

# GSE SYSTEMS INC

## FORM 10-K (Annual Report)

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**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, 2017

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 001-14785

**GSE Systems, Inc.**

(Exact name of registrant as specified in its charter)

**Delaware**

(State of incorporation)

**52-1868008**

(I.R.S. Employer Identification Number)

**1332 Londontown Blvd., Suite 200, Sykesville MD**

(Address of principal executive offices)

**21784**

(Zip Code)

Registrant's telephone number, including area code: (410) 970-7800

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Title of each class

Common Stock, \$.01 par value

Name of each exchange on which registered

NYSE American

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 15(d) of the 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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   
Emerging growth company

Accelerated filer

Non-accelerated filer   
(Do not check if a smaller reporting  
company)

Smaller reporting 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 12(b)-2 of the Exchange Act). Yes  No

The aggregate market value of Common Stock held by non-affiliates of the Registrant was \$56,765,904 on June 30, 2017, the last business day of the Registrant's most recently completed second fiscal quarter, based on the closing price of such stock on that date of \$3.10.

The number of shares outstanding of the registrant's Common Stock as of February 28, 2018 was 19,425,905 shares.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement for the 2018 Annual Meeting of Stockholders to be filed pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended, are incorporated by reference into Part III.

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## CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS.

This report and the documents incorporated by reference herein contain "forward-looking" statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act") that are based on management's assumptions, expectations and projections about us, and the industry within which we operate, and that have been made pursuant to the Private Securities Litigation Reform Act of 1995 reflecting our expectations regarding our future growth, results of operations, performance and business prospects and opportunities. Wherever possible, words such as "anticipate", "believe", "continue", "estimate", "intend", "may", "plan", "potential", "predict", "expect", "should", "will" and similar expressions, or the negative of these terms or other comparable terminology, have been used to identify these forward-looking statements. These forward-looking statements may also use different phrases. These statements regarding our expectations reflect our current beliefs and are based on information currently available to us. Accordingly, these statements by their nature are subject to risks and uncertainties, including those listed under Item 1A Risk Factors, which could cause our actual growth, results, performance and business prospects and opportunities to differ from those expressed in, or implied by, these forward-looking statements. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. Except as otherwise required by federal securities law, we are not obligated to update or revise these forward looking statements to reflect new events or circumstances. We caution you that a variety of factors, including but not limited to the factors described below under Item 1A Risk Factors and the following, could cause our business conditions and results to differ materially from what is contained in forward-looking statements:

- changes in the rate of economic growth in the United States and other major international economies;
- changes in investment by the nuclear and fossil electric utility industry, the chemical and petrochemical industries, or the U.S. military;
- changes in the financial condition of our customers;
- changes in the regulatory environment;
- changes in project design or schedules;
- contract cancellations;
- changes in our estimates of costs to complete projects;
- changes in trade, monetary and fiscal policies worldwide;
- currency fluctuations;
- war and/or terrorist attacks on facilities either owned by our customers or our company, or where equipment or services are or may be provided;
- initiation, prosecution, or outcomes of future litigation;
- protection and validity of our trademarks and other intellectual property rights;
- increasing competition by foreign and domestic companies;
- compliance with our debt covenants;
- recoverability of claims against our customers and others; and
- changes in estimates used in our critical accounting policies.

Other factors and assumptions not identified above were also involved in the formation of these forward-looking statements and the failure of such other assumptions to be realized, as well as other factors, may also cause actual results to differ materially from those projected. Most of these factors are difficult to predict accurately and are generally beyond our control. You should consider the areas of risk described above and in Item 1A Risk Factors in connection with any forward-looking statements that may be made by us. You should not place undue reliance on any forward-looking statements. New factors emerge from time to time, and it is not possible for us to predict which factors will arise.

We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. You are advised, however, to consult any additional disclosures we make in proxy statements, quarterly reports on Form 10-Q and current reports on Form 8-K filed with the SEC.

### Company Information Available on the Internet

Our Internet address is [www.gses.com](http://www.gses.com). We make available free of charge through our Internet site our annual reports on Form 10-K; quarterly reports on Form 10-Q; current reports on Form 8-K; proxy statements, and any amendment to those reports filed or furnished pursuant to the Exchange Act as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC.

## PART I

### ITEM 1. BUSINESS.

GSE Systems, Inc. (GSE Systems, GSE, the Company, we, us or our), a NYSE American company trading under the symbol GVP, is a world leader in real-time high-fidelity simulation and provides a wide range of simulation, consulting, training, and engineering solutions to the global power and process industries. We provide customers with simulation, engineering and plant services that help clients reduce risks associated with operating their plants, increase revenue through improved plant and employee performance, and lower costs through improved operational efficiency. In addition, we provide professional services that systematically help clients fill key vacancies in the organization on a short-term basis, primarily in procedures, engineering, technical support, and training focused on regulatory compliance and certification in the nuclear power industry. Our operations also include interactive computer-based tutorials and simulation software for the refining, chemical, and petrochemical industries, through our wholly-owned subsidiary GSE Performance Solutions, Inc.

We execute projects globally with approximately 388 employees operating from offices in the U.S. and China and at client sites. While the majority of revenue comes from the nuclear power market, we also serve the fossil, refining, chemical, and petrochemical markets.

GSE Systems was formed on March 30, 1994 to consolidate the simulation and related businesses of General Physics International Engineering & Simulation, S3 Technologies, and EuroSim. The Company completed its Initial Public Offering in 1995.

On November 14, 2014, we acquired Hyperspring, LLC. Hyperspring is a nuclear industry training and consulting firm that primarily provides highly skilled, high-value professionals to fill training and consulting positions on a contract basis for nuclear power plant operators. Hyperspring professionals provide training, operations and maintenance support including: generic fundamentals exams (GFES), accreditation training visit (ATV) preparation, senior reactor operator (SRO) certification, procedure development, work management, tagging/labeling, outage execution, planning/scheduling, corrective action, self-assessments and equipment reliability. Customers include TVA, Entergy, Southern Company, PSEG Nuclear LLC and NRG Energy Inc.

On September 20, 2017, we acquired Absolute Consulting, Inc. (Absolute). Absolute is a provider of technical consulting and staffing solutions to the global nuclear power industry and employs approximately 160 professionals with expertise in procedures writing, engineering, technical support, project management, training, project controls, and corrective actions. This acquisition brings a natural adjacency to GSE, fits well with our growth strategy, and benefits our customers from expanded capabilities and offerings.

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## Operating Segments

We operate through two reportable business segments: Performance Improvement Solutions and Nuclear Industry Training and Consulting. Each segment focuses on delivering solutions to customers within our targeted markets - primarily the power and process industries. Marketing and communications, accounting, finance, legal, human resources, information systems and other administrative services are organized at the corporate level. Business development and sales resources are generally aligned with each segment to support existing customer accounts and new customer development. The following is a description of our business segments:

- *Performance Improvement Solutions (approximately 56% of revenue)*

Our Performance Improvement Solutions segment primarily encompasses our power plant high-fidelity simulation solutions and interactive computer based tutorials/simulation focused on the process industry. This segment includes various simulation products, engineering services, and operation training systems delivered across the industries we serve: primarily nuclear and fossil fuel power generation, as well as the process industries. Our simulation solutions include the following: (1) simulation software and services, including operator training systems, for the nuclear power industry, (2) simulation software and services, including operator training systems, for the fossil power industry, and (3) simulation software and services for the process industries used to teach fundamental industry processes and control systems to newly hired employees and for ongoing workforce development and training. GSE and its predecessors have been providing these services since 1976.

- *Nuclear Industry Training and Consulting (approximately 44% of revenue)*

Nuclear Industry Training and Consulting provides highly specialized and skilled nuclear operations instructors, procedure writers, technical engineers, and other consultants to the nuclear power industry. These employees work at our clients' facilities under client direction. Examples of these highly skilled positions are senior reactor operations instructors, procedure writers, project managers, work management specialists, planners and training material developers. This business is managed through Hyperspring and the newly acquired Absolute subsidiaries. The business model, management focus, margins and other factors clearly separate this business line from the rest of the Company's product and service portfolio. GSE and its predecessors have been providing these services since 1997.

Financial information is provided in Note 17 of the accompanying consolidated financial statements regarding our business segments and geographic operations and revenue.

## Business Strategy, Industry Trends, Products and Services

### Business Strategy

Our objective is to provide a powerful technology-enabled engineering and training/consulting services platform focused primarily on the nuclear power industry. We offer our differentiated suite of products and services to adjacent markets such as fossil power and the process industries where our offerings are a natural fit with a clear and compelling value proposition for the market. Our primary growth strategy is twofold: (1) seek acquisitions to accelerate our overall growth in a manner that is complementary to our core business and (2) expand organically within our core markets by leveraging our market leadership position and drive increased usage and product adoption via new products and services. To accomplish this, we will pursue the following activities:

***Pursue roll-up acquisition strategy.*** We intend to complement our organic growth strategy through selective acquisitions including, but not limited to, the following: technical engineering; training, staffing and consulting service businesses focused on the power industry particular nuclear; value added components for nuclear power plants; and software utilized in the power industry, both domestic and international. We are focusing our efforts on acquisitions that would enhance our existing portfolio of products and services, strengthen our relationships with our existing customers, and potentially expand our footprint to include new customers in our core served industries. We have made several acquisitions since 2011 and believe the opportunity exists to acquire businesses that are complementary to ours, allowing us to accelerate our growth strategy.

In January 2011, we acquired a software company called EnVision Systems Inc., which provided interactive multi-media tutorials and simulation models, primarily to the process industries. We have integrated the technology assets from this acquisition and expanded the firm's application to other industries, and we intend to repeat this successful process. In 2014, we acquired Hyperspring, which enabled GSE to offer highly skilled nuclear operations and consulting personnel with unique know-how to our client base which is nuclear power plants. This deepened our relationship with existing clients and won business for us at new client sites in the nuclear industry. This acquisition has proven to be synergistic, enabling cross selling domestically, and in 2015, the expansion of these offerings to international customers for the first time. In September 2017, we acquired Absolute, a provider of technical consulting and staffing solutions to the global nuclear

power industry, located in Navarre, Florida. The acquisition of Absolute is expected to strengthen the Company's global leadership in nuclear training and consulting solutions. The acquisition adds new capabilities to the GSE solution offering, and brings new highly complementary customers to GSE while deepening GSE relationships with existing clients. The acquisition of Absolute is a significant proof point of the thesis that GSE is a compelling platform for consolidating a fragmented vendor ecosystem for nuclear power. The acquisition adds significant scale and focus to the business, while positioning GSE as a "go to" provider of consulting solutions to the power industry, in particular nuclear power.

**Expand our total addressable market.** Our focus on growth means introducing product capabilities or new product and service categories that create value for our customers and therefore expand our total addressable market. Currently we are working on initiatives to expand our solution offerings in both our business segments which may include, but not be limited to, the following: expanding our software product portfolio to the industries we serve with enhanced power and process simulation tools and systems that are complementary to our core offerings; delivering enhanced learning management systems/solutions; offering fully outsourced training solutions to our customers; adding work flow process improvement solutions; tailoring operational reporting and business intelligence solutions to address the unique need of our end user markets; and adding new services to broaden our market reach.

Initiatives such as these will broaden our scope and enable us to engage more deeply with the segments we serve. We have delivered a compelling solution, the GSE GPWR™ Generic Pressurized Water Reactor simulation technology, proving that our modeling technology can be sold via traditional license terms and conditions to the nuclear industry ecosystem. We have both upgraded and expanded the EnVision™ library of simulation and eLearning tutorials for the process industries with specific new products for training clients in the upstream segment of the oil and gas industry including launching a new cloud-based training platform, EnVision™ Learning On-Demand, that significantly extends the capabilities of its industry leading EnVision™ tutorials and simulations. We continue to provide cutting edge training systems by adapting our technology to systems to meet the specific needs of customers such as U.S. government laboratories.

**Research and development (R&D).** We invest in R&D to deliver unique solutions that add value to our end-user markets. We have delivered nuclear core and Balance-of-Plant modeling and visualization systems to the industry. To address the nuclear industry's need for more accurate simulation of both normal and accident scenarios, we provide our DesignEP® and RELAP5-HD® solutions. Our entire JADE™ suite of simulation software, including industry leading JTOPMERET® and JElectric™ software, provides the most accurate simulation of Balance-of-Plant and electrical systems available to the nuclear and fossil plant simulation market. The significant enhancements we have made to our SimExec® and OpenSim™ platforms enables customers to be more efficient in the daily operation of their simulators. We are bringing SimExec® and OpenSim™ together into a next generation unified environment that will add new capabilities as requested by clients and driven by market need.

We intend to continue to make pragmatic and measured investments in R&D that first and foremost are driven by the market, and are complementary to advancing our growth strategy. Such investments in R&D may result in on-going enhancement of existing solutions as well as the creation of new solutions to serve our target markets, ensuring that we add greater value, in an easier to use fashion, at lower cost of ownership than any alternative available to customers. GSE has pioneered a number of industry standards over our lifetime and will continue to be one of the most innovative companies in our industry. During the years ended December 31, 2017 and 2016, we have made R&D investments totaling \$1.6 million, respectively.

**Strengthen and develop our talent.** Our experienced employees and management team are our most valuable resources. Attracting, training, and retaining top talent is critical to our success. To achieve our talent goals, we intend to remain focused on providing our employees with entrepreneurial opportunities to increase client contact within their areas of expertise and to expand our business within our service offerings. We will also continue to provide our employees with training, personal and professional growth opportunities, performance-based incentives including opportunities for stock ownership, bonuses and competitive benefits as benchmarked to our industry and locations.

**Continue to deliver industry-recognized high-quality services.** We have developed a strong reputation for quality services based upon our industry-recognized depth of experience, ability to attract and retain quality professionals, and expertise across multiple service sectors. We have received industry certificates and awards including being recognized for outstanding work on projects by Bechtel's Nuclear, Security & Environmental global business unit (NS&E) at the Bechtel Supply Chain Recognition awards in April 2016. In addition, we have a recognized high-value brand as one of the most respected providers of software and services to the nuclear industry, as evidenced by our marquee client base and significant market wins over the past years. A recently conducted survey of clients with projects underway and/or just delivered validates our brand with a Net Promoter Score of +72, a compelling score for an industrial technology and services company.



**Expand international operations in selected markets.** We believe there are additional opportunities for us to market our software and services to international customers, and to do so in a cost-effective manner. For example, we believe partnerships with Value Added Resellers (VAR) could significantly expand our sales pipeline for the EnVision™ software suite. In 2016, we entered into a reseller agreement with an entity in the Middle East that has an established track record of success selling simulation and workforce development solutions to the process industries throughout the region. Such VARs may yield positive results for our pursuit of international nuclear opportunities globally (see industry trends below). We may explore the creation of appropriate joint ventures to target nuclear new-build and maintenance programs in key regions.

## **Industry Trends**

### ***Industry need for building and sustaining a highly skilled workforce***

We believe a critical ongoing challenge facing the industries we serve is access to, and continued development of, a highly trained and efficient workforce. This challenge manifests primarily in two ways: the increasing pace at which industry knowledge and experience are lost as a significant percentage of the existing experienced workforce reaches retirement age; and the fact that as new power plants come on-line, there is an increased demand for more workers to staff and operate those plants.

In the United States, the energy industry is expected to lose a large percentage of its workforce within the next few years as baby boomers retire on the traditional schedule. For example, *Power Engineering* reports the power sector will need more than 100,000 skilled workers by the end of 2018 to replace retiring baby boomers. *Electric, Light, and Power* reports 72% of energy employers currently struggle to find quality candidates, and fill open positions. *The National Electrical Contractors Association* reports 7,000 electricians join the field each year, while 10,000 retire. Finally, the Nuclear Energy Institute estimates that 39% of the nuclear workforce will be eligible to retire in 2018. As the nuclear industry expands its fleet and strains to maintain the high standards of training the existing workforce, existing plant simulator systems, which provide a critical environment for training services, are often operating 24 hours a day. With workers retiring and the need to backfill as well as expand the workforce for new units, certain operators are exploring the opportunity to de-bottleneck their existing simulator capabilities through the creation of dual reference simulators. Other workforce shortages and/or short term spike in demand for specialist skills that we offer similarly are positive development for our business.

According to the US Energy & Employment Report released in January 2017, the employment in the traditional energy and energy efficiency sectors increased by 55% in 2016, adding 300,000 net new jobs. The Nuclear Energy Institute projects 20,000 new position will be needed in the nuclear industry over the next 5 years.

Globally, as more people increase their standard of living, their demand for power will increase, which in turn will require the on-going construction of power plants to meet this surging demand. Developing a skilled labor force to operate these plants and keeping their skills current and their certifications in compliance with regulatory requirements is a key challenge facing the global power industry.

### ***Growing global power demand and the increasing emphasis on nuclear power***

On September 28, 2017, United States Secretary of Energy, Rick Perry, directed the nation's Federal Energy Regulatory Commission (FERC) to improve the resiliency of the national electrical grid by creating rules recognizing the critical value generated by nuclear power plants, among other things. The Notice of Proposed Rulemaking stated that FERC must order grid operators to increase how they value "reliability and resiliency attributes" in energy generation. All licensed nuclear power plants and a significant portion of existing coal plants can meet those requirements today.

While this request to FERC was unanimously rejected by the commissioners in January 2018, they did say they shared Secretary Perry's stated goals of grid resiliency, and directed regional transmission operators to provide information to help FERC examine the matter further. The operators have 60 days to submit new materials. At that time, the agency can issue another order. While disappointing that the request by Secretary Perry was rejected, it is the first time in quite some time that there is federal recognition of the need for support of the nuclear fleet in the US.

At the time of Secretary Perry's request to FERC, he announced a separate action to support and accelerate the development of new nuclear plants with conditional commitments of up to \$3.7 billion in loan guarantees to the owners of the Vogtle nuclear power plant in Georgia. Secretary Perry stated, "I believe the future of nuclear energy in the United States is bright and look forward to expanding American leadership in innovative nuclear technologies." "Advanced nuclear energy projects like Vogtle are the kind of important energy infrastructure projects that support a reliable and resilient grid, promote economic growth, and strengthen our energy and national security".

In December 2017, Georgia's Public Service Commission voted unanimously to allow continued construction of two nuclear reactors at Georgia Power's embattled Plant Vogtle. Commission chair Stan Wise said the decision came down to the importance of fuel diversity and the long term benefits the project would have on Georgians. Georgia utility regulators on Thursday conditioned their approval of the Vogtle nuclear project with the caveat that Congress approves roughly \$800 million worth of tax credits.

A two-year budget deal signed by President Donald Trump on February 9, 2018, includes provisions that will benefit the development of nuclear power in the U.S. including the expansion of Plant Vogtle, which is located near Waynesboro, Ga. The Nuclear Energy Institute said that the legislation signed by Trump: (1) allows for new nuclear reactors placed in service after Dec. 31, 2020 to qualify for the nuclear PTC; (2) permits the Secretary of Energy to allocate credits up to a 6,000-megawatt capacity limit for the first "new nuclear" reactors placed in service after Dec. 31, 2020; and (3) allows public-entity project partners to transfer their credits to other project partners.

NEI said that the deadline change will ensure the two reactors being built at Vogtle will benefit from the PTC and that the 6,000-MW capacity limit indicates the PTC will also benefit NuScale Power LLC's and its partners' plans to build its first commercial power plant at the Idaho National Laboratory by 2026.

The U.S. Energy Information Administration's latest *International Energy Outlook 2017* projects that world energy consumption will grow by 28% between 2015 and 2040. Most of this growth is expected to come from countries that are not in the Organization for Economic Cooperation and Development (OECD), and especially in countries where demand is driven by strong economic growth, particularly in Asia. Non-OECD Asia (which includes China and India) accounts for more than 60% of the world's total increase in energy consumption from 2015 through 2040. At the same time, countries globally are pledging to reduce

greenhouse gas emissions despite this growth in demand for power. These trends are increasingly favorable to nuclear power. The United Kingdom illustrates this trend, with an energy policy that places a much greater reliance on nuclear power and relies on plans for a new nuclear fleet, while slashing subsidies for solar energy and seeking to phase out coal fired power plants. With plans to build at least three new nuclear plants, the UK plans to add 16GWe of new nuclear capacity operating by 2030 according to World Nuclear Association.

Today there are some 440 nuclear power reactors operating in 30 countries plus Taiwan, with a combined capacity of over 390 GWe. In 2014 these provided over 11% of the world's electricity. There are currently 50 nuclear plants under construction in 13 countries, including 20 in China, seven in Russia, six in India and four in the United Arab Emirates according to the Nuclear Energy Institute. Two reactors are currently under construction in the U.S. at Southern Nuclear's Vogtle, Georgia site. Per the World Nuclear Association, there are 160 reactors in 23 countries in specific phases of planning that will be operating by 2030 and over 300 more are proposed. This pace of construction is surpassing the peak construction velocity of the 1970s and 1980s as countries around the world recognize the importance of lowering carbon emissions from power generation.

For the existing nuclear U.S. fleet, there is recognition that these plants are essential to meeting goals of reducing carbon emissions, even as renewable energy sources are introduced. This recognition of the importance of nuclear providing zero-carbon baseload is demonstrated by the state of New York's Clean Energy Standard that values the emission-free energy of New York's nuclear fleet and in so doing providing an emissions-free subsidy of 1.7¢/kWh. This subsidy helps ensure the state's existing nuclear plants remain economically viable in an era of low cost natural gas even with wind and solar receiving a subsidy of 4.5¢/kWh. In addition, the Illinois Legislature on December 2, 2016, passed the Future Energy Jobs Bill on December 2, 2016, a measure that ensures the continued operation of the Clinton and Quad Cities nuclear power plants in that state. In a statement, the Nuclear Energy Institute said the bill's passage was a "remarkable moment" for the state and the nuclear industry. Gov. Bruce Rauner signed the bill into law on December 7, 2016. The Future Energy Jobs Bill provides Exelon and Commonwealth Edison with a \$235 million annual credit for the carbon-free energy produced by the Clinton and Quad Cities nuclear plants. At the end of October 2017, Connecticut passed a bill that may help it keep its Millstone nuclear plant open. The bill permits state energy officials to change the rules for how Dominion Nuclear Connecticut sells electricity from Millstone. Millstone could sell up to 75% of its output in competition with the other zero-carbon sources of electricity under the bill. This is a significant recognition of the strategic value that nuclear power provides via zero-carbon baseload. The actions of New York, Illinois and Connecticut starts a trend which may continue as states such as Ohio, Pennsylvania, and New Jersey consider legislation to recognize the value of zero carbon power produced by nuclear plants in those states. This would be similar to how the Renewable Portfolio Standard was rolled out across more than half the states in the US to recognize the benefits of zero carbon renewable power.

In regulated markets where the economy is growing, the nuclear fleet is profitable and expanding, with two reactors under construction in the southeast U.S. Longer term, the trends for nuclear power have promise as small scale modular reactors (SMR's) advance in development and prototyping. There is a project planned to build a NuScale Power SMR at Idaho National Labs. NuScale Power is a long-standing GSE customer. Tennessee Valley Authority submitted an application for an early site permit for two or more SMRs modules (up to 800 MWe, 2420 MWt) at the Clinch River Nuclear site on May 12, 2016. In January 2017 the Nuclear Regulatory Commission has accepted and docketed the early site permit. U.S. Department of Energy recently released a draft plan to double America's nuclear power capacity by 2050. The plan, dubbed "Vision 2050", promotes expanding America's nuclear capacity through advanced reactor designs including small and medium-size reactors.

We believe GSE is well positioned to take full advantage of these strategic global and domestic trends by providing high fidelity simulation and training solutions to the global power and process industries.

