the Senior Notes with net cash proceeds of certain equity offerings at a redemption price equal to 105.375% of the principal amount of the Senior Notes to be redeemed, plus accrued and unpaid interest, if any, to, but excluding, the redemption date. In addition, at any time prior to July 15, 2021, the Company may redeem the Senior Notes, in whole or in part, at a redemption price equal to 100.0% of the principal amount of the Senior Notes to be redeemed, plus accrued and unpaid interest, if any, to, but excluding, the redemption date plus an applicable "make-whole" premium.

The Indenture contains customary events of default, including, among other things, payment default, failure to comply with covenants or agreements contained in the Indenture or the Senior Notes and certain provisions related to bankruptcy events. The Indenture also contains customary negative covenants. As of December 31, 2019, we were in compliance with all covenants and agreements set forth in the Indenture and the Senior Notes.

Other Arrangements

We have posted surety bonds to support regulatory and contractual obligations for certain decommissioning responsibilities, projects and legal matters. We utilize bonding facilities to support such obligations, but the issuance of bonds under those facilities is typically at the surety's discretion. Although there can be no assurance that we will maintain our surety bonding capacity, we believe our current capacity is adequate to support our existing requirements for the next twelve months. In addition, these bonds generally indemnify the beneficiaries should we fail to perform our obligations under the applicable agreements. We, and certain of our subsidiaries, have jointly executed general agreements of indemnity in favor of surety underwriters relating to surety bonds those underwriters issue. As of December 31, 2019, bonds issued and outstanding under these arrangements totaled approximately $73.3 million.

NOTE 7 – PENSION PLANS AND POSTRETIREMENT BENEFITS

We have historically provided defined benefit retirement benefits, primarily through noncontributory pension plans, for most of our regular employees. Certain of our subsidiaries have made other benefits available to certain groups of employees, including postretirement health care and life insurance benefits. For salaried employees, all major U.S. and Canadian defined benefit retirement plans have been closed to new entrants, and benefit accruals have ceased. For hourly employees, certain defined benefit retirement plans have been closed to new entrants.

Our funding policy is to fund the plans as recommended by the respective plan actuaries and in accordance with the Employee Retirement Income Security Act of 1974, as amended, or other applicable law. Assuming we continue as a government contractor, our contractual arrangements with the U.S. Government provide for the recovery of contributions to our pension and other postretirement benefit plans covering employees working primarily in our Nuclear Operations Group segment.

Obligations and Funded Status

	Pension Benefits Year Ended December 31, 2019	Pension Benefits Year Ended December 31, 2018	Other Benefits Year Ended December 31, 2019	Other Benefits Year Ended December 31, 2018
	(In thousands)			
Change in benefit obligation:				
Benefit obligation at beginning of period	$ 1,186,186	$ 1,543,343	$ 60,405	$ 68,239
Service cost	9,123	9,593	545	620
Interest cost	46,307	47,496	2,254	2,121
Plan participants' contributions	321	60	550	584
Amendments	5,523	10,734	—	—
Acquisition	—	9,746	—	—
Settlements	(25,694)	(242,513)	—	—
Actuarial loss (gain)	139,909	(107,669)	(2,427)	(7,336)
Transfers	—	1,167	—	—
Foreign currency exchange rate changes	6,027	(12,010)	462	(870)
Benefits paid	(58,904)	(73,761)	(2,908)	(2,953)
Benefit obligation at end of period	$ 1,308,798	$ 1,186,186	$ 58,881	$ 60,405
Change in plan assets:				
Fair value of plan assets at beginning of period	$ 1,024,091	$ 1,257,699	$ 43,945	$ 45,602
Actual return on plan assets	195,846	(53,299)	5,688	(772)
Plan participants' contributions	321	177	550	584
Company contributions	4,284	157,573	915	1,379
Settlements	(21,191)	(252,908)	—	—
Transfers	—	1,134	—	—
Foreign currency exchange rate changes	6,048	(12,524)	—	—
Benefits paid	(58,904)	(73,761)	(2,777)	(2,848)
Fair value of plan assets at the end of period	1,150,495	1,024,091	48,321	43,945
Funded status	$ (158,303)	$ (162,095)	$ (10,560)	$ (16,460)
Amounts recognized in the balance sheet consist of:				
Prepaid postretirement benefit obligation	$ —	$ —	$ 14,012	$ 4,000
Prepaid pension	16,936	14,145	—	—
Accrued employee benefits	(3,218)	(3,191)	(1,313)	(1,240)
Accumulated postretirement benefit obligation	—	—	(23,259)	(19,220)
Pension liability	(172,021)	(173,049)	—	—
Accrued benefit liability, net	$ (158,303)	$ (162,095)	$ (10,560)	$ (16,460)
Amount recognized in accumulated comprehensive income (before taxes):				
Prior service cost (credit)	$ 22,356	$ 19,736	$ (1,252)	$ (1,563)
Supplemental information:				
Plans with accumulated benefit obligation in excess of plan assets:				
Projected benefit obligation	$ 1,167,257	$ 1,058,828	N/A	N/A
Accumulated benefit obligation	$ 1,153,811	$ 1,048,252	$ 22,316	$ 18,429
Fair value of plan assets	$ 992,018	$ 882,588	$ —	$ —
Plans with plan assets in excess of accumulated benefit obligation:				
Projected benefit obligation	$ 141,541	$ 127,358	N/A	N/A
Accumulated benefit obligation	$ 141,497	$ 127,378	$ 36,565	$ 41,976
Fair value of plan assets	$ 158,477	$ 141,503	$ 48,321	$ 43,945

We record the service cost component of net periodic benefit cost within Operating income on our consolidated statements of income. For the years ended December 31, 2019, 2018 and 2017, these amounts were $9.7 million, $10.2 million and $8.6 million, respectively. All other components of net periodic benefit cost are included in Other – net on our consolidated statements of income. For the years ended December 31, 2019, 2018 and 2017, these amounts were $(17.5) million, $0.7 million and $(16.6) million, respectively. Components of net periodic benefit cost included in net income are as follows:

	Pension Benefits Year Ended December 31,			Other Benefits Year Ended December 31,		
	2019	2018	2017	2019	2018	2017
	(In thousands)					
Components of net periodic benefit cost:						
Service cost	$ 9,123	$ 9,593	$ 8,031	$ 545	$ 620	$ 567
Interest cost	46,307	47,496	54,353	2,254	2,121	2,182
Expected return on plan assets	(69,809)	(80,939)	(83,617)	(2,514)	(2,540)	(2,383)
Amortization of prior service cost	2,903	2,221	2,074	(311)	(311)	(314)
Recognized net actuarial loss (gain)	9,353	36,738	8,322	(5,723)	(4,094)	2,741
Net periodic benefit cost (income)	$ (2,123)	$ 15,109	$ (10,837)	$ (5,749)	$ (4,204)	$ 2,793

Net periodic benefit cost related to our pension plans is calculated in accordance with GAAP. In addition, we calculate pension costs in accordance with U.S. cost accounting standards ("CAS") for purposes of cost recovery on our U.S. Government contracts to the extent applicable. See further discussion of CAS pension costs in our discussion of Critical Accounting Policies and Estimates included in Item 7 of this Annual Report on Form 10-K.

Recognized net actuarial losses (gains) consist primarily of our reported actuarial losses (gains), settlements, and the differences between the actual returns on plan assets and the expected returns on plan assets. In July 2018, we completed the purchase of a group annuity contract that transferred certain domestic pension benefit obligations of approximately $240 million to an insurance company for approximately 1,300 retirees. As a result, we recognized pension settlement-related charges of $10.4 million during 2018. In October 2017, we completed the purchase of a group annuity contract that transferred certain domestic pension benefit obligations totaling $113.6 million to an insurance company for approximately 2,300 retirees. As a result, we recognized pension settlement-related charges of $3.8 million during 2017.

We made contributions to our pension and postretirement benefit plans totaling $159.0 million during the year ended December 31, 2018. In August 2018, we accelerated $118.1 million of pension contributions to certain domestic pension plans in order to capture a tax benefit in our 2017 U.S. tax return due to the change in corporate tax rates.

Additional Information

	Pension Benefits Year Ended December 31,		Other Benefits Year Ended December 31,	
	2019	2018	2019	2018
	(In thousands)			
Decrease in accumulated other comprehensive income due to actuarial losses – before taxes	$ (5,523)	$ (10,734)	$ —	$ —

In the current fiscal year, we have recognized expense (income) in other comprehensive income as a component of net periodic benefit cost of approximately $2.9 million and $(0.3) million for our pension benefits and other benefits, respectively. In the next fiscal year, we expect to recognize expense (income) in other comprehensive income as a component of net periodic benefit cost of approximately $4.1 million and $(0.2) million for our pension benefits and other benefits, respectively.

Assumptions

	Pension Benefits		Other Benefits	
	2019	2018	2019	2018
Weighted-average assumptions used to determine net periodic benefit obligations at December 31:				
Discount rate	3.31%	4.30%	3.21%	4.25%

	Pension Benefits			Other Benefits		
	2019	2018	2017	2019	2018	2017
Weighted-average assumptions used to determine net periodic benefit cost for the years ended December 31:						
Discount rate to determine service cost	3.74%	3.32%	3.84%	3.93%	3.91%	4.29%
Discount rate to determine interest cost	3.98%	3.56%	3.17%	3.92%	3.50%	3.71%
Expected return on plan assets	6.95%	6.95%	7.00%	5.68%	5.70%	5.71%

The expected return on plan assets rate assumptions are based on the long-term expected returns for the investment mix of assets in the portfolio. In setting these rates, we use a building-block approach. Historical real return trends for the various asset classes in the plan's portfolio are combined with anticipated future market conditions to estimate the real rate of return for each asset class. These rates are then adjusted for anticipated future inflation to estimate nominal rates of return for each class. The expected rate of return on plan assets is then determined to be the weighted-average nominal return based on the weightings of the classes within the total asset portfolio. We are using an expected return on plan assets assumption of 7.2% for the majority of our existing pension plan assets (approximately 86% of our total pension assets at December 31, 2019).

