GSE SYSTEMS INC
Form 10-K
March 16, 2009

Conformed

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K

(Mark One)

[X] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2008

OR

[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to ____

Commission File Number 001-14785

GSE Systems, Inc.
(Exact name of registrant as specified in its charter)

Delaware	52-1868008
(State of incorporation)	(I.R.S. Employer Identification Number)
1332 Londontown Blvd, Suite 200, Sykesville MD	21784
(Address of principal executive offices)	(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	Name of each exchange on which registered
Common Stock, $.01 par value	American Stock Exchange

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT: NONE

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

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 [X]

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

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 or a smaller reporting company. See the definitions of "large accelerated filer", "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer [ ]	Accelerated filer [X]	Non-accelerated filer [ ] (Do not check if a smaller reporting company)	Smaller reporting company [ ]

Indicate by check mark whether the registrant is a shell company (as defined in rule 12(b)-2 of the Exchange Act). Yes [ ] No [X]

The aggregate market value of Common Stock held by non-affiliates of the Registrant was $134,757,843 on June 30, 2008, 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 $8.91.

The number of shares outstanding of the registrant's Common Stock as of March 13, 2009 was 15,978,122 shares.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement for the 2009 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.

GSE SYSTEMS, INC.
FORM 10-K
For the Year Ended December 31, 2008

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*to be incorporated by reference from the Proxy Statement for the registrant's 2009 Annual Meeting of Shareholders.

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 and Section 21E of the Exchange Act that are based on management's assumptions, expectations and projections about us, and the industry within which we operate, that have been made pursuant to the Private Securities Litigation Reform Act of 1995 which reflect 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", ' 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 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 and the U.S. military;
- changes in the financial condition of our customers;
- changes in 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 or where equipment or services are or may be provided;
- 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 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.

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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.

PART I

ITEM 1. BUSINESS.

GSE Systems, Inc. ("GSE Systems", "GSE", the "Company", "our", "we" or "us"), a Delaware corporation organized in M 1994, is a world leader in real-time, high fidelity simulation. The Company provides simulation and educational solutions and services to the nuclear and fossil electric utility industry and the chemical and petrochemical industries. In addition, the Company provides plant monitoring, signal analysis monitoring and optimization software primarily to the power industry. GSE is the parent company of GSE Power Systems, Inc., a Delaware corporation; GSE Power Systems, AB, a Swedish corporation; GSE Engineering Systems (Beijing) Co. Ltd., a Chinese limited liability company; GSE Systems Ltd., a British limited liability company; and has a 10% minority interest in Emirates Simulation Academy, LLC, a United Arab Emirates limited liability company.

The Company's annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act (15 U.S.C. 78m(a) or 78o(d) will be made available free of charge through the Investor Relations section of the Company's Internet website (http://www.gses.com) as soon as practicable after such material is electronically filed with, or furnished to, the SEC. In addition, the public may read and copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC at http://www.sec.gov.

Recent Developments.

On March 28, 2008, the Company entered into two separate revolving line of credit agreements for two-year revolving lines of credit with Bank of America, N.A. ("BOA"), in an aggregate amount of up to $5.0 million. The Company and its subsidiary, GSE Power Systems, Inc., are jointly and severally liable as co-borrowers. The credit facilities are collateralized by substantially all of the Company's assets and enable the Company to borrow funds to support working capital needs and standby letters of credit. The first line of credit in the principal amount of up to $3.5 million enables the Company to borrow funds up to 90% of eligible foreign accounts receivable, plus 75% of eligible unbilled foreign receivables and 100% of the cash collateral pledged to BOA on outstanding warranty standby letters of credit. This line of credit is 90% guaranteed by the Export-Import Bank of the United States. The interest rate on this line of credit is based on the daily LIBOR rate plus 150 basis points, with interest only payments due monthly. The second line of credit in the principal amount of up to $1.5 million enables the Company to borrow funds up to 80% of domestic accounts receivable and 30% of domestic unbilled receivables. The interest rate on this line of credit is based on the daily LIBOR rate plus 225 basis points, with interest only payments due monthly. The credit facilities require the Company to comply with certain financial ratios and preclude the Company from making acquisitions beyond certain limits without the bank's consent. At December 31, 2008, the Company was in default on two of its financial covenants; however, it has received a written waiver from BOA. The Company's available borrowing base under the two lines of credit was $3.2 million at December 31, 2008, of which $105,000 had been utilized to collateralize a standby letter of credit.

The nuclear power industry has been largely dormant for the last thirty years with few opportunities to provide new full scope simulators. The Company's nuclear simulation business has concentrated mainly on providing services to the installed base of nuclear simulators worldwide. These services are primarily related to upgrading antiquated simulation software and hardware systems, providing new and improved plant and system simulation models, and modifying the simulator to reflect changes in the physical plant. However, over the last several years, the nuclear power industry has experienced a dramatic change, and most energy experts believe the industry is on the verge of a "renaissance", driven by the gap between the energy that the world is projected to need versus the current capacity, the instability in the cost of oil, and growing environmental concerns over the usage of fossil fuels. Government and industry sources and trade journals report that up to 240 new nuclear plants could be built worldwide over the next 20 years. In the U.S. alone, applications for accelerated construction and operating licenses have been or are expected to be submitted for 35 new nuclear plants. Each new plant will be required to have a full scope simulator ready for operator training and certification about two years prior to plant operation. Similar nuclear plant construction programs are underway or planned in China, Russia, Ukraine, Japan and Central Europe to meet growing energy demands. In addition, most U.S. nuclear electric utilities have applied for license extensions and/or power upgrades. These license extensions will lead to significant upgrades to the physical equipment and control room technology which will result in the need to modify or replace the existing plant control room simulators. The Company, having what it believes is the largest installed base of existing simulators, over 60% on a global basis, is well positioned to capture a large portion of this business, although no assurance can be given that it will be successful in doing so. The Company logged approximately $26.5 million, $21.5 million and $12.2 million in nuclear simulation orders in the years ended December 31, 2008, 2007 and 2006, respectively.

In 2005, the Company completed an agreement with Westinghouse Electric Company LLC ("Westinghouse") to become their preferred vendor for the development of simulators for their AP1000 reactor design. As a result of this agreement, GSE is working closely with Westinghouse to cooperate in the development of simulators for the AP1000 design and assist Westinghouse in the verification and validation of the AP1000 Human Machine Interface. The Company's simulation models have been used to help Westinghouse successfully complete several phases of Human Machine Interface testing with U.S. regulators. Westinghouse and its consortium partners received definitive multi-million dollar contracts to provide four AP1000 nuclear power plants in China. The four plants are to be constructed in pairs on China's eastern coast at Sanmen in Zhejiang province and Haiyang in Shandong province. In September 2007, GSE received an initial contract from Westinghouse to begin work on the Sanmen simulator project in China. In February 2008, the Company received the balance of its multi-million dollar order for the Sanmen project. In April 2008, GSE received a contract from Westinghouse to begin work on the Haiyang simulator project. The Company expects to receive the balance of the Haiyang contract from Westinghouse in 2009. The Westinghouse agreement is not exclusive and does not prevent the Company from working with other nuclear vendors anywhere in the world.

In November 2008, the Company was awarded a contract from NuScale Power, Inc. to develop simulation models for its novel, first-of-a-kind nuclear power plant. NuScale Power, Inc. through work performed at Oregon State University and the Department of Energy's Idaho National Engineering laboratory, has designed a small, scalable light water nuclear reactor design for multiple purposes from electricity generation to producing steam needed for industrial applications. GSE's simulation models will be used in NuScale's design certification process, including design analysis, and control system strategy and plant procedure development. Eventually the simulation models would form the basis for a full scope operator training system to license the operators of these new plants.

The Company's fossil fueled power simulation business has been growing rapidly over the past three years. The Company logged approximately $13.6 million, $11.2 million, and $4.8 million of fossil fueled simulation orders for the years ended December 31, 2008, 2007 and 2006, respectively. The transition from obsolete analog control systems to modern digital control systems and the new requirements for complex emission control systems are contributing to the growth the Company is experiencing in this business, coupled with the fact that GSE's high-fidelity simulation models can be used to validate control schemes and logics for new designs before the control systems are deployed to the field. GSE builds the plant models based upon design specifications supplied by its customers, and the models then drive the actual digital control systems in the factory. This testing can uncover numerous control system discrepancies. By correcting these problems at the factory versus in the field, GSE's customers can save millions in reduced down time and reduced commissioning time.

GSE's process industries simulation business customers include primarily oil and gas production facilities, oil refining plants, chemical plants and petro-chemical facilities. As in the power industry, there is increasing focus on regular, periodic and systematic training of plant operator personnel which may reduce the risk of operator errors and potentially catastrophic environment disasters and/or loss of life. The Company logged approximately $1.2 million, $3.4 million, and $1.5 million of process industry simulation orders for the years ended December 31, 2008, 2007 and 2006, respectively.

In 2008, the Company completed its $16.9 million order from the Emirates Simulation Academy in the UAE to supply five simulators and an integrated training program except for the final warranty coverage. The Academy had its formal opening on January 14, 2009. The Company continues to develop its concept of integrating simulation with broader training programs and educational initiatives giving customers a turnkey alternative to traditional on-site operator and maintenance training. In the fourth quarter 2008, the Company was awarded a nuclear power plant operator training program contract with one of the largest U.S. nuclear utilities. The scope of the award includes the development of course materials for a licensed operator preparation course which includes modules on nuclear plant fundamentals, introduction to nuclear plant systems, human performance principles and team building, and an introduction to integrated nuclear plant operations. The classroom training, which GSE personnel will conduct at a Georgia technical college, is scheduled to commence in mid 2009.

The global recession and financial credit crisis has not currently had a significant effect on the Company's business. Specifically, the Company has seen no delays or cancellations to the projects it is currently working on, and is unaware of any delays or cancellations to projects that the Company expects to secure in 2009.

Background.

GSE Systems was formed on March 30, 1994 to consolidate the simulation and related businesses of S3 Technologies, General Physics International Engineering & Simulation and EuroSim, each separately owned and operated by ManTech International Corporation, GP Strategies Corporation and Vattenfall AB, respectively.

In December 1997, the Company acquired 100% of the outstanding common stock of J.L. Ryan, Inc. (“Ryan”), a provider of engineering modifications and upgrade services to the power plant simulation market. The combination of the Company’s pre-existing technology with the technical staff of the acquired Ryan business positioned the Company to be more competitive for modifications and upgrade service projects within the nuclear simulation market.

In October 2002, GSE purchased the stock of ManTech Automation Systems (Beijing) Company Ltd, from ManTech International Corp. The Chinese company, which has fourteen employees, was renamed GSE Systems Engineering (Beijing) Company Ltd. This acquisition gave the Company a base in China to pursue and implement simulation projects in that emerging market.

In 2007, the Company formed a subsidiary, GSE Systems Ltd., in the United Kingdom. The British subsidiary was established to provide training solutions to the nuclear power industry. The Company has an agreement with the University of Strathclyde to provide training services at the University using an on-site training simulator provided by GSE.

Simulation Business.

I. Nuclear and Fossil Fuel Power Simulation.

Industry History

The real-time simulation industry grew from the need to train people on complex and potentially dangerous operations, without placing life or capital assets at risk. Real-time simulation has been used for the training of plant operators for the power industry, including both nuclear power plants and conventional fossil fuel power plants (i.e., coal, oil, and natural gas), since the early 1970s. Real-time simulation usage has traditionally centered on initial training of operators and follow-on training of operators in emergency conditions that can best be achieved through simulation replicating actual plant operations.

In the nuclear power industry, use of a simulator that accurately reflects the current actual plant design is mandated by the U.S. Nuclear Regulatory Commission. This mandate resulted from the investigation of the accident at the Three Mile Island nuclear plant in 1979, which was attributed, at least in part, to operator error. The NRC requires nuclear plant operators to earn their licenses through simulator testing. Each nuclear plant simulator must pass a certification program to ensure that the initial plant design and all subsequent changes made to the actual plant control room or plant operations are accurately reflected in the simulator. Plant operating licenses are tied to simulator certification.

Full scope power plant simulators are a physical representation of the entire plant control room. For older plants, the control panels are connected to an input/output (I/O) system, which converts analog electrical signals to digital signals understood by the simulation computer. For newer plants, the control rooms consist mainly of digital control systems and a series of computer screens used by the operator to control the plant. The simulation computer houses the mathematical models, which simulate the physical performance of the power plant’s systems such as the reactor core, steam boiler, cooling water, steam turbine, electrical generator, plant system controls and electrical distribution systems. Partial scope simulators can be viewed as a subset of a full scope simulator. Instead of simulating the entire performance of the power plant, a partial scope simulator might represent one or two critical systems such as the steam turbine and/or electrical generator operation.

In the past, training simulators had to strike a delicate balance between providing an accurate engineering representation of the plant, while still operating in “real-time” in order to provide effective training. As computing power has increased, so too has the capacity of simulators to provide more accurate plant representations in real-time based upon simulation models developed from engineering design codes. The more sophisticated and accurate engineering codes allows customers to use the simulator to help validate plant design, control system strategies, control system displays, and develop plant operating procedures and training material.

Simulation also is used to validate proposed plant equipment changes and to confirm the results of such changes, prior to making the change in the plant, which can save time and money, as well as reduce the risk of unsafe designs, for the utility.

The importance of nuclear power to the U.S. energy supply is resulting in the extension of the useful lives of U.S. nuclear power plants. Any service life extension of a nuclear power plant is likely to require major upgrades to the plant's equipment and technology, including its simulator.

Fossil fuel plant simulators are not required by law or regulation, but are justified as a cost-effective approach to train operators on new digital control systems being implemented at many fossil fuel power plants. The size, complexity and price of a fossil plant simulator are much lower than for simulators used for nuclear plants. Fossil plant simulators have traditionally used lower fidelity (less sophisticated) mathematical models to provide an approximate representation of plant performance. The demand for highly accurate models did not exist in the early market for fossil simulators since the main use of the simulator was to train operators on the functionality of distributed control systems for plant start-up activities.

The deregulation of the power industry has forced utilities to view their assets differently. Power plants must now be profit centers, and gaining the maximum efficiency from the plant to become, or remain, competitive is a paramount issue. The mindset of the operator has shifted, as plant operators now must perform within narrower and narrower performance margins while still maintaining safe operations. GSE believes its fossil fuel plant customers are now recognizing the benefits of high fidelity simulation models that provide highly accurate representations of plant operations to help plant operators and management determine optimal performance conditions.

Beyond traditional operator training uses, the Company sees a significant shift in the use of its simulators to test plant automation systems before they are deployed in the actual plant. Control strategies and equipment set points are validated on the simulator prior to plant start up to ensure the control schemes work properly and the expected plant performance is achieved. Performing these tests on a high fidelity simulator saves days or weeks in the plant start up, thereby reducing cost and ensuring quicker revenue generation by the utility.

Industry Future

The Company sees a renaissance in nuclear power generation both domestically and internationally that will provide significant opportunities for expansion of the Company’s business. China has announced plans to build 40 new nuclear plants by the year 2020. Russia has also announced plans for 40 new plants by 2030. New plants are on the drawing board or under construction in Finland, Slovakia, and Bulgaria. Domestically, numerous utilities are preparing applications for Construction and Operating Licenses under the Department of Energy 2010 incentive program, a joint government/industry cost-shared effort to identify sites for new nuclear power plants, develop advanced nuclear plant technologies, and demonstrate new regulatory processes leading to a private sector decision to order new nuclear power plants for deployment in the United States in the 2010 timeframe. Beyond new construction, numerous U.S. utilities are extending the useful life of their current assets.

These license extension processes in the nuclear industry will result in significant changes in plant equipment and control room technology. Based upon U.S. Nuclear Regulatory Commission regulations, each training simulator is required to reflect all changes that are made in the actual plant, thus when changes in plant equipment and control room technology are made, the nuclear power plants must either upgrade existing simulators or purchase brand new simulators.

The second phenomena affecting the industry is the aging of the nuclear and fossil plant operator workforce which will result in the need for simulation to train the next generation of plant operators. The industry is faced with an aging workforce at the same time new capacity is needed, thereby placing significant pressure on the industry to find and train the next generation of operations and maintenance personnel. According to the Energy Central Research and Analysis Division white paper entitled The High Cost of Losing Intellectual Capital, the U.S. Bureau of Labor Statistics predicts that 30% or more of the existing workforce will be eligible for retirement in the next five years, and it is believed that by 2012 there will be nearly 10,000 more utility industry jobs then workers to fill them.

Therefore, the Company believes that these trends, if they come to fruition in whole or even in part, represent a market opportunity for its real-time simulation, plant optimization, asset management and condition monitoring products and services.

GSE’s Solution

The Company’s Power Simulation business is a leader in the development, marketing and support of high fidelity, real-time, dynamic simulation software for the electric utility industry. The Company has built or modified about 65 of the approximately 75 full-scope simulators serving about 103 operating nuclear power plants in the United States. Outside the United States, GSE has built or modified about 73 of the approximately 167 full-scope simulators serving approximately 329 operating nuclear power plants.

The Company has developed integrated training solutions which combine the power of the Company’s simulation technology with training content to provide turn-key training for the power and process industries. These training centers will help industry bridge the gap between college and university level training and real world experience through simulation.

In addition to operator training, the Company’s simulation products and services permit plant owners and operators to simulate the effects of changes in plant configuration and performance conditions to optimize plant operation. These features allow the Company’s customers to understand the cost implications of replacing a piece of equipment, installing new technology or holding out-of-service assets. GSE has also developed a suite of tools based on sophisticated signal analysis and simulation techniques to help its customers manage their assets by determining equipment degradation before it severely impacts plant performance.

The Company has also focused on upgrading older technology used in power plants to new technology upgrades for plant process computers and safety parameter display systems. As nuclear plants in the U.S. continue to age, the Company will seek more business in this upgrade market.

GSE provides both turn-key solutions, including simulated hardware and proprietary software, to match a specific plant, and discrete simulation technology for specific uses throughout a plant. Its substantial investment in simulation technology has led to the development of proprietary software tools. These tools significantly reduce the cost and time to implement simulation solutions and support long-term maintenance. The Company's high fidelity, real-time simulation technology for power plant fluid, logic and control, electrical systems and associated real-time support software, JADE, is available for use primarily on UNIX, Linux and Windows computer platforms. The Company's Xtreme tools were designed for the Windows environment. Both technologies were specifically designed to provide user friendly graphic interfaces to the Company's high fidelity simulator.

In addition to the simulator market, the Company offers products aimed at improving performance of existing plants by reducing the number of unplanned outages due to equipment failure. Using advanced signal analysis techniques, the Company's tools can predict when certain plant equipment needs to be replaced. Replacement of critical equipment prior to failure permits effective planning and efficient use of maintenance time during scheduled off-line periods.

Products of the Power Simulation business include:

♦ Java Applications & Development Environment (JADE™), a Java-based application that provides a window into the simulation instructor station and takes advantage of the web capabilities of Java, allowing customers to access the simulator and run simulation scenarios from anywhere they have access to the web. JADE includes the following software modeling tools:

♦ JFlow™, a modeling tool that generates dynamic models for flow and pressure networks.
♦ JControl™, a modeling tool that generates control logic models from logic diagrams.
♦ JLogic™, a modeling tool that generates control logic models from schematic diagrams.
♦ JElectric™, a modeling tool that generates electric system models from schematic and one-line diagrams.
♦ JTopmeret™, a modeling tool that generates two phase network dynamic models.
¨ JDesigner™, a JADE based intuitive graphic editor for all JADE tools.
¨ JStation™, a JADE based web-enabled Instructor Station.

♦ Xtreme Tools™, a suite of software modeling tools developled under the Microsoft Windows environment. It includes:

¨ Xtreme Flow™, a modeling tool that generates dynamic models for flow and pressure networks.
♦ Xtreme Control™, a modeling tool that generates control logic models from logic diagrams.
¨ Xtreme Logic™, a modeling tool that generates control logic models from schematic diagrams.
¨ Xtreme Electric™, a modeling tool that generates electric system models from schematic and one-line diagrams.

♦ RELAP5 R/T HD™, a real-time version of the safety analysis code RELAP5 developed by the Idaho National Laboratory. The Company's HD (High Definition) version of RELAP5 R/T enables the engineers to understand and control all of the internal functions of RELAP5, making this solution unique in the market.

- SimExec® and OpenSim®, real-time simulation executive systems that control all real-time simulation activities and allow for an off-line software development environment in parallel with the training environment. OpenSim is targeted for users of Microsoft Windows operating systems, while SimExec is targeted for users of Microsoft Windows, UNIX and Linux operating systems.

- SmartTutor®, complementary software for instructor stations. It provides new capabilities to help improve training methodologies and productivity. Using Microsoft Smart Tag technology, SmartTutor allows the control of the simulator software directly from Microsoft Office products. The user can run training scenarios directly from a Microsoft Word document, or he can plot and show transients live within a Microsoft PowerPoint slide.

- Xtreme I/S™, a Microsoft Windows based Instructor Station that allows the use of Microsoft Word and PowerPoint to control the real-time simulation environment. Xtreme I/S is a user-friendly tool for classroom training and electronic report generation. It provides real-time plant performance directly from the simulator during classroom training, which drastically increases learning efficiency.

- Pegasus Surveillance and Diagnosis System™, a software package for semi-automatic plant surveillance and diagnostics, incorporates sophisticated signal processing and simulation techniques to help operators evaluate the condition and performance of plant components. Pegasus permits plant management to identify degraded performance and replace components before they fail.

- SIMON™, a computer workstation system used for monitoring stability of boiling water reactor plants. SIMON assists the operator in determining potential instability events, enabling corrective action to be taken to prevent unnecessary plant shutdowns.

The Simulation business also provides consulting and engineering services to help users plan, design, implement, and manage/support simulation and control systems. Services include application engineering, project management, training, site services, maintenance contracts and repair.