## Products and Services

### *Performance Improvement Solutions*

To assist our clients in creating world-class internal training and engineering improvement processes, we offer a set of integrated and scalable products and services which provide a structured program focused on continuous skills improvement for experienced employees to engineering services, which include plant design verification and validation. We provide the right solutions to solve our clients' most pressing needs.

For workforce development and training, students and instructors alike must have a high degree of confidence that their power plant simulator truly reflects plant behavior across the entire range of operations. To achieve this, GSE's simulation solution starts with the most robust engineering approach possible. Using state-of-the-art modeling tools combined with our leading nuclear power modeling expertise, GSE provides simulation solutions that achieve unparalleled fidelity and accuracy. The solutions that GSE provides are also known for ease of use, resulting in increased productivity by end-users. For these reasons, GSE has delivered more nuclear power plant simulators than any other company in the world.

For virtual commissioning, designers of first-of-a-kind plants or existing plants need a highly accurate dynamic simulation platform to model a wide variety of design assumptions and concepts from control strategies to plant behavior to human factors. Because new builds and upgrades to existing plants result in new technology being deployed, often involving the integration of disparate technologies for the first time, a high-fidelity simulator allows designers to see the interaction between systems for the very first time. With our combination of simulation technology and expert engineering, GSE was chosen to build first-of-a-kind simulators for the AP1000, PBMR, and small modular reactors such as those being built by NuScale.

Examples of the types of simulators we sell include, but are not limited to, the following:

- **Universal Training Simulators:** These products complement the Self-Paced Training Tutorials by reinforcing what the student learned in the tutorial, putting it into practice on the Universal Simulator. The simulation models are high fidelity and engineering correct, but represent a typical plant or typical process, rather than the exact replication of a client's plant. We have delivered over 360 such simulation models to clients consisting of major oil companies and educational institutions.
- **Part-Task Training Simulators:** Like the Universal Simulators, we provide other unique training solutions such as a generic nuclear plant simulator and VPanel<sup>®</sup> displays, which replicate control room hardware and simulator solutions specific to industry needs such as severe accident models to train on and aid in the understanding of events like the Fukushima Daiichi accident.
- **Plant-Specific Operator Training Simulators:** These simulators provide an exact replication of the plant control room and plant operations. They provide the highest level of realism and training and allow users to practice their own plant-specific procedures. Clients can safely practice startup, shutdown, normal operations, as well as response to abnormal events we all hope they never have to experience in real life. Since our inception, we have delivered over 480 plant-specific simulators to clients in the nuclear power, fossil power and process industries worldwide.

### *Nuclear Industry Training and Consulting*

As our customers' experienced staff retire, access to experts that can help operate and train existing and new employees in how to operate their plants is essential to ensure safe ongoing plant operations. In addition, operating and training needs change over time and sometimes our clients require fixed priced discrete projects or specialized courses in contrast to straight staff augmentation. The industry needs operating personnel, including procedure writers, engineers, operators and instructors who can step in and use as well as update the client's operating methods, procedures, training material and more. Finding technical professionals and instructors, who know the subject, can perform the work or teach it to others and can adapt to the client's culture, is critical. GSE provides both qualified professionals, instructors and turnkey projects/courses that work within the client's system and complement the operating or training methods they already have in place. Examples of our training program courses include senior reactor operator certification, generic fundamentals training, and simulation supervisor training. In addition, we also provide expert support through consulting or turnkey projects for procedure writing, technical engineers, project managers, training material upgrade and development, outage execution, planning and scheduling, corrective actions programs, and equipment reliability.

We bring together the collection of skills we have amassed over more than 40 years beginning with its traditional roots in custom high-fidelity simulation and training solutions for the power industries, extended through the acquisition of specialized engineering capabilities, enhanced by the entry and intermediate level training solutions of EnVision and the extensive nuclear industry training and consulting services of Absolute and Hyperspring.

### **Customers and Locations**

For more than 40 years, we have been developing next-generation, custom training simulation technologies. Since we built the first commercial full-scope nuclear power plant simulator in 1971, we have completed more than 1,100 installations in 50 countries.

In 2017, approximately 19% of our revenue was generated from end-users outside the United States. A small representative list of our customer base includes: ABB Inc., American Electric Power, Bechtel Hanford National Laboratory, Duke Energy, EDF Energy (United Kingdom), Emerson Process Management, Exelon, Korean Electric Power Company (Korea), PSEG Nuclear, Inc., Shangdong Nuclear Power Co. Ltd. (China), Siemens AG (Germany), Southern Nuclear Operating Company, Inc., State Nuclear Power Automation System Engineering Company (China), Savannah River Nuclear Solutions, LLC, Tennessee Valley Authority, US Department of Energy, and Westinghouse Electric Co.

Hydrocarbon and chemical process customers include numerous large oil refineries and chemical plants such as BP (worldwide), Statoil ASA (Norway), Chevron, Emerson Process Management, Shell Oil Company (worldwide), and Total (Belgium).

### **Marketing and Sales**

We market our products and services through a network of direct sales staff, agents and representatives, and strategic alliance partners. Market-oriented business

and customer account teams define and implement specific campaigns to pursue opportunities.

We continue to have a proactive public relations program, issuing more non-financial press releases aimed at product development and delivery, as well as our role in numerous industry trade shows and technical conferences. We are active across numerous social media platforms to build a stronger presence across all media our clients use to find information about the Company, and providing useful information for each stage of the client's journey with the Company.

The Company's ability to support its multi-facility, international and/or multinational clients is facilitated by its network of offices and strategic partners in the U.S. and overseas. In addition to the office located in China, the Company's ability to conduct international business is enhanced by its multilingual and multicultural workforce. GSE has strategic relationships with system integrators and agents representing its interests in Bulgaria, Japan, Malaysia, Mexico, Singapore, South America, South Korea, Taiwan, Ukraine and various locations in the Gulf Coast Countries of the Middle East.

## Competition

In the nuclear simulation market, we compete directly with firms primarily from Canada, France and the U.S., such as L-3 MAPPS Inc., a subsidiary of L-3 Communications (Canada), CORYS T.E.S.S (France) and Western Services Corporation. In the fossil simulation market, the Company competes with smaller companies in the U.S. and overseas. In the process industry the main competition comes from large Digital Control System/Automation companies such as Honeywell and Schneider.

The Nuclear Industry Training and Consulting business services include technical professional and training-related and services as well as staff augmentation solutions. The competition for these services includes, but is not limited to the following: GP Strategies, The Westwind Group, Professional Training Technologies, and Western Technical Services. The competition for staff augmentation includes: Day & Zimmerman, Planet Forward, and The Westwind Group.

## Competitive Advantages

While there is competition in various industry niches, few companies in our space can combine our engineering, simulation and training expertise, especially for the nuclear power industry. None of our competitors serve the broader performance improvement market and few work across the broader energy markets of nuclear and fossil power plus petrochemicals.

**Proprietary Software Tools .** We developed a library of proprietary software tools including auto-code generators and system models that substantially facilitate and expedite the design, production and integration, testing and modification of software and systems. These tools are used to automatically generate the computer code and systems models required for specific functions commonly used in simulation applications, thereby enabling the Company or its customers to develop high-fidelity, real-time software quickly, accurately and at lower costs. The Company also has an expertise in being able to integrate 3<sup>rd</sup> party engineering codes into the Company's simulation environment, thereby being able to offer some of the most sophisticated technical solutions in the market. The Company has a substantial library of Process-Specific Simulation models and eLearning Modules aimed at the oil and gas, refining and specialty chemicals market.

**Industry Expertise .** We are a leading innovator and developer of real-time software with more than 40 years of experience producing high-fidelity, real-time simulators. As a result, the Company has acquired substantial applications expertise in the energy and process industries. The Company employs a highly educated and experienced multinational workforce of approximately 430 employees, including approximately 84 engineers and scientists in fields such as chemical, mechanical and electrical engineering, applied mathematics and computer sciences, and approximately 226 instructors and plant operations staff specialists.

**Unique Combination of Talent.** Nobody in our market space brings together the sophistication of simulation technology with the engineering expertise, training expertise and visualization expertise to provide the holistic people and plant performance improvement solutions as well as we do.

**Reputation for Customer Satisfaction.** As part of its ISO-9000 Quality Program Certification, GSE measures customer satisfaction across numerous factors such as On-Time Delivery, Problem Solving, and Customer Communication. In each category measured we routinely exceed customer expectations .

**Training Curricula .** The Company has developed hundreds of detailed courses and simulator exercise material and specific industrial applications including oil and gas refining, gas-oil production, nuclear and combined cycle gas turbine power plant and desalination.

Our Nuclear Industry Training and Consulting business is mostly focused on training and operations support. Our trainers and consultants provide their services at the customer facilities which allow us to interface with our customers directly in the course of doing business versus having to periodically call on customers. Our proximity allows us a significant competitive advantage in that we can immediately offer solutions and therefore bypass lengthy bid processes.

## Intellectual Property.

The Company depends upon its intellectual property rights in its proprietary technology and information. GSE maintains a portfolio of trademarks (both registered and unregistered), copyrights (both registered and unregistered), and licenses. While such trademarks, copyrights and licenses as a group are of material importance to the Company, it does not consider any one trademark, copyright, or license to be of such importance that the loss or expiration thereof would materially affect the Company. The Company relies upon a combination of trade secrets, copyright, and trademark law, contractual arrangements and technical means to protect its intellectual property rights. GSE distributes its software products under software license agreements that grant customers nonexclusive licenses for the use of its products, which are nontransferable. Use of the licensed software is restricted to designated computers at specified sites, unless the customer obtains a site license of its use of the software. Software and hardware security measures are also employed to prevent unauthorized use of the Company's software, and the licensed software is subject to terms and conditions prohibiting unauthorized reproduction of the software.

The Company does not own any patents. The Company believes that all of the Company's trademarks (especially those that use the phrase "GSE Systems") are valid and will have an unlimited duration as long as they are adequately protected and sufficiently used. The Company's licenses are perpetual in nature and will have an unlimited duration as long as they are adequately protected and the parties adhere to the material terms and conditions.

GSE has numerous registered U.S. trademarks: GSE Systems®, JTOPMERET®, RELAP5-HD®, TOTALVISION®, VPanel® and SimExec®. Some of these trademarks have also been registered in foreign countries. The Company also claims trademark rights to DesignEP™, Java Application and Development Environment (JADE)™, OpenSim™, PSA-HD™, RACS™, SimSuite Pro™, SmartTutor™, THOR™, and Xtreme I/S™.

In addition, the Company maintains federal statutory copyright protection with respect to its software programs and products, has registered copyrights for some of the documentation and manuals related to these programs, and maintains trade secret protection on its software products.

Despite these protections, the Company cannot be sure that it has protected or will be able to protect its intellectual property adequately, that the unauthorized disclosure or use of its intellectual property will be prevented, that others have not or will not develop similar technology independently, or, to the extent it owns any patents in the future, that others have not or will not be able to design around those patents. Furthermore, the laws of certain countries in which the Company's products are sold do not protect its products and intellectual property rights to the same extent as the laws of the United States.



## Government Regulations.

Our operations are directly and indirectly affected by political developments and both domestic and foreign governmental regulations. We cannot determine the extent to which changing political priorities, new legislation, new regulations or changes in existing laws or regulations may affect our future operations, positively or negatively.

## Industries Served.

The following chart illustrates the approximate percentage of the Company's 2017 and 2016 consolidated revenue by industries served:

	Years ended December 31,	
	2017	2016
Nuclear power	83%	73%
Fossil fuel power	9%	17%
Process	6%	6%
Other	2%	4%
Total	100%	100%

**Backlog.** As of December 31, 2017, we had approximately \$71.4 million of total gross revenue backlog compared to \$73.2 million as of December 31, 2016. Most of our contract terms are less than 24 months. With respect to our backlog, it includes only those amounts that have been funded and authorized and does not reflect the full amounts we may receive over the term of such contracts. Our backlog includes future expected revenue at contract rates, excluding contract renewals or extensions that are at the discretion of the client. We calculate backlog without regard to possible project reductions or expansions or potential cancellations unless and until such changes may occur.

Backlog is expressed in terms of gross revenue and, therefore, may include significant estimated amounts of third-party or pass-through costs to subcontractors and other parties. Because backlog is not a defined accounting term, our computation of backlog may not necessarily be comparable to that of our industry peers.

**Employees.** As of December 31, 2017, we had approximately 430 employees, which include approximately 181 in our Performance Improvement segment and 249 in our Nuclear Industry Training and Consulting segment. This also includes approximately 100 licensed engineers and other advanced degreed professionals. Excluding our Nuclear Industry Training and Consulting business, which consists primarily of contracted instructors, our employee attrition rate for 2017 among all staff was approximately 10%. To date, we have been able to locate and engage highly qualified employees as needed and we expect our growth efforts to be addressed through attracting top talent.

## ITEM 1A. RISK FACTORS.

The following are some of the factors that we believe could cause our actual results to differ materially from historical results and from the results contemplated by the forward-looking statements contained in this report and other public statements made by us. Additional risks and uncertainties not presently known to us, or that we currently see as immaterial, may also harm our business. Most of these risks are generally beyond our control. If any of the risks or uncertainties described below, or any such other or additional risks and uncertainties actually occurs, our business, results of operations and financial condition could be materially and adversely affected. The following information should be read in conjunction with Item 7 - Management's Discussion and Analysis of Financial Condition and Results of Operations and the consolidated financial statements and related notes under Item 8 - Financial Statements and Supplementary Data.

**Our business is largely dependent on sales to the nuclear power industry. Any disruption in this industry would have a material adverse effect upon our revenue and profitability.**

In 2017, 83% of our revenue was from customers in the nuclear power industry (73% in 2016). We expect to derive a significant portion of our revenue from customers in the nuclear power industry for the foreseeable future. Our ability to supply nuclear power plant simulators and related products and services is dependent on the continued operation of nuclear power plants and, to a lesser extent, on the construction of new nuclear power plants. A wide range of factors affect the continued operation and construction of nuclear power plants, including the political and regulatory environment, the availability and cost of alternative means of power generation, the occurrence of future nuclear incidents, such as the one which occurred at the Fukushima Daiichi nuclear plant in 2011, and general economic conditions. In addition, demand for our products and services may be affected by changes in the legal and regulatory environment within which the global nuclear power industry operates. Regulatory changes could materially affect demand for our products, the profitability of our service deliveries to nuclear power industry customers, and the overall efficacy of our current business model.

**Our sales to foreign customers expose us to risks associated with operating internationally.**

Sales of products and services to end users outside the United States accounted for approximately 19% of the Company's consolidated revenue in 2017 and 33% of consolidated revenue in 2016. Consequently, our businesses are subject to a variety of risks that are specific to international operations, including the following:

- export laws and regulations that could erode our profit margins or restrict exports;
- compliance with the U.S. Foreign Corrupt Practices Act and similar non-U.S. regulations such as the UK Bribery Act;
- the burden and cost of compliance with foreign laws, treaties and technical standards generally, as well as responding to changes in those regulations;
- contract award and funding delays;
- potential restrictions on transfers of funds;
- potential difficulties in accounts receivable collection;
- currency fluctuations, including costs and potentially limited availability of viable hedging options;
- import and export duties and value added or other taxes;
- transportation and communication delays and interruptions;
- difficulties involving strategic alliances and managing foreign sales agents or representatives;
- uncertainties arising from foreign local business practices and cultural considerations; and
- potential military conflicts and political risks.

While we have and will continue to adopt measures to reduce the potential impact of losses resulting from the risks of our foreign business, we cannot ensure that such measures will be adequate. During the years ended December 31, 2017 and 2016, we did not have revenues greater than 10% from any individual foreign country.



**Nuclear Industry Training and Consulting revenue, results of operations, and cash flows may suffer upon the loss of a significant customer.**

For the years ended December 31, 2017 and 2016, the following customers have provided more than 10% of this operating segment's revenues:

	Years ended December 31,	
	2017	2016
Entergy Corporation (Entergy)	48%	22%
Tennessee Valley Authority	16%	32%
PSEG Nuclear LLC	8%	14%

Entergy provided 20.8% and 10.2% of our consolidated revenue for the years ended December 31, 2017 and 2016, respectively.

Hyperspring and Absolute may lose a significant customer if any existing contract with such customer expires without being extended, renewed, renegotiated or is terminated by the customer prior to expiration, to the extent such early termination is permitted by the contract. A number of Hyperspring and Absolute's contracts are typically subject to expiration during each year, and they may lose any of these contracts if they are unable to extend, renew or renegotiate the contracts. The loss of any significant customer would adversely affect our Nuclear Industry Training and Consulting segment's revenue, results of operations, and cash flows.

**Our expense levels are based upon our expectations as to future revenue, and we may be unable to adjust spending to compensate for a revenue shortfall. Accordingly, any revenue shortfall would likely have a disproportionate effect on our operating results.**

Our revenue was \$70.9 million and \$53.1 million for the years ended December 31, 2017 and 2016, respectively. We had operating income of \$0.2 million and \$1.6 million for the years ended December 31, 2017 and 2016, respectively. Our operating results have fluctuated in the past and may fluctuate significantly in the future as a result of a variety of factors, including purchasing patterns, timing of new products and enhancements by us and our competitors, and fluctuating global economic conditions. Since our expense levels are based in part on our expectations as to future revenue and includes certain fixed, pre-negotiated, and prepaid costs, we may be unable to adjust spending in a timely manner to compensate for any revenue shortfall and such revenue shortfalls would likely have a disproportionate adverse effect on our operating results.

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

Backlog represents products or services that our customers have committed by contract or purchase order to purchase from us which have not yet been delivered or recognized as revenue. Our backlog as of December 31, 2017 and 2016 was \$71.4 million and \$73.2 million, respectively. 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 currently a party to multiple fixed price contracts and will continue to enter into similar contracts in the future. If we are not able to accurately estimate or control costs on such projects, the profitability of such projects could be reduced.**

A significant portion of our revenue is attributable to contracts entered into on a fixed price basis, which allow us to benefit from cost savings, but we carry the burden of cost overruns. If our initial estimates are incorrect regarding our costs of performance under these contracts, or if unanticipated circumstances arise, we could experience cost overruns which would result in reduced profits or even result in net losses on these contracts. Our financial condition is dependent upon our ability to maximize our earnings from our contracts. Lower earnings or losses caused by cost overruns could have a negative impact on our financial results.

Under time and materials contracts, we are paid for labor at negotiated hourly billing rates and for certain expenses. Under cost-reimbursable contracts, which are subject to a contract ceiling amount, we are reimbursed for allowable costs and are paid a fee, which may be fixed or performance based. However, if our costs exceed the contract ceiling or are not allowable under the provisions of the contract or applicable regulations, we may not be able to obtain reimbursement for all such costs even under a time and materials contract.

Our inability to successfully estimate and manage costs on each of these contract types may materially and adversely affect our financial condition.

**Our simulation business is dependent on product innovation and research and development, which costs are incurred prior to realization of revenue for new products and improvements.**

We believe that our success will depend in large part on our ability to maintain and enhance our current product line, develop new products, maintain technological competitiveness and meet an expanding range of customer needs. Our product development activities are aimed at the development and expansion of our library of software modeling tools, the improvement of our display systems and workstation technologies, and the advancement and upgrading of our simulation technology. The life cycles for software modeling tools, graphical user interfaces, and simulation technology are variable and largely determined by competitive pressures and the evolution of software and standards that may be controlled by third parties. Consequently, we will need to continue to make significant investments in research and development to enhance and expand our capabilities in these areas and to maintain our competitive advantage. We cannot control, and we may be unable to predict accurately, the development and evolution of these competitive pressures and external software and standards.

**We use derivative instruments in the normal course of our business which could result in financial losses and exposure to other risks that negatively impact our net income (loss) and business operational efficiency.**

We periodically enter into forward foreign exchange contracts to manage market risks associated with the fluctuations in foreign currency exchange rates on foreign-denominated trade receivables. We could recognize financial losses as a result of volatility in the market values of these contracts or if a derivative instrument counterparty fails to perform. We attempt to minimize credit exposure by limiting counterparties to internationally recognized financial institutions, but even these counterparties are subject to default and contract risk and this risk is beyond our control. Additionally, we may need or wish to avail ourselves of other forms of hedging or derivative instruments in the future depending on our business needs, and these other types of derivative instruments may be subject to the same and other risk, and may not be available to us on a cost-effective or risk-controlled basis, if at all. The unavailability of viable and cost effective risk management, hedging, or similar instruments now or in the future could adversely impact our business operational efficiency or results.

**We issue performance, advance payment, and bid bonds in the normal course of our business which could result in financial losses that negatively impact our net income (loss).**

We may be required to issue performance, advance payment, and bid bonds to our customers and potential customers as a normal part of our business activities. Our customers may have the ability to draw upon these performance bonds in the event we fail to cure a material breach of the contract within 30 days of receiving notice from the customer regarding the nature of the breach. As of December 31, 2017, we had issued advance payment and performance bonds on three contracts totaling \$0.9 million, all of which have been cash collateralized; the largest of these performance bonds was for \$0.5 million. Although we expect no material breaches to occur on these contracts, if such a breach were to occur and we failed to cure such breach, we could incur a loss of up to \$0.9 million.

**We rely upon our intellectual property rights for the success of our business; however, the steps we have taken to protect our intellectual property may be inadequate.**

Although we believe that factors such as the technological and creative skills of our personnel, new product developments, frequent product enhancements and reliable product maintenance are important to establishing and maintaining a technological leadership position, our business depends, in part, on the strength of our intellectual property rights in our proprietary technology and information. We rely upon a combination of trade secret, copyright, and trademark law, contractual arrangements and technical means to protect our intellectual property rights. We enter into confidentiality agreements with our employees, consultants, joint venture and alliance partners, customers and other third parties that are granted access to our proprietary information, and limit access to and distribution of our proprietary information. There can be no assurance, however, that we have protected or will be able to protect our proprietary technology and information adequately, that the unauthorized disclosure or use of our proprietary information will be prevented, that others have not or will not develop similar technology or information independently, or, to the extent we own any patents in the future, that others have not or will not be able to design around those future patents. Furthermore, the laws of certain countries in which our products are sold do not protect our products and intellectual property rights to the same extent as the laws of the United States. Our inability to protect our intellectual property rights from infringement, dilution, or loss could make it more difficult for us to generate revenue from the offer, licensure, and sale of our products and services and could enable third parties to compete with us more effectively.

**The industries in which we operate are highly competitive. This competition may prevent us from raising prices at the same pace at which our costs increase.**

Our businesses operate in highly competitive environments with both domestic and foreign competitors, many of whom have substantially greater financial, marketing and other resources than we do. The principal factors affecting competition in our industries include price, technological proficiency, ease of system configuration, product reliability, applications expertise, engineering support, local presence and financial stability. We believe competition in the simulation fields may further intensify in the future as a result of advances in technology, consolidations and strategic alliances among competitors, increased costs required to develop new technology and the increasing importance of software content in systems and products. As our business has a significant international component, changes in the value of the dollar could adversely affect our ability to compete internationally and could reduce our profitability on international business opportunities that we do win.

**We may encounter difficulties in effectively integrating acquired businesses.**

As part of our business strategy, we have acquired, and intend to acquire, companies with compatible or related products. These acquisitions will be accompanied by the risks commonly encountered in acquisitions of companies, which include, among other things:

- potential exposure to unknown liabilities of the acquired companies;
- higher than anticipated acquisition costs and expenses;
- difficulty and expense of assimilating the operations and personnel of the companies, especially if the acquired operations are geographically distant or culturally different;
- potential disruption of our ongoing business and diversion of management time and attention;
- failure to maximize our financial and strategic position by the successful incorporation of acquired technology;
- difficulties in adopting and maintaining uniform standards, controls, procedures and policies;
- loss of key employees and customers as a result of changes in management; and
- possible dilution to our shareholders.