Our existing other benefit plans are unfunded, with the exception of the NFS postretirement benefit plans. These plans provide health benefits to certain salaried and hourly employees, as well as retired employees, of NFS. All of the assets for these postretirement benefit plans are contributed into a Voluntary Employees' Beneficiary Association trust.

	2019	2018
Assumed health care cost trend rates at December 31:		
Health care cost trend rate assumed for next year	7.00%	7.25%
Rates to which the cost trend rate is assumed to decline (ultimate trend rate)	4.50%	4.50%
Year that the rate reaches ultimate trend rate	2030	2030

Assumed health care cost trend rates have a significant effect on the amounts we report for our health care plan. A one-percentage-point change in our assumed health care cost trend rates would have the following effects:

	One-Percentage-Point Increase	One-Percentage-Point Decrease
	(In thousands)	
Effect on total of service and interest cost	$ 300	$ (247)
Effect on postretirement benefit obligation	$ 5,470	$ (4,624)

Investment Goals

General

The overall investment strategy of the pension trusts is to achieve long-term growth of principal, while avoiding excessive risk and to minimize the probability of loss of principal over the long term. The specific investment goals that have been set for the pension trusts, in the aggregate, are (1) to ensure that plan liabilities are met when due and (2) to achieve an investment return on trust assets consistent with a reasonable level of risk.

Allocations to each asset class for both domestic and foreign plans are reviewed periodically and rebalanced, if appropriate, to assure the continued relevance of the goals, objectives and strategies. The pension trusts for both our domestic and foreign plans employ a professional investment advisor and a number of professional investment managers whose individual benchmarks are, in the aggregate, consistent with the plan's overall investment objectives.

The goals of each investment manager are (1) to meet (in the case of passive accounts) or exceed (for actively managed accounts) the benchmark selected and agreed upon by the manager and the pension trust and (2) to display an overall level of risk in its portfolio that is consistent with the risk associated with the agreed upon benchmark.

The investment performance of total portfolios, as well as asset class components, is periodically measured against commonly accepted benchmarks, including the individual investment manager benchmarks. In evaluating investment manager performance, consideration is also given to personnel, strategy, research capabilities, organizational and business matters, adherence to discipline and other qualitative factors that may impact the ability to achieve desired investment results.

Domestic Plans

We sponsor the following domestic defined benefit plans:

- BWXT Retirement Plan;
- Nuclear Fuel Services, Inc. Retirement Plan for Salaried Employees; and
- Nuclear Fuel Services, Inc. Retirement Plan for Hourly Employees.

The assets of the domestic pension plans are commingled for investment purposes and held by the trustee in the BWXT Master Trust (the "Master Trust"). For the years ended December 31, 2019 and 2018, the investment returns on domestic plan assets of the Master Trust (net of deductions for management fees) were approximately 21% and (4)%, respectively.

The following is a summary of the asset allocations for the Master Trust at December 31, 2019 and 2018 by asset category:

	December 31,	
	2019	**2018**
Asset Category:		
Fixed Income (excluding U.S. Government Securities)	33%	33%
Commingled and Mutual Funds	27%	27%
U.S. Government Securities	22%	24%
Partnerships with Security Holdings	5%	7%
Real Estate	7%	7%
Other	6%	2%
Total	100%	100%

The target allocation for 2020 for the domestic plans, by asset class, is as follows:

Asset Class:	
Fixed Income	55%
Equities	28%
Other	17%

Foreign Plans

We sponsor various plans through certain of our Canadian subsidiaries.

The combined weighted-average asset allocations of these plans at December 31, 2019 and 2018 by asset category were as follows:

	December 31,	
	2019	2018
Asset Category:		
Fixed Income	62%	46%
Equity Securities and Commingled Mutual Funds	35%	51%
Other	3%	3%
Total	100%	100%

The target allocation for 2020 for the Canadian plans, by asset class, is as follows:

Asset Class:	
Fixed Income	65%
Global Equity	19%
U.S. Equity	16%

Fair Value

See Note 14 for a detailed description of fair value measurements and the hierarchy established for valuation inputs. The following is a summary of total investments for our plans measured at fair value at December 31, 2019:

	12/31/2019	Level 1	Level 2	Level 3	Unclassified
			(In thousands)		
Pension and Other Benefits:					
Fixed Income	$ 453,390	$ —	$ 355,064	$ —	$ 98,326
Commingled and Mutual Funds	334,786	58,161	—	—	276,625
U.S. Government Securities	220,606	216,300	4,306	—	—
Partnerships with Security Holdings	52,840	—	—	—	52,840
Real Estate	65,821	—	—	—	65,821
Other	47,550	—	—	—	47,550
Cash and Accrued Items	23,823	17,180	6,643	—	—
Total Assets	$ 1,198,816	$ 291,641	$ 366,013	$ —	$ 541,162

The following is a summary of total investments for our plans measured at fair value at December 31, 2018:

	12/31/2018	Level 1	Level 2	Level 3	Unclassified
			(In thousands)		
Pension and Other Benefits:					
Fixed Income	$ 380,925	$ —	$ 315,691	$ —	$ 65,234
Commingled and Mutual Funds	320,210	47,975	—	—	272,235
U.S. Government Securities	218,074	214,427	3,647	—	—
Partnerships with Security Holdings	62,309	—	—	—	62,309
Real Estate	61,219	—	—	—	61,219
Cash and Accrued Items	25,299	21,542	3,757	—	—
Total Assets	$ 1,068,036	$ 283,944	$ 323,095	$ —	$ 460,997

In accordance with FASB Topic *Fair Value Measurements*, certain investments that were measured at net asset value per share (or its equivalent) ("NAV") have not been classified in the fair value hierarchy. These investments are measured on the fair value of the underlying investments but may not be redeemable at that fair value. When appropriate, we adjust these net asset values for contributions and distributions, if any, made during the period beginning on the latest NAV valuation date and ending on our measurement date. We also consider available market data, relevant index returns, preliminary estimates from our investees and other data obtained through research and consultation with third-party advisors in determining the fair value of these investments.

Cash Flows

	Domestic Plans		Foreign Plans	
	Pension Benefits	Other Benefits	Pension Benefits	Other Benefits
	(In thousands)			
Expected employer contributions to trusts of defined benefit plans:				
2020	$ —	$ 85	$ 3,608	N/A
Expected benefit payments:				
2020	$ 57,550	$ 2,822	$ 6,820	$ 447
2021	$ 59,995	$ 2,890	$ 6,933	$ 493
2022	$ 62,010	$ 2,950	$ 7,165	$ 499
2023	$ 63,804	$ 2,965	$ 7,310	$ 528
2024	$ 65,194	$ 3,003	$ 7,413	$ 536
2025-2029	$ 335,013	$ 14,062	$ 41,293	$ 3,171

Defined Contribution Plans

We also provide benefits under the BWXT Thrift Plan (the "Thrift Plan"). The Thrift Plan generally provides for matching employer contributions of 50% of the first 6% of compensation, as defined in the Thrift Plan, contributed by participants, and fully vest and are nonforfeitable after three years of service or upon retirement, death, lay-off or approved disability. These matching employer contributions are made in cash and invested at the employees' discretion. We also provide service-based cash contributions under the Thrift Plan to employees not accruing benefits under our defined benefit plans. Our Canadian Plans also include a defined contribution component whereby we make cash, service-based contributions. Amounts charged to expense for employer contributions under our defined contribution plans totaled approximately $31.7 million, $31.3 million and $29.1 million in the years ended December 31, 2019, 2018 and 2017, respectively.

NOTE 8 – CAPITAL STOCK

In October 2015, our Board of Directors authorized us to repurchase an indeterminate number of shares of our common stock of up to an aggregate market value of $300 million; this authorization expired on February 26, 2018. On February 24, 2017, our Board of Directors authorized an additional share repurchase of up to an aggregate market value of $150 million; this authorization became fully utilized in November 2018. On November 6, 2018, our Board of Directors authorized an additional share repurchase of up to an aggregate market value of $250 million during a three-year period from November 6, 2018 to November 6, 2021.

On September 15, 2016, we entered into a $200 million accelerated share repurchase agreement (the "ASR Agreement") with Wells Fargo Bank, National Association ("Wells Fargo"). Pursuant to the terms of the ASR Agreement, on September 16, 2016, we paid Wells Fargo $200 million in cash and received 4,135,435 shares of BWXT common stock. On March 24, 2017, the final settlement of the ASR Agreement was completed, and we received an additional 846,568 shares of BWXT common stock. The total number of shares repurchased under the ASR Agreement was 4,982,003 shares at an average price of $40.14 per share based on the volume-weighted average stock price of BWXT common stock traded during the term of the ASR Agreement, less a customary discount.

We immediately reduced the outstanding shares used to calculate the weighted-average common shares outstanding for basic and diluted earnings per share as of the dates the initial and final repurchases of shares were physically delivered. The ASR Agreement was accounted for as a treasury stock transaction and forward stock purchase contract. The shares were recorded in treasury stock on our consolidated balance sheets. The forward stock purchase contract was indexed to BWXT's own stock and classified as an equity instrument.

