GSE SYSTEMS INC

FORM 10-K
(Annual Report)

Filed 03/31/00 for the Period Ending 12/31/99

Address	1332 LONDONTOWN BLVD
	SYKESVILLE, MD 21784
Telephone	4109707874
CIK	0000944480
Symbol	GVP
SIC Code	7372 - Prepackaged Software
Industry	Software
Sector	Technology
Fiscal Year	12/31

GSE SYSTEMS INC

FORM 10-K
(Annual Report)

Filed 3/31/2000 For Period Ending 12/31/1999

Address	9189 RED BRANCH ROAD
	COLUMBIA, Maryland 21045
Telephone	410-772-3500
CIK	0000944480
Industry	Software & Programming
Sector	Technology
Fiscal Year	12/31

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION Conformed

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, 1999

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 0-26494

GSE Systems, Inc.

(Exact name of registrant as specified in its charter)

Delaware	52-1868008
(State of incorporation)	(I.R.S. Employer Identification Number)

9189 Red Branch Road, Columbia, Maryland 21045
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (410) 772-3500

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

Common Stock, $.01 par value
(Title of each class)

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

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. [ ]

The aggregate market value of Common Stock held by non-affiliates as of March 15, 2000 was $40,170,164 based on closing price of such stock on that date.

Number of shares of Common Stock outstanding as of March 15, 2000: 5,183,247

DOCUMENTS INCORPORATED BY REFERENCE

Part III incorporates certain information by reference from the Registrant's definitive proxy statement to be filed for its 2000 Annual Meeting of Shareholders.

GSE SYSTEMS, INC.
FORM 10-K
For the Year Ended December 31, 1999

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* to be incorporated by reference from the Proxy Statement for the registrant's 2000 Annual Meeting of Shareholders.

Cautionary Statement Regarding Forward-Looking Statements. This Form 10-K contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, which are subject to the safe harbors created by those Acts. These statements include the plans and objectives of management for future operations, including plans and objectives relating to the development of the Company's business in the domestic and international marketplace. All forward-looking statements involve risks and uncertainties, including, without limitation, risks relating to the Company's ability to enhance existing software products and to introduce new products in a timely and cost-effective manner, reduced development of nuclear power plants that may utilize the Company's products, a long pay-back cycle from the investment in software development, uncertainties regarding the ability of the Company to grow its revenues and successfully integrate operations through expansion of its existing business and strategic acquisitions, the ability of the Company to respond adequately to rapid technological changes in the markets for process control and simulation software and systems, significant quarter-to-quarter volatility in revenues and earnings as a result of customer purchasing cycles and other factors, dependence upon key personnel, and general market conditions and competition. See "Risk Factors", in Part I. The forward-looking statements included herein are based on current expectations that involve numerous risks and uncertainties as set forth herein, the failure of any one of which could materially adversely affect the operations of the Company. The Company's plans and objectives are also based on the assumptions that market conditions and competitive conditions within the Company's business areas will not change materially or adversely and that there will be no material adverse change in the Company's operations or business. Assumptions relating to the foregoing involve judgments with respect, among other things, to future economic, competitive and market conditions and future business decisions, all of which are difficult or impossible to predict accurately and many of which are beyond the control of the Company. Although the Company believes that the assumptions underlying the forward-looking statements are reasonable, any of the assumptions could be inaccurate and there can, therefore, be no assurance that the forward-looking statements included in this Form 10-K will prove to be accurate. In light of the significant uncertainties inherent in the forward-looking statements included herein, the inclusion of such information should not be regarded as a representation by the Company or any other person that the objectives and plans of the Company will be achieved.

PART I

ITEM 1. BUSINESS.

GSE Systems, Inc. ("GSE Systems", "GSE" or the "Company") develops and delivers business and technology solutions by applying process control, simulation software, systems and services to the energy, process and manufacturing industries worldwide. The Company's solutions and services assist customers in reducing the time-to-market for new product development; improving chemistry for producing products; improving quality, safety and throughput; reducing operating expenses; and enhancing overall productivity. The Company's products are used in over 500 applications, representing over 200 customers in 30 countries, in the following industries: specialty chemical, food & beverage, pharmaceutical, and fossil and nuclear power generation.

Recent Developments.