We may not be successful in overcoming these risks or any other problems encountered in connection with any of our acquisitions, and if we are not successful, our financial results may be materially impacted.

**We are dependent on our management team, and the loss of or the inability to attract and retain one or more key employees or groups could harm our business and prevent us from implementing our business plan in a timely manner.**

Our future success is substantially dependent on the continued services and continuing contributions of our executive officers and other key personnel. Our Nuclear Industry Training and Consulting business segment is particularly dependent on key personnel and their key strategic relationships. The loss of the services of any of our executive officers or other key personnel could harm our business. Our future success also depends on our ability to continue to attract, retain, and motivate highly skilled employees. If we are not able to attract and retain key skilled personnel, our business could be harmed.

**A failure to attract and retain technical personnel could reduce our revenue and our operational effectiveness.**

There is a continuing demand for qualified technical personnel in the industries within which we operate. We believe that our future growth and success will depend upon our ability to attract, train and retain such personnel. Our design and development efforts depend on hiring and retaining qualified technical personnel. An inability to attract or maintain a sufficient number of technical personnel could have a material adverse effect on our contract performance or on our ability to capitalize on market opportunities.

**The nuclear power industry, our largest customer group, is associated with a number of hazards which could create significant liabilities.**

Our business could expose us to third party claims with respect to product, environmental and other similar liabilities. Although we have sought protection from these potential liabilities through a variety of legal and contractual provisions as well as through liability insurance, the effectiveness of such protections has not been fully tested. Certain of our products and services are used by the nuclear power industry primarily in operator training. Although our contracts for such products and services typically contain provisions designed to protect us from potential liabilities associated with such use, there can be no assurance that we would not be materially adversely affected by claims or actions which may potentially arise due to factors that may be outside of our direct control.

**Cyber security incidents could disrupt business operations, result in the loss of critical and confidential information, and adversely impact our reputation and results of operations.**

Global cyber security threats can range from uncoordinated individual attempts to gain unauthorized access to our information technology (IT) systems to sophisticated and targeted measures known as advanced persistent threats. While we employ comprehensive measures to prevent, detect, address and mitigate these threats (including access controls, data encryption, vulnerability assessments, continuous monitoring of our IT networks and systems and maintenance of backup

and protective systems), cyber security incidents, depending on their nature and scope, could potentially result in the misappropriation, destruction, corruption or unavailability of critical data and confidential or proprietary information (our own or that of third parties) and the disruption of business operations. The potential consequences of a material cyber security incident include reputational damage, litigation with third parties, diminution in the value of our investment in research, development and engineering, loss of intellectual property, and increased cyber security protection and remediation costs, which in turn could adversely affect our competitiveness and results of operations.

**Third-party claims that we allegedly infringe the intellectual property rights of others may be costly to defend or settle and could damage our business.**

We cannot be certain that our software and services do not infringe issued patents, copyrights, trademarks or other intellectual property rights of third parties. We may be subject to legal proceedings and claims from time to time, including claims of alleged infringement of intellectual property rights of third parties by us or our licensees concerning their use of our software products and integration technologies and services. Third parties may bring claims of infringement against us. Because our software is integrated with our customers' networks and business processes, as well as other software applications, third parties may bring claims of infringement against us, as well as our customers and other software suppliers, if the cause of the alleged infringement cannot easily be determined.

Claims of alleged infringement may have a material adverse effect on our business and may discourage potential customers from doing business with us on acceptable terms, if at all, even if they are ultimately adjudicated to have no merit, dismissed, or settled. Defending against claims of infringement may be time-consuming and may result in substantial costs and diversion of resources, including our management's attention to our business. Furthermore, a party making an infringement claim could secure a judgment that requires us to pay substantial damages. A judgment could also include an injunction or other court order that could prevent us from selling our software or require that we re-engineer some or all of our products. Claims of intellectual property infringement also might require us to enter costly royalty or license agreements. We may be unable to obtain royalty or license agreements on terms acceptable to us or at all. Our business, operating results and financial condition could be harmed significantly if any of these events were to occur, and the price of our common stock could be adversely affected. In addition, we have agreed, and may agree in the future, to indemnify certain of our customers against claims that our software infringes upon the intellectual property rights of others. Although we carry general liability insurance, our current insurance coverage may not apply to, and likely would not protect us entirely or at all from, liability that may be imposed under any of the types of claims described above.

**We are subject to a wide variety of laws and regulations.**

Our businesses are subject to regulation by U.S. federal and state laws and foreign laws, regulations and policies. Changes to laws or regulations may require us to modify our business objectives if existing practices become more restricted, subject to escalating costs or prohibited outright. Particular risks include regulatory risks arising from federal laws, such as laws regarding export of sensitive technologies or technical information. Our business and the industries in which we operate are also at times being reviewed or investigated by regulators, which could lead to enforcement actions, fines and penalties or the assertion of private litigation claims and damages.

**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 and fills all vacancies on the Board of Directors;
- providing for the division of our Board of Directors into three classes with staggered terms;
- 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; 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.

**A sustained decline in the price of our common stock or weaker than forecasted operating results could result in write-downs of goodwill and other intangible assets and capitalized software development costs.**

In conjunction with business acquisitions, we record goodwill and other intangible assets and review their fair value for impairment annually as of December 31, or on an interim basis if impairment indicators are present, such as a significant reduction in our market capitalization, significant declines in operating performance or disruptions to the business that could reduce our future cash flow. On November 14, 2014, we recorded \$5.6 million of goodwill related to our acquisition of Hyperspring. On September 20, 2017, we recorded \$2.8 million of goodwill related to our acquisition of Absolute. We tested our goodwill at the reporting unit level as of December 31, 2017 and 2016, and there was no indication of impairment. We can provide no assurance that we will not have an impairment charge in future periods as the result of changing conditions. See Note 4 to our consolidated financial statements for information regarding our goodwill.

We capitalize certain computer software development costs and, accordingly, the capitalized costs are reported on our balance sheet. Capitalization of computer software development costs begins upon the establishment of technological feasibility. Capitalization ceases and amortization of capitalized costs begins when the software product is commercially available for general release to customers. Amortization of capitalized computer software development costs is included in cost of revenue and is determined using the straight-line method over the remaining estimated economic life of the product, typically three years. On an annual basis, and more frequently as conditions indicate, we assess the status of our development programs and the recoverability of the unamortized software development costs by estimating the net undiscounted cash flows expected to be generated by the sale of the product. If the undiscounted cash flows are not sufficient to recover the unamortized software costs we will write-down these costs to their estimated fair value based on the future undiscounted cash flows. The excess of any unamortized computer software costs over the related net realizable value is written down and charged to operations.

Treatment of goodwill and capitalized software development costs in the current and future accounting periods may have an impact on the value of the company, results of operations, and price of our common stock.

**Our ability to use our net operating loss (NOL) carryforward and certain other tax attributes may be limited.**

Under Section 382 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an "ownership change," generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, the corporation's ability to use its pre-change NOL carryforwards, and other pre-change tax attributes (such as research tax credits) to offset its post-change income or tax liabilities may be limited. We may experience ownership changes in the future as a result of shifts in our stock ownership. As a result, if we earn net taxable income, our ability to use our pre-change NOL carryforwards to offset U.S. federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us.

**ITEM 1B. UNRESOLVED STAFF COMMENTS.**

None.

**ITEM 2. PROPERTIES.**

The Company is headquartered in a facility in Sykesville, Maryland (approximately 43,000 square feet). The lease for this facility expires on June 30, 2023. As of December 31, 2017, the Company subleased approximately 4,800 square feet of the facility.

On November 28, 2017, the Company entered into an office lease agreement to lease approximately 5,039 rentable square feet of an office building located in Columbia, Maryland. The lease is for an initial six years and six months with two renewal periods of five years each. The Company expects to relocate part of the back-office employees to the new office in the first quarter of 2018.

In addition, the Company leases office space domestically in Huntsville, Alabama, Navarre, Florida, and internationally in Beijing, China, Chennai, India (terminating in 2018), Nyköping, Sweden (terminating in 2018) and Stockton-On-Tees, England (terminating in 2018). The Company leases these facilities for terms ending between 2018 and 2023.

**ITEM 3. LEGAL PROCEEDINGS.**

The Company and its subsidiaries are from time to time involved in ordinary routine litigation incidental to the conduct of its business. The Company and its subsidiaries are not a party to, and its property is not the subject of, any material pending legal proceedings that, in the opinion of management, are likely to have a material adverse effect on the Company's business, financial condition or results of operations.

**ITEM 4. MINE SAFETY DISCLOSURES.**

Not applicable.

## PART II

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

The Company's common stock is listed on the NYSE American Stock Exchange, where it trades under the symbol "GVP". The following table sets forth, for the periods indicated, the high and low sale prices for the Company's common stock reported by the NYSE American Stock Exchange for each full quarterly period within the two most recent fiscal years:

2017				
Quarter		High		Low
First	\$	3.85	\$	3.05
Second	\$	3.75	\$	2.85
Third	\$	3.55	\$	2.35
Fourth	\$	3.60	\$	3.10

  

2016				
Quarter		High		Low
First	\$	2.92	\$	2.00
Second	\$	2.67	\$	2.07
Third	\$	2.89	\$	2.16
Fourth	\$	3.70	\$	2.66

On February 28, 2018, there were 19,425,905 shares of common stock outstanding, which was held by approximately 766 holders of record. The Company has never declared or paid a cash dividend on its common stock. The Company currently intends to retain future earnings to finance the growth and development of its business and, therefore, does not anticipate paying any cash dividends in the foreseeable future on its common stock.

The Company believes factors such as quarterly fluctuations in results of operations and announcements of new products by the Company or by its competitors may cause the market price of the common stock to fluctuate, perhaps significantly. In addition, in recent years the stock market in general, and the shares of technology companies in particular, have experienced extreme price fluctuations. The Company's common stock has also experienced a relatively low trading volume, making it further susceptible to extreme price fluctuations. These factors may adversely affect the market price of the Company's common stock.

### ITEM 6. SELECTED FINANCIAL DATA.

This information is not required for smaller reporting companies.



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

GSE is a world leader in real-time high-fidelity simulation, providing a wide range of simulation, training, and engineering solutions to the global power and process industries. We provide customers with simulation, engineering and plant services that help clients reduce risks associated with operating their plants, increase revenue through improved plant and employee performance, and lower costs through improved operational efficiency. In addition, we provide services that systematically help clients fill key vacancies in the organization on a short-term basis, primarily in training professionals focused on regulatory compliance and certification in the nuclear power industry.

On September 20, 2017, the Company acquired Absolute Consulting, Inc., now a wholly-owned subsidiary of GSE Performance Solutions, Inc. Absolute Consulting, Inc. is a provider of technical consulting and staffing solutions to the global nuclear power industry and employs approximately 160 professionals with expertise in procedures writing, engineering, technical support, project management, training, project controls, and corrective actions. This acquisition brings a natural adjacency to GSE, fits well with our growth strategy, and benefits our customers from expanded capabilities and offerings.

We execute projects globally with approximately 388 employees operating from offices in the U.S., China, and at client sites. While the majority of revenue comes from the nuclear power market, we also serve the fossil, refining, chemical, and petrochemical markets.

Through our Hyperspring and Absolute subsidiaries, we provide highly skilled, high-value professionals to fill training and consulting positions on a contract basis for nuclear power plant operators. Hyperspring professionals provide training, operations and maintenance support including: generic fundamentals exams (GFES), accreditation training visit (ATV) preparation, senior reactor operator (SRO) certification, procedure development, work management, tagging/labeling, outage execution, planning/scheduling, corrective action, self-assessments and equipment reliability. Customers include TVA, Entergy, Southern Company, PSEG Nuclear LLC and NRG Energy Inc.

## Results of Operations.

The following table sets forth the results of operations for the periods presented expressed as a percentage of revenue.

(\$ in thousands)

	Years ended December 31,			
	2017	%	2016	%
Revenue	\$ 70,880	100.0 %	\$ 53,101	100.0 %
Cost of revenue	52,336	73.8 %	36,843	69.4 %
Gross profit	18,544	26.2 %	16,258	30.6 %
Operating expenses				
Selling, general and administrative	15,469	21.8 %	12,260	23.1 %
Research and development	1,391	2.0 %	1,261	2.4 %
Restructuring charges	778	1.1 %	490	0.9 %
Depreciation	342	0.5 %	383	0.7 %
Amortization of definite-lived intangible assets	335	0.5 %	289	0.5 %
Total operating expenses	18,315	25.8 %	14,683	27.7 %
Operating income	229	0.3 %	1,575	3.0 %
Interest income, net	80	0.1 %	85	0.2 %
Gain (loss) on derivative instruments, net	99	0.1 %	(18)	0.0 %
Other (expense) income, net	(4)	0.0 %	130	0.2 %
Income before income taxes	404	0.6 %	1,772	3.3 %
(Benefit) provision for income taxes	(4,980)	-7.0 %	350	0.7 %
Net income	\$ 5,384	7.6 %	\$ 1,422	2.7 %

## Comparison of the Years Ended December 31, 2017 to December 31, 2016.

*Revenue.* Revenue for the year ended December 31, 2017, totaled \$70.9 million, which was 33.5% greater than the \$53.1 million of revenue for the year ended December 31, 2016. The year over year increase in revenue was primarily driven by the respective increases in the two segments listed below:

(in thousands)

	Year ended December 31,	
	2017	2016
Revenue:		
Performance Improvement Solutions	\$ 39,899	\$ 35,474
Nuclear Industry Training and Consulting	30,981	17,627
Total revenue	<u>\$ 70,880</u>	<u>\$ 53,101</u>

Performance Improvement Solutions revenue increased 12.5% from \$35.5 million to \$39.9 million for the years ended December 31, 2016 and 2017, respectively. The increase in revenue for the year ended December 31, 2017 compared to the prior year is mainly driven by an additional \$10.4 million in revenues from a major customer per the large contract executed in the first quarter of 2016. Excluding this customer, revenues were down \$6.0 million compared to the prior year. This decrease was primarily due to a \$2.3 million decrease in revenues from foreign subsidiaries as well as several large contracts that were completed in 2016 and only partially backfilled by new orders in 2017. We recorded total Performance Improvement Solutions orders of \$16.9 million and \$63.7 million for the years ended December 31, 2017 and 2016, respectively.

For the year ended December 31, 2017, Nuclear Industry Training and Consulting revenue totaled \$31.0 million compared to revenue of \$17.6 million during the year ended December 31, 2016. The \$13.4 million increase was primarily attributable to the acquisition of Absolute, which contributed \$8.7 million of revenues to the current year increase, as well as Hyperspring's major customer, which contributed \$6.5 million of increased revenues compared to the prior year mainly due to a landmark event for operator performance at this customer; the increase was partially offset by a decrease of \$2.0 million from two other customers due to lower staff augmentation needs. Nuclear Industry Training and Consulting orders totaled \$38.1 million and \$15.8 million for the years ended December 31, 2017 and 2016, respectively. Absolute contributed \$8.2 million of orders for the current year since the acquisition date.

At December 31, 2017, the Company's backlog was \$71.4 million: \$46.3 million for the Performance Improvement Solutions segment and \$25.1 million for the Nuclear Industry Training and Consulting segment, \$13.1 million of which was attributable to Absolute. At December 31, 2016, the Company's backlog was \$73.2 million: \$68.8 million for the Performance Improvement Solutions segment and \$4.4 million for the Nuclear Industry Training and Consulting segment. Performance Improvement Solutions segment's backlog decreased by \$22.5 compared to December 31, 2016. The decrease in backlog is primarily due to 2016 backlog that was converted to revenues during 2017 and has only been partially replaced by new orders. Excluding Absolute, Nuclear Industry Training and Consulting segment's backlog increased by \$7.6 million, primarily due to increased orders from major customers for Hyperspring.

*Gross profit.* Gross profit was \$18.5 million, or 26.2%, for the year ended December 31, 2017 compared to \$16.3 million, or 30.6%, for the year ended December 31, 2016.

(\$ in thousands)

	Years ended December 31,			
	2017	%	2016	%
Gross profit:				
Performance Improvement Solutions	\$ 13,712	34.4%	\$ 13,658	38.5%
Nuclear Industry Training and Consulting	4,832	15.6%	2,600	14.8%
Consolidated gross profit	\$ 18,544	26.2%	\$ 16,258	30.6%

As a percentage of revenue, the Performance Improvement Solutions segment's gross profit decreased from 38.5% for the year ended December 31, 2016 to \$13.7 million, or 34.4%, for the year ended December 31, 2017. The decrease in gross profit percentage for Performance Improvement Solutions during 2017 was primarily driven by three large nuclear simulation projects with lower margin.

For the years ended December 31, 2017 and 2016, the Nuclear Industry Training and Consulting segment had gross margin of 15.6% and 14.8%, respectively. The minor fluctuations in gross profit percentage for Nuclear Industry Training and Consulting for the periods presented were due to normal changes in the mix of projects with different margins.

*Selling, general and administrative expenses.* Selling, general and administrative (SG&A) expenses totaled \$15.5 million and \$12.3 million for the years ended December 31, 2017 and 2016, respectively. Fluctuations in the components of SG&A spending were as follows:

(\$ in thousands)

	Years ended December 31,			
	2017	%	2016	%
Selling, general and administrative expenses:				
Corporate charges	\$ 10,428	67.4%	\$ 8,392	68.5%
Business development	3,560	23.0%	3,004	24.5%
Facility operation & maintenance (O&M)	908	5.9%	1,043	8.5%
Contingent consideration	446	2.9%	(207)	(1.7)%
Bad debt expense	118	0.8%	-	0.0%
Other	9	0.1%	28	0.2%
Total	\$ 15,469	100.0%	\$ 12,260	100.0%

Corporate charges increased \$2.0 million in 2017 compared to 2016. The increase was primarily due to higher stock-based compensation expenses of \$0.9 million, acquisition-related expenses of \$0.5 million, and higher professional fees of \$0.7 million.

Business development charges increased \$0.6 million in 2017 compared to 2016, primarily due to acquisition of Absolute, which contributed \$0.6 million of business development expenses since acquisition.

Facility O&M expenses decreased \$0.1 million for the year ended December 31, 2017 compared to the year ended December 31, 2016. The decrease in 2017 was mainly due to the sublease of a portion of our Sykesville location and the closing of our Georgia office at the end of 2016.

Contingent consideration expense mainly reflected the fair value adjustments related to our November 2014 Hyperspring acquisition. Contingent consideration increased \$0.7 million for the year ended December 31, 2017 compared to the year ended December 31, 2016. The increase primarily reflected better performance for Hyperspring in 2017. The contingent consideration liability expired in November 2017 with the final payment made in January 2018.

Bad debt expense. We recorded bad debt expense of \$118,000 for the year ended December 31, 2017. We did not record bad debt expense for the year ended December 31, 2016. On July 31, 2017, South Carolina Electric and Gas Company announced that it would cease construction of new nuclear plants at the V.C. Summer Nuclear Station, one of the facilities for which the Company has an executory contract with Westinghouse for the provision of simulator software and equipment. Although there has been no formal rejection of the contract as part of the Westinghouse bankruptcy process, GSE considered it likely that Westinghouse would reject the parties' contract pertaining to the V.C. Summer Nuclear Station. Therefore, at June 30, 2017, GSE reserved 100% of accounts receivable, unbilled receivables, and billings in excess related to the V.C. Summer Nuclear Station, resulting in a net bad debt charge of \$118,000.

*Research and development.* Research and development costs consist primarily of software engineering personnel and other related costs. Research and development costs, net of capitalized software, totaled \$1.4 million and \$1.3 million for the years ended December 31, 2017 and 2016, respectively.

*Restructuring charges.* Restructuring charges totaled \$0.8 million and \$0.5 million for the years ended December 31, 2017 and 2016, respectively. On December 27, 2017, the Board of GSE Systems, Inc. approved an international restructuring plan to streamline and optimize the Company's global operations. Under the restructuring plan, we expect to record a total restructuring charge of \$1.7 million, excluding any tax impacts and cumulative translation adjustments. We recorded a severance expense of \$0.5 million, asset write-offs of \$0.2 million and other costs of \$46,000 for the year December 31, 2017. We expect to record the remaining restructuring charges in 2018, primarily to reflect the office closure costs and the amounts to be transferred from cumulative translation adjustments and included in determining net income for the period. In the third quarter of 2015, the Board of Directors of the Company approved restructuring actions for the Company's worldwide operations. Under the restructuring plan, we recorded restructuring expense of \$45,000 and \$0.5 million for the years ended December 31, 2017 and 2016 respectively. The decrease in 2015 restructuring plan charges was primarily due to nearing completion on the Company's restructuring activities initiated during 2015.

*Depreciation.* Depreciation expense totaled \$342,000 and \$383,000 for the years ended December 31, 2017 and 2016, respectively.

*Amortization of definite-lived intangible assets.* Amortization expense related to definite-lived intangible assets totaled \$335,000 and \$289,000 for the years ended December 31, 2017 and 2016, respectively. The increase in amortization was primarily due to Absolute's amortization of \$136,000 for current year which was partially offset by lower amortization of customer-related intangible assets that were recorded in conjunction with the Hyperspring acquisition in 2014.

*Gain (loss) on derivative instruments, net.* The Company periodically enters into forward foreign exchange contracts to manage market risks associated with the fluctuations in foreign currency exchange rates on foreign-denominated trade receivables. The Company had not designated the contracts as hedges and recognized a gain on the change in the estimated fair value of the contracts of \$73,000 and 51,000 for the years ended December 31, 2017 and 2016, respectively.

The foreign currency denominated trade receivables, unbilled receivables, billings in excess of revenue earned and subcontractor accruals that are related to the outstanding foreign exchange contracts are remeasured at the end of each period into the functional currency using the current exchange rate at the end of the period. The gain or loss resulting from such remeasurement is also included in gain (loss) on derivative instruments net in the consolidated statements of operations. For the years ended December 31, 2017 and 2016, the Company incurred gain (losses) of \$26,000 and \$(69,000), respectively, from the remeasurement of such assets and liabilities.

*Other income (expense), net.* The Company recognized \$4,000 of other expense, net and \$130,000 of other income, net for the years ended December 31, 2017 and 2016, respectively. Other income recognized in 2016 primarily represented \$101,000 Value Added Tax refund received by the Company's Chinese subsidiary during fiscal year 2016.

*Provision for Income Taxes.* The Company files tax returns in the United States federal jurisdiction and in several state and foreign jurisdictions. Because of the net operating loss carryforwards, the Company is subject to U.S. federal and state income tax examinations for tax years 1997, and forward, and is subject to foreign tax examinations by tax authorities for the years 2009 and forward. Open tax years related to state and foreign jurisdictions remain subject to examination but are not considered material to our financial position, results of operations or cash flows.

The Company's tax expense (benefit) in 2017 was \$(5.0) million, representing an annual effective tax rate of (1,232.7)%, and consisted of \$0.5 million of current tax provision and \$(5.5) million of deferred taxes. The Company's tax expense in 2016 was \$0.3 million, representing an annual effective rate of 19.8% and consisted of \$0.2 million of current tax provision and \$0.1 million of deferred taxes.

The increase of \$0.3 million in current tax provision was primarily driven by the increased accrued provision for foreign uncertain tax positions as more services were provided in certain countries, primarily in Korea and the interests and penalties we accrued on the foreign tax contingencies.

The significant change of \$5.6 million in deferred tax expense (benefits) was primarily driven by the release of \$9.4 million of valuation allowance against the deferred tax assets related to the U.S. entities which was partially offset by a decrease of \$2.5 million for deferred taxes, primarily due to the remeasurement of deferred tax assets using a tax rate decreased from 34% to 21% and a charge of \$1.4 million for provision for uncertain tax positions.