In the year ended December 31, 2019, we repurchased 443,877 shares of our common stock for $20.0 million. In the year ended December 31, 2018, we repurchased 4,523,934 shares of our common stock for approximately $214.7 million. In the year ended December 31, 2017, we received 846,568 shares under the final settlement of the ASR Agreement and made no other share repurchases. As of December 31, 2019, we had approximately $165.3 million available to us for share repurchase under the $250 million authorization described above.

NOTE 9 – STOCK-BASED COMPENSATION

2010 Long-Term Incentive Plan of BWX Technologies, Inc.

Members of the Board of Directors, executive officers, key employees and consultants are eligible to participate in the 2010 Long-Term Incentive Plan of BWX Technologies, Inc. (the "Plan"). The Compensation Committee of the Board of Directors selects the participants for the Plan. The Plan provides for a number of forms of stock-based compensation, including incentive and non-qualified stock options, restricted stock, restricted stock units, performance shares and performance units, subject to satisfaction of specific performance goals. Shares subject to awards under the Plan that are cancelled, forfeited, terminated or expire unexercised, shall immediately become available for the granting of awards under the Plan. As part of the approval of the Plan, 10,000,000 shares of common stock were initially authorized for issuance through the Plan, with an additional 2,300,000 authorized for issuance in 2014. Options to purchase shares are granted at not less than 100% of the fair market value closing price on the date of grant, become exercisable at such time or times as determined when granted and expire not more than ten years after the date of grant.

At December 31, 2019, we had awarded 9,109,541 shares under the Plan and had a total of 3,190,459 shares of our common stock available for future awards. In the event of a change in control of the Company, the terms of the awards under the Plan contain provisions that may cause restrictions to lapse and accelerate the vesting of awards.

Long-Term Incentive Plan of BWXT Technical Services Group, Inc.

In June 2012, we established the 2012 Long-Term Incentive Plan of BWXT Technical Services Group, Inc., a cash-settled plan for employees of certain subsidiaries and unconsolidated affiliates as selected by the plan committee. The cash-settled plan provides for a number of forms of stock-based compensation, including stock appreciation rights, restricted stock units and performance units, subject to satisfaction of specific performance goals. Stock appreciation rights are granted at not less than 100% of the fair market value closing price of a share of BWXT common stock on the date of grant, become exercisable at such time or times as determined when granted and expire not more than ten years after the date of grant. Stock appreciation rights are cash settled for the excess of the market price of BWXT common stock on the exercise date minus the exercise price. Restricted stock units and performance units are cash settled upon vesting as determined when granted. We will not issue any shares of BWXT common stock under this plan, as all awards are cash settled.

In the event of a change in control of the Company, the terms of the awards under the cash-settled plan contain provisions that may cause restrictions to lapse and accelerate the vesting of awards.

Stock-based compensation expense for all of our plans recognized for the years ended December 31, 2019, 2018 and 2017 totaled $14.8 million, $10.8 million and $18.5 million, respectively, with associated tax benefit totaling $2.5 million, $1.7 million and $3.7 million, respectively. Included in stock-based compensation expense for the year ended December 31, 2017 is $2.5 million associated with an executive reorganization that resulted in the acceleration of previously granted equity awards.

As of December 31, 2019, unrecognized estimated compensation expense related to nonvested awards was $13.3 million, which is expected to be recognized over a weighted-average period of 1.7 years.

Stock Options

The following table summarizes activity for our stock options for the year ended December 31, 2019 (share data in thousands):

	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (In millions)
Outstanding at beginning of period	571	$ 23.44		
Granted	—	N/A		
Exercised	(246)	$ 22.85		
Cancelled/expired/forfeited	(1)	$ 20.31		
Outstanding at end of period	324	$ 23.91	3.1 Years	$ 12.4
Exercisable at end of period	324	$ 23.91	3.1 Years	$ 12.4

The aggregate intrinsic value included in the table above represents the total pre-tax intrinsic value that would have been received by the option holders had all option holders exercised their options on December 31, 2019. The intrinsic value is calculated as the total number of option shares multiplied by the difference between the closing price of our common stock on the last trading day of the period and the exercise price of the options. This amount changes based on the price of our common stock.

During the years ended December 31, 2019, 2018 and 2017, the total intrinsic value of stock options exercised was $8.1 million, $8.5 million and $22.6 million, respectively. The actual tax benefits realized related to the stock options exercised during the year ended December 31, 2019 totaled $1.1 million.

Performance Shares

Nonvested performance shares as of December 31, 2019 and changes during the year ended December 31, 2019 were as follows (share data in thousands):

	Number of Shares	Weighted-Average Grant Date Fair Value
Nonvested at beginning of period	639	$ 43.06
Adjustment to assumed vesting percentage	13	$ 48.52
Granted	140	$ 51.78
Vested	(368)	$ 34.64
Cancelled/forfeited	(15)	$ 53.97
Nonvested at end of period	409	$ 53.39

The actual number of shares in which each participant vests is dependent upon achievement of certain return on invested capital and diluted earnings per share targets over a three-year performance period. The number of shares in which participants can vest ranges from zero to 200% of the initial performance shares granted, to be determined upon completion of the three-year performance period. The nonvested shares at the end of the period in the table above assumes weighted-average vesting of 114%.

The actual tax benefits realized related to the performance shares vested during the year ended December 31, 2019 totaled $3.3 million.

Restricted Stock Units

Nonvested restricted stock units as of December 31, 2019 and changes during the year ended December 31, 2019 were as follows (share data in thousands):

	Number of Shares	Weighted-Average Grant Date Fair Value
Nonvested at beginning of period	160	$ 51.85
Granted	123	$ 51.36
Vested	(110)	$ 46.96
Cancelled/forfeited	(7)	$ 55.22
Nonvested at end of period	166	$ 54.51

The actual tax benefits realized related to the restricted stock units vested during the year ended December 31, 2019 totaled $0.8 million.

Cash-Settled Stock Appreciation Rights

The following table summarizes activity for our stock appreciation rights for the year ended December 31, 2019 (unit data in thousands):

	Number of Units	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (In millions)
Outstanding at beginning of period	64	$ 22.92		
Granted	—	N/A		
Exercised	(9)	$ 20.00		
Cancelled/expired/forfeited	—	N/A		
Outstanding at end of period	55	$ 23.39	3.0 Years	$ 2.1
Exercisable at end of period	55	$ 23.39	3.0 Years	$ 2.1

The aggregate intrinsic value included in the table above represents the total pre-tax intrinsic value that would have been received by the stock appreciation rights holders had all holders exercised their rights on December 31, 2019. The intrinsic value is calculated as the total number of stock appreciation rights multiplied by the difference between the closing price of our common stock on the last trading day of the period and the exercise price of the stock appreciation rights. This amount changes based on the price of our common stock.

Cash-Settled Performance Units

The actual number of units in which each participant vests is dependent upon achievement of certain return on invested capital and diluted earnings per share targets over a three-year performance period. The number of units in which participants can vest ranges from zero to 200% of the initial performance units granted, to be determined upon completion of the three-year performance period.

As of December 31, 2019, we had 5,207 nonvested units valued at $62.08 per share with an assumed weighted-average vesting of 124%. The fair value is based on our closing stock price as of December 31, 2019 and is re-determined at the end of each reporting period for purposes of remeasuring compensation expense associated with these cash-settled awards.

Cash-Settled Restricted Stock Units

As of December 31, 2019, we had 1,193 nonvested units valued at $62.08 per share. The fair value is based on our closing stock price as of December 31, 2019 and is re-determined at the end of each reporting period for purposes of remeasuring compensation expense associated with these cash-settled awards.

NOTE 10 – COMMITMENTS AND CONTINGENCIES

Investigations and Litigation

Due to the nature of our business, we are, from time to time, involved in investigations, litigation, disputes or claims related to our business activities, including, among other things:

- performance- or warranty-related matters under our customer and supplier contracts and other business arrangements; and
- workers' compensation, employment, premises liability and other claims.

Based upon our prior experience, we do not expect that any of these litigation proceedings, disputes and claims will have a material adverse effect on our consolidated financial condition, results of operations or cash flows.

Environmental Matters

We have been identified as a potentially responsible party at various cleanup sites under the Comprehensive Environmental Response, Compensation, and Liability Act, as amended ("CERCLA") and other environmental laws. These laws can impose liability for the entire cost of cleanup on any of the potentially responsible parties, regardless of fault or the lawfulness of the original conduct. Generally, however, where there are multiple responsible parties, a final allocation of costs is made based on the amount and type of wastes disposed of by each party and the number of financially viable parties, although this may not be the case with respect to any particular site. We have not been determined to be a major contributor of wastes to any of these sites. On the basis of our relative contribution of waste to each site, we expect our share of the ultimate liability for the various sites will not have a material adverse effect on our consolidated financial condition, results of operations or cash flows in any given year.

We perform significant amounts of work for the U.S. Government under both prime contracts and subcontracts and operate certain facilities that are licensed to possess and process special nuclear materials. As a result of these activities, we are subject to continuing reviews by governmental agencies, including the U.S. Environmental Protection Agency and the NRC. We are also involved in manufacturing activities at licensed facilities in Canada that are also subject to continuing reviews by governmental agencies in Canada, including the CNSC.

The NRC's decommissioning regulations require our Nuclear Operations Group segment to provide financial assurance that it will be able to pay the expected cost of decommissioning its two licensed facilities at the end of their service lives. We provided financial assurance totaling $61.8 million and $56.2 million during the years ended December 31, 2019 and 2018 respectively, with surety bonds for the ultimate decommissioning of these licensed facilities. These facilities have provisions in their government contracts pursuant to which substantially all of our decommissioning costs and financial assurance obligations are covered by the DOE, including the costs to complete the decommissioning projects underway at the facility in Erwin, Tennessee. These surety bonds are to cover decommissioning required pursuant to work not subject to this DOE obligation.