Strategy

The goal of the Power Simulation business is to expand its business on three fronts:

- Continue serving its traditional customer base.
- Combine its simulation capability with training content to provide totally integrated training solutions.
- Expand the use of high fidelity simulatoin beyond trining to help validate plant design.

Traditional Simulation Market. Nuclear power currently accounts for about 20% of the electrical power grid capacity in the United States and this percentage will likely remain the same even as total capacity increases. Any new nuclear power plants will likely be of the advanced reactor designs created by Westinghouse, General Electric and Areva. These new designs require new simulators and training programs, as they are different from the nuclear power plant designs currently in operation. In addition to new power plants, existing nuclear power plants will likely be required to remain on-line for a longer period than originally expected. In order to stay in operation, many plants will require life extension modifications. Since all existing U.S. nuclear power plants went on-line before 1979, their designs and technology can also benefit from the substantial advances in plant design and technology developed over the past 30 years. For example, several of the Company's U.S. utility customers are considering replacing their existing hard panel control rooms with modern distributed control systems (DCS) as are common in fossil fuel plants, and which have been implemented in Europe for several years. Significant changes to control room instrumentation and overall control strategy from hard panel to DCS generally require modification or replacement of the plant simulator. With the largest installed base of nuclear plant simulators in the world, the Company believes it is uniquely positioned to serve this market segment with new simulation products and services. GSE has received several projects in the last few years for implementing digital turbine control systems in U.S. plants.

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As plants extend their useful life, many plan to “up-rate” the existing capacity to increase electrical yield. By changing the capacity of certain equipment in a plant, the utility can gain upwards of a 10%-15% increase in output. Again, any such changes must be reflected in the control room simulator, and operators must be trained on the new equipment before implementation.

In addition to the United States markets, several emerging regions of the world are expanding their electrical capacity with both nuclear and fossil fuel power plants. This is particularly the case in China and the Gulf Region of the Middle East. In 2006, the Company received its first contract for a fully integrated training academy in the United Arab Emirates. The Emirates Simulation Academy, LLC is using five simulators developed by the Company for gas turbine plants, combined cycle power plants, oil refineries, oil platforms and desalination plants. In addition, the Company has provided the training content for both classroom and simulator training. The Company sees other opportunities for similar academies in other regions of the world.

Classroom Simulation. In recent years the Company has upgraded numerous training simulators to utilize standard PC technology. As an extension of the PC-based simulator technology, the Company has developed tools which will allow the training simulator to be used in a classroom setting, replacing the actual control room panels with “soft-panel” graphics.

Increased training requirements and demands for performance improvement have resulted in simulator training time becoming scarce. By providing the actual training simulator models in a classroom setting, the value of the simulator is increased by allowing more personnel the training advantages of interactive, dynamic real-time simulation.

The Company pioneered the technology to run a simulator on a PC several years ago. However, the technology remains complex, which prevented wide deployment of the simulator in classrooms. The Company has developed unique software which allows simulator-based training lessons to be easily developed and deployed in a classroom setting.

Simulation Beyond Training. In addition to operator training, the Company’s simulation products can meet this increased need for efficiency by assisting plant operators in understanding the cost implications of replacing equipment, installing new technology and maintaining out-of-service assets. In order to exploit this potential, the Company has increased the fidelity of its simulation products and is marketing its services to increase the fidelity of simulators that are already in operation.

As computing power and networking technologies improve, several of the Company’s customers have started to migrate simulation technology from the training organization to the engineering organization. The same full scope simulation software that drives the simulated control room panels in a simulator can be used with graphical representations of the panels so engineers can test design changes and see how the balance of the plant will react to such changes. GSE has developed a Java-based application to allow customers easier access to, and use of, the simulation capabilities across the organization through network communication.

Optimize Existing Engineering Resources. GSE's Power domestic service organization focuses on simulator upgrades and retrofits. In addition to domestic resources, GSE has developed a network of trained engineers in Russia, Ukraine, Czech Republic, Bulgaria, and China. These foreign resources provide low cost engineering and software development capabilities and are readily available to supplement the United States engineering staff as necessary.

Strategic Alliances

Power's strategic alliances have enabled the Company to penetrate regions outside the United States by combining the Company's technological expertise with the regional presence and knowledge of local market participants. These strategic alliances have also permitted the reduction of research and development and marketing costs by sharing such costs with other companies.

In recent years, a significant amount of the Company's international business has come from contracts in Eastern Europe, including the republics of the former Soviet Union, and the Pacific Rim. In order to acquire and perform these contracts, the Company entered into strategic alliances with various entities including All Russian Research Institute for Nuclear Power Plant Operation (Russia); Kurchatov Institute (Russia); Risk Engineering Ltd. (Bulgaria); Samsung Electronics (Korea); Sinopec Ningbo Engineering Company (China); Toyo Engineering Corporation (Japan); and Westinghouse Electric Company LLC (U.S.). In March 2006, GSE completed a strategic alliance with the University of Strathclyde in Glasgow, UK to develop a simulation training and plant diagnostics center to serve the UK.

Competition

The Power Simulation business encounters intense competition. In the nuclear simulation market, GSE competes directly with larger firms primarily from Canada and Germany, such as MAPPS Inc., a subsidiary of L-3 Communications, and Rheinmetal Defense Electronics (RDE). The fossil simulation market is represented by smaller companies in the U.S. and overseas. Several of the Company's competitors have greater capital and other resources than it has, including, among other advantages, more personnel and greater marketing, financial, technical and research and development capabilities. Customer purchasing decisions are generally based upon price, the quality of the technology, experience in related projects, and the financial stability of the supplier.

Customers

The Power Simulation business has provided approximately 200 simulation systems to an installed base of over 75 customers worldwide. In 2008, approximately 63% of the Company's revenue was generated from end users outside the United States. Customers include, among others, ABB Inc., American Electric Power, Bernische Kraftwerke AG (Switzerland), British Energy Generation Ltd. (UK), Comission Federal De Electricidad (Mexico), Emerson Process Management, Emirates Simulation Academy, LLC (UAE), Kapar Energy Ventures SDN BHD (Malaysia), Karnkraftsakerhet och Utbildning AB (Sweden), Kraftwerks Simulator Gesellschaft mbH (Germany), Battelle's Pacific Northwest National Laboratory, Nuclear Engineering Ltd. (Japan), Pebble Bed Modular Reactor (Pty) Ltd. (South Africa), PSEG Nuclear, Inc., and Rosenergoatom Federal State Owned Enterprise (Russia).

For the year ended December 31, 2008, Emerson Process Management provided 16% of the Company's consolidated revenue (8% in 2007 and 10% in 2006) and American Electric Power provided 11% of the Company's consolidated revenue (0% in 2007 and 1% in 2006).

Sales and Marketing

The Company markets its Power Simulation products and services through a network of direct sales staff, agents and representatives, systems integrators and strategic alliance partners. Market-oriented business and customer development teams define and implement specific campaigns to pursue opportunities in the power marketplace.

The Company's ability to support its multi-facility, international and/or multinational Power Simulation clients is facilitated by its network of offices and strategic partners in the U.S. and overseas. Power Simulation offices are maintained in Maryland and Georgia, and outside the U.S., in Sweden and China. In addition to the offices located overseas, the Company's ability to conduct international business is enhanced by its multilingual and multicultural work force. GSE has strategic relationships with systems integrators and agents representing its interests in the Czech Republic, Bulgaria, Germany, Japan, Mexico, People's Republic of China, South Africa, Spain, South Korea, Taiwan, Ukraine and the United Kingdom.

II. Process Industries Simulation.

Industry

Throughout the process industries there is continuing competitive pressure, reduction of technical resources, and an aging workforce which is forcing process manufacturers to turn to advanced technologies for real-time optimization, training, and advanced process control. Operational efficiency is vital for companies to remain competitive where many of the manufacturing industries operate on very thin margins. There are only one or two advanced technology companies that offer services fully across this spectrum, and GSE offers dynamic real-time simulation capabilities for operator training and plant design validation and verification into this segment.

GSE's Solution

The SimSuite Pro™ product was developed by GSE specifically for dynamic real-time simulation for operator training and validating the plant design logic and control. The GSE culture and expertise is one of customized project execution and delivery. This marketplace places a high value on experience, both company-wide and for the individuals on the project teams, so GSE promotes its long history in training simulators, while also seeking new applications. The SimSuite Pro package continues to be enhanced with features applicable not just to the execution of professional training techniques and design validation, but also to the recording and validating of process operator performance for potential certification.

Strategy

GSE is uniquely positioned in the process simulation market to provide total training solutions which combine the development of the plant simulator with the training infrastructure and course material to enable the customer to truly benefit from the simulator investment. The core concepts of process simulation make the technology a basis for other potential process improvement activities, such as Advanced Process Control and Process Optimization, which is where some of the major GSE competition has more business focus than for operator training. GSE will continue to emphasize its operator training focus and strengths, as well as the application of the process simulator for change management, where changes in the process, control strategy, or operating procedures can be evaluated in real time before they are applied to the actual process units. On-stream time is an important economic factor, and there is recognizable value in avoiding the risk of unplanned process disturbances from invalidated changes.

An emerging energy market is developing for Integrated Gasification Combined Cycle ("IGCC") power plants. These new plants produce electricity more efficiently than traditional power plants by first converting existing refinery waste materials into synthetic gas that is used to power a gas turbine. The gas is then burned to create steam to turn a steam turbine. The unique nature of these plants requires expertise both in chemical process simulation and power simulation. GSE is one of the few simulator companies in the world with expertise in both areas.

In 2007, GSE was awarded a contract from Sinopec Ningbo Engineering Company ("SNEC") to build an IGCC simulation platform for design verification and validation of the Fujian IGCC plant in China. GSE also formed a strategic alliance with SNEC to build simulators for the SNEC designed refineries and IGCC plants throughout China.

Customers

Hydrocarbon and chemical process customers include numerous large oil refineries and chemical plants such as Statoil ASA of Norway, Bayernoil of Germany, Saudi Basic Industries Corporation of Saudi Arabia, Sinopec Ningbo Engineering Company of China, and Savannah River Nuclear Solutions, LLC of the U.S.

Competition

GSE's process simulation competitors are a varied group. There are major corporations offering a wide range of products and services that include operator training simulators. There are also companies focused on Process Technology and manufacturing enhancement, such as Invensys and Honeywell who are Distributed Control System ("DCS") distributors to the refining industry and provide operator simulation as part of their DCS offering. There is a collection of companies with specific industry niches that enables them to compete in operator training simulation, such as Invensys and RSI Simcon. There are also the smaller training companies that compete at the lower cost levels of Computer Based Training ("CBT") or simple simulations close to CBT.

The GSE focus on dynamic simulation for training and design validation is a business strength, and its vendor independence, with the ability to integrate to different vendor's process control systems, is also a value which is appreciated by customers. GSE can be seen as a best-of-breed type of supplier because it is not tied to a major control system, nor is it providing simulation software for engineering and business management with high annual license fees.

Sales and Marketing

The Company will market its Process Simulation technologies through a combination of techniques including its existing direct sales channel, sales agents, and strategic alliance partners.

Competitive Advantages.

The Company believes that it is in a strong position to compete in the Simulation markets based upon the following strengths:

♦ Technical and Applications Expertise. GSE is a leading innovator and developer of real-time software with more than 30 years of experience producing high fidelity real-time simulators. As a result, the Company has acquired substantial applications expertise in the energy and industrial process industries. The Company employs a highly educated and experienced multinational workforce of 178 employees, including approximately 130 engineers and scientists. Approximately 48% these engineers and scientists have advanced science and technical degrees in fields such as chemical, mechanical and electrical engineering, applied mathematics and computer sciences.

♦ Proprietary Software Tools. GSE has 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 it or its customers to develop high fidelity real-time software quickly, accurately and at lower costs.

♦ Open System Architecture. GSE's software products and tools are executed on standard operating systems with third-party off-the-shelf hardware. The hardware and operating system independence of its software enhances the value of its products by permitting customers to acquire less expensive hardware and operating systems. The Company's products work in the increasingly popular Microsoft operating environment, allowing full utilization and integration of numerous off-the-shelf products for improved performance.

♦ Training Curricula. The Company has developed detailed course material in engineering fundamentals and specific industrial applications.

♦ International Strengths. Approximately 63% of the Company's 2008 revenue was derived from international sales of its products and services. GSE has a multinational sales force with offices located in Beijing, China, and Nyköping, Sweden and agents, representatives and partners in 20 other countries. To capitalize on international opportunities and penetrate foreign markets, the Company has established strategic alliances and partnerships with several foreign entities and universities.

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 eleven registered U.S. trademarks: RETACT®, GSE Systems®, THOR®, OpenSim®, SmartTutor®, SimSuite Pro®, ESmart®, GAARDS®, Openexec®, REMITS-Real-Time Emergency Management Interactive Training System® and SimExec® Some of these trademarks have also been registered in foreign countries. The Company also claims trademark rights to GFLOW+™, GLOGIC+™, GCONTROL+™, GPower+™, SimSuite Power™, Xtr I/S™, RACS™, PEGASUS Plant Surveillance and Diagnosis System™, SIMON™, BRUS™, Sens Base™, Vista PIN™, Application and Development Enviroment (JADE)™.

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.

Industries Served.

The following chart illustrates the approximate percentage of the Company's 2008, 2007, and 2006 consolidated revenue by industries served:

	2008	2007	2006
Nuclear power industry	54%	45%	60%
Fossil fuel power industry	31%	20%	18%
Training and education industry	6%	31%	21%
Other	9%	4%	1%
Total	100%	100%	100%

Contract Backlog.

The Company does not reflect an order in backlog until it has received a contract that specifies the terms and milestone delivery dates. As of December 31, 2008, the Company's aggregate contract backlog totaled approximately $38.1 million of which approximately $20.1 million or 53% is expected to be converted to revenue by December 31, 2009. As of December 31, 2007, the Company's aggregate contract backlog totaled approximately $24.6 million.

Employees.

As of December 31, 2008, the Company had 178 employees as compared to 153 employees at December 31, 2007.

ITEM 1A. RISK FACTORS.

The following discussion of risk factors contains "forward-looking statements," as discussed on pages 3 and 4 of this Annual Report on Form 10-K. These risk factors may be important to understanding any statement in this Annual Report on Form 10-K or elsewhere. The Company believes that the following risk factors may cause the market price for its 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. 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.

We routinely encounter and address risks, some of which may cause our future results to be different, sometimes materially, than we presently anticipate. Discussion about important operational risks that we encounter can be found in Item 1, Business and Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations. We have described certain important strategic risks below. Our reactions as well as our competitors' reactions to material future developments may affect our future results.

The Company's global growth is subject to a number of economic and political risks.

The Company conducts its operations in North America, Europe, Asia and the Middle East. Global economic developments affect businesses such as GSE, and the Company's operations are subject to the effects of global competition. The Company's global business is affected by local economic environments, including inflation, recession and currency volatility. Political changes, some of which may be disruptive, can interfere with the Company's supply chain, its customers and all of its activities in a particular location. While some of these risks can be hedged using derivatives or other financial instruments and some are insurable, such attempts to mitigate these risks are costly and not always successful. The current global recession has not yet had a material impact on the Company's business. The Company's backlog as of December 31, 2008 totaled $38.1 million, a 54.9% increase over the Company's backlog at December 31, 2007. The Company has seen no significant delays or cancellations to the projects it is currently working on and is unaware of any significant delays or cancellations to projects that the Company expects to secure in 2009. However, as the recession continues, we may see a significant impact on the Company's operations.

The Company's expense levels are based upon its expectations as to future revenue, so it may be unable to adjust spending to compensate for a revenue shortfall. Accordingly, any revenue shortfall would likely have a disproportionate effect on the Company's operating results.

The Company's revenue was $29.0 million, $31.9 million, and $27.5 million for the years ended December 31, 2008, 2007 and 2006, respectively. The Company's operating income (loss) was $(12,000), $2.2 million and $2.1 million for the years ended December 31, 2008, 2007, and 2006, respectively. The Company's 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 the Company and its competitors, and fluctuating global economic conditions. Since the Company's expense levels are based in part on its expectations as to future revenue and includes certain fixed costs, the Company 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 operating results.

Risk of International Sales and Operations.

Sales of products and services to end users outside the United States accounted for approximately 63% of the Company's consolidated revenue in 2008, 71% of consolidated revenue in 2007, and 74% of consolidated revenue in 2006. The Company anticipates that international sales and services will continue to account for a significant portion of its revenue in the foreseeable future. As a result, the Company may be subject to certain risks, including risks associated with the application and imposition of protective legislation and regulations relating to import or export (including export of high technology products) or otherwise resulting from trade or foreign policy and risks associated with exchange rate fluctuations. Additional risks include potentially adverse tax consequences, tariffs, quotas and other barriers, potential difficulties involving the Company's strategic alliances and managing foreign sales agents or representatives and potential difficulties in accounts receivable collection. The Company currently sells products and provides services to customers in emerging market economies. The following emerging markets have provided more than 10% of the Company's revenue for the indicated period:

	Year Ended December 31,		
	2008	2007	2006
Peoples' Republic of China	15%	4%	0%
Russian Federation	4%	9%	12%
United Arab Emirates	4%	31%	12%

The Company has taken steps designed to reduce the additional risks associated with doing business in these countries, but the Company believes that such risks may still exist and include, among others, general political and economic instability, lack of currency convertibility, as well as uncertainty with respect to the efficacy of applicable legal systems. There can be no assurance that these and other factors will not have a material adverse effect on the Company's business, financial condition or results of operations.

The Company's business is largely dependent on sales to the nuclear power industry. Any disruption in this industry would have a material adverse effect upon the Company's revenue.

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In 2008, 54% of GSE's revenue was from customers in the nuclear power industry (45% in 2007 and 60% in 2006). The Company expects to derive a significant portion of its revenue from customers in the nuclear power industry for the foreseeable future. The Company's 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, and general economic conditions.

The Company's line of credit agreement imposes operating and financial restrictions on the Company which may prevent it from capitalizing on business opportunities.

GSE's line of credit agreement with Bank of America (BOA) imposes operating and financial restrictions. These restrictions affect, and in certain cases limit, among other things, the Company's ability to:

- incur additional indebtedness and liens;
- make investments and acquisitions;
- consolidate, merge or sell all or substantially all of its assets.

There can be no assurance that these restrictions will not adversely affect the Company's ability to finance its future operations or capital needs or to engage in other business activities that may be in the interest of stockholders. At December 31, 2008, the Company was in default on two of its financial covenants; however, it has received a written waiver from BOA. The Company's available borrowing base under the two lines of credit was $3.2 million at December 31, 2008, of which $105,000 had been utilized to collateralize a standby letter of credit.

The Company is dependent on product innovation and research and development, which costs are incurred prior to revenue for new products and improvements.

The Company believes that its success will depend in large part on its ability to maintain and enhance its current product line, develop new products, maintain technological competitiveness and meet an expanding range of customer needs. The Company's product development activities are aimed at the development and expansion of its library of software modeling tools, the improvement of its display systems and workstation technologies, and the advancement and upgrading of its simulation technology. The life cycles for software modeling tools, graphical user interfaces, and simulation technology are variable and largely determined by competitive pressures. Consequently, the Company will need to continue to make significant investments in research and development to enhance and expand its capabilities in these areas and to maintain its competitive advantage.

The Company relies upon its intellectual property rights for the success of its business; however, the steps it has taken to protect its intellectual property may be inadequate.

Although the Company believes that factors such as the technological and creative skills of its personnel, new product developments, frequent product enhancements and reliable product maintenance are important to establishing and maintaining a technological leadership position, the Company's business depends, in part, on its intellectual property rights in its proprietary technology and information. The Company relies upon a combination of trade secret, copyright, and trademark law, contractual arrangements and technical means to protect its intellectual property rights. The Company enters into confidentiality agreements with its employees, consultants, joint venture and alliance partners, customers and other third parties that are granted access to its proprietary information, and limits access to and distribution of its proprietary information. There can be no assurance, however, that the Company has protected or will be able to protect its proprietary technology and information adequately, that the unauthorized disclosure or use of the Company's proprietary information will be prevented, that others have not or will not develop similar technology or information independently, or, to the extent the Company owns 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 the Company's products are sold do not protect the Company's products and intellectual property rights to the same extent as the laws of the United States.

The industries in which GSE operates are highly competitive. This competition may prevent the Company from raising prices at the same pace as its costs increase.

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

GSE may pursue new acquisitions and joint ventures, and any of these transactions could adversely affect its operating results or result in increased costs or related issues.

The Company intends to pursue new acquisitions and joint ventures, a pursuit which could consume substantial time and resources. Identifying appropriate acquisition candidates and negotiating and consummating acquisitions can be a lengthy and costly process. The Company may also encounter substantial unanticipated costs or other related issues such as compliance with new regulations and regulatory schemes, additional oversight, elimination of redundancy, and increased employee benefit costs associated with the acquired businesses. The risks inherent in this strategy could have an adverse impact on the Company’s results of operation or financial condition.

The nuclear power industry, the Company’s largest customer group, is associated with a number of hazards which could create significant liabilities for the Company.

The Company’s business could expose it to third party claims with respect to product, environmental and other similar liabilities. Although the Company has sought to protect itself 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 the Company’s products and services are used by the nuclear power industry primarily in operator training. Although the Company’s contracts for such products and services typically contain provisions designed to protect the Company from potential liabilities associated with such use, there can be no assurance that the Company would not be materially adversely affected by claims or actions which may potentially arise.

The use of derivative instruments by the Company in the normal course of business could result in financial losses that negatively impact the Company’s net income.

GSE 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 could recognize financial losses as a result of volatility in the market values of these contracts or if a counterparty fails to perform. The Company minimizes credit exposure by limiting counterparties to internationally recognized financial institutions.

The Company, as a 10% owner of ESA, has provided a partial guarantee totaling $1.2 million for the credit facility that Union National Bank has extended to ESA. ESA is a start-up entity; if it is unable to generate sufficient cash flow from operations and defaults on its credit facility, GSE may have to provide up to $1.2 million to Union National Bank to cover ESA's obligations.