Following the scale back of the Company to its core business units in 1998, Power Systems and Process Solutions, GSE developed a business strategy in 1999 that leverages the strengths of these core businesses, simulation and automation. In May, 1999 the Company introduced its new business and marketing strategy VirtualPlant. VirtualPlant combines the benefits of real-time simulation with control systems to create a "living", learning real-time representation of an operating plant. VirtualPlant also allows a customer to create an environment for simulation-enhanced experimentation, thereby reducing the amount of physical experimentation necessary to achieve an optimal design result for a new process product. Based on sophisticated simulation technologies and expert knowledge of processing realities, VirtualPlant is a fully integrated, comprehensive strategy including software, consulting services and training that energy and process manufacturing companies can use to dramatically reduce new product time-to-market, minimize development costs, achieve greater optimization and improve overall profitability. Several significant events have occurred in the last year that reflect the development of the Company's strategy:

o In April, 1999 the Company purchased certain assets and employed the associates of BatchCAD Limited, a United Kingdom-based supplier of batch process development and design consulting services and simulation software tools. The BatchCAD software tools provide simulation-based solutions that enable chemical, food, and pharmaceutical companies to achieve optimal configurations of chemistry, equipment, control system and other charcteristics necessary to technically describe enough parameters to successfully design and transfer to manufacturing a chemical product. In doing so, the product helps achieve a faster time-to-market and enables more product ideas to reach the full manufacturing stage.

o In April, 1999 the Company purchased certain assets and contracts of Mitech, a Massachusetts-based supplier of neural network and artificial intelligence software.

o In February, 2000 the Company participated in the founding of Avantium Technologies, a high technology company that employs high speed experimentation and simulation ("HSE&S") technologies in contract research and development in the area of new product development and process chemistry. GSE is an equity shareholder along with Shell International Chemical, SmithKline Beecham, W.R. Grace, three Dutch universities (Technical University of Delft, Technical University of Eindhoven, and Twente University) and three venture capital firms (Alpinvest, The Generics Group, and S.R.One, the SmithKline Beecham venture funding company). Avantium Technologies will deploy HSE&S techniques to rapidly discover and optimize new processes and products of interest to the petrochemicals, fine chemicals and pharmaceutical industries. GSE will provide the basis for the informatics system that will automate and maximize Avantium's lab environment, and the Company will utilize its core simulation technologies to assist in the optimization of experimentation as well as analysis of the resulting data. The Company's undiluted holdings in Avantium Technologies will be approximately 10%; after taking into consideration the expected dilutive effect of stock option plans, the Company's diluted ownership percentage is anticipated to be approximately 5%.

o The Company will have exclusive distribution and marketing rights to the technology developed with Avantium Technologies (including but not limited to the informatics solution set, the laboratory equipment/solution and associated equipment/sensor technology, the management services associated with the laboratory technology, the technology contributed by any of the current or future partners in Avantium) and will provide engineering and development services on a contract basis to Avantium for the completion of this technology.

o The Company initiated a market development program designed to bring the benefits of VirtualPlant, plus the products and services associated with its affiliation with Avantium Technologies, to major customers around the world. Additionally, the Company will directly, but non-exclusively, market the R&D capabilities of Avantium Technologies.

Background.

GSE Systems was formed on April 13, 1994, by ManTech International Corporation ("ManTech"), GP Strategies Corporation ("GP Strategies") and its affiliates, General Physics Corporation and SGLG, Inc.; and Vattenfall AB to consolidate the simulation and related businesses of their affiliates, GSE Power Systems, Inc. ("Power Systems" and formerly known as "Simulation, Systems & Services Technologies Company" or "S3 Technologies"), GP International Engineering & Simulation, Inc. ("GPI") and GSE Power Systems AB ("Power Systems AB" and formerly known as "EuroSim AB"). On December 30, 1994, GSE Systems expanded into the process control automation and supply chain management consulting industry through its acquisition of the process systems division of Texas Instruments Incorporated, which the Company operates as GSE Process Solutions, Inc. ("Process Solutions").