In Canada, the CNSC's decommissioning regulations require our Nuclear Power Group segment to provide financial assurance that it will be able to pay the expected cost of decommissioning its CNSC-licensed facilities at the end of their service lives. We provided financial assurance totaling $47.0 million and $45.1 million during the years ended December 31, 2019 and 2018, respectively, with letters of credit and surety bonds for the ultimate decommissioning of these licensed facilities.

Our compliance with federal, foreign, state and local environmental control and protection regulations resulted in pre-tax charges of approximately $15.9 million, $14.7 million and $14.1 million in the years ended December 31, 2019, 2018 and 2017, respectively. In addition, compliance with existing environmental regulations necessitated capital expenditures of $1.4 million, $1.7 million and $0.9 million in the years ended December 31, 2019, 2018 and 2017, respectively. At December 31, 2019 and 2018, we had total environmental accruals (including asset retirement obligations) of $90.8 million and $104.9 million, respectively. Of our total environmental accruals at December 31, 2019 and 2018, $10.4 million and $18.5 million, respectively, were included in current liabilities. Inherent in the estimates of these accruals are our expectations regarding the levels of contamination, decommissioning costs and recoverability from other parties, which may vary significantly as decommissioning activities progress. Accordingly, changes in estimates could result in material adjustments to our operating results, and the ultimate loss may differ materially from the amounts that we have provided for in our consolidated financial statements.

NOTE 11 – RISKS AND UNCERTAINTIES

Revenue Recognized Over Time

As of December 31, 2019, in accordance with the method of recognizing revenue over time, we have provided for our estimated costs to complete all of our ongoing contracts. However, it is possible that current estimates could change due to unforeseen events, which could result in adjustments to overall contract costs. The risk on fixed-price contracts is that revenue from the customer does not cover increases in our costs. It is possible that current estimates could materially change for various reasons, including, but not limited to, fluctuations in forecasted labor productivity or steel and other raw material prices. Increases in costs on our fixed-price contracts could have a material adverse impact on our consolidated financial condition, results of operations and cash flows. Alternatively, reductions in overall contract costs at completion could materially improve our consolidated financial condition, results of operations and cash flows.

Insurance

Upon the February 22, 2006 effectiveness of the settlement relating to the Chapter 11 proceedings involving several of our former subsidiaries, most of our subsidiaries contributed substantial insurance rights to the asbestos personal injury trust, including rights to (1) certain pre-1979 primary and excess insurance coverages and (2) certain of our 1979-1986 excess insurance coverage. These insurance rights provided coverage for, among other things, asbestos and other personal injury claims, subject to the terms and conditions of the policies. The contribution of these insurance rights was made in exchange for the agreement on the part of the representatives of the asbestos claimants, including the representative of future claimants, to the entry of a permanent injunction, pursuant to Section 524(g) of the U.S. Bankruptcy Code, to channel to the asbestos trust all asbestos-related general liability claims against our subsidiaries and former subsidiaries arising out of, resulting from or attributable to their operations, and the implementation of related releases and indemnification provisions protecting those subsidiaries and their affiliates from future liability for such claims. Although we are not aware of any significant, unresolved claims against our subsidiaries and former subsidiaries that are not subject to the channeling injunction and that relate to the periods during which such excess insurance coverage related, with the contribution of these insurance rights to the asbestos personal injury trust, it is possible that we could have underinsured or uninsured exposure for non-derivative asbestos claims or other personal injury or other claims that would have been insured under these coverages had the insurance rights not been contributed to the asbestos personal injury trust. In conjunction with the spin-off, claims and liabilities associated with the asbestos personal injury, property damage and indirect property damage claims mentioned above have been expressly assumed by BWE pursuant to the master separation agreement between us and BWE.

NOTE 12 – FINANCIAL INSTRUMENTS WITH CONCENTRATIONS OF CREDIT RISK

The primary customer of our Nuclear Operations Group and Nuclear Services Group segments is the U.S. Government, including some of its contractors. Our Nuclear Power Group segment's major customers are large utilities. These concentrations of customers may impact our overall exposure to credit risk, either positively or negatively, in that our customers may be similarly affected by changes in economic or other conditions. In the years ended December 31, 2019, 2018 and 2017, U.S. Government contracts accounted for approximately 77%, 79% and 81% of our total consolidated revenues, respectively. Accounts receivable due directly or indirectly from the U.S. Government represented 67% and 63% of net receivables at December 31, 2019 and 2018, respectively. See Note 15 for additional information about our operations in different geographic areas.

We believe that our provision for possible losses on uncollectable accounts receivable is adequate for our credit loss exposure. At December 31, 2019 and 2018, the allowances for possible losses that we deducted from Accounts receivable – trade, net on our consolidated balance sheets were $0.2 million and $0.1 million, respectively.

NOTE 13 – INVESTMENTS

The following is a summary of our investments at December 31, 2019:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
	(In thousands)			
Equity securities				
Equities	$ 417	$ 1,755	$ —	$ 2,172
Mutual funds	4,988	697	—	5,685
Available-for-sale securities				
U.S. Government and agency securities	2,039	5	—	2,044
Corporate bonds	3,103	380	—	3,483
Asset-backed securities and collateralized mortgage obligations	132	—	(53)	79
Total	$ 10,679	$ 2,837	$ (53)	$ 13,463

The following is a summary of our investments at December 31, 2018:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
	(In thousands)			
Equity securities				
Equities	$ 908	$ 255	$ —	$ 1,163
Mutual funds	4,699	—	(5)	4,694
Available-for-sale securities				
U.S. Government and agency securities	2,216	11	—	2,227
Corporate bonds	2,850	—	(47)	2,803
Asset-backed securities and collateralized mortgage obligations	144	—	(52)	92
Total	$ 10,817	$ 266	$ (104)	$ 10,979

Proceeds, gross realized gains and gross realized losses on sales of available-for-sale securities were as follows:

	Proceeds	Gross Realized Gains	Gross Realized Losses
	(In thousands)		
Year Ended December 31, 2019	$ —	$ —	$ —
Year Ended December 31, 2018	$ —	$ —	$ —
Year Ended December 31, 2017	$ 148	$ 108	$ —

NOTE 14 – FAIR VALUE MEASUREMENTS

FASB Topic *Fair Value Measurements and Disclosures* defines fair value as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in an orderly transaction between market participants at the measurement date. This topic also sets forth the disclosure requirements regarding fair value and establishes a hierarchy for valuation inputs that emphasizes the use of observable inputs when measuring fair value. A financial instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The fair value hierarchy established by this topic is as follows:

- Level 1 – inputs are based upon quoted prices for identical instruments traded in active markets.
- Level 2 – inputs are based upon quoted prices for similar instruments in active markets, quoted prices for similar or identical instruments in inactive markets and model-based valuation techniques for which all significant assumptions are observable in the market or can be corroborated by observable market data for substantially the full term of the assets and liabilities.

- Level 3 – inputs are generally unobservable and typically reflect management's estimates of assumptions that market participants would use in pricing the asset or liability. The fair values are therefore determined using model-based techniques that include option pricing models, discounted cash flow models and similar valuation techniques.

The following sections describe the valuation methodologies we use to measure the fair values of our investments, derivatives and nonrecurring fair value measurements.

Investments

Investments primarily include U.S. Government and agency securities, corporate bonds and equities and mutual funds.

In general, and where applicable, we principally use a composite of observable prices and quoted prices in active markets for identical assets or liabilities to determine fair value. This pricing methodology applies to our Level 1 and Level 2 investments.

Fair Value Measurements

The following is a summary of our investments measured at fair value at December 31, 2019:

	12/31/2019	Level 1	Level 2	Level 3
		(In thousands)		
Equity securities				
Equities	$ 2,172	$ —	$ 2,172	$ —
Mutual funds	5,685	—	5,685	—
Available-for-sale securities				
U.S. Government and agency securities	2,044	2,044	—	—
Corporate bonds	3,483	1,855	1,628	—
Asset-backed securities and collateralized mortgage obligations	79	—	79	—
Total	$ 13,463	$ 3,899	$ 9,564	$ —

The following is a summary of our investments measured at fair value at December 31, 2018:

	12/31/2018	Level 1	Level 2	Level 3
		(In thousands)		
Equity securities				
Equities	$ 1,163	$ —	$ 1,163	$ —
Mutual funds	4,694	—	4,694	—
Available-for-sale securities				
U.S. Government and agency securities	2,227	2,227	—	—
Corporate bonds	2,803	1,433	1,370	—
Asset-backed securities and collateralized mortgage obligations	92	—	92	—
Total	$ 10,979	$ 3,660	$ 7,319	$ —

Derivatives

Level 2 derivative assets and liabilities currently consist of FX forward contracts. Where applicable, the value of these derivative assets and liabilities is computed by discounting the projected future cash flow amounts to present value using market-based observable inputs, including FX forward and spot rates, interest rates and counterparty performance risk adjustments. At December 31, 2019 and 2018, we had forward contracts outstanding to purchase or sell foreign currencies, primarily Canadian dollars and Euros, with a total fair value of $(0.8) million and $0.7 million, respectively.

Other Financial Instruments

We used the following methods and assumptions in estimating our fair value disclosures for our other financial instruments, as follows:

Cash and cash equivalents and restricted cash and cash equivalents. The carrying amounts that we have reported in the accompanying consolidated balance sheets for Cash and cash equivalents and Restricted cash and cash equivalents approximate their fair values due to their highly liquid nature.