In May 2007, the Company deposited $1.2 million into a restricted, interest-bearing account at Union National Bank ("UNB") in the United Arab Emirates as a partial guarantee for the $11.8 million credit facility that UNB has extended to ESA. The guarantee will be in place until the expiration of the ESA credit facility on December 31, 2014 or earlier if ESA pays down and terminates the facility. Both of the other two owners of ESA, Al Qudra Holding PJSC and the Centre of Excellence for Applied Research and Training, both located in the United Arab Emirates, have each provided to UNB a bank guarantee for 100% of the $11.8 million ESA credit facility. In the event that ESA should default upon their UNB loan, UNB can utilize all or a portion of the guarantees that the three owners have provided to cover ESA's outstanding borrowings against the credit facility and accrued interest payable. Thus, if such a default were to occur, GSE may incur a loss of up to $1.2 million.

In January 2006, the Company received a $15.1 million contract from ESA to supply five simulators and an integrated training program. The Company received change orders totaling $1.8 million from ESA which increased the total order value to $16.9 million. Under the terms of the contract, the Company provided a $2.1 million performance bond to ESA that will remain outstanding until September 30, 2009, the end of the contract warranty period.

The Company has provided a cash-collateralized standby letter of credit to ESA which can be drawn upon by ESA in the event the Company fails to cure a material breach of the contract within 30 days of receiving written notice from ESA regarding the nature of the breach. The project is currently in the one-year warranty period which ends on September 30, 2009, and the Company expects no such material breach, however, if ESA were to draw upon the standby letter of credit, GSE would incur a loss of up to $2.1 million.

The Company accounts for its investment in ESA using the equity method. Accordingly, the Company will record 10% of ESA's net income (loss) as an adjustment of its investment.

As ESA is a start-up entity (it had its formal opening on January 14, 2009), it is likely that it will incur net losses for some period of time. Under the equity method, the Company is required to record 10% of such losses as a charge to other income (expense) and as a reduction of its investment in ESA; in 2008 and 2007 the Company recorded an equity loss of $213,000 and $54,000, respectively. At December 31, 2008 and 2007, the Company's investment in ESA totaled $718,000 and $445,000. Depending on ESA's future performance, the Company may be required to impair a portion or all of this investment.

The Company is subject to a wide variety of laws and regulations.

The Company’s 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 the Company to modify its 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. The Company’s business and the industries in which it operates 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.

ITEM 1B. UNRESOLVED STAFF COMMENTS.

None.

ITEM 2. PROPERTIES.

The Company is headquartered in a facility in Eldersburg, Maryland (approximately 36,000 square feet). The lease for this facility expires on June 30, 2018.

In addition, the Company leases office space domestically in St. Marys and Atlanta, Georgia and Tarrytown, New York and internationally in Beijing, China and Nyköping, Sweden. The Company leases these facilities for terms ending between 2009 and 2011.

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. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS.

No matter was submitted to a vote of security holders during the quarter ended December 31, 2008.

PART II

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

The Company’s common stock is listed on the 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 American Stock Exchange for each full quarterly period within the two most recent fiscal years:

2008

Quarter	High	Low
First	$ 10.75	$ 7.66
Second	$ 9.22	$ 7.08
Third	$ 9.20	$ 6.90
Fourth	$ 6.99	$ 4.71

2007

Quarter	High	Low
First	$ 8.42	$ 5.82
Second	$ 7.55	$ 6.17
Third	$ 7.41	$ 6.15
Fourth	$ 12.00	$ 6.75

The following table sets forth the equity compensation plan information for the year ended December 31, 2008:

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	1,705,967	$4.25	604,888
Equity compensation plans not approved by security holders	--	$ --	--
Total	1,705,967	$4.25	604,888

There were approximately 79 holders of record of the common stock as of December 31, 2008. 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.

At a special shareholder's meeting on December 13, 2007, the Company's shareholders approved an amendment to the Certificate of Incorporation increasing GSE's authorized common stock by 12 million shares to a total of 30 million shares.

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.

On February 28, 2006, the Company raised $3.9 million, net of associated fees of $395,000, through the sale of 42,500 shares of Series A Cumulative Convertible Preferred Stock and Warrants by means of a private placement to "accredited investors", as that term is used in rules and regulations of the Securities and Exchange Commission. The Convertible Preferred Stockholders were entitled to an 8% cumulative dividend, payable on a semiannual basis every June 30 and December 30. In 2006, the Company paid dividends totaling $279,000 to the preferred stockholders; in 2007 the Company paid dividends totaling $49,000. At any time after March 1, 2007, the Company had the right to

convert the Preferred Stock into shares of GSE common stock when the average of the current stock price during the twenty trading days immediately prior to the date of such conversion exceeded 200% of the Series A Conversion Price. On March 7, 2007, the Company sent notice to the holders of the remaining 20,000 outstanding shares of its Preferred Stock that the average current stock price for the prior twenty trading days had exceeded 200% of the Conversion Price, and that the Company was converting the outstanding Preferred Stock into common stock. The 20,000 shares of Preferred Stock converted to 1,129,946 shares of GSE common stock. Prior to March 7, 2007, the holders of 22,500 shares of Preferred Stock had already elected to convert their Preferred Stock into a total of 1,271,187 shares of Common Stock; 8,580 shares of Preferred Stock were converted in 2006, and 13,920 shares of Preferred Stock were converted in 2007.

On June 22, 2007, the Company raised $9.2 million, net of associated fees of $768,000, through the sale of 1,666,667 shares (the "Shares") of its common stock, $.01 par value per share, by means of a private placement to selected institutional investors. Each investor received a five-year warrant to purchase GSE common stock (the "Warrant Shares") equal to 10% of the shares of common stock that each investor purchased at an exercise price of $6.00 per share (the "Warrants"). In aggregate, the Company issued Warrants to purchase a total of 166,667 shares of GSE common stock.

The Company filed its registration statement on Form S-3 with the Securities and Exchange Commission (the "Commission") on July 16, 2007 covering the offer and sale, from time to time, of the Shares, the Warrant Shares and shares of common stock issuable upon exercise of warrants that may be issued as liquidated damages under the terms of a certain registration rights agreement entered into between the Company and the investors (the "Registration Rights Agreement") in connection with the private placement. The Registration Statement became effective on August 8, 2007 and, pursuant to the provisions of the Registration Rights Agreement, the Company is obligated to use commercially reasonable efforts to, after the date on which the Registration Statement becomes effective, cause the Registration Statement to remain continuously effective as to all Shares and Warrant Shares, other than for an aggregate of more than 30 consecutive trading days or for more than an aggregate of 60 trading days in any 12-month period. In the event of a default of the foregoing obligation, the Company will be required to issue to the investors, as liquidated damages, on the date the foregoing default occurs and each monthly anniversary thereafter, a number of warrants (on the same terms as the Warrants) equal to 2% of the number of Shares then held by such investor, not to exceed 10% of the total number of Shares then held by such investor, and thereafter cash, in an amount equal to 2% of the aggregate purchase price paid by the investors, not to exceed 30% of the aggregate purchase price paid by the investors.

At the date of issuance, the fair value of the Warrants was $510,000 and the fair value of the Shares was $9.5 million. The fair value of the Warrants and the Shares was determined by the use of the relative fair value method, in which the $10.0 million gross proceeds was allocated based upon the fair values of the Warrants, as determined by using the Black-Scholes Model, and the Shares, as determined by the closing price of the common stock on the American Stock Exchange on the date the transaction was closed.

The Company paid the placement agent for the Shares and Warrants 6% of the gross proceeds received by the Company from the offering ($600,000). In addition to the placement agent fee, the Company paid $168,000 of other transaction fees related to the offering.

The proceeds were used to pay down the Company's line of credit and for other working capital purposes.

The following graph compares the Company's cumulative total shareholder return since January 1, 2003 through December 31, 2008 with that of the American Stock Exchange- US & Foreign Index and a peer group index. The Peer Group consists of companies selected on a line-of-business basis and includes Aspen Technology, Inc., L-3 Communications Holdings and Honeywell International. In previous years, GenSym Corporation was included in the Peer Group, however, it was acquired by privately held Versata Enterprises, Inc. on August 10, 2007. Accordingly, we have replaced GenSym Corporation with L-3 Communications Holdings. The graph assumes an initial investment of $100 on January 1, 2004 in the Company's common stock and each index. There were no dividends declared or paid by the Company during the five year period. The Company has never paid a dividend on its common stock. The indices are re-weighted daily, using the market capitalization on the previous tracking day. The comparisons shown in the graph below are based upon historical data. The stock price performance shown in the graph below is not necessarily indicative of, or intended to forecast, the potential future performance of the Company's common stock. The graph was prepared for the Company by Morningstar, Inc.

	12/31/2003	12/31/2004	12/30/2005	12/29/2006	12/31/2007	12/31/2008
GSE Systems, Inc.	100.00	150.00	68.89	369.50	568.89	327.78
Peer Group Index	100.00	112.77	120.28	146.67	201.63	115.62
Amex Market Index	100.00	114.51	126.29	141.39	158.74	94.93

Sales of Unregistered Securities

The Company's sales of unregistered securities during the past three years are described in Item 5 above.

ITEM 6. SELECTED FINANCIAL DATA.

Historical consolidated results of operations and balance sheet data presented below have been derived from the historical financial statements of the Company. This information should be read in connection with the Company's consolidated financial statements.

(in thousands, except per share data)	Years ended December 31,				
	2008	2007	2006	2005	2004
Consolidated Statements of Operations:					
Contract revenue	$ 29,004	$ 31,900	$ 27,502	$ 21,950	$ 29,514
Cost of revenue	21,187	22,217	19,602	18,603	22,715
Gross profit	7,817	9,683	7,900	3,347	6,799
Operating expenses:					
Selling, general and administrative	7,383	7,214	4,929	6,958	5,543
Administrative charges from GP Strategies	-	-	685	685	974
Depreciation	446	258	186	431	280
Total operating expenses	7,829	7,472	5,800	8,074	6,797
Operating income (loss)	(12)	2,211	2,100	(4,727)	2
Interest income (expense), net	130	(433)	(764)	(416)	(176)
Loss on extinguishment of debt	-	-	(1,428)	-	-
Gain (loss) on derivative instruments	(453)	(11)	(24)	(170)	203
Other income (expense), net	(226)	(555)	(81)	667	113
Income (loss) from continuing operations before income taxes	(561)	1,212	(197)	(4,646)	142
Provision for income taxes	129	43	149	149	60
Income (loss) from continuing operations	(690)	1,169	(346)	(4,795)	82
Income on sale of discontinued operations, net of income taxes	-	-	-	-	36
Net income (loss)	$ (690)	$ 1,169	$ (346)	$ (4,795)	$ 118
Basic income (loss) per common share (1)	$ (0.04)	$ 0.09	$ (0.07)	$ (0.53)	$ 0.01
	$ (0.04)	$ 0.08	$ (0.07)	$ (0.53)	$ 0.01

Diluted income (loss) per common share (1)					
Weighted average common shares outstanding:					
-Basic	15,747	12,927	9,539	8,999	8,950
-Diluted	15,747	14,818	9,539	8,999	9,055

	As of December 31,				
	2008	2007	2006	2005	2004
Balance Sheet data:					
Working capital (deficit)	$ 13,888	$ 14,711	$ 1,463	$ (925)	$ 2,175
Total assets	31,015	28,364	18,448	11,982	14,228
Long-term liabilities	906	695	251	1,567	19
Stockholders' equity	20,700	20,365	7,361	897	5,945

(1) In 2006, $279,000 preferred stock dividends were added to net loss to arrive at net loss attributed to common shareholders.
In 2007, $49,000 preferred stock dividends were deducted from net income to arrive at net income attributed to common shareholders.

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

On June 21, 2005, the Board of Directors of GP Strategies Corporation ("GP Strategies") approved plans to spin-off its 57% interest in GSE through a special dividend to the GP Strategies' stockholders. On September 30, 2005, the GP Strategies' stockholders received 0.283075 share of GSE common stock for each share of GP Strategies common stock or Class B stock held on the record date of September 19, 2005. Following the spin-off, GP Strategies ceased to have any ownership interest in GSE. GP Strategies continued to provide corporate support services to GSE, including accounting, finance, human resources, legal, network support and tax pursuant to a Management Services Agreement which expired on December 31, 2006.

On March 28, 2008, the Company entered into two separate revolving line of credit agreements for two-year revolving lines of credit with Bank of America, N.A. ("BOA"), in an aggregate amount of up to $5.0 million. The Company and its subsidiary, GSE Power Systems, Inc., are jointly and severally liable as co-borrowers. The credit facilities are collateralized by substantially all of the Company's assets and enable the Company to borrow funds to support working capital needs and standby letters of credit. The first line of credit in the principal amount of up to $3.5 million enables the Company to borrow funds up to 90% of eligible foreign accounts receivable, plus 75% of eligible unbilled foreign receivables and 100% of the cash collateral pledged to BOA on outstanding warranty standby letters of credit. This line of credit is 90% guaranteed by the Export-Import Bank of the United States. The interest rate on this line of credit is based on the daily LIBOR rate plus 150 basis points, with interest only payments due monthly. The second line of credit in the principal amount of up to $1.5 million enables the Company to borrow funds up to 80% of domestic accounts receivable and 30% of domestic unbilled receivables. The interest rate on this line of credit is based on the daily LIBOR rate plus 225 basis points, with interest only payments due monthly. The credit facilities require the Company to comply with certain financial ratios and preclude the Company from making acquisitions beyond certain limits without the bank's consent. At December 31, 2008, the Company was in default on two of its financial covenants; however, it has received a written waiver from BOA. The Company's available borrowing base under the two lines of credit was $3.2 million at December 31, 2008, of which $105,000 had been utilized as collateral for a standby letter of credit.

Critical Accounting Policies and Estimates.

As further discussed in Note 2 to the consolidated financial statements, in preparing the Company's 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 on Long-Term Contracts. The majority of the Company's revenue is derived through the sale of uniquely designed systems containing hardware, software and other materials under fixed-price contracts. In accordance with Statement of Position 81-1, Accounting for Performance of Construction-Type and Certain Production-Type Contracts, the revenue under these fixed-price contracts is accounted for on 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. There were no claims outstanding as of December 31, 2008.

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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 software embedded in the systems.

The Company's system design contracts do not normally provide for "post customer support service" (PCS) in terms of software upgrades, software enhancements or telephone support. In order to obtain PCS, the customers normally must purchase a separate contract. Such PCS arrangements are generally for a one-year period renewable annually and include customer support, unspecified software upgrades, and maintenance releases. The Company recognizes revenue from these contracts ratably over the life of the agreements in accordance with Statement of Position 97-2, Software Revenue Recognition.

Revenue from the sale of software licenses 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.

Revenue for contracts with multiple elements is recognized in accordance with Emerging Issues Task Force Issue 00-21, Accounting for Revenue Arrangements with Multiple Deliverables.

Revenue from certain consulting or training contracts is recognized on a time-and-material basis. For time-and-material type contracts, revenue is recognized based on hours incurred at a contracted labor rate plus expenses.

Capitalization of Computer Software Development Costs. In accordance with Statement of Financial Accounting Standards (SFAS) No. 86, Accounting for the Costs of Computer Software to Be Sold, Leased, or Otherwise Marketed, 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 normally ranges from three to five years. As of December 31, 2008, the Company has net capitalized software development costs of $1.5 million. On an annual basis, and more frequently as conditions indicate, the Company assesses the recovery of the unamortized software computer 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 sheet.

Deferred Income Tax Valuation Allowance. Deferred income taxes arise from temporary differences between the tax bases of assets and liabilities and their reported amounts in the financial statements. As required by SFAS No. 109, Accounting for Income Taxes, 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. As of December 31, 2008, the Company's largest deferred tax asset related to a U.S. net operating loss carryforward of $17.9 million which expires in various amounts between 2017 and 2028. 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. Thus, a portion of the Company's loss carryforward may expire unutilized. We believe that the Company will achieve profitable operations in future years that will enable the Company to recover the benefit of its net deferred tax assets. However, other than a portion of the net deferred tax assets that are related to the Company's Swedish subsidiary, the recovery of the net deferred tax asset could not be substantiated by currently available objective evidence. Accordingly, the Company has established an $8.3 million valuation allowance for its net deferred tax assets.

Results of Operations.

The following table sets forth the results of operations for the periods presented expressed in thousands of dollars and as a percentage of contract revenue.

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($ in thousands)	Years ended December 31,								
		2008	%		2007	%		2006	%
Contract revenue	$	29,004	100.0%	$	31,900	100.0%	$	27,502	100.0%
Cost of revenue		21,187	73.1%		22,217	69.6%		19,602	71.3%
Gross profit		7,817	26.9%		9,683	30.4%		7,900	28.7%
Operating expenses:									
Selling, general and administrative		7,383	25.4%		7,214	22.6%		4,929	17.9%
Administrative charges from GP Strategies		-	0.0%		-	0.0%		685	2.5%
Depreciation		446	1.5%		258	0.8%		186	0.7%
Total operating expenses		7,829	26.9%		7,472	23.4%		5,800	21.1%
Operating income (loss)		(12)	(0.0)%		2,211	7.0%		2,100	7.6%
Interest income (expense), net		130	0.4%		(433)	(1.4)%		(764)	(2.8)%
Loss on extinguishment of debt		-	0.0%		-	0.0%		(1,428)	(5.2)%
Loss on derivative instruments		(453)	(1.6)%		(11)	0.0%		(24)	(0.1)%
Other expense, net		(226)	(0.8)%		(555)	(1.8)%		(81)	(0.2)%
Income (loss) before income taxes		(561)	(2.0)%		1,212	3.8%		(197)	(0.7)%
Provision for income taxes		129	0.4%		43	0.1%		149	0.6%
Net income (loss)	$	(690)	(2.4)%	$	1,169	3.7%	$	(346)	(1.3)%

Comparison of the Years Ended December 31, 2008 to December 31, 2007.

Contract Revenue. Contract revenue for the year ended December 31, 2008 totaled $29.0 million, which was 9.1% lower than the $31.9 million total revenue for the year ended December 31, 2007. The decrease mainly reflects the completion of the $16.9 million ESA contract in 2008. For the year ended December 31, 2008 and 2007, the Company recognized $1.2 million and $9.9 million, respectively of contract revenue on the ESA project, which accounted for 4.2% and 31.1%, respectively, of the Company's consolidated revenue. The decrease in revenue from the ESA project was partially offset by an increase in the Company's fossil fueled power simulation revenue, which totaled $9.2 million in the year ended December 31, 2008 versus $6.5 million in the year ended December 31, 2007. In the year ended December 31, 2008, the Company recorded total orders of $44.0 million versus $37.8 million in the year ended December 31, 2007. At December 31, 2008, the Company's backlog was $38.1 million, a 54.9% increase from the Company's backlog at December 31, 2007.

Gross Profit. Gross profit totaled $7.8 million for the year ended December 31, 2008 versus $9.7 million for the year ended December 31, 2007. As a percentage of revenue, gross profit decreased from 30.4% for the twelve months ended December 31, 2007 to 26.9% for the twelve months ended December, 31 2008. The decrease in gross margin reflects the lower revenue generated by the Company's higher margined ESA contract and the lower revenue base to recover the Company's relatively fixed overhead.

Selling, General and Administrative Expenses. Selling, general and administrative ("SG&A") expenses totaled $7.4 million and $7.2 million for the years ended December 31, 2008 and 2007, respectively. Fluctuations in the components of SG&A spending were as follows:

- Business development and marketing costs increased from $2.6 million for the year ended December 31, 2007 to $2.9 million in the year ended December 31, 2008. The spending increase mainly reflects a $120,000 increase in business development labor and benefit costs, a $115,000 increase in business development travel expenses, the cost of participating in the first quarter 2008 Society in Computer Simulation trade show ($27,000) and the cost of the Company's September 2008 Simworld user's conference in Beijing, China ($75,000). These increases were partially offset by a $51,000 decrease in bidding and proposal costs, which are the costs of operations personnel in assisting with the preparation of contract proposals.

- The Company's general and administrative expenses totaled $4.2 million for the year ended December 31, 2008 versus $4.1 million for the year ended December 31, 2007. The increase mainly reflects the relocation expenses incurred in the move of the Company's headquarters to Eldersburg, Maryland in July 2008 and increased utility costs due to the additional space in the new headquarters.

- Gross spending on software product development ("development") totaled $907,000 in the year ended December 31, 2008 as compared to $1.2 million in the same period of 2007. For the year ended December 31, 2008, the Company expensed $316,000 and capitalized $591,000 of its development spending and expensed $514,000 and capitalized $673,000 of its development spending in the year ended December 31, 2007. The Company's capitalized development expenditures in 2008 were mainly related to the customization of RELAP5-RT software (which simulates transient fluid dynamics, neutronics and heat transfer in nuclear power plants) to run on the Company's real-time executive software and the enhancement to JCAD to add the capability to convert AutoCAD Control Logic Diagrams to the Company's JControl modeling tool. The Company anticipates that its total gross development spending in 2009 will approximate $900,000.

Depreciation. Depreciation expense totaled $446,000 and $258,000 for the years ended December 31, 2008 and 2007, respectively. The higher 2008 depreciation expense reflects the increase in 2007 capital spending which totaled $778,000, a 320% increase as compared to the capital spending in 2006. Approximately 50% of the capital spending in 2007 was for furniture and computer equipment for the training centers that the Company established at Georgia Tech University and Strathclyde University; the balance was for computers, printers, servers and software. Capital spending in the year ended December 31, 2008 totaled $706,000. Of the 2008 capital spending, $355,000 was related to the Company's move to its new headquarters in Eldersburg, Maryland.

Operating Income. The Company had operating loss of $12,000 (0.0% of revenue) in the year ended December 31, 2008, as compared with operating income of $2.2 million (7.0% of revenue) for the year ended December 31, 2007. The variances were due to the factors outlined above.