In April 1996, the Company aligned its operating groups into three strategic business units ("BUs") to better serve its then primary vertical markets - Power, Process and Oil & Gas. The realignment allowed the Company to focus on providing all of its technologies to these markets, while addressing the specific needs of each market and delivering industry specific solutions. In May 1996, the Company acquired Erudite Software & Consulting, Inc. "Erudite"), a regional provider of client/server technology, custom application software development, training services, hardware/software sales, and network design and implementation services. The acquisition was made to facilitate the Company's efforts to enter the client/server information technology solutions market. Erudite was subsequently combined with a small pre-existing consulting group within the Company to form the Company's Business Systems BU.

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 Compan's pre-existing technology with the technical staff of the acquired Ryan business positioned the Company to be more competitive for modifications and upgrade services projects within the nuclear simulation market.

After incurring substantial losses in 1997, management decided to divest the Company's unprofitable BU's and concentrate its resources on its core businesses, Power Systems and Process Solutions. Accordingly, in April 1998, the Company sold substantially all of the assets of Erudite to Keane, Inc. and in November 1998, the Company divested certain assets of the Oil & Gas BU to Valmet Automation (USA), Inc. See Note 3, Acquisitions and dispositions, in the"Notes to Consolidated Financial Statements," for a discussion of these transactions.

As discussed in the "Recent Developments" Section above, in April 1999 the Company acquired certain assets and employed the associates of BatchCAD Limited. With this acquisition, the Company gained a presence in the United Kingdom, with an office in Hexham, England, that will provide the baseline for future expansion in the region. The BatchCAD product is a key element in the Company's VirtualPlant strategy.

Business Strategy.

GSE Systems combines real-time control automation, real-time simulation and application engineering for true problem solving techniques and solutions. The Company believes this provides a technological advantage which, when combined with its focused efforts on targeted industry markets and defined application solution approach, allows its staff to assess, define, develop, and apply innovative solutions that meet the current and future industry-specific needs of its customers.

Users in the markets served by the Company want to focus their resources on their own customers and wish to spend less resources on managing areas such as control and simulation systems, the core strengths of GSE. Its products and services are designed to help its customers solve problems and create opportunity within these areas.

Within the targeted industry segments, the Company seeks customers who will make investments based primarily on one of the following six basic goals:

o Reduction in time-to-market for new product development
o Improvement in chemistry for producing products
o Increase in yield or efficiency
o Improvement in quality
o Solution to an environmental concern
o Solution to a safety concern

All of these directly or indirectly impact the profitability of a particular customer. GSE Systems utilizes its expertise within real-time control automation, real-time simulation and application engineering to provide solutions to its customers in those areas.

The Company believes that GSE Systems can partner with customers to help provide them with cost-effective solutions for problems associated with simulation and control, which would allow its customers to focus their resources on their own strengths.

The Company has enhanced its ability to develop strategic opportunities with the formation of a Business Development group. This group will focus on identifying industry trends and creating new opportunities for the Company to leverage its core capabilities of resources and products.

As a result of this strategy, the Company has recently developed an informatics strategy that provides an integrated system for the management and implementation of advanced lab environments to assist companies in the development of new products and to improve the chemistry necessary to produce products under the most optimum conditions.

Services and Products.

GSE Systems has developed its knowledge and expertise in process control and simulation systems that are utilized to improve, control and model processes. This expertise is concentrated heavily in the process industries, including the chemicals, food & beverage, and pharmaceuticals fields, as well as in the power generation industry, where the Company is a world leader in nuclear power plant simulation.

As the Microsoft Windows NT operating environment continues to evolve, the Company has continued the migration of its products to this platform in such a way as to assure current customers' legacy applications will function properly while at the same time offering the advantages of the new technology. Although the Company uses open standards for its products, the Company's standard system configurations are based on the proprietary technology and know-how, which are necessary to meet the requirements of its customers in the controls and simulation markets.

The Company's business model is based on software licensing and value-added services, as well as hardware sales. Because this model is based primarily on software and value-added services, the Company believes it can maintain its business model in an environment of rapidly decreasing hardware costs.

In the Process Business Unit, the flagship product is a Distributed Control System ("DCS") product, known as the D/3 DCS that is highly flexible and open. This product is a real-time system, which uses multiple process control modules to monitor, measure, and automatically control variables in both continuous and complex batch processes, as well as form the platform for plant-wide information for use by operators, engineers and management.