The difference between the effective rate and statutory rate primarily resulted from the release of valuation allowance and change in the statutory tax rate from 34% to 21%. Please see Note 12, *Income Taxes* for additional information.

### **Critical Accounting Policies and Estimates.**

In preparing the Company's consolidated financial statements, management makes several estimates and assumptions that affect the Company's reported amounts of assets, liabilities, revenues and expenses. Those accounting estimates that have the most significant impact on the Company's operating results and place the most significant demands on management's judgment are discussed below. For all of these policies, management cautions that future events rarely develop exactly as forecast, and the best estimates may require adjustment.

*Revenue Recognition.* The Company recognizes revenue through (1) fixed price contracts on the sale of uniquely designed systems containing hardware, software and other materials which apply mainly to the Performance Improvement Solutions segment as well as (2) time and material contracts primarily through Nuclear Industry Training and Consulting support and service agreements.

In accordance with U.S. generally accepted accounting principles (U.S. GAAP), our Performance Improvement Solutions segment accounts for revenue under fixed-price contracts using the percentage-of-completion method. This methodology recognizes revenue and earnings as work progresses on the contract and is based on an estimate of the revenue and earnings earned to date, less amounts recognized in prior periods. The Company bases its estimate of the degree of completion of the contract by reviewing the relationship of costs incurred to date to the expected total costs that will be incurred on the project. Estimated contract earnings are reviewed and revised periodically as the work progresses, and the cumulative effect of any change in estimate is recognized in the period in which the change is identified. Estimated losses are charged against earnings in the period such losses are identified. The Company recognizes revenue arising from contract claims either as income or as an offset against a potential loss only when the amount of the claim can be estimated reliably and realization is probable and there is a legal basis of the claim.

Uncertainties inherent in the performance of contracts include labor availability and productivity, material costs, change order scope and pricing, software modification and customer acceptance issues. The reliability of these cost estimates is critical to the Company's revenue recognition as a significant change in the estimates can cause the Company's revenue and related margins to change significantly from the amounts estimated in the early stages of the project.

As the Company recognizes revenue under the percentage-of-completion method, it provides an accrual for estimated future warranty costs based on historical and projected claims experience. The Company's long-term contracts generally provide for a one-year warranty on parts, labor and any bug fixes as it relates to customized software embedded in the systems.

Revenue from the sale of software licenses without other elements in the contract and which do not require significant modifications or customization for the Company's modeling tools are recognized when the license agreement is signed, the license fee is fixed and determinable, delivery has occurred, and collection is considered probable. We utilize written contracts as a means to establish the terms and conditions by which our products support and services are sold to our customers. Delivery is considered to have occurred when title and risk of loss have been transferred to the customer, which generally occurs after a license key has been delivered electronically to the customer.

The Company also recognizes revenue from the sale of software licenses from contracts with multiple deliverables. These software license sales are evaluated under ASC 985-605, *Software Revenue Recognition*. Contracts with multiple element arrangements typically include, but are not limited to, components such as installation, training, licenses, maintenance, and PCS listed in the contract. The Company has established that vendor specific objective evidence (VSOE) does not exist for all elements sold together with its software license sales. If a PCS or professional services element exists in the software license arrangement, revenue is recognized ratably over the longest service period. If no PCS or professional services element exists in the arrangement, revenue is deferred until the last undelivered element is delivered.

The Company recognizes revenue under time and materials contracts primarily from Nuclear Industry Training and Consulting and certain cost-reimbursable contracts. Revenue on time and material contracts is recognized as services are rendered and performed. Under a typical time-and-materials billing arrangement, customers are billed on a regularly scheduled basis, such as biweekly or monthly. Any unbilled amounts are typically billed the following month. Under cost-reimbursable contracts, which are subject to a contract ceiling amount, we are reimbursed for allowable costs and paid a fee, which may be fixed or performance based. However, if costs exceed the contract ceiling or are not allowable under the provisions of the contract or applicable regulations, we may not be able to obtain reimbursement for all such costs.

*Impairment of Intangible Assets, including Goodwill.* We review goodwill for impairment annually as of December 31 and whenever events or changes in circumstances indicate the carrying value of an asset may not be recoverable. We test goodwill at the reporting unit level. A reporting unit is an operating segment,

or one level below an operating segment, as defined by U.S. GAAP. As of December 31, 2017, the Company's \$8.4 million goodwill balance was related to our Nuclear Industry Training and Consulting segment, which arose from the acquisitions of Hyperspring in November 2014 and Absolute in September 2017.

Accounting Standards Update (ASU) 2011-08, *Intangibles — Goodwill and Other (Topic 350): Testing Goodwill for Impairment* (ASU 2011-08) permits an entity to first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount as a basis for determining whether it is necessary to perform the two-step goodwill impairment test. An entity is not required to perform step one of the goodwill impairment test for a reporting unit if it is more likely than not that its fair value is greater than its carrying amount (Step 0). If the Step 0 test indicates the fair value of a reporting unit is less than its carrying value, then additional impairment testing is required in accordance with the provisions of ASC 350, *Intangibles — Goodwill and Other*.

If it is determined that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, a two-step impairment test is required. In the first step, we compare the fair value of each reporting unit to its carrying value. If the fair value of the reporting unit exceeds the carrying value of the net assets assigned to that unit, goodwill is not impaired and we are not required to perform further testing. If the carrying value of the net assets assigned to the reporting unit exceeds the fair value of the reporting unit, then we must perform the second step of the impairment test in order to determine the implied fair value of the reporting unit's goodwill. The implied fair value of goodwill is determined by allocating the fair value of the reporting unit's assets and liabilities in a manner similar to a purchase price allocation, with any residual fair value allocated to goodwill. If the carrying value of a reporting unit's goodwill exceeds its implied fair value, then we record an impairment loss equal to the difference.

At December 31, 2017, we performed a qualitative step 0 analysis and have concluded that the estimated fair values of each of our reporting units as of December 31, 2017, is more likely than not, greater than their respective carrying values. At December 31, 2016, we performed a quantitative step one goodwill impairment test and concluded that the fair values of each of our reporting units exceeded their respective carrying values.

Determining the fair value of a reporting unit is judgmental in nature and involves the use of significant estimates and assumptions. These estimates and assumptions include revenue growth rates and operating margins used to calculate projected future cash flows, risk-adjusted discount rates, future economic and market conditions and determination of appropriate market comparables. We base our fair value estimates on assumptions we believe to be reasonable but that are unpredictable and inherently uncertain. Actual future results may differ from those estimates. In addition, we make certain judgments and assumptions in allocating shared assets and liabilities to determine the carrying values for each of our reporting units. The timing and frequency of our goodwill impairment tests are based on an ongoing assessment of events and circumstances that would indicate a possible impairment. We will continue to monitor our goodwill and intangible assets for impairment and conduct formal tests when impairment indicators are present.

*Capitalization of Computer Software Development Costs.* In accordance with U.S. GAAP, the Company capitalizes computer software development costs incurred after technological feasibility has been established, but prior to the release of the software product for sale to customers. Once the product is available to be sold, the Company amortizes the costs, on a straight line method, over the estimated useful life of the product, which is typically three years. As of December 31, 2017, the Company has net capitalized software development costs of \$0.7 million. On an annual basis, and more frequently as conditions indicate, the Company assesses the recovery of the unamortized software development costs by estimating the net undiscounted cash flows expected to be generated by the sale of the product. If the undiscounted cash flows are not sufficient to recover the unamortized software costs the Company will write-down the investment to its estimated fair value based on future discounted cash flows. The excess of any unamortized computer software costs over the related net realizable value is written down and charged to operations. Significant changes in the sales projections could result in an impairment with respect to the capitalized software that is reported on the Company's consolidated balance sheets.

*Valuation of Contingent Consideration for Business Acquisitions.* Acquisitions may include contingent consideration payments based on future financial measures of an acquired company. Contingent consideration is required to be recognized at fair value as of the acquisition date. We estimate the fair value of these liabilities based on financial projections of the acquired companies and estimated probabilities of achievement. We believe our estimates and assumptions are reasonable; however, there is significant judgment involved. At each reporting date, the contingent consideration obligation will be revalued to estimated fair value and changes in fair value subsequent to the acquisition will be reflected in income or expense in the consolidated statements of operations, and could cause a material impact to our operating results. Changes in the fair value of contingent consideration obligations may result from changes in discount periods and rates, changes in the timing and amount of revenue and/or earnings estimates and changes in probability assumptions with respect to the likelihood of achieving the various earn-out criteria.

*Deferred Income Tax Valuation Allowance.* Deferred income taxes arise from temporary differences between the tax basis of assets and liabilities and their reported amounts in the consolidated financial statements. Management makes a regular assessment of the realizability of the Company's deferred tax assets. In making this assessment, management considers whether it is more likely than not that some or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities and projected future taxable income of the Company in making this assessment. A valuation allowance is recorded to reduce the total deferred income tax asset to its realizable value. Based on the assessment the Company's management performed as of December 31, 2017, we conclude that critical pieces of positive evidence supporting the realization of deferred tax assets exist including the strength of three year cumulative positive earnings, reversal of existing deferred temporary differences and future taxable income for the U.S. entities. As a result, the Company has determined that a portion of the historic valuation allowance should be released as realization of the associated asset is more likely than not. Accordingly, we reversed \$9.4 million of valuation allowance against the deferred tax assets related to the U.S. entities. As of December 31, 2017, the Company has established a \$1.1 million valuation allowance for its net deferred tax assets. Because a portion of the deferred tax assets are capital in nature, the Company must assess the realizability of these assets separately from the deferred tax assets that are ordinary in nature. The Company determined that it would not be able to generate sources of capital income and, therefore, would need to continue to assess a valuation allowance in the amount of \$0.4 million. The Company currently does not have sufficient object evidence to substantiate the recovery of the deferred tax assets for U.K. Swedish and Chinese deferred tax assets at December 31, 2017, accordingly, a full valuation allowance of \$0.7 million has been established on these deferred tax assets, predominantly comprised of net operating losses.

#### **Liquidity and Capital Resources.**

As of December 31, 2017, GSE had cash and cash equivalents of \$19.1 million compared to \$21.7 million at December 31, 2016.

*Cash provided by operating activities.* For the years ended December 31, 2017 and 2016, net cash provided by operating activities totaled \$7.7 million and \$10.2 million, respectively. The year over year decrease in cash provided by operating activities was largely driven by:

- A \$3.1 million decrease in net inflows from changes in net working capital primarily due to a significant customer contract that was executed during 2016 and the timing of contracted billing milestones of the projects.
- A \$1.5 million increase in operating expenses (excluding non-cash operating expenses) mainly due to higher professional fees and transaction costs related to acquisition of Absolute in fiscal year 2017
- The decrease was partially offset by a \$2.3 million increase in gross profit, primarily driven by higher revenue contributed by two largest customers

*Net cash (used in) provided by investing activities.* For the year ended December 31, 2017, net cash used in investing activities was \$9.2 million compared to net cash of \$2.1 million provided by investing activities in the prior year. The significant cash outflow in 2017 was primarily due to the acquisition of Absolute, which resulted in a cash outflow of \$9.1 million. For fiscal year 2016, the net cash inflow of \$2.1 million was primarily due to release of cash restricted as collateral for standby letters of credit.

*Cash used in financing activities.* For the years ended December 31, 2017 and 2016, net cash used in financing activities totaled \$1.6 million and \$1.2 million, respectively. The increase in the cash outflow from financing activities is largely driven by the increase of \$0.3 million in the Company's withholding RSUs in order to pay employees' payroll withholding taxes on vested RSUs and a \$0.6 million decrease in proceeds received from stock option exercises, partially offset by a \$0.6 million decrease in contingent consideration payments to the former Hyperspring owners in 2017.

#### *Credit Facilities*

##### *Citizen's Bank*

In December 2016, the Company entered into a three-year, \$5.0 million revolving line of credit (RLOC) facility with Citizen's Bank to fund general working capital needs, including acquisitions. Working capital advances bear interest of one-month LIBOR plus 2.25% per annum and letter of credit fees are 1.25% per annum. The Company is not required to maintain a restricted cash collateral account at Citizen's Bank for outstanding letters of credit and working capital advances. The credit facility agreement is subject to standard financial covenants and reporting requirements.



The maximum availability under the RLOC is subject to a borrowing base equal to 80% of eligible accounts receivable, and is reduced for any issued and outstanding letters of credit and working capital advances. At December 31, 2017, there were no outstanding borrowings on the RLOC and three letters of credit totaling \$0.8 million. The amount available at December 31, 2017, after consideration of the borrowing base, letters of credit and working capital advances was approximately \$4.0 million.

*Branch Banking and Trust Bank (BB&T)*

At December 31, 2017, we had three letters of credit with BB&T totaling \$0.9 million, which expired and are pending on release by the bank and customer. At December 31, 2017, the Company had \$1.0 million as cash collateral for the letters of credit.

## *2018 Liquidity Outlook*

At December 31, 2017, the Company had cash and cash equivalents of \$19.1 million and \$1.0 million of restricted cash.

As discussed above, the Company has a \$5.0 million RLOC with Citizen's Bank to fund general working capital needs, including acquisitions. At December 31, 2017, the amount available under this RLOC, after consideration of the borrowing base, letters of credit and working capital advances was approximately \$4.0 million. This credit facility provides the Company with additional flexibility to pursue its strategic initiatives and continue to expand the business.

The Company entered 2018 with \$71.4 million of backlog; \$56.6 million of which is expected to convert to revenue in 2018. The Company anticipates that its normal operations will generate sufficient liquidity and working capital to fund its consolidated operations during the next twelve months without additional financing.

As discussed in MD&A, on December 27, 2017, the board of GSE Systems, Inc. approved an international restructuring plan to streamline and optimize the Company's global operations. GSE is in the process of consolidating its engineering services and R&D activities to Maryland and cease an unprofitable non-core business in the U.K. As a result, the Company will be closing its offices in Nyköping, Sweden; Chennai, India; and Stockton-on-Tees, UK. These actions are designed to improve Company productivity by eliminating duplicate employee functions and increasing GSE's focus on its core business, improving efficiency and maintaining the full range of engineering capabilities while reducing costs and organizational complexity. Under the restructuring plan, the Company expects a \$1.5 million cash outflow in 2018, which primarily includes severance expense, facility closing costs, and other restructuring costs.

### **Foreign Exchange.**

A portion of the Company's international sales revenue has been and may be received in a currency other than the currency in which the expenses relating to such revenue are paid. Accordingly, the Company periodically enters into forward foreign exchange contracts to manage the market risks associated with the fluctuations in foreign currency exchange rates.

### **Off-balance Sheet Obligations.**

The Company has no off-balance sheet obligations as of December 31, 2017, except for its operating lease commitments and outstanding letters of credit and surety bonds.

### **Other Matters.**

Management believes inflation has not had a material impact on the Company's operations.

**EBITDA and Adjusted EBITDA Reconciliation** *(in thousands)*

EBITDA and Adjusted EBITDA are not measures of financial performance under generally accepted accounting principles (GAAP). Management believes EBITDA and Adjusted EBITDA, in addition to operating profit, net income and other GAAP measures, are useful to investors to evaluate the Company's results because it excludes certain items that are not directly related to the Company's core operating performance that may, or could, have a disproportionate positive or negative impact on our results for any particular period. Investors should recognize that EBITDA and Adjusted EBITDA might not be comparable to similarly-titled measures of other companies. This measure should be considered in addition to, and not as a substitute for or superior to, any measure of performance prepared in accordance with GAAP. A reconciliation of non-GAAP EBITDA and Adjusted EBITDA to the most directly comparable GAAP measure in accordance with SEC Regulation G follows:

	Three Months ended December 31,		Twelve Months ended December 31,	
	2017	2016	2017	2016
Net income	\$5,428	\$1,004	\$5,384	\$1,422
Interest income, net	(20)	(33)	(80)	(85)
Provision for income taxes	(5,379)	75	(4,980)	350
Depreciation and amortization	392	271	1,146	1,080
EBITDA	421	1,317	1,470	2,767
Gain (loss) from the change in fair value of contingent consideration	10	163	446	(207)
Restructuring charges	733	3	778	490
Stock-based compensation expense	599	650	2,472	1,550
Consulting support for finance restructuring	-	84	-	394
Acquisition-related expense	-	-	473	-
Westinghouse bankruptcy related expense	-	-	122	-
Adjusted EBITDA	<u>\$1,763</u>	<u>\$2,217</u>	<u>\$5,761</u>	<u>\$4,994</u>

**Adjusted Net Income and Adjusted EPS Reconciliation** *(in thousands, except per share amounts)*

Adjusted Net Income and adjusted earnings per share (adjusted EPS) are not measures of financial performance under generally accepted accounting principles (GAAP). Management believes adjusted net income and adjusted EPS, in addition to other GAAP measures, are useful to investors to evaluate the Company's results because they exclude certain items that are not directly related to the Company's core operating performance that may, or could, have a disproportionate positive or negative impact on our results for any particular period. These measures should be considered in addition to, and not as a substitute for or superior to, any measure of performance prepared in accordance with GAAP. A reconciliation of non-GAAP adjusted net income and adjusted EPS to GAAP net income, the most directly comparable GAAP financial measure, is as follows:

	Three Months ended		Twelve Months ended	
	December 31,		December 31,	
	2017	2016	2017	2016
	<i>(unaudited)</i>	<i>(unaudited)</i>	<i>audited</i>	<i>audited</i>
<b>Net income</b>	<b>\$5,428</b>	<b>\$1,004</b>	<b>\$5,384</b>	<b>\$1,422</b>
Gain/loss from the change in fair value of contingent consideration	10	163	446	(207)
Restructuring charges	733	3	778	490
Stock-based compensation expense	599	650	2,472	1,550
Consulting support for finance restructuring	-	84	-	394
Acquisition-related expense	-	-	473	-
Westinghouse bankruptcy related expense	-	-	122	-
Tax reform impact	2,497	-	2,497	-
Release of valuation allowance	(9,382)	-	(9,382)	-
Adjusted net (loss) income	<u>\$(115)</u>	<u>1,904</u>	<u>\$2,790</u>	<u>\$3,649</u>
Diluted earnings per common share	<u>\$(0.01)</u>	<u>\$0.10</u>	<u>\$0.14</u>	<u>\$0.20</u>
Adjusted (loss) earnings per common share – Diluted	<u>\$(0.01)</u>	<u>\$0.10</u>	<u>\$0.14</u>	<u>\$0.20</u>
Weighted average shares outstanding – Diluted (a)	<u>19,395,592</u>	<u>19,073,513</u>	<u>19,605,427</u>	<u>18,512,266</u>

(a) During the three months ended December 31, 2017, the Company reported a non-GAAP net loss and positive net income. Accordingly, there were 395,104 dilutive shares from options and RSUs included in the diluted earnings per common share calculation for the three months ended December 31, 2017, that were considered anti-dilutive in determining the non-GAAP diluted loss per common share.

**ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.**

Not required of a smaller reporting company.

**ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.**

**INDEX TO CONSOLIDATED FINANCIAL STATEMENTS**

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## Report of Independent Registered Public Accounting Firm

Shareholders and Board of Directors  
GSE Systems, Inc.  
Sykesville, Maryland

### Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of GSE Systems, Inc. (the "Company") and subsidiaries as of December 31, 2017 and 2016, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the two years in the period ended December 31, 2017, and the related notes. In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company and subsidiaries at December 31, 2017 and 2016, and the results of their operations and their cash flows for each of the two years in the period ended December 31, 2017, in conformity with accounting principles generally accepted in the United States of America.

### Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("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 and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

We have served as the Company's auditor since 2014.

/s/ BDO USA, LLP  
McLean, Virginia

**March 15, 2018**

**PART I - FINANCIAL INFORMATION**

**Item 1. Financial Statements**

**GSE SYSTEMS, INC. AND SUBSIDIARIES**  
**CONSOLIDATED BALANCE SHEETS**  
*(in thousands, except share data)*

ASSETS	December 31,	
	2017	2016
Current assets:		
Cash and cash equivalents	\$ 19,111	\$ 21,747
Restricted cash	960	1,140
Contract receivables, net	13,997	18,863
Prepaid expenses and other current assets	2,795	2,052
Total current assets	36,863	43,802
Equipment, software and leasehold improvements	4,782	6,759
Accumulated depreciation	(3,719)	(5,527)
Equipment, software and leasehold improvements, net	1,063	1,232
Software development costs, net	690	982
Goodwill	8,431	5,612
Intangible assets, net	2,604	454
Deferred tax assets	7,167	-
Other assets	37	1,574
Total assets	\$ 56,855	\$ 53,656
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Accounts payable	\$ 1,251	\$ 923
Accrued expenses	2,276	2,437
Accrued compensation	2,866	2,624
Billings in excess of revenue earned	14,543	21,444
Accrued warranty	1,433	1,137
Current contingent consideration	1,701	2,105
Other current liabilities	1,182	716
Total current liabilities	25,252	31,386
Other liabilities	1,931	1,149
Total liabilities	27,183	32,535
Commitments and contingencies	-	-
Stockholders' equity:		
Preferred stock \$.01 par value, 2,000,000 shares authorized, no shares issued and outstanding	-	-
Common stock \$.01 par value, 30,000,000 shares authorized, 21,024,395 and 20,433,608 shares issued and 19,425,484 and 18,834,697 shares outstanding in 2017 and 2016	210	204
Additional paid-in capital	76,802	75,120
Accumulated deficit	(42,870)	(49,427)
Accumulated other comprehensive loss	(1,471)	(1,777)
Treasury stock at cost, 1,598,911 shares	(2,999)	(2,999)
Total stockholders' equity	29,672	21,121
Total liabilities and stockholders' equity	\$ 56,855	\$ 53,656

The accompanying notes are an integral part of these consolidated financial statements.



**GSE SYSTEMS, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**  
*(in thousands, except per share data)*

	<b>Years ended December 31,</b>	
	<b>2017</b>	<b>2016</b>
Revenue	\$ 70,880	\$ 53,101
Cost of revenue	52,336	36,843
Gross profit	<u>18,544</u>	<u>16,258</u>
Operating expenses		
Selling, general and administrative	15,469	12,260
Research and development	1,391	1,261
Restructuring charges	778	490
Depreciation	342	383
Amortization of definite-lived intangible assets	335	289
Total operating expenses	<u>18,315</u>	<u>14,683</u>
Operating income	229	1,575
Interest income, net	80	85
Gain (loss) on derivative instruments, net	99	(18)
Other (expense) income, net	<u>(4)</u>	<u>130</u>
Income before income taxes	404	1,772
(Benefit) provision for income taxes	<u>(4,980)</u>	<u>350</u>
Net income	<u>\$ 5,384</u>	<u>\$ 1,422</u>
Basic earnings per common share	<u>\$ 0.28</u>	<u>\$ 0.08</u>
Diluted earnings per common share	<u>\$ 0.27</u>	<u>\$ 0.08</u>

The accompanying notes are an integral part of these consolidated financial statements.

**GSE SYSTEMS, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME**  
*(in thousands)*

	<b>Years ended December 31,</b>	
	<b>2017</b>	<b>2016</b>
Net income	\$ 5,384	\$ 1,422
Foreign currency translation adjustment	306	(317)
Comprehensive income	<u>\$ 5,690</u>	<u>\$ 1,105</u>

The accompanying notes are an integral part of these consolidated financial statements.