Interest Income (Expense), Net. For the year ended December 31, 2008, the Company's interest income, net totaled $130,000 while for the year ended December 31, 2007, the Company had net interest expense of $433,000.

In June 2007, using a portion of the proceeds from the Company's June 2007 common stock and warrant transaction, the Company paid off the outstanding balance of its Laurus Master Fund Ltd. line of credit and did not borrow against this line of credit in 2008. On March 6, 2008, the Laurus line of credit expired. The Company incurred interest expense of $0 and $107,000 on borrowings from the Laurus line of credit in the years ended December 31, 2008 and 2007, respectively.

On March 28, 2008, the Company entered into two separate revolving line of credit agreements for two-year revolving lines of credit with Bank of America ("BOA") in an aggregate amount of up to $5.0 million. One line of credit is in the principal amount of up to $3.5 million and is guaranteed by the U.S. Export-Import Bank. The other line of credit is in the principal amount of up to $1.5 million. The Company has not borrowed any funds against either BOA line of credit since the closing and incurred no interest expense from the credit facility in 2008. However, at December 31, 2008, $105,000 of the credit facility was utilized as collateral for a standby letter of credit.

The deferred financing costs incurred in conjunction with the Laurus Master Fund line of credit were amortized over the two-year period of the line of credit, with the final amortization expense recorded in February 2008. Such amortization expense totaled $89,000 in the year ended December 31, 2008. This compares to amortization expense of $533,000 in the year ended December 31, 2007. Amortization of the deferred financing costs incurred in conjunction with the BOA lines of credit began in April 2008; amortization expense totaled $53,000 in the year ended December 31, 2008.

Interest income earned on short-term investments of the Company's operating cash totaled $67,000 for the year ended December 31, 2008 versus $96,000 in the year ended December 31, 2007.

At December 31, 2008, the Company has approximately $2.9 million of cash in Certificates of Deposit with BOA that are being used as collateral for four performance bonds. At December 31, 2007, the Company had approximately $2.9 million of cash in Certificates of Deposit being used as collateral for six performance bonds. The Company earned approximately $132,000 and $104,000 in interest income on the Certificates of Deposit in the years ended December 31, 2008 and 2007, respectively.

In May 2007, the Company deposited $1.2 million into a restricted, interest-bearing account at the Union National Bank in the United Arab Emirates as a partial guarantee for the $11.8 million credit facility that UNB has extended to ESA. GSE recorded approximately $48,000 and $36,000 interest income in the years ended December 31, 2008 and 2007, respectively.

The Company had other interest income in the year ended December 31, 2008 of $25,000 and other interest expense of $29,000 in the year ended December 31, 2007.

Loss on Derivative Instruments. 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. As of December 31, 2008, the Company had foreign exchange contracts for sale of approximately 2 million Pounds Sterling, 4 million Euro, and 68 million Japanese Yen at fixed rates. The contracts expire on various dates through February 2014. The Company had not designated the contracts as hedges and has recognized a loss on the change in the estimated fair value of the contracts of $174,000 for the twelve months ended December 31, 2008. The estimated fair value of the contracts at December 31, 2008 was a net liability of $58,000 and was recorded on the balance sheet as follows:

(in thousands)	December 31, 2008
Prepaid expenses and other current assets	$ 14
Other assets	537
Other current liabilities	(426)
Other liabilities	(183)
Net fair value	$ (58)

The foreign currency denominated trade receivables and unbilled receivables that are related to the outstanding foreign exchange contracts at December 31, 2008 are remeasured at the end of each period into the functional currency using the current exchange rate at the end of the period. For the twelve months ended December 31, 2008, the Company incurred a $279,000 loss from the remeasurement of such trade and unbilled receivables.

At December 31, 2007, the Company had foreign exchange contracts for the sale of approximately 36 million Japanese Yen and 125,000 Pounds Sterling at fixed rates. The contracts expired on various dates through January 2008. The Company had not designated the contracts as hedges and recognized a loss on the change in the estimated fair value of the contracts of $11,000 for the twelve months ended December 31, 2007. The estimated fair value of the contracts was $1,000 at December 31, 2007 and was recorded on the balance sheet under other current assets.

Other Expense, Net. For the years ended December 31, 2008 and 2007, other expense, net was $226,000 and $555,000, respectively. The major components of other expense, net include the following items:

The Company accounts for its investment in ESA using the equity method. In accordance with the equity method, the Company has eliminated 10% of the profit from this contract as the training simulators are assets that will be recorded on the books of ESA, and the Company is thus required to eliminate its proportionate share of the profit included in the asset value. The profit elimination totaled $28,000 and $444,000 for the years ended December 31, 2008 and 2007, respectively.

For the years ended December 31, 2008 and 2007, the Company recognized a $213,000 and $54,000 equity loss, respectively, on its investment in ESA.

The Company had other miscellaneous income in the year ended December 31, 2008 of $15,000 and other miscellaneous expense of $57,000 in the year ended December 31, 2007.

Provision for Income Taxes. In July 2006, the Financial Accounting Standards Board, or FASB, issued Interpretation, or FIN, No. 48, Accounting for Uncertainty in Income Taxes — An Interpretation of FASB Statement No. 109, “Accounting for Income Taxes”. FIN No. 48 clarifies the accounting for uncertainty in income taxes recognized in the Company’s financial statements. It also prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of tax positions taken or expected to be taken in a tax return. This interpretation also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods and expanded disclosure with respect to uncertainty in income taxes. The Company adopted the guidance of FIN No. 48 effective January 1, 2007. The adoption of this accounting pronouncement did not have a material effect on the Company’s financial position, results of operations or cash flows. Furthermore, the Company is not aware of any tax positions for which it is reasonably possible that the total amounts of unrecognized tax benefits would significantly decrease or increase within the next twelve months.

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The Company files 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 from years 1997 and forward and is subject to foreign tax examinations by tax authorities for years 2003 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.

As of December 31, 2008, there have been no material changes to the liability for uncertain tax positions.

The Company’s tax provision in 2008 was $129,000 and consisted of $226,000 foreign income tax withholding on several non-U.S. contracts, $10,000 state income taxes, and $19,000 foreign income taxes incurred by the Company’s foreign subsidiaries. The income tax expense was partially offset by a $126,000 credit from the reduction of the valuation allowance against the net deferred tax assets of the Company’s Swedish subsidiary.

The Company has a full valuation allowance on its net deferred tax assets at December 31, 2008, with the exception of the net deferred tax assets of its Swedish subsidiary which are expected to be realized in 2009.

Comparison of the Years Ended December 31, 2007 to December 31, 2006.

Contract Revenue. For the year ended December 31, 2007, contract revenue totaled $31.9 million, a 16.0% increase from the $27.5 million for the year ended December 31, 2006. The increase is mainly attributable to the $15.1 million ESA contract received in January 2006. Change orders totaling $1.8 million were received from ESA increasing the total order value to $16.9 million. For the twelve months ended December 31, 2007 and 2006, the Company recognized $9.9 million and $5.7 million, respectively, of contract revenue on this project. Total orders received in 2007 were $37.8 million versus $33.5 million in 2006. At December 31, 2007, the Company’s backlog was approximately $24.6 million, of which $1.1 million related to the ESA contract.

Gross Profit. Gross profit totaled $9.7 million for the year ended December 31, 2007 versus $7.9 million for the year ended December 31, 2006. As a percentage of revenue, gross profit increased from 28.7% for the twelve months ended December 31, 2006 to 30.4% for the twelve months ended December, 31 2007. The increase in gross profit percentage mainly reflects the higher proportion of revenue from the ESA project in 2007.

Selling, General and Administrative Expenses. Selling, general and administrative (“SG&A”) expenses increased 46.4% from $4.9 million for the year ended December 31, 2006 to $7.2 million for the year ended December 31, 2007. The increase reflects the following spending variances:

♦ Business development and marketing costs increased from $2.1 million for the year ended December 31, 2006 to $2.6 million in the year ended December 31, 2007. In the latter part of 2006, the Company added additional business development personnel, plus the Company incurred higher bidding and proposal costs in 2007.

- ♦ The Company's general and administrative expenses totaled $4.1 million in the year ended December 31, 2007, which was 76.1% higher than the $2.3 million incurred in 2006. The increase is due to the following:

o The Management Services Agreement with GP Strategies was terminated on December 31, 2006. Under this agreement, General Physics (a GP Strategies subsidiary) provided corporate support services, including accounting, finance, human resources, legal, and network support. In conjunction with the reinstatement of these corporate services in-house, the Company hired several personnel, implemented a new financial system and contracted with outside vendors to provide payroll services and IT support and hosting services.

o In February 2007, the Board of Directors approved a new director compensation plan. In 2006, only the Audit Committee members received compensation; in 2007 all non-employee directors received compensation. In addition, the independent directors were awarded 10,000 stock options each on February 6, 2007. The options were valued using the Black-Scholes method, and the cost is being amortized over the three year vesting period. Accordingly, total director compensation expense increased by $202,000 in 2007 as compared to 2006.

o The Company established a two-man Advisory Committee to the Board of Directors which met once in the first quarter 2007. The Advisory Committee members are not affiliated with the Company or any of its subsidiaries. The Advisory Committee members receive a fee of $7,500 for each meeting that they attend.

o In May 2006, the Company hired an outside investor relations consulting firm. The firm received a monthly fee of $3,500 and a total of 50,000 shares of GSE common stock, with 2,778 shares earned as of the last day of each month during the 18-month consulting period. A certificate representing all 50,000 shares of GSE common stock was delivered to the investor relations consulting firm in October 2007. The fair value of the shares earned was determined using the closing AMEX price as of the last day of each month. In November 2007, this agreement was extended through April 2009, with a monthly fee of $5,000 and a total of 25,000 shares of GSE common stock, with 1,388 shares earned as of the last day of each month during the 18-month consulting period. Total compensation paid to the investor relations consulting firm, including the value of the earned shares of common stock, increased by $148,000 in 2007 versus 2006.

o In 2007, the Company hired an independent accounting firm to perform a study to determine whether an even triggering IRS Code Section 382 had occurred. Section 382 limits the amount of income that may be offset by net operating losses after an ownership change. The Company incurred $137,000 of expense related to this study and related costs in 2007.

o As of June 30, 2007, the Company's market capitalization exceeded $75 million. The Company hired an internal audit manager and hired its independent registered public accounting firm to perform an audit of the Company's internal controls over financial reporting as of December 31, 2007 as required by the Sarbanes-Oxley Act of 2002 ("SOX"). No such audit of the Company's internal controls over financial reporting was required in 2006. The Company incurred a total of $228,000 of expense related to SOX compliance in 2007.

- Gross spending on software product development ("development") totaled $1.2 million in the year ended December 31, 2007 as compared to $871,000 in 2006. For the year ended December 31, 2007, the Company expensed $514,000 and capitalized $673,000 of its development spending while in the year ended December 31, 2006, the Company expensed $538,000 and capitalized $333,000 of its development spending. The Company's capitalized development expenditures in 2007 were related to the development of a new graphic user interface ("GUI") for THEATRe, the replacement of the GUI for SimSuite Pro with JADE Designer, and the addition of new features to JADE Topmeret and Opensim.

Administrative Charges from GP Strategies. As noted above, the Company terminated its Management Services Agreement with GP Strategies on December 31, 2006. The Company was charged $685,000 by GP Strategies in the twelve months ended December 31, 2006.

Depreciation. For the year ended December 31, 2007 and 2006, depreciation expense totaled $258,000 and $186,000, respectively. The increase in depreciation expense reflects an increase in capital spending in the year ended December 31, 2007 as compared to the year ended December 31, 2006, $778,000 versus $185,000, respectively. Approximately 50% of the capital spending in 2007 was for furniture and computer equipment for the training centers that the Company established at Georgia Tech University and Strathclyde University; the balance was for computers, printers, servers and software.

Operating Income. The Company had operating income of $2.2 million and $2.1 million in the years ended December 31, 2007 and 2006, respectively. As a percentage of revenue, operating income decreased from 7.6% of revenue in 2006 to 7.0% in 2007. The decrease in operating income as a percentage of revenue was due to the factors outlined above.

Interest Expense, Net. For the year ended December 31, 2007, net interest expense totaled $433,000 as compared to net interest expense for the year ended December 31, 2006 of $764,000.

In June 2007, using the proceeds from the Company's June 2007 common stock and warrant transaction, the Company paid off the outstanding balance of its line of credit and did not borrow against the line of credit for the balance of 2007. For the years ended December 31, 2007 and 2006, interest expense on credit facility borrowings totaled $107,000 and $264,000, respectively.

Amortization of deferred financing costs related to the Company's line of credit increased from $200,000 for the year ended December 31, 2006 to $231,000 for the year ended December 31, 2007. The Company entered into its $5.0 million line of credit with Laurus Master Fund, Ltd. in March 2006.

Amortization of the cost of the warrants issued to Laurus in conjunction with the credit facility totaled $302,000 in 2007 versus $251,000 in 2006.

For the year ended December 31, 2006, the Company incurred interest expense of $26,000 on the Dolphin Note and original issue discount accretion related to the Dolphin Note and GSE Warrant of $58,000. The Company paid off the Dolphin Note in conjunction with the preferred stock transaction that was completed in February 2006.

The Company had approximately $2.9 million of cash in Certificates of Deposit that were being used as collateral for six performance bonds. The Company recognized $104,000 of interest income on these Certificates of Deposit in the year ended December 31, 2007. In the year ended December 31, 2006, the Company recognized $56,000 of interest income on its Certificates of Deposit.

Interest income earned on short-term investments of the Company's operating cash totaled $96,000 for the year ended December 31, 2007.

The Company deposited $1.2 million into a restricted, interest-bearing account at the Union National Bank in the United Arab Emirates as a partial guarantee for ESA's credit facility. The Company earned $36,000 of interest income on this account in 2007.

Interest expense accrued on the preferred dividends payable to ManTech was $9,000 for the year ended December 31, 2007 and $20,000 for the year ended December 31, 2006.

Other miscellaneous interest expense, net totaled $20,000 and $1,000 respectively, in the years ended December 31, 2007 and 2006.

Loss on Extinguishment of Debt. On February 28, 2006, the Company and Dolphin entered into a Cancellation and Warrant Exchange Agreement (the "Cancellation Agreement") under which Dolphin agreed to cancel its Senior Subordinated Secured Convertible Promissory Note and cancel its outstanding warrant to purchase 380,952 shares of GSE common stock at an exercise price of $2.22 per share. In exchange for Dolphin's agreement to enter into the Cancellation Agreement and for the participation of Dolphin Offshore Partners, LP in the Preferred Stock transaction, the Company repaid the Dolphin Note and agreed to issue a new warrant to purchase 900,000 shares of GSE common stock at an exercise price of $0.67 per share.

In conjunction with the early payoff of the Dolphin Note and the cancellation of the 380,952 warrants, the Company wrote off the remaining unamortized Original Issue Discount of $1.1 million, wrote off the remaining unamortized deferred financing charges of $185,000; recognized a credit of $698,000 from the write-off of the liabilities related to the Dolphin Note conversion feature and the related warrants and took an $868,000 charge for the value of the 900,000 new warrants issued to Dolphin.

Loss on Derivative Instruments. 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. At December 31, 2007, the Company had foreign exchange contracts for the sale of approximately 36 million Japanese Yen and 125,000 Pounds Sterling at fixed rates. The contracts expired on various dates through January 2008. The Company had not designated the contracts as hedges and recognized a loss on the change in the estimated fair value of the contracts of $11,000 for the year ended December 31, 2007. The estimated fair value of the contracts was $1,000 at December 31, 2007 and was recorded on the balance sheet under other current assets.

At December 31, 2006, the Company had foreign exchange contracts for sale of approximately 142 million Japanese Yen at fixed rates. The contracts expired on various dates through August 2007. The Company had not designated the contracts as hedges and recgonized a loss on the change in the estimated fair value of the contracts of $24,000 for the year ended December 31, 2006. The estimated fair value of the contracts was $12,000 at December 31, 2006 and was recorded on the balance sheet under other current assets.

Other Expense, Net. For the years ended December 31, 2007 and 2006, other expense, net was $555,000 and $81,000, respectively. The major components of other expense, net included the following items:

- ♦ The Company accounts for its investment in ESA using the equity method. In accordance with the equity method, the Company has eliminated 10% of the profit from its ESA contract as the training simulators are assets that will be recorded on the books of ESA, and the Company is thus required to eliminate its proportionate share of the profit included in the asset value. The profit elimination totaled $444,000 and $251,000 for the years ended December 31, 2007 and 2006, respectively. In addition, the Company recognized a $54,000 equity loss on the Company's investment in ESA in the year ended December 31, 2007.

- ♦ Foreign currency transaction losses totaled $60,000 for the year ended December 31, 2007 versus foreign currency transaction gains of $128,000 for the year ended December 31, 2006, respectively.

- ♦ Other miscellaneous income items totaled $3,000 and $42,000 in the years ended December 31, 2007 and 2006, respectively.

Provision for Income Taxes. In July 2006, the Financial Accounting Standards Board, or FASB, issued Interpretation, or FIN, No. 48, Accounting for Uncertainty in Income Taxes — An Interpretation of FASB Statement No. 109, "Accounting for Income Taxes". FIN No. 48 clarifies the accounting for uncertainty in income taxes recognized in the Company's financial statements. It also prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of tax positions taken or expected to be taken in a tax return. This interpretation also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods and expanded disclosure with respect to uncertainty in income taxes. The Company adopted the guidance of FIN No. 48 effective January 1, 2007. The adoption of this accounting pronouncement did not have a material effect on the Company's financial position, results of operations or cash flows. Furthermore, the Company is not aware of any tax positions for which it is reasonably possible that the total amounts of unrecognized tax benefits would significantly decrease or increase within the next twelve months.

As of December 31, 2007, there had been no material changes to the liability for uncertain tax positions.

The Company's tax provision in 2007 was $43,000 and consisted of $147,000 foreign income tax withholding on several non-U.S. contracts and $7,000 state income taxes which were partially offset by a federal income tax benefit of $111,000 (the benefit mainly reflects the reversal of the tax benefit from the exercise of employee stock options recognized in 2006 due to an increase in the Company's estimate of the annual amount of net operating loss carryforwards available).

The Company's tax provision in 2006 was $149,000 and consisted of foreign income taxes of $17,000 and state income taxes of $29,000 and federal income taxes of $103,000.

The Company had a full valuation allowance on its deferred tax assets at December 31, 2007.

Liquidity and Capital Resources.

As of December 31, 2008, GSE had cash and cash equivalents of $8.3 million versus $8.2 million at December 31, 2007.

Cash From Operating Activities. For the year ended December 31, 2008, net cash provided by operating activities totaled $2.3 million and increased $385,000 as compared to 2007. Significant changes in the Company's assets and liabilities in 2008 included:

- ♦ A $527,000 increase in the Company's contracts receivable. The Company's trade receivables increased from $4.2 million at December 31, 2007 (including $1.0 million due from ESA) to $7.3 million at December 31, 2008 (including $1.6 million due from ESA) while the Company's unbilled receivables decreased by $3.0 million to $3.6 million at December 31, 2008. At December 31, 2008, trade receivables outstanding for more than 90 days totaled $2.3 million (including $1.6 million from ESA) versus $2,000 at December 31, 2007. Despite the increase in overdue receivables, the Company believes the entire balance will be received and has not increased its bad debt reserve.
- ♦ A $1.0 million reduction in accounts payable, accrued compensation and accrued expenses. The decrease mainly reflects a reduction in outstanding trade payables at December 31, 2008 as compared to the prior year and a payout in early 2008 of accrued vacation to U.S. employees in excess of the annual carryover allowance in accordance with the Company's vacation policy.
- ♦ A $1.8 million increase in billings in excess of revenue earned. The increase is due to the timing of contracted billing milestones of the Company's current projects.

Net cash provided by operating activities was $1.9 million for the year ended December 31, 2007 and increased $2.5 million as compared to 2006, reflecting an increase in net income before non-cash items (such as depreciation, amortization, stock-based compensation expense, and elimination of profit of the ESA contract). The most significant change in the Company's assets and liabilities in 2007 was a $1.5 million reduction in the Company's accounts payable, accrued compensation and accrued expenses. After the completion of the Company's June 2007 common stock transaction, the Company paid $405,000 to ManTech for the preferred stock dividends that had been payable since 2003 and the related accrued interest. The balance of the reduction was mainly due to the paydown of the Company's trade payable balance.

Net cash used in operating activities was $594,000 for the year ended December 31, 2006. The loss on early extinguishment of debt of $1.4 million was a non-cash expense that had no impact on the Company's operating cash flow. Significant changes in the Company's assets and liabilities in 2006 included:

- ♦ A $3.8 million increase in contracts receivable. An invoice for $1.7 million was issued to ESA in August 2006 and was still outstanding at December 31, 2006. The Company received the $1.7 million in May 2007. In addition, the Company had an unbilled receivable of $1.9 million for the ESA contract at December 31, 2006.
- ♦ A $690,000 increase in billings in excess of revenues earned. The increase is related to the timing of milestone billings on several projects.
- ♦ A $536,000 decrease in the amount due to GP Strategies Corporation. The reduction reflects the utilization of a portion of the funds received through the Company's convertible preferred stock transaction to pay down the balance due to GP Strategies. The Company paid off the balance due to GP Strategies prior to the termination of the Management Services Agreement on December 31, 2006.

Cash Used in Investing Activities. For the year ended December 31, 2008, net cash used in investing activities was $2.6 million. The Company made capital expenditures of $705,000, increased its investment in ESA by $486,000 and capitalized software development costs of $591,000. The Company also restricted an additional $836,000 of cash as collateral for performance bonds issued by the Company and backed by standby letters of credit.

Net cash used in investing activities was $3.5 million for the year ended December 31, 2007. The Company made capital expenditures of $778,000, capitalized software development costs of $673,000, and made an additional investment in ESA of $261,000. The Company deposited $1.2 million into a restricted, interest-bearing account at the Union National Bank in the United Arab Emirates as a partial guarantee for the $11.8 million credit facility that the bank extended to ESA. The Company also restricted $700,000 of cash as collateral for performance bonds issued by the Company and backed by standby letters of credit.