Other products include the following:

o VPbatch (formerly FlexBatch) , a flexible batch manufacturing system used to facilitate the rapid creation of various batch production processes;

o TotalVision, which is a graphical system that provides a client/server-based human-machine interface for real-time process and plant information;

o VPtv, a web enabled version of the TotalVision package; and

o SABL, which is a sophisticated batch and sequential manufacturing software language that permits the scheduling and tracking of raw materials and finished products, data collection and emergency shutdown procedures.

The Company's proprietary technology also includes real-time dynamic simulation tools and products that are used to develop high fidelity simulations for use in petroleum refineries, chemical processing plants and other industrial plants. The most prominent set of products and tools is known as SimSuite Pro, which facilitates design verification, process optimization and operator training.

The Power Business Unit focuses on developing high fidelity, real-time, dynamic simulators for nuclear and fossil power plants for use in both operator training and plant optimization. GSE's SimSuite Power set of auto-code generators provides state of the art simulation of flow processes, logic and control systems and electrical distribution systems within a power plant. This technology is both licensed by the Company to its customers as well as used by the Company to develop simulators for its customers.

In addition, other products include:

o SimExec, a Windows NT based real-time simulation executive system that controls all simulation activities and allows for off-line software development environment in parallel with the training environment.

o RACS, a fully integrated Access Control and Intrusion Detection System ideally suited for nuclear power plant security applications, and other large, multi-access facilities.

o 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 Company also provides value-added 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.

Customers.

The Company has provided over 500 simulation and process control systems to an installed base of over 200 customers worldwide. In 1999, approximately 38% of the Company's worldwide revenue was generated from end users outside the United States.

The Companys customers include, among others, Archer Daniels Midland Company, Bethlehem Steel Corporation, BASF Corporation, Cargill Incorporated, Carolina Power and Light Company, Commonwealth Edison Company, Eastman Company, Eskom South Africa, Karnaraft Sakerhet & Utbildning AB, Merck & Co., Inc., Miller Brewing Company, Nationalina Elecktrischecka Kompania, Orgrez SC, Pacific Northwest National Laboratory, and Westinghouse Savannah River Company.

For the year ended December 31, 1999, one customer accounted for approximately 13% of the Company's revenues.

Strategic Alliances.

In recent years, a high portion of the Company's international business has come from major contracts in Europe, 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 or partnerships with various entities including Automation Systems Co. Inc., a subsidiary of ManTech China Systems Corporation; Siemens AG (Europe); All Russian Research Institute for Nuclear Power Plant Operation (Russia); Kurchatov Institute (Russia); Samsung Electronics (Korea); Toyo Engineering Corporation (Japan); and Institute for Information Industry (Taiwan). These alliances have enabled the Company to penetrate these regions by combining its technological expertise with the regional or local presence and knowledge of its partners.

Also, the Company continues to believe that it must have strong solutions partners as well as strong technology partners in order to address the myriad of systems needs of its customers in the various geographical areas in which they do business.

Sales and Marketing.

The Company markets its products and services through a network of direct sales staff, agents and representatives, systems integrators and strategic alliance partners. The Company also employs personnel that support corporate advertising, literature development and exhibit/conference participation.

GSE Systems employs a direct sales force in the continental United States that is regionally based, market focused and trained on its product and service offerings. Market-oriented business and customer development teams define and implement specific campaigns to pursue opportunities in the power, process and manufacturing marketplaces. This effort is supported by an extensive, regionally-based support organization focused on the current customer installed base. The Company's ability to support its multi-facility, international and/or multinational clients, is facilitated by its network of offices throughout the U.S. and overseas. Within the U.S., the Company maintains offices in: Alabama, Georgia, Louisiana, Maryland, North and South Carolina, Pennsylvania and Texas. Outside the U.S., the Company has offices in Sweden, Belgium, Japan, Taiwan and the United Kingdom. In addition to its offices located overseas, the Company's ability to conduct international business is enhanced by its multilingual and multicultural work force.

The Company has recently enhanced the sales and marketing function by establishing a VirtualPlant customer and marketing development team. This group focuses on the executive level relationship between GSE and potential customer partners. This group will also be responsible for handling the new customer growth as a result of the Avantium venture.

Strategic alliance partners, systems integrators and agents represent the Company's interests in Russia, Germany, Switzerland, Spain, Czech Republic, Slovakia, United Arab Emirates, India, South Africa, Venezuela, Mexico, Argentina, and the People's Republic of China.