Long-term and short-term debt. We base the fair values of debt instruments, including our Senior Notes, on quoted market prices. Where quoted prices are not available, we base the fair values on the present value of future cash flows discounted at estimated borrowing rates for similar debt instruments or on estimated prices based on current yields for debt issues of similar quality and terms. At December 31, 2019 and 2018, the fair value of our Senior Notes was $423.5 million and $384.9 million, respectively. The fair value of our remaining debt instruments approximated their carrying values at December 31, 2019 and 2018.

NOTE 15 – SEGMENT REPORTING

As described in Note 1, our operations are assessed based on three reportable segments. The operations of our segments are managed separately, and each segment has unique technology, services and customer classes. We account for intersegment sales at prices that we generally establish by reference to similar transactions with unaffiliated customers. Reportable segments are measured based on operating income exclusive of general corporate expenses and gains (losses) on sales of corporate assets.

1. Information about Operations in our Different Industry Segments:

	Year Ended December 31, 2019	2018	2017
	(In thousands)		
REVENUES [1]:			
Nuclear Operations Group	$ 1,428,587	$ 1,319,170	$ 1,271,861
Nuclear Power Group	352,640	365,911	285,831
Nuclear Services Group	131,339	122,438	137,249
Eliminations	(17,646)	(7,630)	(7,203)
	$ 1,894,920	$ 1,799,889	$ 1,687,738

(1) Segment revenues are net of the following intersegment transfers:

	2019	2018	2017
Nuclear Operations Group Transfers	$ (4,382)	$ (4,004)	$ (1,322)
Nuclear Power Group Transfers	(208)	(308)	(246)
Nuclear Services Group Transfers	(13,056)	(3,318)	(5,635)
	$ (17,646)	$ (7,630)	$ (7,203)

	2019	2018	2017
OPERATING INCOME:			
Nuclear Operations Group	$ 298,328	$ 271,405	$ 267,930
Nuclear Power Group	53,815	52,270	36,548
Nuclear Services Group	14,226	20,374	22,083
Other	(23,099)	(18,074)	(10,688)
	$ 343,270	$ 325,975	$ 315,873
Unallocated Corporate [1]	(17,749)	(20,998)	(23,650)
Total Operating Income [2]	$ 325,521	$ 304,977	$ 292,223
Other Income (Expense)	(11,779)	(24,832)	3,557
Income before Provision for Income Taxes	$ 313,742	$ 280,145	$ 295,780

(1) Unallocated Corporate includes general corporate overhead not allocated to segments.

(2) The following amounts are included in Operating Income:

	2019	2018	2017
Losses (Gains) on Asset Disposals and Impairments, Net:			
Nuclear Operations Group	$ (6)	$ —	$ (65)
Nuclear Power Group	103	(179)	(129)
Nuclear Services Group	2,727	—	—
Other	—	467	—
Unallocated Corporate	—	(224)	—
	$ 2,824	$ 64	$ (194)
Equity in Income of Investees:			
Nuclear Operations Group	$ —	$ —	$ —
Nuclear Power Group	—	—	—
Nuclear Services Group	28,924	30,343	13,612
Other	—	—	—
	$ 28,924	$ 30,343	$ 13,612

	Year Ended December 31, 2019	2018	2017
	(In thousands)		
CAPITAL EXPENDITURES:			
Nuclear Operations Group	$ 133,279	$ 93,360	$ 86,323
Nuclear Power Group	38,053	4,710	3,856
Nuclear Services Group	1,169	974	1,514
Other	2,597	2,780	628
Segment Capital Expenditures	175,098	101,824	92,321
Corporate Capital Expenditures	7,026	7,514	4,559
Total Capital Expenditures	$ 182,124	$ 109,338	$ 96,880
DEPRECIATION AND AMORTIZATION:			
Nuclear Operations Group	$ 33,231	$ 32,132	$ 31,289
Nuclear Power Group	17,054	17,154	13,751
Nuclear Services Group	3,246	3,401	3,702
Other	787	—	—
Segment Depreciation and Amortization	54,318	52,687	48,742
Corporate Depreciation and Amortization	7,404	7,410	7,815
Total Depreciation and Amortization	$ 61,722	$ 60,097	$ 56,557

	December 31, 2019	2018	2017
	(In thousands)		
SEGMENT ASSETS:			
Nuclear Operations Group	$ 986,827	$ 878,758	$ 947,055
Nuclear Power Group	580,413	482,763	313,959
Nuclear Services Group	177,952	180,441	161,948
Other	3,751	5,557	2,511
Segment Assets	1,748,943	1,547,519	1,425,473
Corporate Assets	159,970	107,577	286,866
Total Assets	$ 1,908,913	$ 1,655,096	$ 1,712,339
INVESTMENT IN UNCONSOLIDATED AFFILIATES:			
Nuclear Operations Group	$ —	$ —	$ —
Nuclear Power Group	—	—	—
Nuclear Services Group	70,116	63,746	43,266
Other	—	—	—
Total Investment in Unconsolidated Affiliates	$ 70,116	$ 63,746	$ 43,266

2. Information about our Product and Service Lines:

	Year Ended December 31,		
	2019	2018	2017
	(In thousands)		
REVENUES:			
Nuclear Operations Group:			
Government Programs	$ 1,368,555	$ 1,311,886	$ 1,262,929
Commercial Operations	60,032	7,284	8,932
	1,428,587	1,319,170	1,271,861
Nuclear Power Group:			
Nuclear Manufacturing	243,472	201,628	158,931
Nuclear Services and Engineering	109,168	164,283	126,900
	352,640	365,911	285,831
Nuclear Services Group:			
Nuclear Environmental Services	102,726	96,566	101,056
Management & Operation Contracts of U.S. Government Facilities	—	—	9,746
Nuclear Services and Advanced Reactor Design and Engineering	28,613	25,872	26,447
	131,339	122,438	137,249
Other:	—	—	—
Eliminations	(17,646)	(7,630)	(7,203)
	$ 1,894,920	$ 1,799,889	$ 1,687,738

3. Information about our Consolidated Operations in Different Geographic Areas:

	Year Ended December 31,		
	2019	2018	2017
	(In thousands)		
REVENUES [(1)]:			
U.S.	$ 1,572,085	$ 1,446,791	$ 1,408,817
Canada	287,971	294,913	245,073
All Other Countries	34,864	58,185	33,848
	$ 1,894,920	$ 1,799,889	$ 1,687,738

(1) We allocate geographic revenues based on the location of the customers' operations.

	December 31,		
	2019	2018	2017
	(In thousands)		
NET PROPERTY, PLANT AND EQUIPMENT:			
U.S.	$ 494,202	$ 390,632	$ 308,561
Canada	86,039	48,607	40,068
	$ 580,241	$ 439,239	$ 348,629

4. Information about our Major Customers:

In the years ended December 31, 2019, 2018 and 2017, sales to the U.S. Government accounted for approximately 77%, 79% and 81% of our total consolidated revenues, respectively, all of which were included in our Nuclear Operations Group and Nuclear Services Group segments.

NOTE 16 – QUARTERLY FINANCIAL DATA (UNAUDITED)

The following tables set forth selected unaudited quarterly financial information for the years ended December 31, 2019 and 2018:

	Year Ended December 31, 2019 Quarter Ended			
	March 31, 2019	June 30, 2019	September 30, 2019	December 31, 2019
	(In thousands, except per share amounts)			
Revenues	$ 416,454	$ 471,231	$ 506,000	$ 501,235
Operating income (1)	$ 63,644	$ 80,535	$ 98,462	$ 82,880
Equity in income of investees	$ 7,682	$ 6,862	$ 7,874	$ 6,506
Net Income Attributable to BWX Technologies, Inc.	$ 48,978	$ 58,878	$ 74,810	$ 61,449
Earnings per common share:				
Basic:				
Net Income Attributable to BWX Technologies, Inc.	$ 0.51	$ 0.62	$ 0.78	$ 0.64
Diluted:				
Net Income Attributable to BWX Technologies, Inc.	$ 0.51	$ 0.62	$ 0.78	$ 0.64

(1) Includes equity in income of investees.

	Year Ended December 31, 2018 Quarter Ended			
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018
	(In thousands, except per share amounts)			
Revenues	$ 457,463	$ 438,921	$ 425,507	$ 477,998
Operating income (1)	$ 79,888	$ 71,549	$ 50,395	$ 103,145
Equity in income of investees	$ 7,150	$ 6,225	$ 9,323	$ 7,645
Net Income Attributable to BWX Technologies, Inc.	$ 66,441	$ 60,663	$ 77,919	$ 21,935
Earnings per common share:				
Basic:				
Net Income Attributable to BWX Technologies, Inc.	$ 0.67	$ 0.61	$ 0.78	$ 0.22
Diluted:				
Net Income Attributable to BWX Technologies, Inc.	$ 0.66	$ 0.60	$ 0.78	$ 0.22

(1) Includes equity in income of investees.

In the quarter ended September 30, 2018, we recognized $12.5 million of benefit in our provision for income taxes related to the remeasurement of our deferred tax assets as a result of accelerating additional contributions to certain of our domestic pension plans for inclusion in our 2017 U.S. tax return.

We immediately recognize actuarial gains (losses) for our pension and postretirement benefit plans in earnings as a component of net periodic benefit cost. Recorded in the quarters ended December 31, 2019 and 2018, the effects of these adjustments on pre-tax income were $(3.6) million and $(67.8) million, respectively. Additionally, we recorded an interim net actuarial gain of $35.1 million in the quarter ended September 30, 2018 as a result of the purchase of a group annuity contract to transfer certain domestic pension benefit obligations to an insurance company, which included a $10.4 million settlement loss and a $45.5 million actuarial gain.