For the year ended December 31, 2006, net cash used in investing activities was $3.1 million consisting of $333,000 of capitalized software development costs, $185,000 of capital expenditures, and the restriction of $2.3 million of cash as collateral for five performance bonds issued by the Company and backed by standby letters of credit. The largest is a $2.1 million performance bond issued to ESA which expires on September 30, 2009. In addition, the Company invested $238,000 in ESA.

Cash Provided by Financing Activities. The Company generated $483,000 from financing activities in the year ended December 31, 2008. The Company received $571,000 from the issuance of common stock from the exercise of warrants and employee stock options and spent $88,000 on deferred financing costs in conjunction with the new Bank of America lines of credit.

In the year ended December 31, 2007, the Company generated $8.7 million from financing activities. The Company generated net proceeds of $9.2 million from the issuance of 1,666,667 shares of common stock and warrants which was used to pay down the Laurus Master Fund, Ltd. line of credit. The Company generated $2.1 million from the exercise of warrants and employee stock options. The Company reversed a tax benefit of $115,000 related to employee stock option exercises that had been recognized in 2006. The Company paid dividends of $49,000 to the Series A Cumulative Convertible Preferred stockholders and paid the $316,000 preferred stock dividend that was due to ManTech since 2003.

The Company generated $3.4 million from financing activities in the twelve months ended December 31, 2006. The Company generated net proceeds of $3.9 million from the issuance of 42,500 shares of Series A Cumulative Convertible Preferred Stock and Warrants which were used to pay off the $2.0 million Dolphin Note and the outstanding borrowings under the Company's bank line of credit ($1.2 million).

The Company entered into a new credit facility with Laurus Master Fund on March 7, 2006 and had outstanding borrowings under the credit facility on December 31, 2006 of $2.2 million. In conjunction with the establishment of the Laurus line of credit, the Company incurred cash financing costs of $448,000. On May 18, 2006, Laurus Master Fund agreed to temporarily increase the Company's borrowing capability by $2.0 million over and above the funds that were available to the Company based upon its normal borrowing base calculation. The over advance was used to collateralize a $2.1 million performance bond that the Company issued to the Emirates Simulation Academy, LLC in the form of a standby letter of credit. One half of the increased borrowing capability expired on July 18, 2006, and the balance expired on April 13, 2007. The Company's borrowings over and above the normal borrowing base calculation bore additional interest of 1.5% per month over and above the normal interest rate on the line of credit.

The Company received $409,000 through the issuance of common stock due to the exercise of employee stock options, and $730,000 through the issuance of common stock due to the exercise of warrants. The Company recognized a tax benefit of $124,000 related to the employee stock option exercises.

In 2006, the Company paid dividends of $279,000 to the preferred stockholders.

Credit Facilities

On March 28, 2008, the Company entered into two separate revolving line of credit agreements for two-year revolving lines of credit with Bank of America, N.A. ("BOA"), in an aggregate amount of up to $5.0 million. The Company and its subsidiary, GSE Power Systems, Inc., are jointly and severally liable as co-borrowers. The credit facilities are collateralized by substantially all of the Company's assets and enable the Company to borrow funds to support working capital needs and standby letters of credit. The first line of credit in the principal amount of up to $3.5 million enables the Company to borrow funds up to 90% of eligible foreign accounts receivable, plus 75% of eligible unbilled foreign receivables and 100% of the cash collateral pledged to BOA on outstanding warranty standby letters of credit. This line of credit is 90% guaranteed by the Export-Import Bank of the United States. The interest rate on this line of credit is based on the daily LIBOR rate plus 150 basis points, with interest only payments due monthly. The second line of credit in the principal amount of up to $1.5 million enables the Company to borrow funds up to 80% of domestic accounts receivable and 30% of domestic unbilled receivables. The interest rate on this line of credit is based on the daily LIBOR rate plus 225 basis points, with interest only payments due monthly. The credit facilities require the Company to comply with certain financial ratios and preclude the Company from making acquisitions beyond certain limits without the bank's consent. At December 31, 2008, the Company was in default on two of the financial covenants; however, it has received a written waiver from BOA. The Company's available borrowing base under the two lines of credit was $3.2 million at December 31, 2008, of which $105,000 had been utilized as collateral for a standby letter of credit.

Common Stock and Warrant Transaction

On June 22, 2007, the Company raised $9.2 million, net of associated fees of $768,000, through the sale of 1,666,667 shares (the "Shares") of its common stock, $.01 par value per share, by means of a private placement to selected institutional investors. Each investor received a five-year warrant to purchase GSE common stock (the "Warrant Shares") equal to 10% of the shares of common stock that they had purchased at an exercise price of $6.00 per share (the "Warrants"). In aggregate, the Company issued Warrants to purchase a total of 166,667 shares of GSE common stock.

The Company filed its registration statement on Form S-3 (the "Registration Statement") with the Securities and Exchange Commission (the "Commission") on July 16, 2007 covering the offer and sale, from time to time, of the Shares, the Warrant Shares and shares of common stock issuable upon exercise of warrants that may be issued as liquidated damages under the terms of a certain registration rights agreement entered into between the Company and the investors (the "Registration Rights Agreement") in connection with the private placement. The Registration Statement became effective on August 8, 2007 and, pursuant to the provisions of the Registration Rights Agreement, the Company is obligated to use commercially reasonable efforts to, after the date on which the Registration Statement becomes effective, cause the Registration Statement to remain continuously effective as to all Shares and Warrant Shares, other than for an aggregate of more than 30 consecutive trading days or for more than an aggregate of 60 trading days in any 12-month period. In the event of a default of the foregoing obligation, the Company will be required to issue to the investors, as liquidated damages, on the date the foregoing default occurs and each monthly anniversary thereafter, a number of warrants (on the same terms as the Warrants) equal to 2% of the number of Shares then held by such investor, not to exceed 10% of the total number of Shares then held by such investor, and thereafter cash, in an amount equal to 2% of the aggregate purchase price paid by the investors, not to exceed 30% of the

aggregate purchase price paid by the investors.

At the date of issuance, the fair value of the Warrants was $510,000 and the fair value of the Shares was $9.5 million. The fair value of the Warrants and the Shares was determined by the use of the relative fair value method, in which the $10.0 million gross proceeds was allocated based upon the fair values of the Warrants, as determined by using the Black-Scholes Model, and the Shares, as determined by the closing price of the common stock on the American Stock Exchange on the date the transaction was closed.

The Company paid the placement agent a fee in the amount of 6% of the gross proceeds received by the Company from the offering ($600,000). In addition to the placement agent fee, the Company paid $168,000 of other transaction fees related to the offering.

The proceeds were used to pay down the Company's line of credit and for other working capital purposes.

Senior Convertible Secured Subordinated Note Payable

On May 26, 2005, GSE issued and sold to Dolphin Direct Equity Partners, LP ("Dolphin") a Senior Subordinated Secured Convertible Note in the aggregate principal amount of $2,000,000 which was to mature on March 31, 2009 (the "Dolphin Note"), and a seven-year warrant to purchase 380,952 shares of GSE common stock at an exercise price of $2.22 per share (the "GSE Warrant"). The Dolphin Note was convertible into 1,038,961 shares of GSE common stock at an exercise price of $1.925 per share and accrued interest at 8% payable quarterly. On February 28, 2006, the Company and Dolphin entered into a Cancellation and Warrant Exchange Agreement (the "Cancellation Agreement") under which Dolphin agreed to cancel its Senior Subordinated Secured Convertible Promissory Note and cancel its outstanding warrant to purchase 380,952 shares of GSE common stock at an exercise price of $2.22 per share. In exchange for Dolphin's agreement to enter into the Cancellation Agreement, the Company repaid the Dolphin Note and agreed to issue a new warrant to purchase 900,000 shares of GSE common stock at an exercise price of $.67 per share (the "Dolphin Warrant"). At the date of issuance, the fair value of the Dolphin Warrant was $868,000, as established using the Black-Scholes Model, and was recorded in paid-in capital with the offset recorded as loss on extinguishment of debt. In accordance with the terms of the warrant agreement, Dolphin exercised the Dolphin Warrant on November 8, 2006 upon the Company's certification that, among other things, the underlying shares of GSE common stock were registered with the Securities and Exchange Commission on October 31, 2006, that the current stock price was greater than $1.25 per share, and that the average of the current stock prices for each trading day of the prior 30 calendar day period was not less than $1.25 per share. The Company received cash proceeds of $603,000.

In conjunction with the early payoff of the Dolphin Note and the cancellation of the 380,952 warrants, the Company wrote off the remaining unamortized Original Issue Discount of $1.1 million, wrote off the remaining unamortized deferred financing charges of $185,000; recognized a credit of $698,000 from the write-off of the liabilities related to the Dolphin Note conversion feature and the related warrants and took an $868,000 charge for the value of the 900,000 new warrants issued to Dolphin. The total loss on extinguishment of the Dolphin Note and the cancellation of the related warrants totaled $1.4 million.

Series A Cumulative Preferred Stock

On February 28, 2006, the Company raised $3.9 million, net of associated fees of $395,000, through the sale of 42,500 shares of Series A Cumulative Convertible Preferred Stock and Warrants by means of a private placement to “accredited investors”, as that term is used in rules and regulations of the Securities and Exchange Commission. The Convertible Preferred Stock was convertible at any time into a total of 2,401,133 shares of GSE common stock at a conversion price of $1.77 per share. The conversion price was equal to 110% of the closing price of the Company’s Common Stock on February 28, 2006, the date the sale of the Convertible Preferred Stock was completed. Each investor received a five-year warrant to purchase GSE common stock equal to 20% of the shares they would receive from the conversion of the Convertible Preferred Stock, at an exercise price of $1.77. In aggregate, the Company issued warrants to purchase a total of 480,226 shares of GSE common stock. The Convertible Preferred Stock holders were entitled to an 8% cumulative dividend, payable on a semiannual basis every June 30 and December 30. In 2006, the Company paid dividends totaling $279,000 to the preferred stockholders; in the nine months ended September 30, 2007 the Company paid dividends totaling $49,000. At the date of issuance, the fair value of the warrants was $342,000 and the fair value of the preferred stock was $3.9 million. The fair value of the warrants and the preferred stock was determined by the use of the relative fair value method, in which the $4.25 million gross proceeds was allocated based upon the fair values of the warrants, as determined by using the Black-Scholes Model, and the preferred stock, as determined by an independent appraisal. At any time after March 1, 2007, the Company had the right to convert the Preferred Stock into shares of GSE common stock when the average of the current stock price during the twenty trading days immediately prior to the date of such conversion exceeded 200% of the Series A Conversion Price. On March 7, 2007, the Company sent notice to the holders of the remaining 20,000 outstanding shares of its Preferred Stock that the average current stock price for the prior twenty trading days had exceeded 200% of the Conversion Price, and that the Company was converting the outstanding Preferred Stock into common stock. The 20,000 shares of Preferred Stock converted to 1,129,946 shares of GSE common stock. Prior to March 7, 2007, the holders of 22,500 shares of Preferred Stock had already elected to convert their Preferred Stock into a total of 1,271,187 shares of Common Stock; 8,580 shares of Preferred Stock were converted in 2006 and 13,920 shares of Preferred Stock were converted in 2007.

The Company paid the placement agent for the Convertible Preferred Stock and Warrants 6% of the gross proceeds received by the Company from the offering ($255,000) plus five-year warrants to purchase 150,000 shares of the Company’s common stock at an exercise price of $1.77 per share. In addition to the placement agent fee, the Company paid $140,000 of other transaction fees related to the offering. At the date of issuance, the fair value of the placement agent warrants was $128,000, as established using the Black-Scholes Model, and was recorded in paid-in capital, with the offset recognized as a reduction of the preferred stock proceeds.

Contractual Cash Commitments

The following summarizes the Company’s contractual cash obligations as of December 31, 2008, and the effect these obligations are expected to have on its liquidity and cash flow in future periods:

Payments Due by Period
(in thousands)

Contractual Cash Obligations	Total	Less than 1 year	1-3 Years	4-5 Years	After 5 Years
Long Term Debt	$ -	$ -	$ -	$ -	$ -
Subcontractor and Purchase Commitments	$ 3,617	$ 2,690	$ 927	$ -	$ -
Net future minimum lease payments	$ 5,034	$ 768	$ 1,745	$ 874	$ 1,647
Total	$ 8,651	$ 3,458	$ 2,672	$ 874	$ 1,647

As of December 31, 2008, the Company was contingently liable for seven standby letters of credit totaling $3.7 million. The letters of credit represent performance bonds on seven contracts. Six of the letters of credit have been cash collateralized, the seventh letter of credit has been collateralized using the Company's line of credit.

The Company has deposited $1.2 million into a restricted, interest-bearing account at the Union National Bank ("UNB") in the United Arab Emirates as a partial guarantee for the $11.8 million credit facility that UNB has extended to ESA. The guarantee will be in place until the expiration of the ESA credit facility on December 31, 2014 or earlier if ESA pays down and terminates the credit facility.

2009 Liquidity Outlook

At December 31, 2008, the Company had cash and cash equivalents of $8.3 million and another $3.1 million available under its line of credit. Although the Company was in default on two of its financial covenants under its line of credit agreement, the Company has received a written waiver from its bank. In addition, the Company's backlog of project milestone invoices totaled $28 million at December 31, 2008. The Company anticipates that its normal operations and the utilization of its credit facility will generate all of the funds necessary to fund its consolidated operations during the next twelve months. The Company believes that it will have sufficient liquidity and working capital without additional financing. However, notwithstanding the foregoing, the Company may be required to look for additional capital to fund its operations if the Company is unable to operate profitably and generate sufficient cash from operations. There can be no assurance that the Company would be successful in raising such additional funds.

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, 2008, except for its operating lease commitments and outstanding letters of credit. See Contractual Cash Commitments above.

New Accounting Standards.

In December, 2007, the FASB issued SFAS No. 141(R), Business Combinations ("SFAS 141(R)"), which applies prospectively to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2008. An entity may not apply it before that date. SFAS 141(R) establishes principles and requirements for how the acquirer: i) recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed and any noncontrolling interest in the acquiree; ii) recognizes and measures the goodwill acquired in the business combination or a gain from a bargain purchase; and iii) determines what information to disclose to enable users of the financial statements to evaluate the nature and financial effects of the business combination. The Company does not expect the adoption of SFAS 141 (R) to have an effect on its results of operations and its financial condition unless it enters into a business combination after January 1, 2009.

In September 2006, the Financial Accounting Standards Board ("FASB") issued Statement No. 157, Fair Value Measurements ("SFAS 157"). SFAS 157 defines fair value, establishes a framework for measuring fair value and expands disclosure requirements regarding fair value measurements. SFAS 157 does not require any new fair value measurements. However, on February 12, 2008, the FASB issued FASB Staff Position No. FAS 157-2, Effective Date of FASB Statement No. 157 ("FSP FAS 157-2"). FSP FAS 157-2 delays the effective date of SFAS 157 for all nonfinancial assets and nonfinancial liabilities until fiscal years beginning after November 15, 2008 and interim periods within those fiscal years. The implementation of SFAS No. 157 for financial assets and financial liabilities, effective January 1, 2008, did not have a material impact on the Company's condensed consolidated financial statements. The Company is currently assessing the impact of SFAS No. 157 for nonfinancial assets and nonfinancial liabilities on its consolidated financial statements.

In December 2007, the FASB issued SFAS No. 160, Noncontrolling Interests in Consolidated Financial Statements—an amendment of Accounting Research Bulletin No. 51 ("SFAS 160"). SFAS 160 establishes accounting and reporting standards for ownership interests in subsidiaries held by parties other than the parent, the amount of consolidated net income attributable to the parent and to the noncontrolling interest, changes in a parent's ownership interest and the valuation of retained noncontrolling equity investments when a subsidiary is deconsolidated. SFAS 160 also establishes disclosure requirements that clearly identify and distinguish between the interests of the parent and the interests of the noncontrolling owners. The Company is required to adopt the provisions of SFAS 160 effective January 1, 2009. The Company does not expect the adoption of SFAS No. 160 to have a material impact, if any, on its consolidated financial statements.

In March 2008, the FASB issued SFAS No. 161, "Disclosures about Derivative Instruments and Hedging Activities - an amendment of FASB Statement No. 133". SFAS No. 161 is intended to improve financial reporting about derivative instruments and hedging activities by requiring enhanced disclosures to enable investors to better understand how and why an entity uses derivative instruments and their effects on an entity's financial position, financial performance, and cash flows. SFAS No. 161 is effective for financial statements issued for fiscal years and interim periods beginning after November 15, 2008.

Other Matters.

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

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

The Company's market risk is principally confined to changes in foreign currency exchange rates. During the year ended December 31, 2008, 27% of the Company's revenue was from contracts which required payments in a currency other than U.S. Dollars, principally British Pounds Sterling (10%) and Swedish Krona (7%). For the years ended December 31, 2007 and 2006, 16% and 18%, respectively, of the Company's revenue was from contracts which required payments in a currency other than U.S. Dollars, principally Swedish Krona, British Pounds Sterling and Japanese Yen.

In addition, during the years ended December 31, 2008, 2007 and 2006, 14%, 11% and 15%, respectively, of the Company's expenses were incurred in Swedish Krona. The Company's exposure to foreign exchange rate fluctuations arises in part from inter-company accounts in which costs incurred in one entity are charged to other entities in different foreign jurisdictions. The Company is also exposed to foreign exchange rate fluctuations as the financial results of all foreign subsidiaries are translated into U.S. dollars in consolidation. As exchange rates vary, those results when translated may vary from expectations and adversely impact overall expected profitability.

The Company utilizes forward foreign currency exchange contracts to manage market risks associated with the fluctuations in foreign currency exchange rates. The principal currencies for which such forward exchange contracts are entered into are the Pound Sterling, the Euro and the Japanese Yen. 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, 2008, the Company had foreign exchange contracts for sale of approximately 2 million Pounds Sterling, 4 million Euro, and 68 million Japanese Yen at fixed rates. The contracts expire on various dates through February 2014. The Company had not designated the contracts as hedges and has recorded a loss on the change in the estimated fair value of the contracts of $174,000 for the year ended December 31, 2008. The estimated fair value of the contracts was a net liability of $58,000 at December 31, 2008. The Company recognized unrealized losses of approximately $11,000 and $24,000 in 2007 and 2006, respectively, on the changes in fair value of its forward currency exchange contracts.

The Company is also subject to market risk related to the interest rate on its two existing lines of credit. As of December 31, 2008, the interest rate on one line of credit is based on LIBOR plus 150 basis-points and the interest rate on the other line or credit is based on LIBOR plus 225 basis-points. The Company had no outstanding borrowings against either line of credit in 2008.

GSE SYSTEMS, INC.
FORM 10-K
For the Year Ended December 31, 2008

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.

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Report of Independent Registered Public Accounting Firm – Internal Control over Financial Reporting

The Board of Directors and Stockholders
GSE Systems, Inc.:

We have audited GSE Systems, Inc. and subsidiaries' (the "Company") internal control over financial reporting as of December 31, 2008, based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting Item 9A(b). Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

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

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. A material weakness related to the Company's accounting for derivative instruments has been identified and included in management's assessment. We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of the Company as of December 31, 2008 and 2007 and the related consolidated statements of operations, comprehensive income (loss), changes in stockholders' equity and cash flows for each of the years in the three-year period ended December 31, 2008. This material weakness was considered in determining the

nature, timing, and extent of audit tests applied in our audit of the 2008 consolidated financial statements, and this report does not affect our report dated March 16, 2009 which expressed an unqualified opinion on those consolidated financial statements.

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In our opinion, because of the effect of the aforementioned material weakness on the achievement of the objectives of the control criteria, the Company has not maintained effective internal control over financial reporting as of December 31, 2008, based on the criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission.

/s/ KPMG LLP

Baltimore, Maryland
March 16, 2009

Report of Independent Registered Public Accounting Firm – Consolidated Financial Statements

The Board of Directors and Stockholders
GSE Systems, Inc.:

We have audited the accompanying consolidated balance sheets of GSE Systems, Inc. and subsidiaries as of December 31, 2008 and 2007, and the related consolidated statements of operations, comprehensive income (loss), changes in stockholders' equity and cash flows for each of the years in the three-year period ended December 31, 2008. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

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

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of GSE Systems, Inc. and subsidiaries as of December 31, 2008 and 2007, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2008 in conformity with U.S. generally accepted accounting principles.

As discussed in Note 10, the Company adopted FASB Interpretation No. 48, Accounting for Uncertainty in Income Taxes – An Interpretation of FASB Statement No. 109, on January 1, 2007.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2008, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated March 16, 2009 expressed an adverse opinion on the effectiveness of the Company's internal control over financial reporting.