Product Development.

The Company continued to invest in the conversion of its D/3 DCS (Version 10.0 was released in October, 1999), VPbatch, and SimSuite Pro products to the Microsoft Windows NT platform. For the years ended December 31, 1999, 1998 and 1997, gross research and product development expenditures for the Company were $5.4 million, $4.3 million, and $5.1 million, respectively. Capitalized software development costs totaled $2.5 million, $2.3 million and $3.5 million for the years ended December 31, 1999, 1998 and 1997. See Note 2, Summary of significant accounting policies, in the "Notes to Consolidated Financial Statements", for a discussion of the Company's policy regarding capitalization of software development costs.

Industries Served.

The following chart illustrates the approximate percentage of the Company's 1999, 1998 and 1997 revenues, respectively, attributable to each of the major industries served by the Company:

	1999	1998	1997
Power	48 %	42 %	31 %
Process	52 %	49 %	46 %
Other	0 %	9 %	23 %
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, 1999, the Company's aggregate contract backlog totaled approximately $40 million.

Employees.

As of December 31, 1999, the Company had 406 employees, a 9% increase from December 1998.

Segment Information.

See Note 17, Segment information, in the "Notes to Consolidated Financial Statements", for discussion of the Company's segments.

RISK FACTORS.

Fluctuations in Quarterly Operating Results.

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 foreign economic conditions. Since the Company's expense levels are based in part on its expectations as to future revenues, 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 net income. The Company believes that these 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.

International Sales and Operations.

Sales of products and the provision of services to end users outside the United States accounted for approximately 38% of the Companys consolidated revenues in 1999. The Company anticipates that international sales and services will continue to account for a significant portion of its revenues 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 such as Russia, Ukraine, Bulgaria, and the Czech Republic, as well as to customers in countries whose economies have suffered in the recent Asian financial crisis. 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. Furthermore, the Company's ability to expand its business into certain emerging international markets is dependent, in part, on the ability of its customers to obtain financing.

Revenues in the Nuclear Power Industry.

The Company will continue to derive a significant portion of its revenues from customers in the nuclear power industry, particularly the international 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, general economic conditions and the ability of customers to obtain adequate financing.

Revenues in the Chemicals Industry.

The Company derives a portion of its revenues from companies in the chemicals industry. Accordingly, the Company's future performance is dependent to a certain extent upon the demand for the Company's products by customers in the chemical industry. The Company's revenues may be subject to period-to-period fluctuations as a consequence of industry cycles, as well as general domestic and foreign economic conditions and other factors affecting spending by companies in the Company's target process industries. There can be no assurance that such factors will not have a material adverse effect on the Company's business, operating results and financial condition.

Product Development and Technological Change.

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 and process control technologies. The life cycles for software modeling tools, display system software, process control and simulation technologies 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's products are offered in markets affected by technological change and emerging standards that are influenced by customer preferences. The Company has expended significant resources in developing versions of its core products that operate in the increasingly popular Windows NT environment; however, there can be no assurance of customer acceptance of these Windows NT-based products or that these products will be competitive with products offered by the Company's competitors. Although the Company believes that no significant trends to migrate to other operating platforms currently affect the markets for the Company's products, there can be no assurance that customers will not require compatibility with such other operating platforms in the future.

Intellectual Property Rights.

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, patent and trademark law, contractual arrangements and technical means to protect its intellectual property rights. The Company generally 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 generally 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 patents, 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 the Company's products and intellectual property rights to the same extent as the laws of the United States.

Competition.

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 and process automation 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. The Company believes that its technology leadership, experience, ability to provide a wide variety of solutions, product support and related services, open architecture and international alliances will allow it to compete effectively in these markets. 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.

Additionally, GSE Systems' operations are dependent on the efforts of its technical personnel and its senior management. Thus, recruiting and retaining capable personnel, particularly engineers, computer scientists and other personnel with expertise in computer software and hardware, as well as particular customer processes, are critical to the future performance of the Company. Competition for qualified technical and management personnel is substantial.

Legal Liability.

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. The failure or malfunction of one of the Company's systems or devices could create potential liability for substantial monetary damages and environmental cleanup costs. Such damages or claims could exceed the applicable coverage of the Company's insurance. Although management has no knowledge of material liability claims against the Company to date, such potential future claims could have a material adverse effect on the business or financial condition of the Company. Certain of the Company's products and services are used by the nuclear power industry. The Company believes that it does not have significant liability exposure associated with such use, as nearly all such products and services relate to 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.