NOTE 17 – EARNINGS PER SHARE

The following table sets forth the computation of basic and diluted earnings per share:

	Year Ended December 31, 2019	2018	2017
	(In thousands, except shares and per share amounts)		
Basic:			
Net Income Attributable to BWX Technologies, Inc.	$ 244,115	$ 226,958	$ 147,844
Weighted-average common shares	95,377,414	99,062,087	99,334,472
Basic earnings per common share	$ 2.56	$ 2.29	$ 1.49
Diluted:			
Net Income Attributable to BWX Technologies, Inc.	$ 244,115	$ 226,958	$ 147,844
Weighted-average common shares (basic)	95,377,414	99,062,087	99,334,472
Effect of dilutive securities:			
Stock options, restricted stock units and performance shares [1]	433,124	956,966	1,034,718
Adjusted weighted-average common shares	95,810,538	100,019,053	100,369,190
Diluted earnings per common share	$ 2.55	$ 2.27	$ 1.47

(1) At December 31, 2019, 2018 and 2017, we excluded 0, 0 and 41,854 shares, respectively, from our diluted share calculation as their effect would have been antidilutive.

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

Item 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

As of the end of the period covered by this Report, we carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures (as that term is defined in Rules 13a-15(e) and 15d-15(e) adopted by the SEC under the Securities Exchange Act of 1934, as amended (the "Exchange Act")). Our disclosure controls and procedures were developed through a process in which our management applied its judgment in assessing the costs and benefits of such controls and procedures, which, by their nature, can provide only reasonable assurance regarding the control objectives. It should be noted that the design of any system of disclosure controls and procedures is based in part upon various assumptions about the likelihood of future events, and we cannot assure that any design will succeed in achieving its stated goals under all potential future conditions, regardless of how remote. Based on the evaluation referred to above, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures are effective as of December 31, 2019 to provide reasonable assurance that information required to be disclosed by us 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 rules and forms of the SEC and such information is accumulated and communicated to management, including its principal executives and principal financial officers or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as that term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) and for our assessment of the effectiveness of internal control over financial reporting.

Our internal control over financial reporting includes policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of our consolidated financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures are being made only in accordance with authorizations of our management and Board of Directors; and (3) 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 consolidated 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.

Our management, including our Chief Executive Officer and Chief Financial Officer, has conducted an assessment of the effectiveness of our internal control over financial reporting as of December 31, 2019, based on the framework established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. This assessment included an evaluation of the design of our internal control over financial reporting and testing of the operational effectiveness of those controls. Based on our assessment under the criteria described above, management has concluded that our internal control over financial reporting was effective as of December 31, 2019. Deloitte & Touche LLP has issued an attestation report on our internal control over financial reporting as of December 31, 2019, and their report is included in Item 9A.

Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting during the quarter ended December 31, 2019 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of BWX Technologies, Inc.:

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of BWX Technologies, Inc. and subsidiaries (the Company) as of December 31, 2019, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control – Integrated Framework (2013) issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2019 of the Company and our report dated February 24, 2020 expressed an unqualified opinion on those financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) 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/ DELOITTE & TOUCHE LLP

Charlotte, North Carolina
February 24, 2020

Item 9B. OTHER INFORMATION

None.

PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this item with respect to directors and executive officers is incorporated by reference to the material appearing under the headings "Election of Directors," "Named Executive Profiles," and "Executive Officer Profiles" in the Proxy Statement for our 2020 Annual Meeting of Stockholders. The information required by this item with respect to compliance with section 16(a) of the Securities and Exchange Act of 1934, as amended, is incorporated by reference to the material appearing under the heading "Section 16(a) Beneficial Ownership Compliance" in the Proxy Statement for our 2020 Annual Meeting of Stockholders. The information required by this item with respect to the Audit Committee and Audit and Finance Committee financial experts is incorporated by reference to the material appearing in "Director Independence" and "Audit and Finance Committee" under the heading "Corporate Governance – Board of Directors and Its Committees" in the Proxy Statement for our 2020 Annual Meeting of Stockholders.

We have adopted a Code of Business Conduct for our employees and directors, including, specifically, our chief executive officer, our chief financial officer, our chief accounting officer and our other executive officers. Our code satisfies the requirements for a "code of ethics" within the meaning of SEC rules. A copy of the code is posted on our web site, www.bwxt.com under "About Us – Corporate Citizenship – Ethics and Compliance."

Item 11. EXECUTIVE COMPENSATION

The information required by this item is incorporated by reference to the material appearing under the headings "Compensation Discussion and Analysis," "Compensation of Directors," "Compensation of Executive Officers," "Compensation Committee Interlocks and Insider Participation" section under the heading "Corporate Governance – Board of Directors and Its Committees," and "Compensation Committee Report" in the Proxy Statement for our 2020 Annual Meeting of Stockholders.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this item is incorporated by reference to the material appearing under the headings "Equity Compensation Plan Information" and "Security Ownership of Certain Beneficial Owners" in the Proxy Statement for our 2020 Annual Meeting of Stockholders.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information required by this item is incorporated by reference to the material appearing under the headings "Corporate Governance – Director Independence" and "Certain Relationships and Related Transactions" in the Proxy Statement for our 2020 Annual Meeting of Stockholders.

Item 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item is incorporated by reference to the material appearing under the heading "Ratification of Appointment of Independent Registered Public Accounting Firm for Year Ending December 31, 2020" in the Proxy Statement for our 2020 Annual Meeting of Stockholders.

PART IV

Item 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

The following documents are filed as part of this Report or incorporated by reference:

1. CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

Consolidated Balance Sheets as of December 31, 2019 and 2018

Consolidated Statements of Income for the Years Ended December 31, 2019, 2018 and 2017

Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2019, 2018 and 2017

Consolidated Statements of Stockholders' Equity for the Years Ended December 31, 2019, 2018 and 2017

Consolidated Statements of Cash Flows for the Years Ended December 31, 2019, 2018 and 2017

Notes to Consolidated Financial Statements for the Years Ended December 31, 2019, 2018 and 2017

2. CONSOLIDATED FINANCIAL STATEMENT SCHEDULES

All schedules for which provision is made of the applicable regulations of the SEC have been omitted because they are not required under the relevant instructions or because the required information is included in the financial statements or the related footnotes contained in this Report.

3. EXHIBITS

Exhibit Number	Description
2.1	Master Separation Agreement dated as of July 2, 2010 between McDermott International, Inc. and the Company (incorporated by reference to Exhibit 2.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2010 (File no. 1-34658)).
2.2	Master Separation Agreement, dated as of June 8, 2015, between the Company and Babcock & Wilcox Enterprises, Inc. (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed with the SEC on June 9, 2015 (File No.1-34658)).
3.1	Restated Certificate of Incorporation of the Company, dated May 14, 2019 (incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K filed with the SEC on May 17, 2019 (File No. 1-34658)).
3.3	Amended and Restated Bylaws, dated November 1, 2019 (incorporated by reference to Exhibit 3.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2019 (File No. 1-34658)).
4.1	Indenture, dated May 24, 2018, among BWX Technologies, Inc., each of the guarantors party thereto and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed with the SEC on May 24, 2018 (File No. 1-34658)).
4.2	Form of 5.375% Senior Note Due 2026 (included in Exhibit 4.1) (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed with the SEC on May 24, 2018 (File No. 1-34658)).
4.3	First Supplemental Indenture, dated May 24, 2019, among the Company, each of the guarantors party thereto and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019 (File No. 1-34658)).
4.4	Description of the Company's Securities Registered under Section 12 of the Securities Exchange Act of 1934.
10.1	Credit Agreement, dated as of May 24, 2018, among BWX Technologies, Inc., as administrative borrower, BWXT Canada Ltd., as the Canadian borrower, Wells Fargo Bank, N.A., as administrative agent, and the other lenders party thereto (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on May 24, 2018 (File No. 1-34658)).

Exhibit Number	Description
10.2	Tax Sharing Agreement dated as of June 7, 2010 between J. Ray Holdings, Inc. and Babcock & Wilcox Holdings, Inc. (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2010 (File No. 1-34658)).
10.3	Tax Sharing Agreement, dated as of June 8, 2015, by and between the Company and Babcock & Wilcox Enterprises, Inc. (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 1-34658)).
10.4	Cooperative Agreement, dated as of April 12, 2013, between Babcock & Wilcox mPower, Inc. and the United States Department of Energy (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated April 15, 2013 (File No. 1-34658)).
10.5*	BWX Technologies, Inc. Executive Incentive Compensation Plan as amended and restated July 1, 2015 (incorporated by reference to Exhibit 10.10 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 1-34658)).
10.6*	Supplemental Executive Retirement Plan of BWX Technologies, Inc. as amended and restated July 1, 2015 (incorporated by reference to Exhibit 10.12 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 1-34658)).
10.7*	BWX Technologies, Inc. Defined Contribution Restoration Plan as amended and restated effective July 1, 2015 (incorporated by reference to Exhibit 10.13 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 1-34658)).
10.8*	Form of Change In Control Agreement between the Company and selected officers (other than Mr. Geveden) (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on July 6, 2015 (File No. 1-34658)).
10.9*	Form of Amendment to Change in Control Agreement, dated July 1, 2016, between the Company and certain officers (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2016 (File No. 1-34658)).
10.10*	Form of Change In Control Agreement between the Company and Mr. Geveden dated October 26, 2015 (incorporated by reference to Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015 (File No. 1-34658)).
10.11*	Form of Non-Employee Director Grant Letter (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018 (File No. 1-34658)).
10.12*	Form of Non-Employee Director Grant Letter (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017 (File No. 1-34658)).
10.13*	Form of Non-Employee Director Grant Letter (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2016 (File No. 1-34658)).
10.14*	Form of 2019 Performance Restricted Stock Unit Grant Agreement for Employees (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed for the quarter ended March 31, 2019 (File No. 1-34658)).
10.15*	Form of 2019 Restricted Stock Unit Grant Agreement for Employees (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed for the quarter ended March 31, 2019 (File No. 1-34658)).
10.16*	Form of 2018 Performance Restricted Stock Unit Grant Agreement for Employees (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed for the quarter ended March 31, 2018 (File No. 1-34658)).
10.17*	Form of 2018 Restricted Stock Unit Grant Agreement for Employees (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed for the quarter ended March 31, 2018 (File No. 1-34658)).
10.18*	Form of 2017 Performance Restricted Stock Unit Grant Agreement for Employees (incorporated by reference to Exhibit 10.13 to the Company's Annual Report on Form 10-K filed for the year ended December 31, 2016 (File No. 1-34658)).