/s/ KPMG LLP

Baltimore, Maryland
March 16, 2009

PART I - FINANCIAL INFORMATION

Item 1. Financial Statements

GSE SYSTEMS, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(in thousands, except share data)

	December 31, 2008	December 31, 2007
ASSETS		
Current assets:		
Cash and cash equivalents	$ 8,274	$ 8,172
Restricted cash	2,962	2,228
Contract receivables	10,951	10,721
Prepaid expenses and other current assets	1,110	894
Total current assets	23,297	22,015
Equipment and leasehold improvements, net	1,133	880
Software development costs, net	1,487	1,170
Goodwill	1,739	1,739
Long-term restricted cash	2,027	1,925
Other assets	1,332	635
Total assets	$ 31,015	$ 28,364
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 1,655	$ 1,533
Accrued expenses	685	1,061
Accrued compensation and payroll taxes	1,234	1,613
Billings in excess of revenue earned	4,020	2,270
Accrued warranty	1,066	724
Other current liabilities	749	103
Total current liabilities	9,409	7,304
Other liabilities	906	695
Total liabilities	10,315	7,999
Commitments and contingencies	-	-
Stockholders' equity:		
Preferred stock $.01 par value, 2,000,000 shares authorized, shares issued and outstanding none in 2008 and none in 2007	-	-
Common stock $.01 par value, 30,000,000 shares authorized, shares issued and outstanding 15,968,122 in 2008 and 15,508,014 in 2007	160	155
Additional paid-in capital	50,572	49,225
Accumulated deficit	(28,818)	(28,128)
Accumulated other comprehensive loss	(1,214)	(887)

Total stockholders' equity		20,700		20,365
Total liabilities and stockholders' equity	$	31,015	$	28,364

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)

	Years ended December 31, 2008	2007	2006
Contract revenue	$ 29,004	$ 31,900	$ 27,502
Cost of revenue	21,187	22,217	19,602
Gross profit	7,817	9,683	7,900
Operating expenses			
Selling, general and administrative	7,383	7,214	4,929
Administrative charges from GP Strategies	-	-	685
Depreciation	446	258	186
Total operating expenses	7,829	7,472	5,800
Operating income (loss)	(12)	2,211	2,100
Interest income (expense), net	130	(433)	(764)
Loss on extinguishment of debt	-	-	(1,428)
Loss on derivative instruments	(453)	(11)	(24)
Other expense, net	(226)	(555)	(81)
Income (loss) before income taxes	(561)	1,212	(197)
Provision for income taxes	129	43	149
Net income (loss)	(690)	1,169	(346)
Preferred stock dividends	-	(49)	(279)
Net income (loss) attributed to common shareholders	$ (690)	$ 1,120	$ (625)
Basic income (loss) per common share	$ (0.04)	$ 0.09	$ (0.07)
Diluted income (loss) per common share	$ (0.04)	$ 0.08	$ (0.07)

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

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

	Years ended December 31,		
	2008	2007	2006
Net income (loss)	$ (690)	$ 1,169	$ (346)
Foreign currency translation adjustment	(327)	69	201
Comprehensive income (loss)	$ (1,017)	$ 1,238	$ (145)

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)

	Preferred Stock		Common Stock		Additional Paid-in	Accumulated	Accumulated Other Comprehensive	
	Shares	Amount	Shares	Amount	Capital	Deficit	Loss	Total
Balance, January 1, 2006	-	$ -	9,000	$ 90	$ 30,915	$ (28,951)	$ (1,157)	$ 897
Issuance of preferred stock	43	-	-	-	3,386	-	-	3,386
Conversion of preferred stock to common stock	(9)	-	485	5	(5)	-	-	-
Preferred stock dividends paid	-	-	-	-	(279)	-	-	(279)
Stock-based compensation expense	-	-	-	-	202	-	-	202
Common stock issued for options exercised	-	-	169	2	407	-	-	409
Tax benefit of options exercised	-	-	-	-	124	-	-	124
Common stock issued for services provided			22	-	96	-	-	96
Issuance of warrants	-	-	-	-	1,941	-	-	1,941
Common stock issued for warrants exercised	-	-	1,338	13	717	-	-	730
Foreign currency translation adjustment	-	-	-	-	-	-	201	201
Net loss	-	-	-	-	-	(346)	-	(346)
Balance, December 31, 2006	34	-	11,014	110	37,504	(29,297)	(956)	7,361
Issuance of common stock	-	-	1,667	17	8,705	-	-	8,722

Conversion of preferred								-
stock to common stock	(34)	-	1,916	19	(19)	-	-	-
Preferred stock dividends paid	-	-	-	-	(49)	-	-	(49)
Stock-based compensation								-
expense	-	-	-	-	344	-	-	344
Common stock issued for								-
options exercised	-	-	617	6	1,677	-	-	1,683
Adjustment of tax benefit of options exercised	-	-	-	-	(115)	-	-	(115)
Common stock issued for services provided	-	-	30	-	229	-	-	229
Issuance of warrants	-	-	-	-	510	-	-	510
Common stock issued for								-
warrants exercised	-	-	264	3	439	-	-	442
Foreign currency translation								-
adjustment	-	-	-	-	-	-	69	69
Net income	-	-	-	-	-	1,169	-	1,169
Balance, December 31, 2007	-	-	15,508	155	49,225	(28,128)	(887)	20,365
Stock-based compensation expense	-	-	-	-	650		-	650
Common stock issued for options								-
exercised, net of 30,645 shares								-
returned to GSE to pay for								-
employee's income tax								-
liabilities of								-
$251	-	-	194	2	29		-	31
								-

Common stock issued for services provided	-	-	17	-	131		-	131
Common stock issued for								-
warrants exercised	-	-	249	3	537		-	540
Foreign currency translation								-
adjustment	-	-	-	-	-		(327)	(327)
Net loss	-	-	-	-	-	(690)	-	(690)
Balance, December 31, 2008	-	$ -	15,968	$ 160	$ 50,572	$ (28,818)	$ (1,214)	$ 20,700

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

	Years ended December 31,		
	2008	2007	2006
Cash flows from operating activities:			
Net income (loss)	$ (690)	$ 1,169	$ (346)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation	446	258	186
Capitalized software amortization	274	323	453
Note payable discount amortization	-	-	58
Deferred financing costs amortization	142	533	444
Stock-based compensation expense	781	573	298
Elimination of profit on Emirates Simulation Academy, LLC contract	28	444	251
Equity loss on investment in Emirates Simulation Academy, LLC	213	54	-
Loss on derivative instruments	453	11	24
Loss on extinguishment of debt	-	-	1,428
Changes in assets and liabilities:			
Contract receivables	(527)	(63)	(3,773)
Prepaid expenses and other assets	(143)	(416)	(98)
Accounts payable, accrued compensation and accrued expenses	(1,033)	(1,499)	341
Due to GP Strategies Corporation	-	-	(536)
Billings in excess of revenues earned	1,750	403	690
Accrued warranty reserves	342	(22)	(8)
Other liabilities	220	103	(6)
Net cash provided by (used in) operating activities	2,256	1,871	(594)
Cash flows from investing activities:			
Investment in Emirates Simulation Academy, LLC	(486)	(261)	(238)
Restriction of cash as collateral under letters of credit or guarantees	(836)	(1,799)	(2,298)
Capital expenditures	(705)	(778)	(185)
Capitalized software development costs	(591)	(673)	(333)
Net cash used in investing activities	(2,618)	(3,511)	(3,054)
Cash flows from financing activities:			
Increase (decrease) in borrowings under lines of credit	-	(2,155)	2,155
Payoff of line of credit with bank	-	-	(1,182)
Net proceeds from issuance of common stock and warrants	-	9,232	-

Net proceeds from issuance of preferred stock and warrants	-	-	3,856
Proceeds from issuance of common stock	571	2,125	1,139
Tax benefit from option exercises	-	(115)	124
Payment of preferred stock dividends	-	(49)	(279)
Payment of ManTech preferred stock dividends	-	(316)	-
Paydown of subordinated convertible note payable	-	-	(2,000)
Deferred financing costs	(88)	-	(448)
Net cash provided by financing activities	483	8,722	3,365
Effect of exchange rate changes on cash	(19)	17	35
Net increase (decrease) in cash and cash equivalents	102	7,099	(248)
Cash and cash equivalents at beginning of year	8,172	1,073	1,321
Cash and cash equivalents at end of period	$ 8,274	$ 8,172	$ 1,073

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

GSE SYSTEMS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
December 31, 2008, 2007, and 2006

1. Business and basis of presentation

GSE Systems, Inc. ("GSE Systems", "GSE" or the "Company") provides training simulators and educational solutions to the energy, process, manufacturing and government sectors.

On June 21, 2005, the Board of Directors of GP Strategies Corporation ("GP Strategies") approved plans to spin-off its 57% interest in GSE through a special dividend to the GP Strategies' stockholders. On September 30, 2005, the GP Strategies' stockholders received 0.283075 share of GSE common stock for each share of GP Strategies common stock or Class B stock held on the record date of September 19, 2005. Following the spin-off, GP Strategies ceased to have any ownership interest in GSE. GP Strategies continued to provide corporate support services to GSE, including accounting, finance, human resources, legal, network support and tax pursuant to a Management Services Agreement which expired on December 31, 2006.

The Company's operations are subject to certain risks and uncertainties including, among others, rapid technological changes, success of the Company's product development, marketing and distribution strategies, the need to manage growth, the need to retain key personnel and protect intellectual property, and the availability of additional financing on terms acceptable to the Company.

At December 31, 2008, the Company had cash and cash equivalents of $8.3 million and another $3.1 million available under its lines of credit. Although the Company was in default on two of its financial covenants under its line of credit agreement, the Company has received a written waiver from its bank. The Company anticipates that its cash on hand and its normal operations will provide all of the funds necessary to fund its consolidated operations during the next twelve months. The Company believes that it will have sufficient liquidity and working capital without additional financing. However, notwithstanding the foregoing, the Company may be required to look for additional capital to fund its operations if the Company is unable to operate profitably and generate sufficient cash from operations. There can be no assurance that the Company would be successful in raising such additional funds.

2. Summary of significant accounting policies

Principles of consolidation

The accompanying consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. All intercompany balances and transactions have been eliminated.

Accounting estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The Company's most significant estimates relate to revenue recognition, capitalization of software development costs, and the recoverability of net deferred tax assets. Actual results could differ from those estimates.

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Revenue recognition

The majority of the Company's revenue is derived through the sale of uniquely designed systems containing hardware, software and other materials under fixed-price contracts. In accordance with Statement of Position 81-1, Accounting for Performance of Construction-Type and Certain Production-Type Contracts, the revenue under these fixed-price contracts is accounted for on 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. There are no claims outstanding as of December 31, 2008.

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 software embedded in the systems.

The Company's system design contracts do not normally provide for "post customer support service" (PCS) in terms of software upgrades, software enhancements or telephone support. In order to obtain PCS, the customers must normally purchase a separate contract. Such PCS arrangements are generally for a one-year period renewable annually and include customer support, unspecified software upgrades, and maintenance releases. The Company recognizes revenue from these contracts ratably over the life of the agreements in accordance with Statement of Position 97-2, Software Revenue Recognition.

Revenue from the sale of software licenses 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.

Revenue for contracts with multiple elements are recognized in accordance with Emerging Issues Task Force Issue 00-21, Accounting for Revenue Arrangements with Multiple Deliverables.

Revenues from certain consulting or training contracts are recognized on a time-and-material basis. For time-and-material type contracts, revenue is recognized based on hours incurred at a contracted labor rate plus expenses.

Cash and cash equivalents

Cash and cash equivalents consist of cash on hand, overnight sweep investments, and highly liquid investments with maturities of three months or less at the date of purchase.

Contract receivables

Contract receivables include recoverable costs and accrued profit not billed which represents revenue recognized in excess of amounts billed. The liability "Billings in excess of revenue earned" represents billings in excess of revenue recognized.

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

(in thousands)	As of and for the years ended December 31,		
	2008	2007	2006
Beginning balance	$ 2	$ 3	$ 245
Current year provision	-	-	3
Current year write-offs	-	(1)	(245)
Ending balance	$ 2	$ 2	$ 3

Equipment and leasehold improvements, net

Equipment is 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 amortization 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 in accordance with SFAS No. 86, Accounting for the Costs of Computer Software to be Sold, Leased, or Otherwise Marketed. 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, not to exceed five years.

Development expenditures

Development expenditures incurred to meet customer specifications under contracts are charged to contract costs. Company sponsored development expenditures are charged to operations as incurred and are included in selling, general and administrative expenses. 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 $907,000, $1.2 million, and $871,000, for the years ended December 31, 2008, 2007, and 2006, respectively. Certain of these expenditures were capitalized as software development costs. See Note 6, Software development costs.

Impairment of long-lived assets

In accordance with SFAS No. 144, Accounting for the Impairment or Disposal of Long-Lived Assets, property and equipment 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; an impairment charge is recognized by the amount by which the carrying amount of the asset exceeds the fair value of the asset. Assets to be disposed of would be separately presented in the balance sheet and reported at the lower of the carrying amount or fair value less costs to sell, and are no longer depreciated. The assets and liabilities of a disposal group classified as held for sale would be presented separately in the appropriate asset and liability sections of the balance sheet.

On an annual basis, and more frequently as conditions indicate, the Company assesses the recovery of the unamortized capitalized software computer 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.

Goodwill is tested annually, on November 30, for impairment, or more frequently if events and circumstances indicate that the asset might be impaired. An impairment loss is recognized to the extent that the carrying amount exceeds the asset's fair value. For goodwill, the impairment determination is made at the reporting unit level and consists of two steps. First, the Company determines the fair value of a reporting unit and compares it to its carrying amount. Second, if the carrying amount of a reporting unit exceeds its fair value, an impairment loss is recognized for any excess of the carrying amount of the reporting unit's goodwill over the implied fair value of that goodwill. The implied fair value of goodwill is determined by allocating the fair value of the reporting unit in a manner similar to a purchase price allocation, in accordance with SFAS No. 141, Business Combinations. The residual fair value after this allocation is the implied fair value of the reporting unit goodwill. No impairment losses were recognized in 2008, 2007 or 2006.

Foreign currency translation

Balance sheet accounts for foreign operations are translated at the exchange rate at the balance sheet date, and income statement accounts are translated at the average exchange rate for the period. The resulting translation adjustments are included in other comprehensive income (loss). Transaction gains and losses, resulting from changes in exchange rates, are recorded in operating income in the period in which they occur. For the years ended December 31, 2008, 2007, and 2006, foreign currency transaction gains (losses) were approximately $41,000, ($60,000), and $128,000, respectively.

Warranty

As the Company recognizes revenue under the percentage-of-completion method, it provides an accrual for estimated future warranty costs based on historical experience and projected claims. The activity in the warranty accounts is as follows:

(in thousands)	As of and for the Years ended December 31,		
	2008	2007	2006
Beginning balance	$ 724	$ 746	$ 754
Current year provision	799	458	568
Current year claims	(448)	(483)	(599)
Currency adjustment	(9)	3	23
Ending balance	$ 1,066	$ 724	$ 746

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 financial statement 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. 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.

Stock-based compensation

In December 2004, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standard (SFAS) No. 123R, Share-Based Payment (SFAS No. 123R), which revises SFAS No. 123, Accounting for Stock-Based Compensation (SFAS No. 123), and supersedes Accounting Principles Board Opinion No. 25, Accounting for Stock Issued to Employees (APB No. 25), and requires companies to recognize compensation expense for all equity-based compensation awards issued to employees that are expected to vest. The Company adopted SFAS No. 123R on January 1, 2006, using the Modified Prospective Application method without restatement of prior periods. Under this method, the Company would begin to amortize compensation cost for the remaining portion of its outstanding awards for which the requisite service was not yet rendered as of January 1, 2006. However, at January 1, 2006, all of the Company's outstanding options were fully vested and thus there is no compensation expense in 2006 related to the adoption of SFAS No. 123R on these outstanding options. The Company determines the fair value of and accounts for awards that are granted, modified, or settled after January 1, 2006 in accordance with SFAS No. 123R.

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. During the twelve months ended December 31, 2008 and 2007, the Company recognized $650,000 and $344,000, respectively, of pre-tax stock-based compensation expense under the fair value method in accordance with SFAS No. 123R. As of December 31, 2008, the Company had $3.9 million of unrecognized compensation related to the unvested portion of outstanding stock option awards expected to be recognized through October 2015.

Income (loss) per share

Basic income (loss) per share is based on the weighted average number of outstanding common shares for the period. Diluted income (loss) per share adjusts the weighted average shares outstanding for the potential dilution that could occur if stock options, warrants, convertible subordinated debt or convertible preferred stock were exercised or converted into common stock. The number of common shares and common share equivalents used in the determination of basic and diluted income (loss) per share was as follows:

[

(in thousands, except for share and per share amounts)	Years ended December 31,		
	2008	2007	2006
Numerator:			
Net income (loss)	$ (690)	$ 1,169	$ (346)
Preferred stock dividends	-	(49)	(279)
Net income (loss) attributed to common stockholders	$ (690)	$ 1,120	$ (625)
Denominator:			
Weighted-average shares outstanding for basic earnings per share	15,746,616	12,927,128	9,539,142
Effect of dilutive securities:			
Employee stock options, warrants and convertible preferred stock	-	1,890,525	-
Adjusted weighted-average shares outstanding and assumed conversions for diluted earnings per share	15,746,616	14,817,653	9,539,142
Shares related to dilutive securities excluded because inclusion would be anti-dilutive	1,196,746	74,808	3,755,457

Conversion of the stock options, warrants, convertible preferred stock and convertible subordinated debt was not assumed for the years ended December 31, 2008 and 2006 because the impact was anti-dilutive. The difference between the basic and diluted number of weighted average shares outstanding for the year ended December 31, 2007 represents dilutive stock options and warrants to purchase shares of common stock computed under the treasury stock method, using the average market price during the period. The net income for the year ended December 31, 2007 was decreased and the net loss for the year ended December 31, 2006 was increased by preferred stock dividends of $49,000 and $279,000, respectively, in calculating the per share amounts.

Concentration of credit risk

The Company is subject to concentration of credit risk with respect to contract receivables. Credit risk on contract receivables is mitigated by the nature of the Company's worldwide customer base and its credit policies. The Company's customers are not concentrated in any specific geographic region, but are concentrated in the energy industry. The following customers have provided more than 10% of the Company’s revenue for the indicated period:

	Years ended December 31,		
	2008	2007	2006
Emerson Process Management	16%	8%	10%
American Electric Power	11%	0%	1%
Emirates Simulation Academy LLC	4%	31%	21%
Federal State-Owned Concern Rosenergoatom	2%	9%	12%
Pacific Northwest National Laboratory (DOE)	2%	4%	11%

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.

Deferred financing fees

The Company amortizes the cost incurred to obtain debt financing over the term of the underlying obligations using the effective interest method. The amortization of deferred financing costs is included in interest expense. Unamortized deferred financing costs are classified within other assets in the consolidated balance sheets.

Derivative instruments

The Company utilizes forward foreign currency exchange contracts to manage market risks associated with the fluctuations in foreign currency exchange rates. The principal currencies for which such forward exchange contracts are entered into are the Pound Sterling, the Euro and the Japanese Yen. 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, 2008, the Company had foreign exchange contracts for sale of approximately 2 million Pounds Sterling, 4 million Euro, and 68 million Japanese Yen at fixed rates. The contracts expire on various dates through February 2014. The Company has not designated the contracts as hedges and has recorded the estimated fair value of the contracts in the consolidated balance sheet as follows:

(in thousands)	December 31, 2008	
Prepaid expenses and other current assets	$	14
Other assets		537
Other current liabilities		(426)
Other liabilities		(183)
Net fair value	$	(58)

The Company incurred a net loss on the change in the estimated fair value of the contracts for the years ended December 31, 2008, 2007 and 2006 totaling approximately $174,000, $11,000, and $24,000, respectively, which was recorded in loss on derivative instruments in the consolidated statements of operations.

The foreign currency denominated trade receivables, unbilled receivables and billings in excess of revenue earned 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 loss on derivative instruments in the consolidated statements of operations. For the year ended December 31, 2008, the Company incurred a $279,000 loss from the remeasurement of such trade and unbilled receivables.

New accounting standards

In December 2007, the FASB issued SFAS No. 160, Noncontrolling Interests in Consolidated Financial Statements—an amendment of Accounting Research Bulletin No. 51 ("SFAS 160"). SFAS 160 establishes accounting and reporting standards for ownership interests in subsidiaries held by parties other than the parent, the amount of consolidated net income attributable to the parent and to the noncontrolling interest, changes in a parent's ownership interest and the valuation of retained noncontrolling equity investments when a subsidiary is deconsolidated. SFAS 160 also establishes disclosure requirements that clearly identify and distinguish between the interests of the parent and the interests of the noncontrolling owners. The Company is required to adopt the provisions of SFAS 160 effective January 1, 2009. The Company does not expect the adoption of SFAS No. 160 to have a material impact, if any, on its consolidated financial statements.

In December, 2007, the FASB issued SFAS No. 141(R), Business Combinations ("SFAS 141(R)"), which applies prospectively to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2008. An entity may not apply it before that date. SFAS 141(R) establishes principles and requirements for how the acquirer: i) recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed and any noncontrolling interest in the acquiree; ii) recognizes and measures the goodwill acquired in the business combination or a gain from a bargain purchase; and iii) determines what information to disclose to enable users of the financial statements to evaluate the nature and financial effects of the business combination. The Company does not expect the adoption of SFAS 141 (R) to have an effect on its results of operations and its financial condition unless it enters into a business combination after January 1, 2009.

In March 2008, the FASB issued SFAS No. 161, "Disclosures about Derivative Instruments and Hedging Activities - an amendment of FASB Statement No. 133". SFAS No. 161 is intended to improve financial reporting about derivative instruments and hedging activities by requiring enhanced disclosures to enable investors to better understand how and why an entity uses derivative instruments and their effects on an entity's financial position, financial performance, and cash flows. SFAS No. 161 is effective for financial statements issued for fiscal years and interim periods beginning after November 15, 2008.

3. 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,	
	2008	2007
Billed receivables	$ 7,320	$ 4,160
Recoverable costs and accrued profit not billed	3,633	6,563
Allowance for doubtful accounts	(2)	(2)
Total contract receivables	$ 10,951	$ 10,721

4. Prepaid expenses and other current assets

Prepaid expenses and other current assets consist of the following:

(in thousands)	December 31,	
	2008	2007
Prepaid expenses	$ 701	$ 531
Employee advances	19	80
Deferred income taxes- current	126	-
Other current assets	264	283
Total	$ 1,110	$ 894

5. Equipment and leasehold improvements

Equipment and leasehold improvements consist of the following:

(in thousands)	December 31,	
	2008	2007
Computer equipment	$ 2,965	$ 3,253
Leasehold improvements	113	34
Furniture and fixtures	916	508
	3,994	3,795
Accumulated depreciation	(2,861)	(2,915)
Equipment and leasehold improvements, net	$ 1,133	$ 880

Depreciation expense was approximately $446,000, $258,000, and $186,000 for the years ended December 31, 2008, 2007, and 2006, respectively.