**GSE SYSTEMS, INC, AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY**  
*(in thousands)*

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Treasury Stock		Total
	Shares	Amount				Shares	Amount	
<b>Balance, January 1, 2016</b>	19,511	\$ 195	\$ 73,481	\$ (50,849)	\$ (1,460)	(1,599)	\$ (2,999)	\$ 18,368
Stock-based compensation expense	-	-	1,399	-	-	-	-	1,399
Common stock issued for options exercised	458	4	829	-	-	-	-	833
Common stock issued for RSUs vested	465	5	(5)	-	-	-	-	-
Vested RSU shares withheld to pay taxes	-	-	(584)	-	-	-	-	(584)
Foreign currency translation adjustment	-	-	-	-	(317)	-	-	(317)
Net income	-	-	-	1,422	-	-	-	1,422
<b>Balance, December 31, 2016</b>	<u>20,434</u>	<u>\$ 204</u>	<u>\$ 75,120</u>	<u>\$ (49,427)</u>	<u>\$ (1,777)</u>	<u>(1,599)</u>	<u>\$ (2,999)</u>	<u>\$ 21,121</u>
Cumulative effect of new accounting principle	-	-	-	1,173	-	-	-	1,173
Stock-based compensation expense	-	-	2,398	-	-	-	-	2,398
Common stock issued for options exercised	182	2	207	-	-	-	-	209
Common stock issued for RSUs vested	409	4	(4)	-	-	-	-	-
Vested RSU shares withheld to pay taxes	-	-	(919)	-	-	-	-	(919)
Foreign currency translation adjustment	-	-	-	-	306	-	-	306
Net income	-	-	-	5,384	-	-	-	5,384
<b>Balance, December 31, 2017</b>	<u>21,024</u>	<u>\$ 210</u>	<u>\$ 76,802</u>	<u>\$ (42,870)</u>	<u>\$ (1,471)</u>	<u>(1,599)</u>	<u>\$ (2,999)</u>	<u>\$ 29,672</u>

The accompanying notes are an integral part of these consolidated financial statements.

**GSE SYSTEMS, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
*(in thousands)*

	<b>Years ended December 31,</b>	
	<b>2017</b>	<b>2016</b>
<b>Cash flows from operating activities:</b>		
Net income	\$ 5,384	\$ 1,422
Adjustments to reconcile net income to net cash provided by operating activities:		
Write-off of long-lived assets to be disposed of	222	-
Accrued severance costs	465	-
Depreciation	342	383
Amortization of definite-lived intangible assets	335	289
Amortization of capitalized software development costs	469	408
Change in fair value of contingent consideration	446	(207)
Stock-based compensation expense	2,472	1,550
Bad debt expense	118	-
(Gain) loss on derivative instruments, net	(99)	18
Deferred income taxes	(5,505)	123
Loss on sale of equipment, software, and leasehold improvements	2	3
Changes in assets and liabilities:		
Contract receivables, net	10,006	(6,078)
Prepaid expenses and other assets	1,020	(1,249)
Accounts payable, accrued compensation and accrued expenses	(1,904)	961
Billings in excess of revenue earned	(6,897)	12,257
Accrued warranty	462	(465)
Other liabilities	370	737
<b>Net cash provided by operating activities</b>	<b>7,708</b>	<b>10,152</b>
<b>Cash flows from investing activities:</b>		
Capital expenditures	(112)	(79)
Proceeds from sale of assets	-	30
Capitalized software development costs	(177)	(245)
Acquisition of Absolute Consulting, Inc., net of cash acquired	(9,066)	-
Releases of cash as collateral under letters of credit	180	2,408
<b>Net cash (used in) provided by investing activities</b>	<b>(9,175)</b>	<b>2,114</b>
<b>Cash flows from financing activities:</b>		
Proceeds from issuance of common stock on the exercise of stock options	209	833
RSUs withheld to pay taxes	(919)	(584)
Contingent consideration payments to Hyperspring, LLC	(850)	(1,421)
<b>Net cash used in financing activities</b>	<b>(1,560)</b>	<b>(1,172)</b>
Effect of exchange rate changes on cash	391	(431)
Net (decrease) increase in cash and cash equivalents	(2,636)	10,663
Cash and cash equivalents at beginning of year	21,747	11,084
Cash and cash equivalents at end of year	\$ 19,111	\$ 21,747

The accompanying notes are an integral part of these consolidated financial statements.

**GSE SYSTEMS, INC. AND SUBSIDIARIES**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**  
**December 31, 2017 and 2016**

**1. Summary of Significant Accounting Policies**

*Principles of consolidation*

The accompanying consolidated financial statements include the accounts of GSE Systems, Inc. and its wholly-owned subsidiaries (collectively, the Company). All intercompany balances and transactions have been eliminated in consolidation. Investments in partnerships, joint ventures, and less-than-majority owned subsidiaries in which the Company has significant influence are accounted for under the equity method.

*Accounting estimates*

The preparation of the consolidated financial statements in conformity with generally accepted accounting principles in the United States of America (U.S. GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue and expenses during the reporting period. On an ongoing basis, the Company evaluates the estimates used, including but not limited to those related to revenue recognition on long-term contracts, allowance for doubtful accounts, product warranties, valuation of goodwill and intangible assets acquired, impairment of long-lived assets to be disposed of, valuation of contingent consideration issued in business acquisitions, valuation of stock based compensation awards, and the recoverability of deferred tax assets. Actual results could differ from these estimates.

*Business Combinations*

Business combinations are accounted for in accordance with ASC 805, *Business Combinations* using the acquisition method. Under the acquisition method, the identifiable assets acquired, liabilities assumed and any non-controlling interest in the acquiree are recognized at fair value on the acquisition date, which is the date on which control is transferred to the Company. Any excess purchase price is recorded as goodwill. Transaction costs associated with business combinations are expensed as incurred.

Revenues and the results of operations of the acquired business are included in the accompanying consolidated statement of operations commencing on the date of acquisition.

Acquisitions may include contingent consideration payments based on future financial measures of an acquired company. Under Accounting Standards Codification (ASC) 805, contingent consideration is required to be recognized at fair value as of the acquisition date. We estimate the fair value of these liabilities based on financial projections of the acquired companies and estimated probabilities of achievement. At each reporting date, the contingent consideration obligation is revalued to estimated fair value, and changes in fair value subsequent to the acquisition are reflected in income or expense in the consolidated statements of operations, and could cause a material impact to our operating results. Changes in the fair value of contingent consideration obligations may result from changes in discount periods and rates, changes in the timing and amount of revenue and/or earnings estimates, and changes in probability assumptions with respect to the likelihood of achieving the various earn-out criteria.

*Revenue recognition*

The Company recognizes revenue through fixed price contracts for the sale of uniquely designed/customized systems containing hardware, software and other materials which generally apply to the Performance Improvement Solutions segment and time and material contracts for the Nuclear Industry Training and Consulting segment.

In accordance with ASC 605-35, *Construction-Type and Production-Type Contracts* (ASC 605), the Performance Improvement Solutions segment primarily accounts for revenue under fixed-price contracts using the percentage-of-completion method. This methodology recognizes revenue and earnings as work progresses on the contract and is based on costs incurred to date compared to total estimated cost to complete the project. Estimated contract earnings are reviewed and revised periodically as the work progresses, and the cumulative effect of any change in estimate is recognized in the period in which the change is identified. Estimated losses are charged against earnings in the period such losses are identified. The Company recognizes revenue arising from contract claims either as income or as an offset against a potential loss only when the amount of the claim can be estimated reliably and realization is probable and there is a legal basis of the claim.

Uncertainties inherent in the performance of contracts include labor availability and productivity, material costs, change order scope and pricing, software modification and customer acceptance issues. The reliability of these cost estimates is critical to the Company's revenue recognition as a significant change in the estimates can cause the Company's revenue and related margins to change significantly from the amounts estimated in the early stages of the project.

As the Company recognizes revenue under the percentage-of-completion method, it provides an accrual for estimated future warranty costs based on historical and projected claims experience. The Company's long-term contracts generally provide for a one to two year warranty on parts, labor and any bug fixes as it relates to customized software embedded in the systems.

Revenue from the sale of software licenses without other elements in the contract and which do not require significant modifications or customization for the Company's modeling tools are recognized when the license agreement is signed, the license fee is fixed and determinable, delivery has occurred, and collection is considered probable. We utilize written contracts to establish the terms and conditions by which product support and services are sold to customers. Delivery is considered to have occurred when title and risk of loss have been transferred to the customer, which generally occurs after a license key has been delivered electronically to the customer.

The Company also recognizes revenue from the sale of software licenses from contracts with multiple deliverables. These software license sales are evaluated under ASC 985-605, *Software Revenue Recognition*. Contracts with multiple element arrangements typically include, but are not limited to, components such as installation, training, licenses, and post contract support (PCS) listed in the contract. The Company concluded that vendor specific objective evidence (VSOE) does not exist for all elements of its software license sales. If a PCS or professional services element exists in the software license arrangement, revenue is recognized ratably over the longest service period. If no PCS or professional services element exists in the arrangement, revenue is deferred until the last undelivered element is delivered.

The Company recognizes revenue under time and materials contracts primarily from the Nuclear Industry Training and Consulting segment and certain cost-reimbursable contracts. Revenue on time and material contracts is recognized as services are rendered and performed. Under a typical time-and-materials billing arrangement, customers are billed on a regularly scheduled basis, such as biweekly or monthly. Any unbilled amounts are typically billed the following month. Under cost-reimbursable contracts, which are subject to a contract ceiling amount, we are reimbursed for allowable costs and paid a fee, which may be fixed or performance based. However, if costs exceed the contract ceiling or are not allowable under the provisions of the contract or applicable regulations, we may not be able to obtain reimbursement for all such costs.

### *Cash and cash equivalents*

Cash and cash equivalents represent cash and highly liquid investments including money market accounts with maturities of three months or less at the date of purchase.

### *Restricted cash*

Restricted cash consists of the cash collateralization of outstanding letters of credit used for various advance payment, bid, surety and performance bonds, and negative foreign exchange positions which have been segregated into restricted money market accounts with BB&T Bank. BB&T Bank has complete and unconditional control over the restricted money market accounts.

At December 31, 2017 and 2016, the Company had approximately \$1.0 million and \$1.1 million, respectively, of cash in escrow accounts with BB&T Bank. We have classified all of our restricted cash as current assets at December 31, 2017 and 2016, respectively. The Company recorded interest income of \$2,000 and \$6,000 from the escrow accounts for the years ended December 31, 2017 and 2016, respectively. The interest earned on these restricted funds is added to the restricted cash balance. The Company classifies the restriction and release of the cash collateralization of outstanding letters of credit as an investing activity within the consolidated statements of cash flows, as these deposits are not related to borrowings against our line of credit.

### *Contract receivables, net*

Contract receivables include recoverable costs and accrued profit not billed which represents revenue recognized in excess of amounts billed. Billings in excess of costs and estimated earnings on uncompleted contracts in the accompanying consolidated balance sheets represent advanced billings to clients on contracts in advance of work performed. Generally, such amounts will be earned and recognized over the next twelve months.

Billed receivables are recorded at invoiced amounts. The allowance for doubtful accounts is based on historical trends of past due accounts, write-offs, and specific identification and review of customer accounts.

### *Equipment, software and leasehold improvements, net*

Equipment and purchased software are recorded at cost and depreciated using the straight-line method with estimated useful lives ranging from three to ten years. Leasehold improvements are amortized over the life of the lease or the estimated useful life, whichever is shorter, using the straight-line method. Upon sale or retirement, the cost and related depreciation are eliminated from the respective accounts and any resulting gain or loss is included in operations. Maintenance and repairs are charged to expense as incurred.

### *Software development costs*

Certain computer software development costs are capitalized in the accompanying consolidated balance sheets. Capitalization of computer software development costs begins upon the establishment of technological feasibility. Capitalization ceases and amortization of capitalized costs begins when the software product is commercially available for general release to customers. Amortization of capitalized computer software development costs is included in cost of revenue and is determined using the straight-line method over the remaining estimated economic life of the product, typically three years. On an annual basis, or more frequently as conditions indicate, the Company assesses the recovery of the unamortized software development costs by estimating the net undiscounted cash flows expected to be generated by the sale of the product. If the undiscounted cash flows are not sufficient to recover the unamortized software costs the Company will write-down the carrying amount of such asset to its estimated fair value based on the future discounted cash flows. The excess of any unamortized computer software costs over the related fair value is written down and charged to operations.

### *Development expenditures*

Development expenditures incurred to meet customer specifications under contracts are charged to contract costs. Company sponsored development expenditures are either charged to operations as incurred and are included in research and development expenses or are capitalized as software development costs. See Note 9, *Software development costs, net*. The amounts incurred for Company sponsored development activities relating to the development of new products and services or the improvement of existing products and services, were approximately \$1.6 million for the years ended December 31, 2017 and 2016, respectively. Of this amount, the Company capitalized approximately \$0.2 million for the years ended December 31, 2017 and 2016, respectively.

### *Impairment of long-lived assets*

Long-lived assets, such as equipment, purchased software, capitalized software development costs, and intangible assets subject to amortization, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated undiscounted future cash flows, an impairment charge is recognized at the amount by which the carrying amount of the asset exceeds its fair value. Assets to be disposed of would be separately presented in the consolidated balance sheets and reported at the lower of the carrying amount or fair value less costs to sell, and would no longer be depreciated.

On December 27, 2017, the board of the Company approved an international restructuring plan to streamline and optimize the Company's global operations. As a result, the Company will be closing its offices in Nyköping, Sweden; Chennai, India; and Stockton-on-Tees, UK. The Company's management conducted an impairment review of the assets to be disposed of under the plan. Based upon this review, we recorded an impairment loss of \$0.2 million representing the net book value of the equipment and intangible assets subject to amortization under the respective offices. See Note 3, *Restructuring Expenses*.

### *Goodwill and intangible assets*

The Company's intangible assets include amounts recognized in connection with business acquisitions, including customer relationships, contract backlog and

software. Intangible assets are initially valued at fair value using generally accepted valuation methods appropriate for the type of intangible asset. Amortization is recognized on a straight-line basis over the estimated useful life of the intangible assets, except for contract backlog and contractual customer relationships which are recognized in proportion to the related projected revenue streams. Intangible assets with definite lives are reviewed for impairment if indicators of impairment arise. The Company does not have any intangible assets with indefinite useful lives.

Goodwill represents the excess of costs over fair value of assets of businesses acquired. The Company reviews goodwill for impairment annually as of December 31 and whenever events or changes in circumstances indicate the carrying value of goodwill may not be recoverable in accordance with Accounting Standard s Update (ASU) 2011-08, *Intangibles - Goodwill and Other (Topic 350): Testing Goodwill for Impairment*, and ASC 350, *Intangibles — Goodwill and Other* (ASC 350). The Company tests goodwill at the reporting unit level.

ASU 2011-08 permits an entity to first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount as a basis for determining whether it is necessary to perform the two-step goodwill impairment test. Under ASU 2011-08, an entity is not required to perform step one of the goodwill impairment test for a reporting unit if it is more likely than not that its fair value is greater than its carrying amount. For the annual goodwill impairment test as of December 31, 2017, the Company performed a quantitative step one goodwill impairment test and concluded that the fair values of each of the reporting units exceeded their respective carrying values. No goodwill impairment was recorded during 2017.



### Foreign currency translation

The United States Dollar (USD) is the functional currency of GSE and our subsidiaries operating in the United States. Our subsidiaries' financial statements are maintained in their functional currencies. The functional currency of each of our foreign subsidiaries is the currency of the economic environment in which the subsidiary primarily does business. Our foreign subsidiaries' financial statements are translated into USD using the exchange rates applicable to the dates of the financial statements. Assets and liabilities are translated into USD using the period-end spot foreign exchange rates. Income and expenses are translated at the average exchange rate for the year. Equity accounts are translated at historical exchange rates. The effects of these translation adjustments are reported as a component of accumulated other comprehensive income (loss) included in the consolidated statements of changes in stockholders' equity. For any transaction that is in a currency different from the entity's functional currency, we record a gain or loss based on the difference between the exchange rate at the transaction date and the exchange rate at the transaction settlement date (or rate at period end, if unsettled) as foreign currency exchange gain (loss), net in the consolidated statements of operations.

### Accrued warranty

For contracts that contain a warranty provision, the Company provides an accrual for estimated future warranty costs based on historical experience and projected claims. The Company's contracts may contain warranty provisions ranging from one to two years. The current portion of the accrued warranty is presented separately on the consolidated balance sheets within current liabilities whereas the noncurrent portion is included in other liabilities.

The activity in the accrued warranty accounts is as follows:

(in thousands)

	As of and for the years ended December 31,	
	2017	2016
Beginning balance	\$ 1,478	\$ 1,614
Current year provision	707	355
Current year claims	(245)	(467)
Currency adjustment	13	(24)
Ending balance	<u>\$ 1,953</u>	<u>\$ 1,478</u>

### Income taxes

Income taxes are provided under the asset and liability method. Under this method, deferred income taxes are determined based on the differences between the consolidated financial statements and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Valuation allowances are established, when necessary, to reduce deferred tax assets to the amounts expected to be realized. A provision is made for the Company's current liability for federal, state and foreign income taxes and the change in the Company's deferred income tax assets and liabilities.

We establish accruals for uncertain tax positions taken or expected to be taken in a tax return when it is not more likely than not (i.e., a likelihood of more than fifty percent) that the position would be sustained upon examination by tax authorities that have full knowledge of all relevant information. A recognized tax position is then measured at the largest amount of benefit that is greater than fifty percent likely of being realized upon ultimate settlement. Favorable or unfavorable adjustment of the accrual for any particular issue would be recognized as an increase or decrease to income tax expense in the period of a change in facts and circumstances. Interest and penalties related to income taxes are accounted for as income tax expense.

### Stock-based compensation

Share-based compensation expense is based on the grant-date fair value estimated in accordance with the provisions of ASC 718, *Compensation-Stock Compensation*. Compensation expense related to share based awards is recognized on a pro rata straight-line basis based on the value of share awards that are scheduled to vest during the requisite service period.

### Earnings per share

Basic earnings per share is based on the weighted average number of outstanding common shares for the period. Diluted earnings per share adjusts the weighted average shares outstanding for the potential dilution that could occur if outstanding vested stock options were exercised. Basic and diluted earnings per share is based on the weighted average number of outstanding shares for the period.

The number of common shares and common share equivalents used in the determination of basic and diluted earnings per share were as follows:

(in thousands, except for per share data)

	Years ended December 31,	
	2017	2016
Numerator:		
Net income	<u>\$ 5,384</u>	<u>\$ 1,422</u>
Denominator:		
Weighted-average shares outstanding for basic earnings per share	19,259,966	18,218,681
Effect of dilutive securities:		
Stock options and restricted stock units	<u>345,461</u>	<u>293,585</u>

Adjusted weighted-average shares outstanding and assumed conversions for diluted earnings per share	<u>19,605,427</u>	<u>18,512,266</u>
Shares related to dilutive securities excluded because inclusion would be anti-dilutive	<u>374,833</u>	<u>677,964</u>

Conversion of certain outstanding stock options was not assumed for the years ended December 31, 2017 and 2016 because the impact would have been anti-dilutive.

### Significant customers and concentration of credit risk

For the year ended December 31, 2017, we have a concentration of revenue from two individual customers, which accounted for approximately 39.0% of our consolidated revenue. For the year ended December 31, 2016, we have a concentration of revenue from an individual customer, which accounted for 10.2% of our consolidated revenue. No other individual customer accounted for more than 10% of our consolidated revenue in 2017 or 2016.

As of December 31, 2017, we have a one customer that accounted for 26.7% of the Company's consolidated contract receivables. As of December 31, 2016, the Company did not have any customers that accounted for more than 10% of the Company's consolidated contract receivables.

### Fair values of financial instruments

The carrying amounts of current assets and current liabilities reported in the consolidated balance sheets approximate fair value due to their short term duration.

### Derivative instruments

The Company utilizes forward foreign currency exchange contracts to manage market risks associated with the fluctuations in foreign currency exchange rates. It is the Company's policy to use such derivative financial instruments to protect against market risk arising in the normal course of business in order to reduce the impact of these exposures. The Company minimizes credit exposure by limiting counterparties to nationally recognized financial institutions.

As of December 31, 2017, the Company had foreign exchange contracts outstanding of approximately 162.5 million Japanese Yen, 0.2 million Australian Dollars, and 24,000 Euro. At December 31, 2016, the Company had foreign exchange contracts outstanding of approximately 281.4 million Japanese Yen, 0.6 million Australian Dollars, 0.5 million Canadian Dollars, and 0.1 million Euro at fixed rates. The contracts expire on various dates through December 2018. The Company had not designated the foreign exchange contracts as hedges and had recorded the estimated fair value of the contracts in the consolidated balance sheet as follows:

(in thousands)	December 31,	
	2017	2016
<i>Asset derivatives</i>		
Prepaid expenses and other current assets	\$ 201	\$ 57
Other assets	-	84
	<u>201</u>	<u>141</u>
<i>Liability derivatives</i>		
Other current liabilities	-	(20)
	<u>-</u>	<u>(20)</u>
Net fair value	<u>\$ 201</u>	<u>\$ 121</u>

The changes in the fair value of the foreign exchange contracts are included in gain (loss) on derivative instruments, net in the consolidated statements of operations.

The foreign currency denominated trade receivables, unbilled receivables, billings in excess of revenue earned and subcontractor accruals that are related to the outstanding foreign exchange contracts are remeasured at the end of each period into the functional currency using the current exchange rate at the end of the period. The gain or loss resulting from such remeasurement is also included in gain (loss) on derivative instruments net in the consolidated statements of operations.

For the years ended December 31, 2017 and 2016, the Company recognized a gain (loss) on its derivative instruments net as outlined below:

(in thousands)	Years ended December 31,	
	2017	2016
Foreign exchange contracts- change in fair value	\$ 73	\$ 51
Remeasurement of related contract receivables and billings in excess of revenue earned	26	(69)
	<u>\$ 99</u>	<u>\$ (18)</u>

### Reclassifications

Certain prior year amounts have been reclassified to conform with the current year presentation. The Company reclassified the stock-based compensation related to management and administrative employees from cost of revenue and research and development expenses to selling, general and administrative expenses.

### *Accounting pronouncements recently adopted*

In July 2015, the Financial Accounting Standards Board (FASB) issued ASU No. 2015-11, *Simplifying the Measurement of Inventory* (ASU 2015-11). ASU 2015-11 requires that an entity measure inventory at the lower of cost and net realizable value. This ASU does not apply to inventory measured using the last-in, first-out method. ASU 2015-11 was effective for annual reporting periods beginning after December 15, 2016, including interim periods within that reporting period. We adopted ASU 2015-11 effective January 1, 2017. The adoption of this standard did not have a significant impact on our consolidated financial position, results of operations or cash flows.

In March 2016, the FASB issued ASU No. 2016-09, *Compensation - Stock Compensation: Topic 718: Improvements to Employee Share Based Payment Accounting* (ASU 2016-09). The new guidance is intended to simplify the accounting for share based payment award transactions. The amendments in the update include the following aspects for share based accounting: accounting for income taxes, classification of excess tax benefits on the statement of cash flows, forfeitures, minimum statutory tax withholding requirements, and classification of employee taxes paid on the statement of cash flows when an employer withholds shares for tax withholding purposes. The adoption of ASU 2016-09 was required for fiscal reporting periods beginning after December 15, 2016, including interim reporting periods within those fiscal years. We adopted ASU 2016-09 effective January 1, 2017. In the fourth quarter, the Company began providing forward forecasting beyond one year which was incorporated into the scheduling analysis to support realization of the deferred tax assets. The adoption of this standard resulted in a \$1.2 million increase in the opening balance of retained earnings due to the release of windfall tax benefits.