Influence of Affiliate Stockholders.

As of the date of this report, certain directors, executive officers and other parties that are affiliates of the Company beneficially own approximately 45% of the common stock of the Company. If these stockholders vote together as a group, they will be able to exert significant influence on the business and affairs of the Company, including the election of individuals to the Company's Board of Directors, and the outcome of actions that require stockholder approval.

ITEM 2. PROPERTIES.

In early 1998, the Company entered into agreements whereby the lease for its then-existing Columbia facility was terminated. The operations that occupied this facility were relocated into two separate facilities during the second quarter of 1998. One of these facilities is in Columbia, Maryland (approximately 53,000 square feet) and is occupied by the operations of Power Systems, as well the Company's corporate headquarters offices and support functions; the other facility is in Baltimore, Maryland (approximately 39,000 square feet) and is occupied by the operations of Process Solutions. Each of the leases for these smaller facilities has a term of ten years.

In addition, the Company leases office space domestically in Alabama, Georgia, Louisiana, Texas, Pennsylvania, North and South Carolina, and internationally in Belgium, Japan, Sweden, Taiwan, and the United Kingdom. The Company leases these facilities for terms ending between 2000 and 2002. During 1999, as part of the wind down of the Oil & Gas BU, the Company's facilities in Singapore and Korea were shut down.

ITEM 3. LEGAL PROCEEDINGS.

The Company is from time to time involved in legal proceedings incidental to the conduct of its business. The Company currently is not a party to legal proceedings which, 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, 1999.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS.

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.

	1999	
Quarter	High	Low
First	$5	$2 1/2
Second	$6 3/4	$4 1/8
Third	$6 1/4	$3 3/4
Fourth	$4 1/4	$3

	1998	
Quarter	High	Low
First	$3 1/2	$2
Second	$5	$2 1/4
Third	$3 11/16	$1
Fourth	$3 1/2	$2 1/4

In January 1999, the Company's common stock was approved for listing on the American Stock Exchange, where it now trades under the symbol "GVP". Previously, the Company's common stock had traded on the NASDAQ National Market System under the symbol "GSES".

There were approximately 37 holders of record of the common stock as of March 15, 2000. Based upon information available to it, the Company believes there are approximately 700 beneficial holders of the common stock. 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.

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

ITEM 6. SELECTED FINANCIAL DATA.

Historical consolidated results of operations and balance sheet data presented below, have been derived from the historical financial statements of the Company. Erudite was acquired on May 22, 1996 through a merger accounted for by using the pooling of interests method. Accordingly, the Company's financial statements have been restated to include, on a historical cost basis, the accounts and operations of Erudite for all periods presented. The Company disposed of substantially all of the assets of Erudite as of April 30, 1998. In November 1998, the Company completed the sale of certain assets related to activities of its Oil & Gas business unit ("O&G"), effective as of October 30, 1998. The balance sheet data of the Company as of December 31, 1997 includes the operations of Ryan which was acquired by Power Systems as of December 1, 1997. The statement of operations data for the year ended December 31, 1997 includes the activity of Ryan from the date of its acquisition.

For information and disclosures regarding the Compan's business segments, see Note 17, Segment Information, in the "Notes to Consolidated Financial Statements".

	Year ended December 31, (in thousands, except per share data)				
	1995	1996	1997	1998	1999
Contract revenue	$ 96,060	$ 96,033	$ 79,711	$73,818	$66,699
Cost of revenue	65,592	63,679	58,326	49,814	41,629
Gross profit	30,468	32,354	21,385	24,004	25,070
Operating expenses:					
Selling, general and administrative	21,815	24,192	27,320	20,345	22,646
Depreciation and amortization	2,341	2,111	2,368	1,768	1,680
Business combination costs	-	1,206	-	-	-
Employee severance and termination costs	-	-	1,124	-	-
Total operating expenses	24,156	27,509	30,812	22,113	24,326
Operating income (loss)	6,312	4,845	(9,427)	1,891	744
Gain on sale of assets	-	-	-	550	-
Interest expense, net	(983)	(387)	(765)	(350)	(450)
Other income (expense)	364	394	(1,228)	326	40
Income (loss) before income taxes	5,693	4,852	(11,420)	2,417	334
Provision for (benefit from) income taxes	2,017	709	(2,717)	1,020	233
Net income (loss)	$ 3,676	$ 4,143	$ (8,703)	$ 1,397	$ 101
Earnings (loss) per common share -Basic	$ 0.91	$ 0.82	$ (1.72)	$ 0.28	$ 0.02
-Diluted	$ 0.91	$ 0.82	$ (1.72)	$ 0.27	$ 0.02
Weighted average common shares outstanding -Basic	4,049	5,066	5,066	5,066	5,066
-Diluted	4,059	5,073	5,066	5,107	5,351