Exhibit Number	Description
10.19*	Form of 2017 Restricted Stock Unit Grant Agreement for Employees (incorporated by reference to Exhibit 10.14 to the Company's Annual Report on Form 10-K filed for the year ended December 31, 2016 (File No. 1-34658)).
10.20*	Form of 2016 Performance Restricted Stock Unit Grant Agreement for Employees (incorporated by reference to Exhibit 10.11 to the Company's Annual Report on Form 10-K filed for the year ended December 31, 2015 (File No. 1-34658)).
10.21*	Form of 2016 Restricted Stock Unit Grant Agreement for Employees (incorporated by reference to Exhibit 10.12 to the Company's Annual Report on Form 10-K filed for the year ended December 31, 2015 (File No. 1-34658)).
10.22*	Form of Agreement to Convert Units Payable in BWE Shares into Units Payable in BWXT Shares (incorporated by reference to Exhibit 10.13 to the Company's Annual Report on Form 10-K filed for the year ended December 31, 2015 (File No. 1-34658)).
10.23*	2015 Notice of Grant under Amended and Restated 2010 Long-Term Incentive Plan of the Company (incorporated by reference to Exhibit 10.12 to the Company's Annual Report on Form 10-K filed for the year ended December 31, 2014 (File No. 1-34658)).
10.24*	Form of 2015 Stock Option Grant Agreement for Employees (incorporated by reference to Exhibit 10.13 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014 (File No. 1-34658)).
10.25*	Form of 2015 Restricted Stock Unit Grant Agreement (ratable vesting) for Employees (incorporated by reference to Exhibit 10.14 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014 (File No. 1-34658)).
10.26*	Form of 2015 Restricted Stock Unit Grant Agreement (cliff vesting) for Employees (incorporated by reference to Exhibit 10.15 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014 (File No. 1-34658)).
10.27*	BWX Technologies, Inc. Executive Severance Plan amended and restated July 1, 2015 (incorporated by reference to Exhibit 10.11 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 1-34658)).
10.28*	2010 Long-Term Incentive Plan of the Company as amended and restated July 1, 2015 (incorporated by reference to Exhibit 10.9 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 1-34658)).
10.29*	Form of Restructuring Transaction Retention Agreement between the Company and certain of our executive officers, dated November 5, 2014 (incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K dated October 31, 2014 (File No. 1-34658)).
10.30*	Form of Restructuring Transaction Severance Agreement between the Company and certain of our executive officers, dated November 5, 2014 (incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K dated October 31, 2014 (File No. 1-34658)).
10.31*	Employee Matters Agreement, dated as of June 8, 2015, by and between the Company and Babcock & Wilcox Enterprises, Inc. (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on June 9, 2015 (File No. 1-34658)).
10.32	Transition Services Agreement, dated as of June 8, 2015, between the Company, as service provider, and Babcock &Wilcox Enterprises, Inc., as service receiver (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 1-34658)).
10.33	Transition Services Agreement, dated as of June 8, 2015, between Babcock & Wilcox Enterprises, Inc., as service provider, and the Company, as service receiver (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 1-34658)).
10.34	Assumption and Loss Allocation Agreement, dated as of June 19, 2015, by and among ACE American Insurance Company and the Ace Affiliates (as defined therein), Babcock & Wilcox Enterprises, Inc. and the Company (incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 1-34658)).

Exhibit Number	Description
10.35	Reinsurance Novation and Assumption Agreement, dated as of June 19, 2015, by and among ACE American Insurance Company and the Ace Affiliates (as defined therein), Creole Insurance Company and Dampkraft Insurance Company (incorporated by reference to Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 1-34658)).
10.36	Novation and Assumption Agreement, dated as of June 19, 2015, by and among the Company, Babcock & Wilcox Enterprises, Inc., Dampkraft Insurance Company and Creole Insurance Company (incorporated by reference to Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 1-34658)).
10.37*	Form of Director and Officer Indemnification Agreement entered into between the Company and each of its directors and selected officers effective July 1, 2015 (incorporated by reference to Exhibit 10.15 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 1-34658)).
10.38*	Transition Agreement, dated December 14, 2017, between John A. Fees and the Company (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated December 15, 2017 (File No. 1-34658)).
10.39	Joinder Agreement, dated as of May 24, 2019, between BWXT Advanced Technologies LLC and Wells Fargo Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019 (File No. 1-34658)).
21.1	Subsidiaries of the Registrant.
23.1	Consent of Deloitte & Touche LLP.
31.1	Rule 13a-14(a)/15d-14(a) certification of Chief Executive Officer.
31.2	Rule 13a-14(a)/15d-14(a) certification of Chief Financial Officer.
32.1	Section 1350 certification of Chief Executive Officer.
32.2	Section 1350 certification of Chief Financial Officer.
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL 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
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* Management contract or compensatory plan or arrangement.

Item 16. FORM 10-K SUMMARY

None.

SIGNATURES

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

		BWX TECHNOLOGIES, INC.
		/s/ Rex D. Geveden
February 24, 2020	By:	Rex D. Geveden
		President and Chief Executive Officer

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

Signature	Title
/s/ Rex D. Geveden Rex D. Geveden	President and Chief Executive Officer (Principal Executive Officer)
/s/ David S. Black David S. Black	Senior Vice President and Chief Financial Officer (Principal Financial Officer and Duly Authorized Representative)
/s/ Jason S. Kerr Jason S. Kerr	Vice President and Chief Accounting Officer (Principal Accounting Officer and Duly Authorized Representative)
/s/ John A. Fees John A. Fees	Non-Executive Chairman
/s/ Jan A. Bertsch Jan A. Bertsch	Director
/s/ Gerhard F. Burbach Gerhard F. Burbach	Director
/s/ James M. Jaska James M. Jaska	Director
/s/ Kenneth J. Krieg Kenneth J. Krieg	Director
/s/ Robb A. LeMasters Robb A. LeMasters	Director
/s/ Leland D. Melvin Leland D. Melvin	Director
/s/ Robert L. Nardelli Robert L. Nardelli	Director
/s/ Barbara A. Niland Barbara A. Niland	Director
/s/ Charles W. Pryor Jr. Charles W. Pryor Jr.	Director

February 24, 2020

EXHIBIT 4.4

DESCRIPTION OF BWX TECHNOLOGIES, INC.
SECURITIES REGISTERED PURSUANT TO SECTION 12
OF THE SECURITIES EXCHANGE ACT OF 1934

General

BWX Technologies, Inc., a Delaware corporation (the "Company," "we" or "us"), is authorized to issue two classes of securities: (i) up to 325,000,000 shares of common stock, par value of $0.01 per share, and (ii) up to 75,000,000 shares of preferred stock, par value of $0.01 per share. Our common stock is registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and listed on The New York Stock Exchange under the ticker symbol "BWXT". The transfer agent and registrar for our common stock is Computershare Trust Company, N.A. No shares of preferred stock are currently outstanding.

In the discussion that follows, we have summarized provisions of our restated certificate of incorporation (our "certificate of incorporation") and our amended and restated bylaws (our "bylaws") relating to our common stock. This summary is not complete. This discussion is subject to the relevant provisions of Delaware law and is qualified in its entirety by reference to our certificate of incorporation and our bylaws. We have filed copies of our certificate of incorporation and bylaws with the Securities and Exchange Commission as exhibits to our Annual Report on Form 10-K to which this description is an exhibit.

Description of Common Stock

Voting Rights. Each share of our common stock entitles its holder to one vote in the election of each director and on all other matters voted on generally by our stockholders, subject to the rights of the holders of any outstanding preferred stock.

Dividends. Subject to the preferences applicable to any outstanding preferred stock, holders of our common stock are entitled to dividends in such amounts and at such times as our board of directors in its discretion may declare out of funds legally available for the payment of dividends. Dividends are paid at the discretion of our board of directors after taking into account various factors, including:

- general business conditions;
- industry practice;
- our financial condition and performance;
- our future prospects;
- our cash needs and capital investment plans;
- our obligations to holders of any preferred stock we may issue;
- income tax consequences; and
- the restrictions Delaware and other applicable laws and our credit arrangements then impose.

Liquidation. If we liquidate or dissolve our business, the holders of our common stock will share ratably in all our assets that are available for distribution to our stockholders after our creditors are paid in full and the holders of any outstanding preferred stock receive their liquidation preferences in full.

No Preemptive Rights. Our common stock has no preemptive rights and is not convertible or redeemable or entitled to the benefits of any sinking or repurchase fund. All shares of common stock are fully paid and nonassessable.

Exclusive Forum Provision. Our bylaws provide that, unless we consent in writing to the selection of an alternate forum, a state court located in the State of Delaware (or if no state court in Delaware has jurisdiction, then the federal district court for the District of Delaware) will be the exclusive forum for derivative suits and certain other state corporate law actions, including any action asserting a claim against the Company or any director, officer or other employee arising under Delaware corporation law, the certificate of incorporation or bylaws. This exclusive forum provision applies to claims arising under Delaware state law and would not apply to claims brought pursuant to the Exchange Act or the Securities Act of 1933, as amended, or any other claim for which the federal courts have exclusive jurisdiction.