### *Accounting pronouncements not yet adopted*

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers* (ASU 2014-09), which provides guidance for revenue recognition. The standard's core principle is that a company will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. In doing so, companies will need to use more judgment and make more estimates than under today's guidance. These may include identifying performance obligations in the contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation. This guidance also requires enhanced disclosures regarding the nature, amount, timing and uncertainty of revenue and cash flows arising from an entity's contracts with customers. This guidance will be effective for the Company for the fiscal year ending December 31, 2018, and interim periods therein, using either of the following transition methods: (i) a full retrospective approach reflecting the application of the standard in each prior reporting period with the option to elect certain practical expedients, or (ii) a retrospective approach with the cumulative effect of initially adopting ASU 2014-09 recognized at the date of adoption (which includes additional footnote disclosures).

Subsequent to issuing ASU 2014-09, the FASB has issued a series of subsequent updates to the revenue recognition guidance in Topic 606, including ASU No. 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date*, ASU No. 2016-08, *Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations (Reporting Revenue Gross versus Net)*, ASU No. 2016-10, *Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing*, ASU No. 2016-12, *Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients*, ASU No. 2016-20, *Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers*, and ASU No. 2017-13, *Revenue Recognition (Topic 605), Revenue from Contracts with Customers (Topic 606), Leases (Topic 840), and Leases (Topic 842): Amendments to SEC Paragraphs Pursuant to the Staff Announcement at the July 20, 2017 EITF Meeting and Rescission of Prior SEC Staff Announcements and Observer Comments*. The aforementioned amendments are effective for public entities for annual reporting periods beginning after December 15, 2017, and for interim periods within that reporting period.

The Company has completed its evaluation of the new standard and has assessed the impacts of adoption on the consolidated financial statements and disclosures based on the evaluation of our current contracts and revenue streams, which are described below.

During the implementation of the new standard, we identified three broad revenue streams: 1) System Design and Build (SDB), 2) Software, and 3) Consulting and Training services.

The SDB contracts typically consist of initial design, engineering, assembly and installation of training simulators which include hardware, software, labor, and PCS on the software. We primarily account for revenue under fixed-price SDB contracts using the percentage-of-completion method (input method). This methodology recognizes revenue and earnings as work progresses on the contract and is based on costs incurred to date compared to total estimated cost to complete the project. Under the new accounting standard, we identify two main performance obligations for a typical SDB contract: a fully functioning training simulator (which includes hardware, software, and labor) and PCS. For a training simulator, we will continue to use the percentage-of-completion method (input method) to account for revenue, and for PCS, we recognize revenue ratably over the term of the PCS.

For the standalone sales of software and which do not require significant modifications or customization, revenue recognition is mostly consistent under both the previous and new standard.

A software license sale contract with multiple deliverables typically includes the following elements: license, installation and training services and PCS. Under the current revenue recognition standard, due to the lack of VSOE, revenue is recognized ratably over the longest service period. Under the new revenue recognition standard, the total transaction price will be allocated to the identified performance obligations based on their relative standalone selling prices, and we will recognize the revenue as the performance obligations are satisfied. Specially, we will recognize license revenue when the software license is delivered to the customer; installation and training revenue will be recognized when the installation and training is completed without regard to a detailed evaluation of the point in time criteria due to the short-term nature of the installation and training services (1 to 2 days on average); and PCS revenue will be recognized ratably over the service period.

The contracts within the consulting and training services revenue stream are primarily time and materials based in which customers are billed on a regular basis, such as weekly, biweekly or monthly. Revenue on time and material contracts is recognized as services are rendered and performed. Any unbilled amounts are typically billed the following month. Under the new standard, we elect to apply the "right to invoice" practical expedient outlined in ASC 606-10-55-18. The invoice amount represents the number of hours of approved time worked by each temporary worker multiplied by the bill rate for the type of work. As such, the Company will recognize revenue in the amount for which it has the right to invoice. Therefore, revenue recognition is mostly consistent under both the previous

and new standard.

We adopted the new standard effective January 1, 2018 to (i) all new contracts entered into after January 1, 2018 and (ii) all existing contracts for which all (or substantially all) of the revenue has not been recognized under legacy revenue guidance, using the modified retrospective transition method. The adoption of the new standard resulted in an increase of \$0.9 million to the opening balance of accumulated deficit, primarily due to software contracts and the acceleration of software license revenue recognition. The Company is currently assessing the tax impact upon adoption of the new standard. Consolidated revenues presented in the comparative consolidated financial statements for periods prior to January 1, 2018 will not be revised.

The disclosures in our notes to the consolidated financial statements related to revenue recognition will be significantly expanded under the new standard, specifically around the quantitative and qualitative information about performance obligations, changes in contract assets and liabilities, and disaggregation of revenue.

In February 2016, the FASB issued ASU No. 2016-02, *Leases*. The new standard establishes a right-of-use (ROU) model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. The new standard is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. A modified retrospective transition approach is required for lessees with capital and operating leases existing at, or entered into after, the beginning of the earliest comparative period presented in the consolidated financial statements, with certain practical expedients available. We are still evaluating the impact of the pending adoption of the new standard on the consolidated financial statements, and we expect that, upon adoption, the recognition of ROU assets and lease liabilities could be material.

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments – Credit Losses*, which introduces new guidance for credit losses on instruments within its scope. The new guidance introduces an approach based on expected losses to estimate credit losses on certain types of financial instruments, including, but not limited to, trade and other receivables, held-to-maturity debt securities, loans and net investments in leases. The new guidance also modifies the impairment model for available-for-sale debt securities and requires the entities to determine whether all or a portion of the unrealized loss on an available-for-sale debt security is a credit loss. The standard also indicates that entities may not use the length of time a security has been in an unrealized loss position as a factor in concluding whether a credit loss exists. The ASU is effective for public companies for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted for all entities for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. The Company is currently evaluating the effects, if any, that the adoption of this guidance will have on the Company's consolidated financial position, results of operations and cash flows.

In August 2016, the FASB issued ASU No. 2016-15, *Classification of Certain Cash Receipts and Cash Payments* (ASU 2016-15). The new guidance addresses eight specific cash flow issues and applies to all entities that are required to present a statement of cash flows. Adoption of ASU 2016-15 is required for fiscal reporting periods beginning after December 15, 2017, including interim reporting periods within those fiscal years. We are currently evaluating the potential impact of the adoption of ASU 2016-15 on our consolidated financial statements.

In November 2016, the FASB issued ASU No. 2016-18, *Restricted Cash* (ASU 2016-18). The new guidance applies to all entities that have restricted cash or restricted cash equivalents and are required to present a statement of cash flows. This update is intended to reduce diversity in cash flow presentation of restricted cash and restricted cash equivalents and requires entities to include all cash and cash equivalents, both restricted and unrestricted, in the beginning-of-period and end-of-period totals presented on the statement of cash flows. Adoption of ASU 2016-18 is required for fiscal reporting periods beginning after December 15, 2017, including interim reporting periods within those fiscal years. We are currently evaluating the potential impact of the adoption of ASU 2016-18 on our consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-01, *Business Combinations: Clarifying the definition of a Business*, which amends the current definition of a business. Under ASU 2017-01, to be considered a business, an acquisition would have to include an input and a substantive process that together significantly contributes to the ability to create outputs. ASU 2017-01 further states that when substantially all of the fair value of gross assets acquired is concentrated in a single asset (or a group of similar assets), the assets acquired would not represent a business. The new guidance also narrows the definition of the term "outputs" to be consistent with how it is described in ASC 606, *Revenue from Contracts with Customers*. The changes to the definition of a business will likely result in more acquisitions being accounted for as asset acquisitions. ASU 2017-01 is effective for acquisitions commencing on or after December 15, 2017, with early adoption permitted. Adoption of this guidance will be applied prospectively on or after the effective date.

In January 2017, the FASB issued ASU No. 2017-04, *Simplifying the Test for Goodwill Impairment* (ASU 2017-04). ASU 2017-04 simplifies the accounting for goodwill impairment by eliminating Step 2 of the current goodwill impairment test, which required a hypothetical purchase price allocation. Goodwill impairment will now be the amount by which the reporting unit's carrying value exceeds its fair value, limited to the carrying value of the goodwill. ASU 2017-04 is effective for financial statements issued for fiscal years, and interim periods beginning after December 15, 2019. We are currently evaluating the potential impact of the adoption of ASU 2017-04 on our consolidated financial statements.

In May 2017, the FASB issued ASU No. 2017-09, *Compensation – Stock Compensation* (ASU 2017-09). The new guidance is intended to provide clarity and reduce both (1) diversity in practice and (2) cost and complexity when applying the guidance on ASC 718, *Compensation – Stock Compensation*. Entities are required to apply modification accounting for any change to an award, except for a change that is deemed to be purely administrative in nature. ASU 2017-09 provides guidance about which changes to the terms or conditions of a share-based award require an entity to apply modification accounting in ASC 718. The amendments in this update are effective for all entities and for annual periods, and interim periods within those annual periods, beginning after December 15, 2017. Early adoption is permitted. The amendments in this update should be applied prospectively to an award modified on or after the adoption date. We are currently evaluating the potential impact of the adoption of ASU 2017-09 on our consolidated financial statements.

## 2. Acquisition

On September 20, 2017, GSE, through its wholly-owned subsidiary GSE Performance Solutions, Inc. (Performance Solutions), acquired 100% of the capital stock of Absolute Consulting, Inc. (Absolute) for \$8.8 million pursuant to the Stock Purchase Agreement by and among Performance Solutions and the sellers of Absolute. The purchase price was subject to a customary working capital adjustment resulting in total consideration of \$9.5 million. An indemnification escrow of \$1.0 million was funded from the cash paid to the sellers and is available to GSE and Performance Solutions to satisfy indemnification claims until September 20, 2019. The acquisition of Absolute was completed on an all-cash transaction basis.

Absolute is a provider of technical consulting and staffing solutions to the global nuclear power industry. Located in Navarre, Florida, Absolute has established long-term relationships with blue-chip customers primarily in the nuclear power industry. The acquisition of Absolute is expected to strengthen the Company's global leadership in nuclear training and consulting solutions, add new capacities to our technical consulting and staffing solutions offerings and bring highly complementary customers, while deepening relationships with existing clients.

The following table summarizes the consideration paid to acquire Absolute and the fair value of the assets acquired and liabilities assumed at the date of the transaction. The following amounts except for Cash are all reflected in the consolidated statement of cash flow within the "Acquisition of Absolute Consulting, Inc., net of cash acquired" line caption.

	<b>Absolute</b>	
<i>( in thousands )</i>		
Total purchase price	\$	<u>9,521</u>
Purchase price allocation:		
Cash	\$	455
Contract receivables		5,121
Prepaid expenses and other current assets		68
Property, and equipment, net		184
Intangible assets		2,569
Accounts payable, accrued expenses, and other liabilities		(78)
Accrued compensation		(1,617)
Total identifiable net assets		<u>6,702</u>
Goodwill		2,819
Net assets acquired	\$	<u>9,521</u>

The goodwill is primarily attributable to the additional capacities to offer broader solutions to new and existing customers and the expected enhanced cost and growth synergies as a result of the acquisition. The total amount of goodwill that is expected to be tax deductible is \$2.8 million. All of the \$2.8 million of goodwill was assigned to our Nuclear Industry Training and Consulting segment.

The fair value of the assets acquired includes gross trade receivables of \$5.1 million, of which the Company has collected in full subsequent to the acquisition. GSE did not acquire any other class of receivable as a result of the acquisition of Absolute.

The Company identified \$2.6 million of other intangible assets, including customer relationships and trademarks/names with amortization periods of three to ten years. The following table summarizes the fair value of intangibles assets acquired at the date of acquisition and the related weighted average amortization period:

Intangible Assets	Weighted average amortization period <i>(in years)</i>	Fair Value <i>(in thousands)</i>
Customer relationships	10	\$ 1,856
Trademarks/Names	3	713
Total		<u>\$ 2,569</u>

### *Unaudited Pro Forma Financial Information*

The acquired business contributed revenue of \$8.7 million and earnings of \$0.6 million to GSE for the period from September 20, 2017 to December 31, 2017. The following unaudited pro forma summary presents consolidated information of GSE as if the business combination had occurred on January 1, 2016. The unaudited pro forma financial information was prepared based on historical financial information.

These pro forma amounts have been calculated after applying GSE's accounting policies and adjusting the results of Absolute to reflect the additional depreciation

and amortization that would have been charged assuming the fair value adjustments to fixed assets and intangible assets had been applied from January 1, 2016, with the consequential tax effects. In 2017, GSE and Absolute have incurred \$0.5 million of acquisition-related costs. These expenses are included in general and administrative expense on GSE's consolidated statements of operations and are reflected in pro forma earnings for the year ended December 31, 2016, in the table below. The pro forma financial information is not intended to reflect the actual results of operations that would have occurred if the acquisition had been completed on January 1, 2016, nor is it intended to be an indication of future operating results.

(in thousands)

	<i>(unaudited)</i>			
	Year Ended December 31,			
	2017		2016	
Revenue	\$	99,484	\$	93,147
Net income		5,735		1,362



### 3. Restructuring expenses

On December 27, 2017, the board of GSE Systems, Inc. approved an international restructuring plan to streamline and optimize the Company's global operations. Beginning in December 2017, GSE will consolidate its engineering services and R&D activities to Maryland and cease an unprofitable non-core business in the U.K. As a result, the Company will be closing its offices in Nyköping, Sweden; Chennai, India; and Stockton-on-Tees, UK. These actions are designed to improve Company productivity by eliminating duplicate employee functions and increasing GSE's focus on its core business, improving efficiency and maintaining the full range of engineering capabilities while reducing costs and organizational complexity.

GSE will eliminate approximately 40 positions due to these changes, primarily in Europe and India, and will undertake other cost-savings measures. The restructuring plan is expected to be completed in 2018. As a result of these efforts, GSE expects to record a restructuring charge of approximately \$1.7 million, primarily related to workforce reductions, contracts termination costs and asset write-offs due to the exit activities. We recorded a restructuring charge of \$0.7 million for the year ended December 31, 2017, and we expect to record the remaining charges, primarily reflecting the office closure costs, in the first quarter of 2018. The following table summarize the restructuring costs. The amounts to be transferred from cumulative translation adjustments and included in determining net income for the period, in which the liquidation of these foreign entities are completed (2018), are not included in the table below.

( in thousands )	Total Expected Costs	Costs for the Year	Expected Costs Remaining
Employee termination benefits	\$ 499	\$ 465	\$ 34
Lease termination costs	665	-	665
Assets write-offs	222	222	-
Other restructuring costs	303	46	257
<b>Total</b>	<b>\$ 1,689</b>	<b>\$ 733</b>	<b>\$ 956</b>

The restructuring costs related to our Performance Improvement Solutions segment and were included in the consolidated statement of operations within the "Restructuring charges" line caption. The accrued employee termination benefits of \$0.5 million were reflected in the "Accrued compensation" line in the consolidated balance sheet. No payment had been made as of December 31, 2017.

### 4. Goodwill and Intangible Assets

#### *Goodwill*

The Company reviews goodwill for impairment annually as of December 31 and whenever events or changes in circumstances indicate the carrying value of an asset may not be recoverable. The Company tests goodwill at the reporting unit level. A reporting unit is an operating segment, or one level below an operating segment, as defined by U.S. GAAP. After the acquisition of Hyperspring on November 14, 2014, the Company determined that it had two reporting units, which are the same as our two operating segments: (i) Performance Improvement Solutions; and (ii) Nuclear Industry Training and Consulting (which includes Hyperspring and Absolute). As of December 31, 2017 and 2016, goodwill of \$8.4 million and \$5.6 million, respectively, related to the Nuclear Industry Training and Consulting segment. The increase in the carrying amount of goodwill during the year ended December 31, 2017 was due to the acquisition of Absolute. No impairment of goodwill was recorded in 2017 or 2016.

### Intangible Assets Subject to Amortization

As discussed in Note 2, *Acquisition*, we recognized finite-lived intangible assets of \$2.6 million upon acquisition of Absolute on September 20, 2017, including customer relationships and trademarks/names with amortization periods of five years. Amortization is recognized on a straight-line basis over the estimated useful life of the intangible assets.

As discussed in Note 3, *Restructuring Expenses*, on December 27, 2017, the board of the Company approved an international restructuring plan to streamline and optimize the Company's global operations. As a result, the Company will be closing its offices in Nyköping, Sweden; Chennai, India; and Stockton-on-Tees, UK, thus the Company's management conducted an impairment test of the assets to be disposed of under the plan.

The intangible assets under the plan mainly included contractual and non-contractual customer relationships at our UK location. As the intangible assets have no value for sale or value in use, we recognized an impairment loss of \$0.1 million representing the net book value of the intangible assets as of December 31, 2017. The write-off of the intangible assets was included in the consolidated statement of operations within the "Restructuring charges" line caption.

The following table shows the gross carrying amount and accumulated amortization of definite-lived intangible assets:

(in thousands)

	As of December 31, 2017		
	Gross Carrying Amount	Accumulated Amortization	Net
<i>Amortized intangible assets:</i>			
Customer relationships	\$ 3,074	\$ (1,218)	\$ 1,856
Trade names	713	(33)	680
Developed technology	471	(412)	59
Non-contractual customer relationships	433	(426)	7
Others	167	(165)	2
Total	<u>\$ 4,858</u>	<u>\$ (2,254)</u>	<u>\$ 2,604</u>

(in thousands)

	As of December 31, 2016		
	Gross Carrying Amount	Accumulated Amortization	Net
<i>Amortized intangible assets:</i>			
Customer relationships	\$ 1,425	\$ (1,235)	\$ 190
Non-contractual customer relationships	911	(674)	237
Developed technology	471	(353)	118
Others	217	(211)	6
Foreign currency translation	(145)	48	(97)
Total	<u>\$ 2,879</u>	<u>\$ (2,425)</u>	<u>\$ 454</u>

Amortization expense related to definite-lived intangible assets totaled \$335,000 and \$289,000 for the years ended December 31, 2017 and 2016, respectively. The following table shows the estimated amortization expense of the definite-lived intangible assets for the next five years:

(in thousands)

Years ended December 31,:

2018	\$	734
2019		578
2020		472
2021		229
2022		168
Thereafter		423
	<u>\$</u>	<u>2,604</u>

## 5. Contract Receivables

Contract receivables represent balances due from a broad base of both domestic and international customers. All contract receivables are considered to be collectible within twelve months. Recoverable costs and accrued profit not billed represent costs incurred and associated profit accrued on contracts that will become billable upon future milestones or completion of contracts. The components of contract receivables are as follows:

(in thousands)

	December 31,	
	2017	2016
Billed receivables	\$ 8,154	\$ 13,325
Recoverable costs and accrued profit not yet billed	5,980	5,555
Allowance for doubtful accounts	(137)	(17)
Total contract receivables, net	<u>\$ 13,997</u>	<u>\$ 18,863</u>

During January 2018, the Company invoiced \$4.7 million of the unbilled amounts related to the balance at December 31, 2017.

On March 29, 2017, Westinghouse, a customer of our Performance Improvement Solutions segment, filed for Chapter 11 bankruptcy protection in the United States Bankruptcy Court for the Southern District of New York, Case No. 17-10751. During the second quarter of 2017, Westinghouse assumed one of our contracts related to Southern Nuclear Company. Therefore, we have not recorded a reserve for outstanding receivables related to this contract. On July 31, 2017, South Carolina Electric and Gas Company announced that it will cease construction of new nuclear plants at the V.C. Summer Nuclear Station, one of the facilities for which the Company has an executory contract with Westinghouse for the provision of simulator software and equipment. Although there has been no formal rejection of the contract as part of the Westinghouse bankruptcy process, GSE now considers it likely that Westinghouse will reject the parties' contract pertaining to the V.C. Summer Nuclear Station. Therefore, at June 30, 2017, GSE reserved 100% of accounts receivable, unbilled receivables, and billings in excess related to the V.C. Summer Nuclear Station, resulting in a net bad debt charge of \$118,000.

At December 31, 2017, in addition to the foregoing amounts associated with the V.C. Summer Nuclear Station, the Company had approximately \$31,000 in net billed and unbilled pre-petition receivables attributable to Westinghouse, and it was fully collected in January 2018. Therefore, none of the remaining outstanding amounts have been reserved at December 31, 2017.

The activity in the allowance for doubtful accounts is as follows:

(in thousands)

	As of and for the years ended December 31,	
	2017	2016
Beginning balance	\$ 17	\$ 103
Current year provision	118	-
Current year write-offs	-	(86)
Currency adjustment	2	-
Ending balance	<u>\$ 137</u>	<u>\$ 17</u>

## 6. Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consist of the following:

(in thousands)

	December 31,	
	2017	2016
Inventory	\$ 755	\$ -
Income tax receivable	418	446
Prepaid expenses	549	422
Other current assets	1,073	1,184
Total	\$ 2,795	\$ 2,052

Inventory is being purchased to support the construction of three major nuclear simulation projects related to a significant contract that was executed during the first quarter of 2016. Inventory is recorded at the lower of cost or net realizable value in accordance with ASC 330, *Inventory*. Cost is determined using specific identification. At December 31, 2016, inventory related to the simulation projects was classified as a long-term asset within other assets on the consolidated balance sheets. The earliest completion date of these projects is expected to occur in the second quarter of 2018.

Other current assets primarily includes value-added tax receivables and cash deposited in a Swedish tax account.

## 7. Equipment, Software and Leasehold Improvements, net

Equipment, software and leasehold improvements, net consist of the following:

(in thousands)

	December 31,	
	2017	2016
Computer equipment	\$ 2,101	\$ 2,988
Software	1,598	1,511
Leasehold improvements	454	527
Furniture and fixtures	629	1,733
	4,782	6,759
Accumulated depreciation	(3,719)	(5,527)
Equipment, software and leasehold improvements, net	\$ 1,063	\$ 1,232

Depreciation expense was \$342,000 and \$383,000 for the years ended December 31, 2017 and 2016, respectively.

As discussed in Note 3, *Restructuring Expenses*, on December 27, 2017, the board of the Company approved an international restructuring plan to streamline and optimize the Company's global operations. As a result, the Company will be closing its offices in Nyköping, Sweden; Chennai, India; and Stockton-on-Tees, UK, accordingly, the Company's management conducted an impairment test of the assets to be disposed of under the plan.

The fixed assets under the respective offices primarily included computers, office equipment and furniture, software and leasehold improvements. As a result of this test, the Company concluded that these assets were no longer recoverable. Accordingly, we recorded a \$0.1 million write-off of the fixed assets which represented the net book value of the respective assets.

## 8. Other Assets

Other assets consist of the following:

(in thousands)

	December 31,	
	2017	2016
Inventory	\$ -	\$ 1,443
Other	37	131
Total	\$ 37	\$ 1,574

As of December 31, 2016, other assets are comprised primarily of inventory that was being purchased to support the construction of three simulation projects related to a significant contract that was executed during the first quarter of fiscal year 2016. The inventories are to be relieved and charged to the project upon delivery and customer acceptance, which is expected during the second quarter of 2018 and beyond. As of December 31, 2017, inventory is classified as prepaid expenses and other current assets.

## 9. Software Development Costs, net

Software development costs, net consist of the following:

(in thousands)

	December 31,	
	2017	2016
Beginning balance	\$ 982	\$ 1,145

Additions		177		245
Amortization		(469)		(408)
Ending balance	\$	<u>690</u>	\$	<u>982</u>

Software development costs capitalized were \$0.2 million for the years ended December 31, 2017 and 2016, respectively. Amortization of capitalized software development costs was \$0.5 million and \$0.4 million for the years ended December 31, 2017 and 2016, respectively, and was included in cost of revenue in the consolidated statements of operations.