	As of December 31,				
	1995	1996	1997	1998	1999
Working capital	$ 16,077	$ 13,867	$ 1,646	$ 4,058	$ 8,665
Total assets	54,688	51,006	48,362	48,743	43,027
Long-term liabilities	6,055	2,580	2,369	3,350	9,083
Stockholders' equity	20,532	24,693	15,924	17,089	17,170

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

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 revenues.

	Year ended December 31,					
	1999	%	1998	%	1997	%
Contract revenue	66,699	100.0%	73,818	100.0%	79,711	100.0%
Cost of revenue	41,629	62.4%	49,814	67.5%	58,326	73.2%
Gross profit	25,070	37.6%	24,004	32.5%	21,385	26.8%
Operating expenses:						
Selling, general and administrative	22,646	34.0%	20,345	27.6%	27,320	34.3%
Depreciation and amortization	1,680	2.5%	1,768	2.4%	2,368	3.0%
Employee severance and termination costs	-	-	-	-	1,124	1.4%
Total operating expenses	24,326	36.5%	22,113	30.0%	30,812	38.7%
Operating income (loss)	744	1.1%	1,891	2.6%	(9,427)	-11.8%
Gain on sale of assets	-	0.0%	550	0.7%	-	-
Interest expense, net	(450)	-0.7%	(350)	-0.5%	(765)	-1.0%
Other income (expense)	40	0.1%	326	0.4%	(1,228)	-1.5%
Income (loss) before income taxes	334	0.5%	2,417	3.3%	(11,420)	-14.3%
Provision for (benefit from) taxes	233	0.3%	1,020	1.4%	(2,717)	-3.4%
Net income (loss)	$ 101	0.2%	$ 1,397	1.9%	(8,703)	-10.9%

Comparison of 1999 to 1998.

Contract Revenue. Total contract revenue was $66.7 million and $73.8 million for the years ended December 31, 1999 and 1998, respectively. As previously disclosed, the assets of the Company's Erudite subsidiary and Oil & Gas business unit were divested in 1998. Included in 1998 revenue was $5.3 million from Erudite and $1.1 million from the Oil & Gas BU. After excluding these revenues from 1998 results, total revenues decreased $0.7 million from 1998, or 1.0%.

The Power business unit increased revenue by $1.2 million, or 3.9%, to $32.1 million in 1999 from $30.9 million in 1998, primarily due to higher domestic simulator upgrade projects and service contracts. The Process business unit's revenues decreased by $1.9 million, or 5.2%, to $34.6 million in 1999 from $36.5 million in 1998. During the second half of 1999, the Process Business Unit experienced an order slowdown as customers postponed additional investments in their process control systems, pending the resolution of Y2K date issue concerns.

Gross Profit. Despite the lower revenues in 1999, gross profit increased to $25.1 million in 1999 (37.6% of revenue) from $24.0 million in 1998 (32.5% of revenue). The increase in gross profit as a percentage of revenues reflects a higher component of upgrade projects in the Process business unit in 1999 than in 1998, mainly due to customer concerns about Year 2000 date calculations in their existing process control software. Such upgrades typically have fewer hardware and instrumentation components and more license fees and application engineering work, which tend to generate better margins. In addition, the 1998 margins were impacted slightly by low margins on revenues generated by Erudite and the Oil & Gas business unit prior to the divestiture of their assets. Excluding the margins on the revenues of these divested businesses, 1998 gross profit as a percentage of revenue would have been 33.1%.