Anti-Takeover Effects of Provisions of our Certificate of Incorporation and Bylaws

Some of the provisions of our certificate of incorporation and bylaws discussed below may have the effect, either alone or in combination with Section 203 of the Delaware General Corporation Law, of making more difficult or discouraging a tender offer, proxy contest, merger or other takeover attempt that our board of directors opposes but that a stockholder might consider to be in its best interest.

No Stockholder Action by Written Consent. Our certificate of incorporation provides that our stockholders may act only at an annual or special meeting of stockholders and may not act by written consent.

Stockholders May Not Call A Special Meeting. Our certificate of incorporation and bylaws provide that only a majority of our board of directors or the chairman of our board of directors may call a special meeting of our stockholders.

Board Declassification; Size; Director Removal. Our certificate of incorporation provides for the phased-in declassification of our board of directors and the annual election of directors. Our board of directors is divided into three classes, with the terms of the classes elected at the annual meetings of stockholders held in 2017, 2018 and 2019, respectively, expiring at the third annual meeting of stockholders held after the election of such class of directors; provided that such division will terminate at the third annual meeting of stockholders held after the 2019 annual meeting of stockholders and the board of directors will cease to be classified at such time. Notwithstanding the preceding sentence, but subject to the rights, if any, of the holders of a series of preferred stock then outstanding, each director elected by the stockholders after the 2019 annual meeting of stockholders will serve for a term expiring at the first annual meeting of stockholders held after such director’s election. Each director will hold office until the annual meeting of stockholders at which that director’s term expires and, the foregoing notwithstanding, each director will serve until his or her successor will have been duly elected and qualified or until his or her earlier death, resignation or removal. Our certificate of incorporation provides that the number of directors will be fixed exclusively by, and may be increased or decreased exclusively by, our board of directors from time to time, but will not be less than three. Our certificate of incorporation provides that from and after the third annual meeting of stockholders following the 2019 annual meeting of stockholders, directors may be removed either with or without cause and, in either case, by the affirmative vote of the holders of a majority of the voting power of our outstanding stock. Until the third annual meeting of stockholders following the 2019 annual meeting of directors, directors may be removed only with cause or upon a board determination (as such terms are defined in our certificate of incorporation) and, in either case, by a vote of at least 80% of the voting power of our outstanding voting stock. A vacancy on our board of directors may be filled by a vote of a majority of the directors in office, and a director appointed to fill a vacancy serves for the remainder of the term of the class of directors in which the vacancy occurred. These provisions will prevent our stockholders from removing incumbent directors without cause and filling the resulting vacancies with their own nominees.

Advance Notice Provisions. Our bylaws contain advance notice and other procedural requirements that apply to stockholder nominations of persons for election to our board of directors at any annual or special meeting of stockholders and to stockholder proposals that stockholders take any other action at any annual meeting. In the case of any annual meeting, a stockholder proposing to nominate a person for election to our board of directors or proposing that any other action be taken must give our corporate secretary written notice of the proposal not less than 90 days and not more than 120 days before the anniversary of the date of the immediately preceding annual meeting of stockholders. These stockholder proposal deadlines are subject to exceptions if the pending annual meeting date is more than 30 days prior to or more than 30 days after the anniversary of the immediately preceding annual meeting. If the chairman of our board of directors or a majority of our board of directors calls a special meeting of stockholders for the election of directors, a stockholder proposing to nominate a person for that election must give our corporate secretary written notice of the proposal not earlier than 120 days prior to that special meeting and not later than the last to occur of (i) 90 days prior to that special meeting or (ii) the 10th day following the day we publicly disclose the date of the special meeting. Our bylaws prescribe specific information that any such stockholder notice must contain. These advance notice provisions may have the effect of precluding a contest for the election of our directors or the consideration of stockholder proposals if the proper procedures are not followed, and of discouraging or deterring a third party from conducting a solicitation of proxies to elect its own slate of directors or to approve its own proposal, without regard to whether consideration of those nominees or proposals might be considered harmful or beneficial to us and our stockholders.

Supermajority Provisions. Our certificate of incorporation provides that our stockholders may adopt, amend and repeal our bylaws at any regular or special meeting of stockholders by a vote of at least 80% of the voting power of our outstanding voting stock, provided the notice of intention to adopt, amend or repeal the bylaws has been included in the notice of that meeting. Our certificate of incorporation also confers on our board of directors the power to adopt, amend or repeal our bylaws with the affirmative vote of a majority of the directors then in office.

Preferred Stock Issuance. Our certificate of incorporation authorizes our board of directors, without the approval of our stockholders, to provide for the issuance of all or any shares of our preferred stock in one or more series and to determine the designation, powers, preferences and relative, participating, optional or other special rights, and the qualifications, limitations or restrictions applicable to any of those rights, including dividend rights, voting rights, conversion or exchange rights, terms of redemption and liquidation preferences, of each series. The issuance of shares of our preferred stock or rights to purchase shares of our preferred stock could discourage an unsolicited acquisition proposal. In addition, under some circumstances, the issuance of preferred stock could adversely affect the voting power of our common stockholders.

Statutory Business Combination Provision

As a Delaware corporation, we are subject to Section 203 of the Delaware General Corporation Law. In general, Section 203 prevents an "interested stockholder," which is defined generally as a person owning 15% or more of a corporation's outstanding voting stock or any affiliate or associate of that person, from engaging in a broad range of "business combinations" with the corporation for three years following the date that person became an interested stockholder unless:

- before that person became an interested stockholder, the board of directors of the corporation approved the transaction in which that person became an interested stockholder or approved the business combination;
- on completion of the transaction that resulted in that person's becoming an interested stockholder, that person owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, other than stock held by (i) directors who are also officers of the corporation or (ii) any employee stock plan that does not provide employees with the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- following the transaction in which that person became an interested stockholder, both the board of directors of the corporation and the holders of at least two-thirds of the outstanding voting stock of the corporation not owned by that person approve the business combination.

Under Section 203, the restrictions described above also do not apply to specific business combinations proposed by an interested stockholder following the announcement or notification of designated extraordinary transactions involving the corporation and a person who had not been an interested stockholder during the previous three years or who became an interested stockholder with the approval of a majority of the corporation's directors, if a majority of the directors who were directors prior to any person's becoming an interested stockholder during the previous three years, or were recommended for election or elected to succeed those directors by a majority of those directors, approve or do not oppose that extraordinary transaction.

EXHIBIT 21.1

BWX TECHNOLOGIES, INC.
SIGNIFICANT SUBSIDIARIES OF THE REGISTRANT
YEAR ENDED DECEMBER 31, 2019

NAME OF COMPANY	JURISDICTION OF ORGANIZATION	PERCENTAGE OF OWNERSHIP INTEREST
BWXT Investment Company	Delaware	100
BWXT Canada Ltd.	Canada	100
BWXT Government Group, Inc.	Delaware	100
BWXT Nuclear Operations Group, Inc.	Delaware	100
BWXT Nuclear Energy, Inc.	Delaware	100
Nuclear Fuel Services, Inc.	Delaware	100
BWXT Modular Reactors, LLC	Delaware	100
BWXT mPower, Inc.	Delaware	100
BWXT Nuclear Energy Canada Inc.	Canada	100
BWXT ITG Canada, Inc.	Canada	100
BWXT Advanced Technologies LLC	Delaware	100

The subsidiaries omitted from the foregoing list, considered in the aggregate as a single subsidiary, do not constitute a significant subsidiary.

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No.’s 333-168687 and 333-195889 on Form S-8 of our reports dated February 24, 2020, relating to the consolidated financial statements of BWX Technologies, Inc. and subsidiaries, and the effectiveness of BWX Technologies, Inc. and subsidiaries internal control over financial reporting appearing in the Annual Report on Form 10-K of BWX Technologies, Inc. for the year ended December 31, 2019.

/S/ DELOITTE & TOUCHE LLP

Charlotte, North Carolina
February 24, 2020

EXHIBIT 31.1

CERTIFICATIONS

I, Rex D. Geveden, certify that:

1. I have reviewed this annual report on Form 10-K of BWX Technologies, Inc. for the year ended December 31, 2019;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

   c. evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent functions):

   a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

February 24, 2020

/s/ Rex D. Geveden

Rex D. Geveden
President and Chief Executive Officer

EXHIBIT 31.2

I, David S. Black, certify that:

1. I have reviewed this annual report on Form 10-K of BWX Technologies, Inc. for the year ended December 31, 2019;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

    c. evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent functions):

    a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

February 24, 2020

/s/ David S. Black

David S. Black
Senior Vice President and Chief Financial Officer

EXHIBIT 32.1

BWX TECHNOLOGIES, INC.
Certification Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), I, Rex D. Geveden, President and Chief Executive Officer of BWX Technologies, Inc., a Delaware corporation (the “Company”), hereby certify, to my knowledge, that:

(1) the Company’s Annual Report on Form 10-K for the year ended December 31, 2019 (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 24, 2020

/s/ Rex D. Geveden

Rex D. Geveden
President and Chief Executive Officer

EXHIBIT 32.2

BWX TECHNOLOGIES, INC.
Certification Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), I, David S. Black, Senior Vice President and Chief Financial Officer of BWX Technologies, Inc., a Delaware corporation (the "Company"), hereby certify, to my knowledge, that:

(1) the Company's Annual Report on Form 10-K for the year ended December 31, 2019 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
(2) information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 24, 2020

/s/ David S. Black
David S. Black
Senior Vice President and Chief Financial Officer