6. Software development costs

Software development costs, net, consist of the following:

(in thousands)	December 31,	
	2008	2007
Capitalized software development costs	$ 1,878	$ 1,555
Accumulated amortization	(391)	(385)
Software development costs, net	$ 1,487	$ 1,170

Software development costs capitalized were approximately $591,000, $673,000, and $333,000 for the years ended December 31, 2008, 2007 and 2006, respectively. Amortization of software development costs capitalized was approximately $274,000, $323,000, and $453,000, for the years ended December 31, 2008, 2007 and 2006, respectively, and was included in cost of revenue.

7. Investment in Emirates Simulation Academy, LLC

On November 8, 2005, the Emirates Simulation Academy, LLC (“ESA”), headquartered in Abu Dhabi, United Arab Emirates, was formed to build and operate simulation training academies in the Arab Gulf Region. These simulation training centers will be designed to train and certify indigenous workers for deployment to critical infrastructure facilities including power plants, oil refineries, petro-chemical plants, desalination units and other industrial facilities. The members of the limited liability company include Al Qudra Holding PJSC of the United Arab Emirates (60% ownership), the Centre of Excellence for Applied Research and Training of the United Arab Emirates (30% ownership) and GSE (10% ownership). At December 31, 2008 and 2007, GSE’s investment in ESA totaled $718,000 and $445,000, respectively, and was included on the consolidated balance sheet in other assets. The Company accounts for its investment in ESA using the equity method. For the years ended December 31, 2008 and 2007, the Company recognized a $213,000 and $54,000 equity loss, respectively, on its investment in ESA. The equity loss was

recorded in other expense, net.

In January 2006, GSE received a $15.1 million contract from ESA (the “ESA Contract”) to supply five simulators and an integrated training program. The Company received change orders totaling $1.8 million from ESA which increased the total order value to $16.9 million. For the years ended December 31, 2008 and 2007, the Company recognized $1.2 million and $9.9 million, respectively, of contract revenue on this project using the percentage-of-completion method, which accounted for 4.2% and 31.2% of the Company’s consolidated revenue. The contract is currently in the warranty period which ends on September 30, 2009. In accordance with the equity method of accounting, the Company has eliminated 10% of the profit from the ESA Contract as the training simulators are assets that will be recorded on the books of ESA, and the Company is thus required to eliminate its proportionate share of the profit included in the asset value. The profit elimination totaled $28,000, $444,000, and $251,000 for the years ended December 31, 2008, 2007 and 2006, respectively, and has been recorded as an other expense in the income statement and as an other liability on the balance sheet. Once ESA begins to amortize the training simulators on their books, GSE will begin to amortize the other liability to other income.

At December 31, 2008 and 2007, the Company had trade receivables from ESA totaling $1.6 million and $1.0 million, respectively. In addition, the Company had an unbilled receivable of $2.8 million for the ESA Contract at December 31, 2007. Under the terms of the ESA Contract, the Company provided a $2.1 million performance bond to ESA that will remain outstanding until September 30, 2009. The Company has deposited $1.2 million into a restricted, interest-bearing account at the Union National Bank (“UNB”) in the United Arab Emirates as a partial guarantee for the $11.8 million credit facility that UNB has extended to ESA. The guarantee will be in place until the expiration of the ESA credit facility on December 31, 2014 or earlier if ESA pays down and terminates the credit facility.

8. Fair Value of Financial Instruments

Effective January 1, 2008, the Company adopted the provisions of Statement of Financial Accounting Standards No. 157, Fair Value Measurements (“SFAS 157”) as they relate to the Company’s financial assets and liabilities. The Company considers the recorded value of certain of its financial assets and liabilities, which consist primarily of cash and cash equivalents, accounts receivable and accounts payable, to approximate the fair value of the respective assets and liabilities at December 31, 2008 and 2007 based upon the short-term nature of the assets and liabilites. SFAS 157 defines fair value, establishes a framework for measuring fair value under GAAP and enhances disclosures about fair value measurements.

SFAS 157 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 principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. SFAS 157 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 following table presents assets and liabilities measured at fair value at December 31, 2008.

(in thousands)	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Siginificant Unobservable Inputs (Level 3)	Total
Foreign exchange contracts	$ -	$ 551	$ -	$ 551
Total assets	$ -	$ 551	$ -	$ 551
Foreign exchange contracts	$ -	$ (609)	$ -	$ (609)
Total liabilities	$ -	$ (609)	$ -	$ (609)

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, 2008, the Company had foreign exchange contracts for sale of approximately 2 million Pounds Sterling, 4 million Euro, and 68 million Japanese Yen at fixed rates.

9. Long-term debt

At December 31, 2008, and 2007, the Company had no long-term debt.

Line of Credit

On March 28, 2008, the Company entered into two separate revolving line of credit agreements for two-year revolving lines of credit with Bank of America, N.A. (“BOA”), in an aggregate amount of up to $5.0 million. The Company and its subsidiary, GSE Power Systems, Inc., are jointly and severally liable as co-borrowers. The credit facilities are collateralized by substantially all of the Company’s assets and enable the Company to borrow funds to support working capital needs and standby letters of credit. The first line of credit in the principal amount of up to $3.5 million enables the Company to borrow funds up to 90% of eligible foreign accounts receivable, plus 75% of eligible unbilled foreign receivables and 100% of the cash collateral pledged to BOA on outstanding warranty standby letters of credit. This line of credit is 90% guaranteed by the Export-Import Bank of the United States. The interest rate on this line of credit is based on the daily LIBOR rate plus 150 basis points, with interest only payments due monthly. The second line of credit in the principal amount of up to $1.5 million enables the Company to borrow funds up to 80% of domestic accounts receivable and 30% of domestic unbilled receivables. The interest rate on this line of credit is based on the daily LIBOR rate plus 225 basis points, with interest only payments due monthly. The credit facilities require the Company to comply with certain financial ratios and preclude the Company from making acquisitions

beyond certain limits without the bank's consent. As of December 31, 2008, the Company was in default on two of the financial covenants, however it has received a written waiver from BOA. The Company's available borrowing base under the two lines of credit was $3.2 million at December 31, 2008, of which $105,000 had been utilized to collateralize a standby letter of credit.

Senior Convertible Secured Subordinated Note Payable

On May 26, 2005, GSE issued and sold to Dolphin Direct Equity Partners, LP ("Dolphin") a Senior Subordinated Secured Convertible Note in the aggregate principal amount of $2,000,000 which was to mature on March 31, 2009 (the "Dolphin Note"), and a seven-year warrant to purchase 380,952 shares of GSE common stock at an exercise price of $2.22 per share (the "GSE Warrant"). The Dolphin Note was convertible into 1,038,961 shares of GSE common stock at an exercise price of $1.925 per share and accrued interest at 8% payable quarterly.

On February 28, 2006, the Company and Dolphin entered into a Cancellation and Warrant Exchange Agreement (the "Cancellation Agreement") under which Dolphin agreed to cancel its Senior Subordinated Secured Convertible Promissory Note and cancel its outstanding warrant to purchase 380,952 shares of GSE common stock at an exercise price of $2.22 per share. In exchange for Dolphin's agreement to enter into the Cancellation Agreement, the Company repaid the Dolphin Note and agreed to issue a new warrant to purchase 900,000 shares of GSE common stock at an exercise price of $.67 per share (the "Dolphin Warrant"). At the date of issuance, the fair value of the Dolphin Warrant was $868,000, as established using the Black-Scholes Model, and was recorded in paid-in capital with the offset recorded as loss on extinguishment of debt. In accordance with the terms of the warrant agreement, Dolphin exercised the Dolphin Warrant on November 8, 2006 upon the Company's certification that, among other things, the underlying shares of GSE common stock were registered with the Securities and Exchange Commission on October 31, 2006, that the current stock price was greater than $1.25 per share, and that the average of the current stock prices for each trading day of the prior 30 calendar day period was not less than $1.25 per share. The Company received cash proceeds of $603,000.

In conjunction with the early payoff of the Dolphin Note and the cancellation of the 380,952 warrants, the Company wrote off the remaining unamortized Original Issue Discount of $1.1 million, wrote off the remaining unamortized deferred financing charges of $185,000; recognized a credit of $698,000 from the write-off of the liabilities related to the Dolphin Note conversion feature and the related warrants and took an $868,000 charge for the value of the 900,000 new warrants issued to Dolphin. The total loss on extinguishment of the Dolphin Note and the cancellation of the related warrants totaled $1.4 million.

10. Income taxes

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

(in thousands)	Years ended December 31,		
	2008	2007	2006
Domestic	$ (674)	$ 1,496	$ (466)
Foreign	113	(284)	269
Total	$ (561)	$ 1,212	$ (197)

The provision for income taxes is as follows:

(in thousands)	Years ended December 31,		
	2008	2007	2006
Current:			
Federal	$ -	$ (111)	$ 103
State	10	7	29
Foreign	245	147	17
Subtotal	255	43	149
Deferred:			
Federal and state	-	-	-
Foreign	(126)	-	-
Subtotal	(126)	-	-
Total	$ 129	$ 43	$ 149

The Company is entitled to a deduction for federal and state tax purposes with respect to employees' stock option activity. The net reduction in taxes otherwise payable in excess of any amount credited to income tax benefit has been credited to additional paid-in capital. As of December 31, 2008, the Company had $5.2 million of unrecognized excess tax deductions related to compensation for stock option exercises which will be recognized when the net operating loss carryforwards are fully utilized and those excess tax benefits result in a reduction to income taxes payable.

The effective income tax rate differed from the statutory federal income tax rate due to the following:

	Effective Tax Rate Percentage (%)		
	Years ended December 31,		
	2008	2007	2006
Statutory federal income tax rate	(34.0) %	34.0%	(34.0) %
State income taxes, net of federal tax benefit	1.2	0.4	9.8

Effect of foreign operations	0.2	16.2	(2.3)
Change in valuation allowance	39.6	(42.0)	(95.2)
Other, principally permanent differences	16.0	(5.1)	197.6
Effective tax rate	23.0%	3.5%	75.9%

Included within permanent differences in 2006 are certain elements of the loss on extinguishment of debt (see Note 9) that are not tax deductible.

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

(in thousands)	December 31, 2008	2007	2006
Deferred tax assets:			
Net operating loss carryforwards	$ 6,691	$ 6,799	$ 7,611
Investments	1,675	1,584	1,658
Foreign tax credits	-	-	378
Accruals and reserves	61	31	192
Expenses not currently deductible for tax purposes	412	264	300
Alternative minimum tax credit carryforwards	162	162	162
Other	654	479	179
Total deferred tax asset	9,655	9,319	10,480
Valuation allowance	(8,259)	(8,868)	(10,173)
Total deferred tax asset less valuation allowance	1,396	451	307
Deferred tax liabilities:			
Tax in excess of book depreciation	(8)	-	(6)
Undistributed earnings of foreign subsidiary	(683)	-	-
Software development costs	(579)	(451)	(301)
Total deferred tax liability	(1,270)	(451)	(307)
Net deferred tax asset	$ 126	$ -	$ -

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 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 income in making this assessment. Management believes that the Company will achieve profitable operations in future years that will enable the Company to recover the benefit of its deferred tax assets. However, other than for a portion of the deferred tax assets that are related to the Company's Swedish subsidiary, the Company presently does not have sufficient objective evidence to substantiate the recovery of the deferred tax assets. Accordingly, the Company has established a full $8.3 million valuation allowance on its deferred tax assets at December 31, 2008, with the exception of the deferred tax assets of its Swedish subsidiary which are expected to be realized in 2009, which total $126,000. The valuation allowance for deferred tax assets decreased by $609,000 in 2008, $1.3 million in 2007 and by $188,000 in 2006.

At December 31, 2008, the Company's largest deferred tax asset related to a U.S. net operating loss carryforward of $17.9 million which expires in various amounts between 2017 and 2028. 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. Thus, a portion of the Company's loss carryforward may expire unutilized.

The Company adopted the provisions of FIN 48 on January 1, 2007. There was no material impact on our results of operations or financial position as a result of the implementation of FIN 48. Furthermore, the Company is not aware of any tax positions for which it is reasonably possible that the total amounts of unrecognized tax benefits would significantly decrease or increase within the next twelve months.

The Company's policy for recording interest and penalties associated with uncertain tax positions is to record such items as a component of income tax expense. As of December 31, 2008, the Company has no accrued interest or penalties.

11. 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. At a special shareholder's meeting on December 13, 2007, the Company's shareholders approved an amendment to the Certificate of Incorporation increasing GSE's authorized common stock by 12 million shares to a total of 30 million shares. 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.

On June 22, 2007, the Company raised $9.2 million, net of associated fees of $768,000, through the sale of 1,666,667 shares (the "Shares") of its common stock, $.01 par value per share, by means of a private placement to selected institutional investors. Each investor received a five-year warrant to purchase GSE common stock (the "Warrant Shares") equal to 10% of the shares of common stock that they had purchased at an exercise price of $6.00 per share (the "Warrants"). In aggregate, the Company issued Warrants to purchase a total of 166,667 shares of GSE common stock.

The Company filed its registration statement on Form S-3 (the "Registration Statement") with the Securities and Exchange Commission (the "Commission") on July 16, 2007 covering the offer and sale, from time to time, of the Shares, the Warrant Shares and shares of common stock issuable upon exercise of warrants that may be issued as liquidated damages under the terms of a certain registration rights agreement entered into between the Company and the investors (the "Registration Rights Agreement") in connection with the private placement. The Registration Statement became effective on August 8, 2007 and, pursuant to the provisions of the Registration Rights Agreement, the Company is obligated to use commercially reasonable efforts to, after the date on which the Registration Statement becomes effective, cause the Registration Statement to remain continuously effective as to all Shares and Warrant Shares, other than for an aggregate of more than 30 consecutive trading days or for more than an aggregate of 60 trading days in any 12-month period. In the event of a default of the foregoing obligation, the Company will be required to issue to the investors, as liquidated damages, on the date the foregoing default occurs and each monthly anniversary thereafter, a number of warrants (on the same terms as the Warrants) equal to 2% of the number of Shares then held by such investor, not to exceed 10% of the total number of Shares then held by such investor, and thereafter cash, in an amount equal to 2% of the aggregate purchase price paid by the investors, not to exceed 30% of the aggregate purchase price paid by the investors.

At the date of issuance, the fair value of the Warrants was $510,000 and the fair value of the Shares was $9.5 million. The fair value of the Warrants and the Shares was determined by the use of the relative fair value method, in which the $10.0 million gross proceeds was allocated based upon the fair values of the Warrants, as determined by using the Black-Scholes Model, and the Shares, as determined by the closing price of the common stock on the American Stock Exchange on the date the transaction was closed.

The Company paid the placement agent a fee in the amount of 6% of the gross proceeds received by the Company from the offering ($600,000). In addition to the placement agent fee, the Company paid $168,000 of other transaction fees related to the offering.

The proceeds were used to pay down the Company's line of credit and for other working capital purposes.

As of December 31, 2008, the Company has reserved 2,795,799 shares of common stock for issuance: 1,705,967 shares upon exercise of outstanding stock options; 312,709 shares upon exercise of outstanding warrants; 604,888 shares for future grants under the Company's 1995 Long-Term Incentive Plan; 5,568 shares to be issued in accordance with the Company's investor relations consulting agreement; and 166,667 shares upon exercise of warrants that the Company is obligated to issue in the event of a default under its June 2007 common stock sale as discussed above.

12. Series A Convertible Preferred Stock

On February 28, 2006, the Company raised $3.9 million, net of associated fees of $395,000, through the sale of 42,500 shares of Series A Cumulative Convertible Preferred Stock and Warrants by means of a private placement to "accredited investors", as that term is used in rules and regulations of the Securities and Exchange Commission. The Convertible Preferred Stock was convertible at any time into a total of 2,401,133 shares of GSE common stock at a conversion price of $1.77 per share. The conversion price was equal to 110% of the closing price of the Company's Common Stock on February 28, 2006, the date the sale of the Convertible Preferred Stock was completed.

Each investor received a five-year warrant to purchase GSE common stock equal to 20% of the shares they would receive from the conversion of the Convertible Preferred Stock, at an exercise price of $1.77. In aggregate, the Company issued warrants to purchase a total of 480,226 shares of GSE common stock. The Convertible Preferred Stockholders were entitled to an 8% cumulative dividend, payable on a semiannual basis every June 30 and December 30. In 2007 and 2006, the Company paid dividends totaling $49,000 and $279,000, respectively, to the preferred stockholders. At the date of issuance, the fair value of the warrants was $342,000 and the fair value of the preferred stock was $3.9 million. The fair value of the warrants and the preferred stock was determined by the use of the relative fair value method, in which the $4.25 million gross proceeds was allocated based upon the fair values of the warrants, as determined by using the Black-Scholes Model, and the preferred stock, as determined by an independent appraisal.

At any time after March 1, 2007, the Company had the right to convert the Preferred Stock into shares of GSE common stock when the average of the current stock price during the twenty trading days immediately prior to the date of such conversion exceeded 200% of the Series A Conversion Price. On March 7, 2007, the Company sent notice to the holders of the remaining 20,000 outstanding shares of its Preferred Stock that the average current stock price for the prior twenty trading days had exceeded 200% of the Conversion Price, and that the Company was converting the outstanding Preferred Stock into common stock. The 20,000 shares of Preferred Stock converted to 1,129,946 shares of GSE common stock. Prior to March 7, 2007, the holders of 22,500 shares of Preferred Stock had already elected to convert their Preferred Stock into a total of 1,271,187 shares of Common Stock; 8,580 shares of Preferred Stock were converted in 2006 and 13,920 shares of Preferred Stock were converted in 2007. In 2007 and 2006, the Preferred Stockholders exercised 62,147 and 28,248 warrants, respectively.

The Company paid the placement agent, as part of its fee for assisting the Company with the offering, 6% of the gross proceeds received by the Company from the offering ($255,000) plus five-year warrants to purchase 150,000 shares of the Company's common stock at an exercise price of $1.77 per share. In addition to the placement agent fee, the Company paid $140,000 of other transaction fees related to the offering. At the date of issuance, the fair value of the placement agent warrants was $128,000, as established using the Black-Scholes Model, and was recorded in paid-in capital, with the offset recognized as a reduction of the preferred stock proceeds. In 2007 and 2006, 97,000 and 43,000, respectively, of the placement agent warrants were exercised.

On October 23, 2003, ManTech converted all of its preferred stock to common stock in conjunction with the sale of its ownership in GSE to GP Strategies Corporation ("GP Strategies"). The Company had accrued dividends payable to ManTech of $316,000 as of December 31, 2006. The dividends were paid in full to ManTech in June 2007 as well as interest that had accrued on the dividends of $89,000. The unpaid dividends accrued interest at 6% per annum.

13. Stock-based compensation

In December 2004, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standard (SFAS) No. 123R, Share-Based Payment (SFAS No. 123R), which revises SFAS No. 123, Accounting for Stock-Based Compensation (SFAS No. 123), and supersedes Accounting Principles Board Opinion No. 25, Accounting for Stock Issued to Employees (APB No. 25), and requires companies to recognize compensation expense for all equity-based compensation awards issued to employees that are expected to vest. The Company adopted SFAS No. 123R on January 1, 2006, using the Modified Prospective Application method without restatement of prior periods. Under this method, the Company would begin to amortize compensation cost for the remaining portion of its outstanding awards for which the requisite service was not yet rendered as of January 1, 2006. However, at January 1, 2006, all of the Company's outstanding options were fully vested and thus there is no compensation expense in 2006 related to the adoption of SFAS No. 123R on these outstanding options. The Company determines the fair value of and accounts for awards that are granted, modified, or settled after January 1, 2006 in accordance with SFAS No. 123R.

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. 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 generally become exercisable in three installments with 40% vesting on the first anniversary of the grant date and 30% vesting on each of the second and third anniversaries of the grant date, subject to acceleration under certain circumstances. At the Special Meeting of Stockholders held on December 31, 2007, the shareholders approved amendments to the Plan which extended the life of the plan ten years to June 30, 2018 and increased the number of shares that could be issued under the Plan to 3,500,000 from 2,500,000. As of December 31, 2008, the Company had 604,888 shares of common stock reserved for future grants under the Plan.

Under SFAS No. 123R, 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 applies a forfeiture estimate to compensation expense recognized for awards that are expected to vest during the requisite service period, and revises that estimate if subsequent information indicates that the actual forfeitures will differ from the estimate. 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, 2008, 2007 and 2006, the Company recognized $650,000, $344,000 and $202,000, respectively of pre-tax stock-based compensation expense under the fair value method in accordance with SFAS No. 123R.

Stock option and warrant activity

During the year ended December 31, 2008, the Company granted stock options to purchase 845,833 shares of common stock to GSE directors, officers, employees, and consultants. No warrants to purchase shares of common stock were issued in 2008.

Information with respect to stock option and warrant activity as of and for the year ending December 31, 2008 is as follows:

	Number of Shares		Weighted Average Exercise Price		Aggregate Intrinsic Value (in thousands)	Weighted Average Remaining Contractual Life (Years)
Shares under option and warrant, December 31, 2007	1,740,152	$	2.54			
Options granted	845,833		6.26			
Options and warrants exercised	(512,309)		2.21			
Options expired	(21,000)		2.79			
Options forfeited	(34,000)		3.99			
Shares under option and warrant, December 31, 2008	2,018,676		4.16	$	3,994	6.088
Options expected to vest	1,055,163		5.61	$	702	8.452
Options and warrants exercisable at December 31, 2008	963,513	$	2.57	$	3,292	3.499

A summary of the status of the Company's nonvested options as of and for the year ended December 31, 2008 is presented below. All outstanding warrants were vested prior to 2008.