## 10. Fair Value of Financial Instruments

ASC 820, *Fair Value Measurement* (ASC 820) defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principle or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. ASC 820 also establishes a fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value.

The levels of the fair value hierarchy established by ASC 820 are:

Level 1: inputs are quoted prices, unadjusted, in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date.

Level 2: inputs are other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. A Level 2 input must be observable for substantially the full term of the asset or liability.

Level 3: inputs are unobservable and reflect the reporting entity's own assumptions about the assumptions that market participants would use in pricing the asset or liability.

The Company considers the recorded value of certain of its financial assets and liabilities, which consist primarily of cash equivalents, accounts receivable and accounts payable, to approximate the fair value of the respective assets and liabilities at December 31, 2017 and 2016 based upon the short-term nature of the assets and liabilities.

The Company had \$2.3 million and \$15.3 million deposited in unrestricted money market accounts on December 31, 2017 and 2016, respectively.

As of December 31, 2017, the Company had three standby letters of credit totaling \$0.9 million which represent performance bonds on three contracts. The Company has deposited the full value of the standby letters of credit into money market escrow accounts, which have been restricted in that the Company may not access these funds until the related letters of credit have expired. The cash has been recorded on the Company's consolidated balance sheet as restricted cash in current assets based on the expiration date of the underlying letters of credit.

The following table presents assets and liabilities measured at fair value at December 31, 2017:

<i>(in thousands)</i>	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Money market funds	\$ 3,240	\$ -	\$ -	\$ 3,240
Foreign exchange contracts	-	201	-	201
<b>Total assets</b>	<b>\$ 3,240</b>	<b>\$ 201</b>	<b>\$ -</b>	<b>\$ 3,441</b>
Contingent consideration liability	-	-	(1,701)	(1,701)
<b>Total liabilities</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ (1,701)</b>	<b>\$ (1,701)</b>

The following table presents assets and liabilities measured at fair value at December 31, 2016:

<i>(in thousands)</i>	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Money market funds	\$ 16,435	\$ -	\$ -	\$ 16,435
Foreign exchange contracts	-	141	-	141
<b>Total assets</b>	<b>\$ 16,435</b>	<b>\$ 141</b>	<b>\$ -</b>	<b>\$ 16,576</b>
Foreign exchange contracts	\$ -	\$ (20)	\$ -	\$ (20)
Contingent consideration liability	-	-	(2,105)	(2,105)
<b>Total liabilities</b>	<b>\$ -</b>	<b>\$ (20)</b>	<b>\$ (2,105)</b>	<b>\$ (2,125)</b>

For the years ended December 31, 2017 and 2016, the Company did not have any transfers between fair value Level 1 and Level 2. The Company did not hold any non-financial assets or non-financial liabilities subject to fair value measurements on a recurring basis at December 31, 2017 or 2016.

During the years ended December 31, 2017 and 2016, the Company did not have any transfers into or out of the Level 3 contingent consideration liability.

The following table provides a roll-forward of the fair value of the contingent consideration categorized as Level 3 for the year ended December 31, 2017:

(in thousands)

Balance, January 1, 2017	\$ 2,105
Payments made on contingent liabilities	(850)
Change in fair value	446
Balance, December 31, 2017	<u>\$ 1,701</u>

The Company made the last payment of the contingent consideration in January 2018.

## 11. Long-Term Debt

At December 31, 2017 and 2016, the Company had no long-term debt.

### *Line of Credit*

#### BB&T Bank

We previously had a Master Loan and Security Agreement and Revolving Credit Note with BB&T that provided a \$7.5 million revolving line of credit for the purpose of issuing stand-by letters of credit and providing working capital. Working capital advances accrued interest at a rate equal to the Wall Street Journal Prime Rate of Interest, floating with a floor of 4.5%.

In connection with the Citizen's Bank credit facility noted below, this agreement was modified in December 2016 to terminate the revolving line of credit, but maintain the outstanding letters of credit.

At December 31, 2017, the Company had three letters of credit with BB&T totaling \$0.9 million, which have expired and are pending release by the bank and customer.

At December 31, 2017 and 2016, the cash collateral account totaled \$1.0 million and \$1.1 million, respectively, and was classified as restricted cash on the consolidated balance sheets.

#### Citizen's Bank

In December 2016, the Company entered into a three-year, \$5.0 million revolving line of credit facility (RLOC) with Citizen's Bank on December 29, 2016, to fund general working capital needs, including acquisitions. Working capital advances bear interest of one-month LIBOR plus 2.25% per annum and letter of credit fees are 1.25% per annum. The Company is not required to maintain a restricted cash collateral account at Citizen's Bank for outstanding letters of credit and working capital advances. The credit facility agreement is subject to standard financial covenants and reporting requirements.

The maximum availability under the RLOC is subject to a borrowing base equal to 80% of eligible accounts receivable, and is reduced for any issued and outstanding letters of credit and working capital advances. At December 31, 2017, there were no outstanding borrowings on the RLOC and three letters of credit totaling \$0.8 million. The amount available at December 31, 2017, after consideration of the borrowing base, letters of credit and working capital advances was approximately \$4.0 million.

The credit facility agreement is subject to standard financial covenants and reporting requirements. At December 31, 2017, the Company was in compliance with its financial covenants.

## 12. Income Taxes

The consolidated income before income taxes, by domestic and foreign sources, is as follows:

(in thousands)

	Years ended December 31,	
	2017	2016
Domestic	\$ 1,580	\$ 2,873
Foreign	(1,176)	(1,101)
Total	\$ 404	\$ 1,772

The (benefit) provision for income taxes is as follows:

(in thousands)

	Years ended December 31,	
	2017	2016
Current:		
Federal	\$ 459	\$ -
State	47	6
Foreign	19	221
Subtotal	525	227
Deferred:		
Federal	(4,694)	127
State	(942)	19
Foreign	131	(23)
Subtotal	(5,505)	123
Total	\$ (4,980)	\$ 350

The effective income tax rate for the years ended December 31, 2017 and 2016 differed from the statutory federal income tax rate as presented below:

	<b>Effective Tax Rate Percentage (%)</b>	
	<b>Years ended December 31,</b>	
	<b>2017</b>	<b>2016</b>
Statutory federal income tax rate	34.0%	34.0%
State income taxes, net of federal tax benefit	(184.9)%	1.3%
Effect of foreign operations	55.6%	8.6%
Change in valuation allowance	(2,045.3)%	(46.9)%
Change in tax rate	619.1%	0.0%
Uncertain tax positions	338.6%	11.8%
Worthless stock deduction	(257.6)%	0.0%
Stock-based compensation	(51.7)%	0.2%
Transfer pricing adjustments	117.5%	(0.4)%
162(m) limit on compensation	52.3%	4.1%
Change in APB 23 liability	46.2%	0.0%
Meals and entertainment	37.8%	7.7%
Other permanent differences	5.7%	(0.6)%
Effective tax rate	<u>(1,232.7)%</u>	<u>19.8%</u>

The difference between the effective rate and statutory rate in 2017 primarily resulted from the release of valuation allowance and change in the statutory tax rate from 34% to 21%, effective for tax years beginning after December 31, 2017 due to the Tax Cuts and Jobs Act.



Deferred income taxes arise from temporary differences between the tax bases of assets and liabilities and their reported amounts in the consolidated financial statements. A summary of the tax effect of the significant components of the deferred income tax assets and liabilities is as follows:

(in thousands)

	As of December 31,	
	2017	2016
Deferred tax assets:		
Net operating loss carryforwards	\$ 5,009	\$ 7,868
Capital loss carryforwards	383	549
Accruals	487	183
Reserves	514	514
Alternative minimum tax credit carryforwards	299	203
Stock-based compensation expense	1,002	1,224
Intangibles	433	391
Undistributed earnings of foreign subsidiary	-	37
Other	135	71
Total deferred tax asset	8,262	11,040
Valuation allowance	(1,095)	(10,477)
Total deferred tax asset less valuation allowance	7,167	563
Deferred tax liabilities:		
Undistributed earnings of foreign subsidiary	(149)	-
Software development costs	(188)	(382)
Fixed Assets	(91)	(161)
Indefinite-lived intangibles	(337)	(316)
Other	(45)	(27)
Total deferred tax liability	(810)	(886)
Net deferred tax asset	\$ 6,357	\$ (323)

Deferred tax liabilities are included in "Other liabilities" on the consolidated balance sheet.

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some or all of the deferred tax assets will not be realized. The Company's ability to realize its deferred tax assets depends primarily upon the preponderance of positive evidence that could be demonstrated by three year cumulative positive earnings, reversal of existing deferred temporary differences; and generation of sufficient future taxable income to allow for the utilization of deductible temporary differences.

As of each reporting date, the Company's management considers new evidence, both positive and negative, that could impact management's view with regard to future realization of deferral tax assets to estimate if sufficient future taxable income will be generated to use the existing deferred tax assets. This analysis is performed on a jurisdiction by jurisdiction basis. In the fourth quarter, the Company began providing forward forecasting beyond one year which was incorporated into the scheduling analysis to support realization of the deferred tax assets.

Based on the assessment the Company's management performed as of December 31, 2017, we conclude that critical pieces of positive evidence supporting the realization of deferred tax assets exist including the strength of three year cumulative positive earnings, reversal of existing deferred temporary differences and future taxable income for the U.S. entities. As a result, the Company has determined that a portion of the historic valuation allowance should be released as realization of the associated asset is more likely than not. Accordingly, we reversed \$9.4 million of valuation allowance against the deferred tax assets related to the U.S. entities. Because a portion of the deferred tax assets are capital in nature, the Company must assess the realizability of these assets separately from the deferred tax assets that are ordinary in nature. The Company determined that it would not be able to generate sources of capital income and, therefore, would need to continue to assess a valuation allowance in the amount of \$0.4 million.

The Company currently does not have sufficient object evidence to substantiate the recovery of the deferred tax assets for U.K. Swedish and Chinese deferred tax assets at December 31, 2017, accordingly, a full valuation allowance of \$0.7 million has been established on these deferred tax assets, predominantly comprised of net operating losses.

At December 31, 2017, the Company's largest deferred tax asset of \$5.8 million primarily relates to a U.S. net operating loss carryforward of \$5.0 million which expires in various amounts between 2020 and 2035, and excludes the impact of uncertain tax positions. The amount of U.S. loss carryforward which can be used by the Company each year is limited due to changes in the Company's ownership which occurred in 2003. However, the Company does not anticipate that any of the loss carryforward will expire unutilized.

On December 22, 2017, the United States enacted tax reform legislation known as the H.R.1, commonly referred to as the "Tax Cuts and Jobs Act" (the Act), resulting in significant modifications to existing law.

The Company follows the guidance in SEC Staff Accounting Bulletin 118 (SAB 118), which provides additional clarification regarding the application of ASC 740 in situations where the Company does not have the necessary information available, prepared, or analyzed in reasonable detail to complete the accounting for certain income tax effects of the Act for the reporting period in which the Act was enacted. SAB 118 provides for a measurement period beginning in the reporting period that includes the Act's enactment date and ending when the Company has obtained, prepared, and analyzed the information needed in order to complete the accounting requirements but in no circumstances should the measurement period extend beyond one year from the enactment date.

The Company has completed the accounting for the effects of the Act. Our financial statements for the year ended December 31, 2017, reflect certain effects of the Act predominantly related to the reduction in the corporate tax rate from 34% to 21%. As a result of the changes to the tax laws and tax rates under the Act, the Company incurred incremental income tax expense of \$2.5 million during the year ended December 31, 2017 which consisted of the remeasurement of its net deferred tax asset from 34% to 21%. The Company has not recorded a charge related to the one-time deemed repatriation transition tax on unrepatriated foreign earnings given an estimated net negative earnings and profits position. The Company is evaluating available accounting policy alternatives to either record the U.S. income tax effect of future global intangible low-tax income (GILTI) inclusions in the period in which they arise or establish deferred taxes with respect to the expected future tax liabilities associated with future GILTI inclusions, but has not yet made a policy election.

As of December 31, 2017 and 2016, the Company's consolidated cash and cash equivalents totaled \$19.1 million and \$21.7 million, respectively, including cash and cash equivalents held at non-U.S. entities totaling \$5.4 million and \$4.2 million, respectively. The non-U.S. entities include operating subsidiaries located in China, United Kingdom, Sweden and India. Of these, the Company does not assert permanent reinvestment in the UK, Sweden or India. Accordingly, the Company analyzed the cumulative earnings and profits and determined no US deferred liability exists given aggregated accumulated deficits. A deferred tax liability in the amount of \$149,000 has been recorded for India with respect to the undistributed earnings related to India's application of a Dividend Distributions Tax. Undistributed earnings in China are considered indefinitely reinvested as of December 31, 2017, to fund the Company's ongoing international operations. If China were to repatriate the funds it would not incur any tax due to an accumulated earnings and profits deficit.

The Company has made an entity classification (CTB) election to treat GSE UK as a disregarded entity effective January 1, 2018. GSE UK is deemed to distribute all its assets and liabilities to GSE in liquidation. The liquidation will be deemed to occur immediately before the close of December 31, 2017, the day before the election is effective. The provision includes a \$3.0 million worthless stock deduction representing the Company's tax basis at the time of liquidation. See discussion regarding treatment of this item as an uncertain tax position.

Uncertain Tax Positions

Foreign Uncertain Tax Positions

During 2017 and 2016, the Company recorded tax liabilities for certain foreign tax contingencies. During 2016, the Company also determined that South Korea should be included in this inventory. The Company recorded these uncertain tax positions in other current liabilities on the consolidated balance sheets.

During 2017, the Company recorded a tax liability for an uncertain tax position related to the worthless stock deduction on liquidation of GSE UK. The uncertain tax position is recorded as a component of current and deferred liability.

The following table outlines the Company's foreign uncertain tax liabilities, including accrued interest and penalties for each jurisdiction:

(in thousands)	China		Ukraine		South Korea		U.S.		Total
	Tax	Interest and Penalties	Tax	Interest and Penalties	Tax	Interest and Penalties	Tax		
Balance, January 1, 2016	\$ 225	\$ 152	\$ 21	\$ 15	\$ -	\$ -	-	\$ 413	
Increases	-	57	68	13	129	8	-	275	
Decreases	23	-	-	-	-	-	-	23	
Balance, December 31, 2016	\$ 202	\$ 209	\$ 89	\$ 28	\$ 129	\$ 8	-	\$ 665	
Increases	14	53	11	-	212	37	833	1,160	
Decreases	-	-	-	-	-	-	-	-	
Balance, December 31, 2017	\$ 216	\$ 262	\$ 100	\$ 28	\$ 341	\$ 45	833	\$ 1,825	

### **13. Capital Stock**

The Company's Board of Directors has authorized 32,000,000 total shares of capital stock, of which 30,000,000 are designated as common stock and 2,000,000 are designated as preferred stock. The Board of Directors has the authority to establish one or more classes of preferred stock and to determine, within any class of preferred stock, the preferences, rights and other terms of such class.

As of December 31, 2017, the Company has reserved 4,301,854 shares of common stock for issuance; 1,046,833 are reserved for shares upon exercise of outstanding stock options and 1,634,663 are reserved for shares upon vesting of restricted stock units. The Company has 1,620,358 shares available for future grants under the Company's 1995 Long-Term Incentive Plan.

### **14. Stock-Based Compensation**

#### *Long-term incentive plan*

During 1995, the Company established the 1995 Long-Term Incentive Stock Option Plan (the Plan), which permits the granting of stock options (including incentive stock options and nonqualified stock options) stock appreciation rights, restricted or unrestricted stock awards, phantom stock, performance awards or any combination of these to employees, directors or consultants. The Plan expires on April 21, 2026; the total number of shares that could be issued under the Plan is 7,500,000. As of December 31, 2017, 3,198,146 shares have been issued under the Plan, 1,046,833 stock options and 1,634,663 restricted stock units (RSUs) were outstanding under the Plan, while 1,620,358 shares remain for future grants under the Plan.

The Company recognizes compensation expense on a pro rata straight-line basis over the requisite service period for stock-based compensation awards with both graded and cliff vesting terms. The Company recognizes the cumulative effect of a change in the number of awards expected to vest in compensation expense in the period of change. The Company has not capitalized any portion of its stock-based compensation.

During the years ended December 31, 2017 and 2016, the Company recognized \$2,472,000 and \$1,550,000, respectively, of stock-based compensation expense under the fair value method. During the years ended December 31, 2017 and 2016, there were approximately \$74,000 and \$151,000 of stock-based compensation expense related to cash-settled RSUs.

#### *Stock options*

Options to purchase shares of the Company's common stock under the Plan expire in either seven or ten years from the date of grant and become exercisable in three, five, or seven installments with a certain percentage of options vesting on the first anniversary of the grant date and additional options vesting on each of the subsequent anniversaries of the grant date, subject to acceleration under certain circumstances.

Information with respect to stock option activity as of and for the year ended December 31, 2017 is as follows:

	Number of Shares	Weighted Average Exercise Price	Aggregate Intrinsic Value (in thousands)	Weighted Average Remaining Contractual Life (Years)
Options outstanding at January 1, 2017	1,556,833	\$ 3.15		
Options granted	-	-		
Options exercised	(320,000)	2.05		
Options forfeited	(190,000)	4.01		
Options outstanding at December 31, 2017	<u>1,046,833</u>	3.33	\$ 928	1.28
Options expected to vest	<u>24,000</u>	1.90	\$ 33	4.72
Options exercisable at December 31, 2017	<u>1,022,833</u>	\$ 3.36	\$ 895	1.20

Information with respect to stock option activity as of and for the year ended December 31, 2016 is as follows:

	Number of Shares	Weighted Average Exercise Price	Aggregate Intrinsic Value (in thousands)	Weighted Average Remaining Contractual Life (Years)
Options outstanding at January 1, 2016	2,222,333	\$ 3.01		
Options granted	40,000	2.25		
Options exercised	(492,200)	1.86		
Options forfeited	(213,300)	4.77		
Options outstanding at December 31, 2016	<u>1,556,833</u>	3.15	\$ 1,573	2.05
Options expected to vest	<u>72,000</u>	1.87	\$ 117	5.45
Options exercisable at December 31, 2016	<u>1,484,833</u>	\$ 3.21	\$ 1,456	1.89

A summary of the status of the Company's nonvested options as of and for the year ended December 31, 2017 is presented below.

	<u>Number of Shares</u>		<u>Weighted Average Fair Value</u>
Nonvested options at January 1, 2017	72,000	\$	0.97
Options granted	-		-
Options forfeited	-		-
Options vested during the period	<u>(48,000)</u>		0.97
Nonvested options at December 31, 2017	<u>24,000</u>	\$	0.97

A summary of the status of the Company's nonvested options as of and for the year ended December 31, 2016 is presented below.

	<u>Number of Shares</u>		<u>Weighted Average Fair Value</u>
Nonvested options at January 1, 2016	218,522	\$	0.89
Options granted	40,000		1.15
Options forfeited	(32,300)		0.91
Options vested during the period	<u>(154,222)</u>		0.92
Nonvested options at December 31, 2016	<u>72,000</u>	\$	0.97

The Company uses a Black-Scholes valuation model to estimate the fair value of the options at grant date based on the assumptions noted in the following table. Volatility represents an average of market estimates for implied volatility of the Company's common stock. The expected life is estimated based on an analysis of options already exercised and any foreseeable trends or changes in recipients' behavior. The risk-free interest rate is an interpolation of the relevant U.S. Treasury security maturities as of each applicable grant date:

	<b>Years ended December 31,</b>	
	<b>2017</b>	<b>2016</b>
	[1]	
Risk-free interest rates	-	1.53%
Dividend yield		0%
Expected life	-	7 years
Volatility	-	49.05%
Weighted average volatility		49.05%

[1] The Company did not grant stock options during the year ended December 31, 2017.

The Company received cash for the exercise price associated with stock options exercised of \$209,000 and \$833,000 during the years ended December 31, 2017 and 2016, respectively. The total intrinsic value realized by participants on stock options exercised was \$364,974 and \$407,566 during the years ended December 31, 2017 and 2016, respectively.

### Restricted Stock Units

During the years ended December 31, 2017 and 2016, the Company issued RSUs to employees which vest upon the achievement of specific market-based or time-based measures. The fair value for RSU's is calculated based on the stock price on the grant date and expensed ratably over the requisite service period, which ranges between one and five years. The following table summarizes the information about vested and unvested restricted stock units for the years ended December 31, 2017 and 2016.

	<u>Number of Shares</u>	<u>Weighted Average Fair Value</u>
Nonvested RSUs at January 1, 2017	1,688,480	\$ 1.45
RSUs granted	644,677	3.24
RSUs forfeited	(5,500)	3.40
RSUs vested	(692,994)	1.89
	<u>1,634,663</u>	<u>\$ 1.96</u>
Nonvested RSUs at December 31, 2017	<u>1,634,663</u>	<u>\$ 1.96</u>
Nonvested RSUs at January 1, 2016	1,367,500	\$ 0.76
RSUs granted	1,537,399	1.52
RSUs forfeited	(505,000)	0.76
RSUs vested	(711,419)	0.76
	<u>1,688,480</u>	<u>\$ 1.45</u>
Nonvested RSUs at December 31, 2016	<u>1,688,480</u>	<u>\$ 1.45</u>

As of December 31, 2017, the Company had \$1.6 million of unrecognized compensation expense related to the RSUs expected to be recognized on a pro-rata straight line basis over a weighted average remaining service period of approximately 3.9 years.



## 15. Commitments and Contingencies

### Leases

The Company is obligated under certain noncancelable operating leases for office facilities and equipment. Future minimum lease payments under noncancelable operating leases as of December 31, 2017 are as follows:

(in thousands)

	Gross Future Minimum Lease Payments
2018	\$ 1,506
2019	793
2020	702
2021	716
2022	709
Thereafter	541
Total	<u>\$ 4,967</u>

Total rent expense under operating leases for the years ended December 31, 2017 and 2016, was approximately \$0.8 million, respectively.

### Standby letters of credit, bank guarantees, surety bonds and performance bonds

As discussed in Note 11, Long-Term Debt, as of December 31, 2017, the Company had three letters of credit with BB&T bank, totaling \$0.9 million and had three letters of credit with Citizen's Bank totaling \$0.8 million. The Company was contingently liable for these letters of credit.

### Contingencies

Various actions and proceedings are presently pending to which the Company is a party. In the opinion of management, the aggregate liabilities, if any, arising from such actions are not expected to have a material adverse effect on the financial position, results of operations or cash flows of the Company.

## 16. Employee Benefits

The Company has a qualified defined contribution plan that covers all U.S. employees under Section 401(k) of the Internal Revenue Code. Under this plan, the Company's stipulated basic contribution matches a portion of the participants' contributions based upon a defined schedule for GSE Performance Improvement Solutions employees. The Company's contributions to the plan were approximately \$305,000 and \$207,000 for the years ended December 31, 2017 and 2016, respectively.

## 17. Segment Information

The Company has two reportable business segments. The Performance Improvement Solutions segment provides simulation, training and engineering products and services delivered across the breadth of industries we serve. Solutions include simulation for both training and engineering applications. Example training applications include turnkey and custom training services, while engineering services include plant design verification and validation. The Company provides these services across all market segments. Contract terms are typically less than two years.

The Nuclear Industry Training and Consulting segment provides specialized workforce solutions primarily to the nuclear industry, working at clients' facilities. This business is managed through our Hyperspring and newly acquired Absolute subsidiaries. The business model, management focus, margins and other factors clearly separate this business line from the rest of the GSE product and service portfolio.

On September 20, 2017, the Company acquired Absolute Consulting, Inc., now a wholly-owned subsidiary of GSE Performance Solutions, Inc. Absolute is a provider of technical consulting and staffing solutions to the global nuclear power industry and employs approximately 160 professionals with expertise in procedures writing, engineering, technical support, project management, training, project controls, and corrective actions. This acquisition brings a natural adjacency to GSE, fits well with our growth strategy, and benefits our customers from expanded capabilities and offerings. For reporting purposes, Absolute was aggregated with Hyperspring into our Nuclear Industry Training and Consulting segment due to similarities in services provided including training and staff augmentation to the nuclear energy sector. In addition, both entities report to the same management team and share support staff such as sales, recruiting and business development. As such, 100% of the goodwill acquired was allocated to the Nuclear Industry Training and Consulting segment.

The following table sets forth the revenue and operating results attributable to each reportable segment and includes a reconciliation of segment revenue to consolidated revenue and operating results to consolidated (loss) income before income taxes.

(in thousands)

	Years ended December 31,	
	2017	2016
Revenue:		
Performance Improvement Solutions	\$ 39,899	\$ 35,474
Nuclear Industry Training and Consulting	30,981	17,627
	<u>\$ 70,880</u>	<u>\$ 53,101</u>
Operating income		
Performance Improvement Solutions	\$ (2,745)	\$ (856)
Nuclear Industry Training and Consulting	3,420	2,224
Change in fair value of contingent consideration, net	(446)	207
Operating income	<u>\$ 229</u>	<u>\$ 1,575</u>
Interest income, net	80	85
Gain (loss) on derivative instruments, net	99	(18)
Other (expense) income, net	(4)	130
Income before income taxes	<u>\$ 404</u>	<u>\$ 1,772</u>

Additional information relating to segments is as follows:

(in thousands)

	December 31,	
	2017	2016
Performance Improvement Solutions	\$ 34,107	\$ 42,383
Nuclear Industry Training and Consulting	22,748	11,249
Intercompany receivable elimination	-	24
Total assets	<u>\$ 56,855</u>	<u>\$ 53,656</u>

For the years ended December 31, 2017 and 2016, 83% and 73%, respectively, of the Company's consolidated revenue was from customers in the nuclear power industry. The Company designs, develops and delivers business and technology solutions to the energy industry worldwide. Revenue, operating income (loss) and total assets for the Company's United States, European, and Asian subsidiaries as of and for the years ended December 31, 2017 and 2016 are as follows:

(in thousands)

	Year ended December 31, 2017				
	United States	Europe	Asia	Eliminations	Consolidated
Revenue	\$ 66,249	\$ 3,196	\$ 1,435	\$ -	\$ 70,880
Transfers between geographic locations	1,953	-	668	(2,621)	-
Total revenue	<u>\$ 68,202</u>	<u>\$ 3,196</u>	<u>\$ 2,103</u>	<u>\$ (2,621)</u>	<u>\$ 70,880</u>
Operating income (loss)	<u>\$ 1,930</u>	<u>\$ (1,585)</u>	<u>\$ (116)</u>	<u>\$ -</u>	<u>\$ 229</u>
Total assets, at December 31	<u>\$ 149,390</u>	<u>\$ 5,057</u>	<u>\$ 4,313</u>	<u>\$ (101,905)</u>	<u>\$ 56,855</u>

(in thousands)

	Year ended December 31, 2016				
	United States	Europe	Asia	Eliminations	Consolidated
Revenue	\$ 46,149	\$ 4,143	\$ 2,809	\$ -	\$ 53,101
Transfers between geographic locations	2,639	22	1,139	(3,800)	-
Total revenue	<u>\$ 48,788</u>	<u>\$ 4,165</u>	<u>\$ 3,948</u>	<u>\$ (3,800)</u>	<u>\$ 53,101</u>
Operating loss	<u>\$ 2,921</u>	<u>\$ (896)</u>	<u>\$ (450)</u>	<u>\$ -</u>	<u>\$ 1,575</u>
Total assets, at December 31	<u>\$ 121,728</u>	<u>\$ 4,859</u>	<u>\$ 4,064</u>	<u>\$ (76,995)</u>	<u>\$ 53,656</u>

Revenues by geographic location above are attributed to the contracting entity. Therefore, revenues from a foreign customer that contracted directly with our U.S. entity are included in revenues from the United States. In Europe, total revenues attributable to our U.K. and Sweden subsidiaries were \$1.6 million, respectively. All revenues in Asia were attributable to our Chinese subsidiary.

Alternatively, revenues from customers domiciled in foreign countries were approximately 16% and 33%, of the Company's consolidated 2017 and 2016 revenue, respectively. Revenues from foreign countries where our customers reside were all individually less than 10% of the Company's consolidated revenues during 2017 and 2016.

#### 18. Supplemental Disclosure of Cash Flow Information

(in thousands)

	Year ended December 31,	
	2017	2016
Cash paid:		
Interest	\$ -	\$ 13
Income taxes	<u>\$ 155</u>	<u>\$ 370</u>

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

None.

**ITEM 9A. CONTROLS AND PROCEDURES.**

**(a) Evaluation of Disclosure Controls and Procedures**

The Company maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed by it in its reports filed or submitted pursuant to the Securities Exchange Act of 1934, as amended (the Exchange Act), is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and that information required to be disclosed by the Company in its Exchange Act reports is accumulated and communicated to management, including the Company's Chief Executive Officer (CEO), who is its principal executive officer, and Chief Financial Officer (CFO), who is its principal financial officer, to allow timely decisions regarding required disclosure. Based on an evaluation of our disclosure controls and procedures as of December 31, 2017, our CEO and CFO concluded that, as of such date, our disclosure controls and procedures were effective.

On September 20, 2017, the Company completed the acquisition of Absolute Consulting, Inc. Absolute constitutes 22.1% of total assets of the Company at December 31, 2017, and 12.3% of the Company's consolidated revenue for the year ended December 31, 2017. As permitted by SEC guidance for newly acquired businesses, because it was not possible to complete an effective assessment of the acquired company's controls by the year-end, the Company's management has excluded Absolute from its evaluation of disclosure controls and procedures and management's report on internal control over financial reporting and changes therein below from the date of such acquisition through December 31, 2017. Our management is in the process of reviewing the operations of Absolute and implementing GSE's internal control structure over the acquired operations.

**(b) Management's Annual Report on Internal Control over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Our internal control over financial reporting is a process designed by, or under the supervision of, our CEO and CFO, 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.

Management, including our CEO and CFO, assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2017. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework (2013). Based on management's assessment, management has concluded that the Company's internal control over financial reporting was effective as of December 31, 2017.

**(c) Changes in Internal Control over Financial Reporting**

In connection with the preparation of our consolidated financial statements as of and for the year ended December 31, 2015, we had identified a material weakness in our internal control over financial reporting related to our controls over revenue recognition. Since the second quarter 2017, the Company has executed on its remediation plan for this material weakness and the material weakness has been remediated. As part of this remediation plan, the Company implemented internal controls over revenue recognition with improved documentation and additional review procedures. Other than this and excluding the acquisition of Absolute, there were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the quarter ended December 31, 2017 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

**ITEM 9B. OTHER INFORMATION.**

None.

**ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.**

The information required by this item, including items 401, 405, 406 and 407 of Regulation S-K, is incorporated by reference to the section captioned "Directors and Executive Officers" in the definitive Proxy Statement for the Company's 2018 Annual Meeting of Shareholders and incorporated herein by reference or will be provided in an amendment to this Annual Report on Form 10-K.

The Company has adopted a Conduct of Business Policy that applies to its directors, officers and employees, including its principal executive officer, and principal financial officer. The Conduct of Business Policy is available on the Company's website at [www.gses.com](http://www.gses.com). In addition, the Company has adopted a Code of Ethics for its principal executive officer and senior financial officers which is also available on the Company's website. The Company will post on its website information about any amendment to, or waiver from, any provision of the Code of Ethics that applies to its principal executive officer, principal financial officer, or principal accounting officer.

**ITEM 11. EXECUTIVE COMPENSATION.**

The information required by this item will either be set forth under the "Executive Compensation" section in the definitive Proxy Statement for the 2018 Annual Meeting of Shareholders and incorporated herein by reference or will be provided in an amendment to this Annual Report on Form 10-K.

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

The information required by this item will be either set forth under the sections captioned "Voting Securities and Principal Holders Thereof," and "Executive Compensation" in the definitive Proxy Statement for the 2018 Annual Meeting of Shareholders and incorporated herein by reference or will be provided in an amendment to this Annual Report on Form 10-K.

The following table sets forth the equity compensation plan information for the year ended December 31, 2017:

Plan Category		Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted Average Exercise Price of Outstanding Options, Warrants and Rights (b)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a)) (c)
Equity compensation plans approved by security holders	Options	1,046,833	\$3.33	
	RSUs	1,379,663	\$1.96	
		2,426,496	\$2.55	1,620,358
Equity compensation plans not approved by security holders		--	\$--	--
Total		2,426,496	\$2.55	1,620,358

Table above excludes 255,000 RSUs granted under the Company's 1995 Long-Term Incentive Plan that are settled in cash instead of shares.

For a description of the material terms of our stock-based compensation plans, see Note 14 to the consolidated financial statements in Item 8 of this report.

**ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE.**

The information required by this item will be either set forth under the *"Directors and Executive Officers"* section in the definitive Proxy Statement for the 2018 Annual Meeting of Shareholders and incorporated herein by reference or will be provided in an amendment to this Annual Report on Form 10-K.

**ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES.**

The information required by this item will be either set forth under the *"Audit Committee Pre-Approval of Audit and Non-Audit Services"* section in the definitive Proxy Statement for the 2018 Annual Meeting of Shareholders and incorporated herein by reference or will be provided in an amendment to this Annual Report on Form 10-K.

**ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.**

(a) (1) List of Financial Statements

The following financial statements are included in Item 8:

**GSE Systems, Inc. and Subsidiaries**

Report of Independent Registered Public Accounting Firm  
Consolidated Balance Sheets as of December 31, 2017 and 2016  
Consolidated Statements of Operations for the years ended December 31, 2017 and 2016  
Consolidated Statements of Comprehensive Income for the years ended December 31, 2017 and 2016  
Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2017 and 2016  
Consolidated Statements of Cash Flows for the years ended December 31, 2017 and 2016  
Notes to Consolidated Financial Statements

(a) (2) List of Schedules

All other schedules to the consolidated financial statements are omitted as the required information is presented in the consolidated financial statements or related notes.

(a) (3) List of Exhibits

The Exhibits which are filed with this report or which are incorporated by reference are set forth in the Exhibit index hereto.

**ITEM 16. FORM 10-K SUMMARY.**

None.

**Exhibit Description of Exhibits**

**2. Plan of acquisition, reorganization, arrangement, liquidation, or succession**

- [2.1](#) Stock Purchase Agreement, dated as of January 1, 2011 among GSE Systems, Inc., Toshi Shinohara, Santosh Joshi, Hideo Shinohara, and EnVision Systems, Inc., previously filed with Form 8-K as filed with the Securities and Exchange Commission on January 10, 2011 and incorporated herein by reference.
- 
- [2.2](#) Membership Interests Purchase Agreement, dated as of November 14, 2014, by and between Dale Jennings, Paul Abbott, Shawn McKeever and Mickey Ellis and GSE Performance Solutions, Inc. Incorporated herein by reference to Exhibit 2.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on November 17, 2014.
- 
- [2.3](#) IntelliQlik, LLC Operating Agreement, dated as of November 14, 2014. Incorporated herein by reference to Exhibit 2.2 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on November 17, 2014.
- 
- [2.4](#) Amendment to Membership Interests Purchase Agreement, dated as of May 13, 2015. Previously filed in connection with the GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on May 14, 2015 and incorporated herein by reference.
- 
- [2.5](#) Stock Purchase Agreement, dated as of September 20, 2017, by and among GSE Systems, Inc., through its wholly owned subsidiary GSE Performance Solutions, Inc., Richard and Cynthia Linton (and certain trusts owned thereby) and Absolute Consulting, Inc. Incorporated herein by reference to Exhibit 2.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on September 20, 2017.
- 
- [2.6](#) GSE Systems, Inc. 2017 International Restructuring Plan, as approved on December 27, 2017. Incorporated herein by reference to Exhibit 99.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on December 27, 2017.

**3. Articles of Incorporation and Bylaws**

- [3.1](#) Restatement of Certificate of Incorporation dated November 14, 2016. Previously filed in connection with the GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on November 14, 2016 and incorporated herein by reference.
- 
- [3.2](#) Certificate of the Elimination of the Series A Cumulative Convertible Preferred Stock dated November 14, 2016. Previously filed in connection with the GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on November 14, 2016 and incorporated herein by reference.
- 
- [3.3](#) Third Amended and Restated Bylaws of GSE Systems, Inc. Incorporated herein by reference to Exhibit 3.2 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on September 16, 2016.
-

**10. Material Contracts**

- 10.1 Agreement among ManTech International Corporation, National Patent Development Corporation, GPS Technologies, Inc., General Physics Corporation, Vattenfall Engineering AB and GSE Systems, Inc. (dated as of April 13, 1994). Previously filed in connection with the GSE Systems, Inc. Form S-1 Registration Statement as filed with the Securities and Exchange Commission on April 24, 1995 and incorporated herein by reference.
- 10.2 Form of Option Agreement Under the GSE Systems, Inc. 1995 Long-Term Incentive Plan. Previously filed in connection with the GSE Systems, Inc. Form 10-K as filed with the Securities and Exchange Commission on March 22, 1996 and incorporated herein by reference. \*
- [10.3](#) Office Lease Agreement between 1332 Londontown, LLC and GSE Systems, Inc. (dated as of February 27, 2008). Previously filed in connection with the GSE Systems, Inc. Form 8-K as filed with the Securities and Exchange Commission on March 11, 2008 and incorporated herein by reference.
- 
- [10.4](#) Amendment of Lease to Office Lease Agreement, dated May 28, 2008. Incorporated herein by reference to Exhibit 10.20 of GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission on March 19, 2015.
- 
- [10.5](#) Second Amendment of Lease to Office Lease Agreement, dated July 22, 2010. Incorporated herein by reference to Exhibit 10.21 of GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission on March 19, 2015.
- 
- [10.6](#) \$7,500,000 Revolving Credit Note, dated November 22, 2011. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on November 29, 2011 and incorporated herein by reference.
- 
- [10.7](#) Third Amendment of Lease to Office Lease Agreement, dated May 15, 2012. Incorporated herein by reference to Exhibit 10.22 of GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission on March 19, 2015.
- 
- [10.8](#) Extension of the \$7,500,000 Revolving Credit Note, dated July 29, 2013. Incorporated herein by reference to Exhibit 10.14 of GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission on March 26, 2014.
- 
- [10.9](#) GSE Systems, Inc. 1995 Long-Term Incentive Plan, amended and restated as of March 6, 2014. Incorporated herein by reference to Exhibit A of GSE Systems, Inc. Form DEF 14A filed with the Securities and Exchange Commission on April 29, 2014. \*
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- [10.10](#) Fourth Amendment of Lease to Office Lease Agreement, dated April 15, 2014. Incorporated herein by reference to Exhibit 10.1 of GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on May 5, 2014.
- 
- [10.11](#) Extension to Revolving Credit Note, dated June 30, 2014. Previously filed in connection with the GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on August 14, 2014 and incorporated herein by reference.
- 
- [10.12](#) Amendment No. 3 to the Susquehanna Bank Agreement, dated August 9, 2014. Previously filed in connection with the GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on November 14, 2014 and incorporated herein by reference.
- 
- [10.13](#) Amendment No. 4 to the Susquehanna Bank Agreement, dated as of December 31, 2014. Incorporated herein by reference to Exhibit 10.14 of GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission on March 19, 2015.
- 
- [10.14](#) Extension of the \$7,500,000 Revolving Credit Note, dated May 12, 2015. Previously filed in connection with the GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on May 14, 2015 and incorporated herein by reference.
- 
- [10.15](#) Amendment No. 5 to the Susquehanna Bank Agreement, dated as of July 31, 2015. Previously filed in connection with the GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on August 13, 2015 and incorporated herein by reference.
- 
- [10.16](#) Form of Restricted Share Unit Agreement pursuant to the GSE Systems, Inc. 1995 Long-Term Incentive Plan, as amended and restated dated as of April 22, 2016. Previously filed in connection with the GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on November 14, 2016 and incorporated herein by reference.\*
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- [10.17](#) Form of Amendment to Restricted Share Unit Agreement, dated July 1, 2016. Incorporated herein by reference to Exhibit 99.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on July 1, 2016. \*
- 
- [10.18](#) Employment Agreement, dated July 1, 2016, between GSE Systems, Inc. and Emmett A. Pepe. Incorporated herein by reference to Exhibit 99.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on July 5, 2016. \*
- 
- [10.19](#) Employment Agreement between Christopher D. Sorrells and GSE Systems, Inc. dated as of August 15, 2016. Incorporated herein by reference to Exhibit 10.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on August 19, 2016. \*
- 
- [10.20](#) Letter dated October 31, 2016, from Branch Banking and Trust Company, agreeing to extend the Revolving Credit Expiration Date as defined in the Master Loan and Security Agreement dated November 22, 2011, between the Company, GSE Performance Solutions (as co-borrowers), and Branch Banking and Trust Company (as successor by merger to Susquehanna Bank), until March 31, 2017. Previously filed in connection with the GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on November 14, 2016 and incorporated herein by reference.



<a href="#"><u>10.21</u></a>	\$5,000,000 Revolving Line of Credit facility, dated December 29, 2016. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on January 4, 2017 and incorporated herein by reference.
<a href="#"><u>10.22</u></a>	Amendment and Reaffirmation Agreement, date February 22, 2017, and effective as of December 29, 2016. Incorporated herein by reference to Exhibit 10.36 of GSE Systems, Inc. Form 10-K file with the Securities and Exchange Commission on March 28, 2017.
<a href="#"><u>10.23</u></a>	Employment Agreement between Bahram Meyssami and GSE Systems, Inc. dated as of December 1, 2015. Incorporated herein by reference to Exhibit 10.1 of GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on May 15, 2017.*
<a href="#"><u>10.24</u></a>	Restricted Share Unit Agreement between Bahram Meyssami and GSE Systems, Inc. dated as of December 1, 2015. Incorporated herein by reference to Exhibit 10.2 of GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on May 15, 2017.*
<a href="#"><u>10.25</u></a>	Amendment to Restricted Share Unit Agreement between Bahram Meyssami and GSE Systems, Inc. dated as of July 1, 2016. Incorporated herein by reference to Exhibit 10.3 of GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on May 15, 2017.*
<a href="#"><u>10.26</u></a>	Amendment No. 2 to Employment Agreement between Kyle Loudermilk and GSE Systems, Inc. dated as of June 12, 2017. Incorporated herein by reference to Exhibit 99.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 16, 2017.*
<a href="#"><u>10.27</u></a>	Amendment to Employment Agreement between Christopher D. Sorrells and GSE Systems, Inc. dated as of June 12, 2017. Incorporated herein by reference to Exhibit 99.2 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 16, 2017.*
<a href="#"><u>10.28</u></a>	Amendment to Employment Agreement between Bahram Meyssami and GSE Systems, Inc. dated as of June 12, 2017. Incorporated herein by reference to Exhibit 99.3 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 16, 2017.*
<a href="#"><u>10.29</u></a>	Amendment to Employment Agreement between Emmett Pepe and GSE Systems, Inc. dated as of June 12, 2017. Incorporated herein by reference to Exhibit 99.4 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 16, 2017.*





## SUBSIDIARIES OF REGISTRANT AT DECEMBER 31, 2017

The following are significant subsidiaries of GSE Systems, Inc. as of December 31, 2017 and the states or jurisdictions in which they are organized. GSE Systems, Inc. owns, directly or indirectly, at least 99% of the voting securities of substantially all of the subsidiaries included below. The names of particular subsidiaries have been omitted because, considered in the aggregate as a single subsidiary, they would not constitute, as of the end of the year covered by this report, a "significant subsidiary" as that term is defined in Regulation S-X under the Securities Exchange Act of 1934.

<u>Name</u>	<u>Place of Incorporation or Organization</u>
GSE Systems Engineering (Beijing) Company, Ltd	Peoples Republic of China
GSE Power Systems AB	Sweden
GSE Process Solutions, Inc.	State of Delaware
GSE Services Company L.L.C.	State of Delaware
GSE Systems Ltd.	United Kingdom
GSE Performance Solutions, Inc.	State of Delaware
EnVision Systems (India) Pvt. Ltd.	India
Hyperspring, LLC	State of Alabama
Absolute Consulting, Inc.	State of Florida

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**Consent of Independent Registered Public Accounting Firm**

GSE Systems, Inc.  
Sykesville, Maryland

We hereby consent to the incorporation by reference in the Registration Statements on Forms S-8 (No. 333-212241, 333-183427, 333-150249 and 333-138702) of GSE Systems, Inc. of our report dated March 15, 2018, relating to the consolidated financial statements, which appears in this Form 10-K.

/s/ BDO USA, LLP  
McLean, Virginia  
March 15, 2018

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**POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Kyle J. Loudermilk and Emmett A. Pepe, and each of them, with full power of substitution and reconstitution and each with full power to act for him and without the other, as his true and lawful attorney-in-fact and agent, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto and all documents in connection therewith, with the Securities and Exchange Commission or any state, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their, his or her substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Security Exchange Act of 1934, this Annual Report on Form 10-K has been signed by the following persons in the capacities and on the date indicated.

Date: March 15, 2018	<u>/s/ Kyle J. Loudermilk</u> Kyle J. Loudermilk Chief Executive Officer
Date: March 15, 2018	<u>/s/ Emmett A. Pepe</u> Emmett A. Pepe Chief Financial Officer
Date: March 15, 2018	<u>/s/ Chris Sorrells</u> Chris Sorrells Chief Operating Officer
Date: March 15, 2018	<u>/s/ Jane Bryant Quinn</u> Jane Bryant Quinn Chairman of the Board
Date: March 15, 2018	<u>/s/ Jim Stanker</u> Jim Stanker Director
Date: March 15, 2018	<u>/s/ Joseph W. Lewis</u> Joseph W. Lewis Director
Date: March 15, 2018	<u>/s/ Suresh Sundaram</u> Suresh Sundaram Director
Date: March 15, 2018	<u>/s/ John D. Fuller</u> John D. Fuller Director



## Certification of the Chief Executive Officer

I, Kyle J. Loudermilk, certify that:

1. I have reviewed this annual report on Form 10-K of GSE Systems, Inc.;
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 annual 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 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 fourth quarter 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 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 registrant's board of directors:
  - 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.

Date: March 15, 2018

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/s/ Kyle J. Loudermilk  
Kyle J. Loudermilk  
Chief Executive Officer  
(Principal Executive Officer)

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## Certification of the Chief Financial Officer

I, Emmett A. Pepe, certify that:

1. I have reviewed this annual report on Form 10-K of GSE Systems, Inc.;
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 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 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 registrant's board of directors:
  - 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.

Date: March 15, 2018

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/s/ Emmett A. Pepe  
Emmett A. Pepe  
Chief Financial Officer  
(Principal Financial and Accounting Officer)

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**CERTIFICATION PURSUANT TO  
18 U.S.C. SECTION 1350  
AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 10-K of GSE Systems, Inc. (the "Company") for the year ended December 31, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Kyle J. Loudermilk, Chief Executive Officer of the Company, and I, Emmett A. Pepe, Chief Financial Officer, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that,

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. To my knowledge, the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 15, 2018

/s/ Kyle J. Loudermilk  
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Kyle J. Loudermilk  
Chief Executive Officer

/s/ Emmett A. Pepe  
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Emmett A. Pepe  
Chief Financial Officer