	Number of Shares		Weighted Average Fair Value
Nonvested options at December 31, 2007	476,000	$	1.86
Options granted	845,833		4.71
Options vested during the period	(232,670)		1.71
Options canceled and expired	(34,000)		2.38
Nonvested options at December 31, 2008	1,055,163	$	4.16

The fair value of the options and warrants granted in 2008, 2007, and 2006 were estimated on the date of grant using a Black-Scholes option-pricing model with the following assumptions:

	Years ended December 31,		
	2008	2007	2006
Risk-free interest rates	2.745%-3.045%	4.77%-5.02%	4.73% - 4.99%
Dividend yield	0%	0%	0%
Expected life	4.85-8.5 years	3.2 - 5.4 years	5.0 years
Volatility	68.8%-78.22%	70.54% - 71.99%	72.88% - 73.97%
Weighted average volatility	77.40%	71.02%	73.90%

As of December 31, 2008, the Company had $3.9 million of unrecognized compensation expense related to the unvested portion of outstanding stock options expected to be recognized on a pro-rata straight line basis over a weighted average remaining service period of approximately 6.7 years.

The Company received cash for the exercise price associated with stock options exercised of $282,000, $1,683,000, and $409,000 during the years ended December 31, 2008, 2007 and 2006, respectively. The total intrinsic value realized by participants on stock options exercised was $1.4 million, $3.6 million and $360,000 during the years ended December 31, 2008, 2007 and 2006, respectively. In 2006, the Company realized income tax benefits of $124,000 related to stock option exercises, which was reflected as an increase to additional paid-in capital on the consolidated statement of stockholders' equity. A portion of this tax benefit, $115,000, was reversed in 2007.

Common stock issued for services provided

In April 2006, the Company entered into a consulting agreement with an investor relations firm. As partial compensation for services rendered pursuant to the consulting agreement, the Company agreed to issue 50,000 shares of common stock. The shares vested in monthly increments of 2,778 shares commencing May 2006 and ending October 2007. The Company delivered the 50,000 common shares to the investor relations firm in October 2007. The consulting agreement was extended for an additional eighteen months from November 2007 through April 2009, and an additional 25,000 shares of common stock will be issued as partial compensation for services rendered, with the shares vesting in monthly increments of 1,388 shares. Compensation expense is determined based on the price per share on the last day of each month. For the year ended December 31, 2008, the average price per share was $7.87 and the total compensation expense recognized by the Company was $131,000. For the year ended December 31, 2007, the average price per share was $7.79 and the total compensation expense recognized by the Company was $229,000. For the eight months ended December 31, 2006, the average price per share was $4.34; the total compensation expense recognized by the Company was $96,000 in the twelve months ended December 31, 2006.

14. 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, 2008 are as follows:

(in thousands)	Gross Future Minimum Lease Payments
2009	$ 768
2010	708
2011	546
2012	491
2013	444
Thereafter	2,077
Total	$ 5,034

Total rent expense under operating leases for the years ended December 31, 2008, 2007, and 2006 was approximately $921,000, $930,000, and $856,000, respectively.

Standby Letters of credit and performance bonds

As of December 31, 2008, the Company was contingently liable for approximately $3.7 million under seven standby letters of credit used as performance bonds on contracts. Six of the letters of credit were secured by a cash deposit classified as restricted cash in the consolidated balance sheet, the seventh letter of credit has been collateralized using the Company's line 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.

15. Related party transactions

Prior to the spin-off discussed in Note 1, Business and basis of presentation, GP Strategies owned 57% of the Company.

On January 1, 2005, the Company entered into a Management Services Agreement with GP Strategies Corporation in which GP Strategies agreed to provide corporate support services to GSE, including accounting, finance, human resources, legal, network support and tax. GSE was charged $685,000 for GP Strategies' services in 2006. The agreement terminated on December 31, 2006.

16. Employee benefits

The Company has a qualified defined contribution plan that covers substantially 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. The Company's contributions to the plan were approximately $171,000, $136,000, and $124,000 for the years ended December 31, 2008, 2007, and 2006, respectively.

17. Segment information

The Company has one reportable business segment that provides simulation solutions and services to the nuclear and fossil fuel power industry, and to the chemical and petrochemical industries. Contracts typically range from 10 months to three years.

For the years ended December 31, 2008, 2007, and 2006, 54%, 45%, and 60% of the Company's consolidated revenue was from customers in the nuclear power industry, respectively. 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, 2008, 2007, and 2006 are as follows:

(in thousands)	Year ended December 31, 2008				
	United States	Europe	Asia	Eliminations	Consolidated
Contract revenue	$ 24,483	$ 4,521	$ -	$ -	$ 29,004
Transfers between geographic locations	177	23	407	(607)	-
Total contract revenue	$ 24,660	$ 4,544	$ 407	$ (607)	$ 29,004
Operating income (loss)	$ (682)	$ 641	$ 29	$ -	$ (12)
Total assets, at December 31	$ 55,460	$ 3,110	$ 82	$ (27,637)	$ 31,015

(in thousands)	Year ended December 31, 2007				
	United States	Europe	Asia	Eliminations	Consolidated
Contract revenue	$ 28,530	$ 3,370	$ -	$ -	$ 31,900
Transfers between geographic locations	268	89	180	(537)	-
Total contract revenue	$ 28,798	$ 3,459	$ 180	$ (537)	$ 31,900
Operating income (loss)	$ 2,453	$ (182)	$ (60)	$ -	$ 2,211
Total assets, at December 31	$ 48,251	$ 2,061	$ 86	$ (22,034)	$ 28,364

	Year ended December 31, 2006				
	United States	Europe	Asia	Eliminations	Consolidated
Contract revenue	$ 23,975	$ 3,527	$ -	$ -	$ 27,502
Transfers between geographic locations	329	70	166	(565)	-
Total contract revenue	$ 24,304	$ 3,597	$ 166	$ (565)	$ 27,502
Operating income (loss)	$ 1,928	$ 184	$ (12)	$ -	$ 2,100
Total assets, at December 31	$ 37,827	$ 2,583	$ 80	$ (22,042)	$ 18,448

Approximately 63%, 71%, and 74% of the Company's 2008, 2007 and 2006 revenue, respectively, was derived from international sales of its products and services from all of its subsidiaries.

18. Supplemental disclosure of cash flow information

(in thousands) Year ended December 31,

		2008	2007	2006
Cash paid:				
	Interest	$ 2	$ 252	$ 312
	Income taxes	$ 68	$ 172	$ 194

19. Quarterly financial data (unaudited)

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The Company's quarterly financial information has not been audited but, in management's opinion, includes all adjustments necessary for a fair presentation.

(in thousands, except per share data)	Year ended December 31, 2008 Quarterly Data			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Contract revenue	$ 7,083	$ 6,555	$ 7,001	$ 8,365
Operating income (loss)	(174)	(148)	170	140
Net loss	(293)	(270)	(58)	(69)
Basic loss per common share:	$ (0.02)	$ (0.02)	$ -	$ -
Diluted loss per common share:	$ (0.02)	$ (0.02)	$ -	$ -

	Year ended December 31, 2007 Quarterly Data			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Contract revenue	$ 7,845	$ 8,398	$ 7,526	$ 8,131
Operating income	452	733	504	522
Net income	31	348	303	487
Basic income per common share:	$ -	$ 0.03	$ 0.02	$ 0.03
Diluted income per common share:	$ -	$ 0.02	$ 0.02	$ 0.03

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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. At the end of the period covered by this report, an evaluation was performed under the supervision and with the participation of our management including our CEO and our CFO, of the effectiveness of the design and operation of our disclosure controls and procedures pursuant to Rule 13-15(e) of the Exchange Act. Based on their evaluation, the Company's Chief Executive Officer and Chief Financial Officer have concluded that, as of December 31, 2008, such disclosure controls and procedures were not effective because of the material weakness identified as described below.

(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 defined in Exchange Act rule 13a-15(f). Our internal control processes and procedures are designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our consolidated financial statements in accordance with United States generally accepted accounting principles.

Under the supervision and with the participation of management, including our CEO and CFO, we conducted an evaluation of internal control over financial reporting as of December 31, 2008 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control—Integrated Framework. Based upon our evaluation, we concluded that our internal control over financial reporting was not effective as of December 31, 2008, as a result of the material weakness described below.

The Company has identified a material weakness with respect to the accounting for derivative instruments in accordance with the requirements of SFAS No. 133, Accounting for Derivative Instruments and Hedging Activities. The design of the Company's procedures for determining and recording the fair market value of certain foreign exchange contracts was not effective. Specifically, the Company misinterpreted the counterparty bank report and therefore misstated the fair value of its foreign exchange contracts as of September 30, 2008. Additionally, the Company did not have a procedure in place to adjust the values as reported by the counterparty bank to fair value as required by SFAS No. 157, Fair Value Measurements. This deficiency resulted in material errors in the financial statements for the three and nine months ended September 30, 2008 and as a result, the Company filed an amended Quarterly Report on Form 10-QA to restate its interim financial results.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2008 has been audited by KPMG LLP, an independent registered public accounting firm, whose report appears in Item 8 of this Annual Report on Form 10-K.

(c) Changes in Internal Control over Financial Reporting

The Company has made no changes in its internal controls over financial reporting during the quarter ended December 31, 2008 that have materially affected or are reasonably likely to materially affect our internal control over financial reporting.

(d) Limitation of Effectiveness of Controls

Internal control over financial reporting has inherent limitations. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment and breakdowns resulting from human failures. Internal control over financial reporting also can be circumvented by collusion or improper management override. Because of such limitations, there is a risk that material misstatements will not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate this risk.

(e) Remediation efforts

In the first quarter of 2009, the Company revised its internal controls with respect to derivative instruments to ensure that these instruments would be reported at the correct fair market value. The specific steps that the Company completed to remediate the material weakness consisted of:

- ¨ Requesting a written confirmation from its foreign bank in English each month as to the counterparty value of the outstanding foreign exchange contracts as of month end.
- ♦ Monitoring on a periodic basis the fluctuations in the exchange rate for the currencies that are under forward contracts so that changes in fair value are anticipated.
- ♦ Hiring an independent valuation company to adjust the bank-provided fair values of the foreign exchange contracts for non-performance risk.

ITEM 9B. OTHER INFORMATION.

None.

PART III

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 sections captioned “Directors and Executive Officers” and “Section 16(A) Beneficial Ownership Reporting Compliance” in the definitive Proxy Statement for the Company’s 2009 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. In addition, the Company has adopted a Code of Ethics for its Principal Executive Officer and Senior Financial Officers which is also available on our website. The Company will post on its website information about any amendment to, or waiver from, any provision of the Code 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 “Compensation of Directors and Executive Officers” section in the definitive Proxy Statement for the 2009 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 “Compensation of Directors and Executive Officers” in the definitive Proxy Statement for the 2009 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 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 2009 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 2009 Annual Meeting of Shareholders and incorporated herein by reference or will be provided in an amendment to this Annual Report on Form 10-K.

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PART IV

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 – Internal Control over Financial Reporting
Report of Independent Registered Public Accounting Firm – Consolidated Financial Statements
Consolidated Balance Sheets as of December 31, 2008 and 2007
Consolidated Statements of Operations for the years ended December 31, 2008, 2007, and 2006
Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2008, 2007, and 2006
Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2008, 2007, and 2006
Consolidated Statements of Cash Flows for the years ended December 31, 2008, 2007, and 2006
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 either inapplicable or 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.

GSE SYSTEMS, INC.
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For the Year Ended December 31, 2008

SIGNATURES

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

GSE Systems, Inc.

By: / s / JOHN MORAN
John Moran
Chief Executive Officer

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

Date: March 16, 2009	/ s / JOHN MORAN John Moran, Chief Executive Officer (Principal Executive Officer)
Date: March 16, 2009	/ s / JEFFERY G. HOUGH Jeffery G. Hough, Senior Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)

Date: March 16, 2009	(Jerome I. Feldman, Chairman of the Board	)	By: / s / JEFFERY G. HOUGH
	(Michael D. Feldman, Director	)	Jeffery G. Hough
	(Dr. Sheldon L. Glashow, Director	)	Attorney-in-Fact
	(Jane Bryant Quinn, Director	)	
	(Dr. Roger Hagengruber, Director	)	
	(Joseph W. Lewis, Director	)	
	(George J. Pedersen, Director	)	

(Orrie Lee Tawes III,)
Director

A Power of Attorney, dated March 4, 2009 authorizing Jeffery G. Hough to sign this Annual Report on Form 10-K for the fiscal year ended December 31, 2008 on behalf of certain of the directors of the Registrant is filed as Exhibit 24.1 to this Annual Report.

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Exhibit	Description of Exhibit
3	Articles of Incorporation and Bylaws
3(i)	Fourth Amended and Restated Certificate of Incorporation of the Company. Previously filed in connection with the GSE Systems, Inc. Form DEF 14A as filed with the Securities and Exchange Commission on November 20, 2007 and incorporated herein by reference.
3(ii)	Amended and Restated Bylaws of the Company. Previously filed in connection with Form DEF 4A as filed with the Securities and Exchange Commission on November 20, 2007 and incorporated herein by reference.
4.	Instruments Defining Rights of Security Holders, including Indenture.
4.1	Specimen Common Stock Certificate of the Company. Previously filed in connection with Amendment No. 3 to the GSE Systems, Inc. Form S-1 Registration Statement as filed with the Securities and Exchange Commission on July 24, 1995 and incorporated herein by reference.
4.2	Cancellation and Warrant Exchange Agreement dated February 28, 2006 by and among GSE Systems, Inc. and Dolphin Direct Equity Partners, LP. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on March 6, 2006 and incorporated herein by reference.
4.3	Registration Rights Agreement dated February 28, 2006 by and among GSE Systems, Inc. and Dolphin Direct Equity Partners, LP. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on March 6, 2006 and incorporated herein by reference.
4.4	Senior Subordinated Secured Convertible Note and Warrant Purchase Agreement dated as of May 26, 2005 by and among GSE Systems, Inc. and Dolphin Direct Equity Partners, LP. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on March 6, 2006 and incorporated herein by reference.

Exhibit	Description of Exhibit
4.5	Form of Warrant to Purchase 900,000 shares of Common Stock of GSE Systems, Inc. dated as of February 28, 2006. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on March 6, 2006 and incorporated herein by reference.
4.6	Form of Warrant to Purchase 380,952 shares of Common Stock of GSE Systems, Inc. dated as of May 26, 2005. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on March 6, 2006 and incorporated herein by reference.
4.7	Form of Warrant to Purchase 150,000 shares of Common Stock of GSE Systems, Inc. dated as of February 28, 2006. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on March 6, 2006 and incorporated herein by reference.
4.8	Certificate of Designation, Preferences and Rights of Series A Cumulative Preferred Stock dated as of February 28, 2006 providing for the issuance of a series of 42,500 shares of Series A Cumulative Convertible Preferred Stock, par value $0.01 per share. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on March 6, 2006 and incorporated herein by reference.
4.9	Form of Warrant to Purchase 367,647 shares of the Company's Common Stock dated as of March 7, 2006. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on March 13, 2006 and incorporated herein by reference.
4.10	Securities Purchase Agreement, dated as of June 15, 2007 by and between GSE Systems, Inc. and each of the Investors to sell a total of 1,666,667 shares of GSE Common Stock. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 18, 2007 and incorporated herein by reference.
4.11	Form of Warrant issued by GSE Systems, Inc to each of the Investors to purchase shares of GSE Common Stock. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 18, 2007 and incorporated herein by reference.

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Exhibit Description of Exhibit

4.12 Registration Rights Agreement, dated as of June 15, 2007 by and between GSE Systems, Inc. and each of the Investors. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 18, 2007 and incorporated herein by reference.

4.13 Consent and Waiver, dated as of June 15, 2007, among GSE Systems, Inc., GSE Power Systems, Inc. and Laurus Master Fund Ltd. Previously filed in connection with the GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 18, 2007 and incorporated herein by reference.

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 GSE Systems, Inc. 1995 Long-Term Incentive Plan, amended as of September 25, 2007. Previously filed in connection with the GSE Systems, Inc. Form DEF 14A as filed with the Securities and Exchange Commission on November 20, 2007 and incorporated herein by reference. *

10.3 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. *

10.4 Management Services Agreement between GSE Systems, Inc. and GP Strategies Corporation dated January 1, 2004. Previously filed in connection with the GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission on April 14, 2004 and incorporated herein by reference.

10.5 Memorandum of Association of Limited Liability Company dated November 8, 2005 by and between Al Qudra Holding PJSC, Centre of Excellence for Applied Research and Training, and GSE Systems, Inc. Previously filed in connection with the GSE Systems, Inc. Form 10-Q/A filed with the Securities and Exchange Commission on October 4, 2006 and incorporated

herein by reference.

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Exhibit	Description of Exhibit
10.6	Supply Agreement Contract by and between Emirates Simulation Academy, LLC and GSE Power Systems, Inc. dated January 3, 2006. Previously filed in connection with the GSE Systems, Inc. Form 10-Q/A filed with the Securities and Exchange Commission on October 4, 2006 and incorporated herein by reference.
10.7	License and Technology Transfer Agreement by and Between GSE Power Systems, Inc. and Emirates Simulation Academy, LLC dated January 3, 2006. Previously filed in connection with the GSE Systems, Inc. Form 10-Q/A filed with the Securities and Exchange Commission on October 4, 2006 and incorporated herein by reference.
10.8	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.
10.9	$3,500,000 Ex-Im Bank-Guaranteed Transaction Specific Revolving Line of Credit, dated as of march 28, 2008. Previously filed in connection with the GSE Systems, Inc. Form 8-K as filed with the Securities and Exchange Commission on April 3, 2008 and incorporated herein by reference.
10.10	Security Agreement by and among GSE Systems, Inc., GSE Power Systems, Inc and Bank of America, N.A. dated March 28, 2008. Previously filed in connection with the GSE Systems, Inc. Form 8-K as filed with the Securities and Exchange Commission on April 3, 2008 and incorporated herein by reference.
10.11	Borrower Agreement by and among GSE Systems, Inc., GSE Power Systems, Inc. and Bank of America, N.A. dated March 28, 2008. Previously filed in connection with the GSE Systems, Inc. Form 8-K as filed with the Securities and Exchange Commission on April 3, 2008 and incorporated herein by reference.
10.12	Continuing and Unconditional Guaranty by GSE Process Solutions, Inc. and Bank of America, N.A. dated as of March 28, 2008. Previously filed in connection with the GSE Systems, Inc. Form 8-K as filed with the Securities and Exchange Commission

on April 3, 2008 and incorporated herein by reference.

Exhibit	Description of Exhibit
10.13	Continuing and Unconditional Guaranty by MSHI, Inc. and Bank of America, N.A. dated as of March 28, 2008. Previously filed in connection with the GSE Systems, Inc. Form 8-K as filed with the Securities and Exchange Commission on April 3, 2008 and incorporated herein by reference.
10.14	$1,500,000 Domestic Revolving Line of Credit dated as of March 28, 2008. Previously filed in connection with the GSE Systems, Inc. Form 8-K as filed with the Securities and Exchange Commission on April 3, 2008 and incorporated herein by reference.
10.15	Security Agreement by and among GSE Systems, Inc., GSE Power Systems, Inc. and Bank of America, N.A. dated as of March 28, 2008 (Domestic Revolving Line of Credit). Previously filed in connection with the GSE Systems, Inc. Form 8-K as filed with the Securities and Exchange Commission on April 3, 2008 and incorporated herein by reference.
10.16	Continuing and Unconditional Guaranty by GSE Process Solutions, Inc. and Bank of America, N.A. dated as of March 28, 2008. Previously filed in connection with the GSE Systems, Inc. Form 8-K as filed with the Securities and Exchange Commission on April 3, 2008 and incorporated herein by reference.
10.17	Continuing and Unconditional Guaranty by MSHI, Inc. and Bank of America, N.A. dated as of March 28, 2008. Previously filed in connection with the GSE Systems, Inc. Form 8-K as filed with the Securities and Exchange Commission on April 3, 2008 and incorporated herein by reference.
10.18	Pledge Agreement by and among the Company, MSHI, Inc., GSE Power Systems, Inc., GSE Process Solutions, Inc. and Bank of America, N.A. dated as of March 28, 2008. Previously filed in connection with the GSE Systems, Inc. Form 8-K as filed with the Securities and Exchange Commission on April 3, 2008 and incorporated herein by reference.

Exhibit	Description of Exhibit
10.19	Control Agreement Regarding Limited Liability Company Interests by and among GSE Systems, Inc., Bank of America, N.A. and GSE Services Company LLC dated as of March 28, 2008. Previously filed in connection with the GSE Systems, Inc. Form 8-K as filed with the Securities and Exchange Commission on April 3, 2008 and incorporated herein by reference.
14.	Code of Ethics
14.1	Code of Ethics for the Principal Executive Officer and Senior Financial Officers. Previously filed in connection with the GSE Systems, Inc. Form 10-K file with the Securities and Exchange Commission on March 31, 2006 and incorporated herein by reference.
21.	Subsidiaries.
21.1	List of Subsidiaries of Registrant at December 31, 2008, filed herewith.
23.	Consents of Experts and Counsel
23.1.	Consent of KPMG LLP, filed herewith.
24.	Power of Attorney
24.1	Power of Attorney for Directors' and Officers' Signatures on SEC Form 10-K, filed herewith.
31.	Certifications
31.1	Certification of Chief Executive Officer of the Company pursuant to Securities and Exchange Act Rule 13d-14(a)/15(d-14(a), as adopted pursuant to Section 302 and 404 of the Sarbanes-Oxley Act of 2002, filed herewith.
31.2	Certification of Chief Financial Officer of the Company pursuant to Securities and Exchange Act Rule 13d-14(a)/15(d-14(a), as adopted pursuant to Section 302 and 404 of the Sarbanes-Oxley Act of 2002, filed herewith.
32.	Section 1350 Certifications

32.1 Certification of Chief Executive Officer and Chief Financial Officer of the Company pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, file herewith.

* Management contracts or compensatory plans required to be filed as exhibits pursuant to Item 14 (c) of this report.

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