Selling, General and Administrative Expenses. Selling, general and administrative expenses totaled $22.6 million in 1999 (34.0% of revenues), an 11.3% increase from 1998 expenses of $20.3 million (27.6% of revenues). Other than changes in research and development costs which increased $900,000 and are discussed below, the increase reflects additional sales and marketing personnel in the Process business unit, increased advertising and promotions related to the Company's VirtualPlant suite of products and services, higher legal fees related to the Company's new credit facility, and internal Y2K compliance programs.

Gross research and product development expenditures were $5.4 million (8.1% of revenue) and $4.3 million (5.8% of revenue) for the years ended December 31, 1999 and 1998, respectively. Of these expenditures, $2.5 million in 1999 and $2.3 million in 1998 were capitalized. Thus, net research and development costs included in selling, general and administrative expenses were $2.9 million and $2.1 million during the years ended December 31, 1999 and 1998, respectively. The Company continued to invest in the conversion of its D/3 DCS (Version 10.0 was released in October, 1999), VPBatch, and SimSuite Pro products to the Microsoft Windows NT platform.

Depreciation and Amortization. Depreciation expense amounted to $1.3 million and $1.2 million during the years ended December 31, 1999 and 1998, respectively.

Amortization of goodwill was $388,000 and $365,000 during the years ended December 31, 1999 and 1998, respectively.

Operating Income (Loss). Operating income amounted to $744,000 (1.1% of revenue) versus $1.9 million, (2.6% of revenue), for the years ended December 31, 1999 and 1998, respectively. The decrease in operating income reflects the lower revenues in 1999 coupled with higher selling, general and administrative costs, as discussed above.

Gain on Sale of Assets. The gain on sale of assets in 1998 reflects the net pre-tax gain realized on the disposition of the Erudite and the Oil & Gas business unit assets. During the second quarter of 1998, the Company recorded a gain of $5.6 million on the sale of the Erudite assets. In the third quarter of 1998, the Company recognized a ($5.0) million pre-tax loss on the disposition of the Oil & Gas business unit assets. These sales and related gains and losses are described more fully under Note 3, Acquisitions and dispositions, in the "Notes to Consolidated Financial Statements".

Interest Expense. Interest expense increased to $450,000 in 1999 from $350,000 in 1998. This increase is attributable primarily to an increase in the Company's borrowings under its lines of credit made during the period to fund working capital requirements.

Other Income (Expense). Other income amounted to $40,000 in 1999 versus $326,000 in 1998, resulting from recognized foreign currency transaction gains.

Provision for (Benefit from) Income Taxes. The Company's effective tax rate was 69.8% in 1999 versus 42.2% in 1998. The difference between the statutory U.S. tax rate and the Company's effective rate for 1999 is primarily the effect of foreign operations taxed at different rates, state taxes and adjustments to the prior year tax provision based on the final 1998 tax returns.

Comparison of 1998 to 1997.

Contract Revenue. Total contract revenue was $73.8 million and $79.7 million for the years ended December 31, 1998 and 1997, respectively. This $5.9 million (7.4%) decrease in revenue was primarily attributable to the disposition of substantially all of the assets of GSE's wholly owned subsidiary, Erudite, and the disposition of certain assets related to activities of the Oil & Gas BU, as previously disclosed. Revenue of $5.3 million and $18.0 million from Erudite were included in 1998 and 1997, respectively, and revenue of $1.1 million and $2.3 million from the Oil & Gas BU were included in 1998 and 1997, respectively.

Revenue from the Company's two core businesses, operated through the Process and Power business units, increased in 1998. The Process business unit increased revenue by $1.7 million to $36.5 million in 1998 from $34.8 million in 1997, or 4.9%, due to increases in customer orders. The Power business unit increased revenue by $6.4 million to $30.9 million in 1998 from $24.5 million in 1997, or 26.1%, primarily due to revenues generated by its domestic service contracts resulting from the acquisition of Ryan, as previously disclosed, and increases in customer orders.

Gross Profit. Gross profit increased to $24.0 million in 1998 from $21.4 million in 1997, or 12.2%, primarily due to increased customer orders and improved margins in the core businesses, and the disposition of unprofitable businesses. Gross profit percentage was 32.5% in 1998 compared to 26.8% in 1997, reflecting improved margins in the core businesses and the disposition of unprofitable businesses.

Selling, General and Administrative Expenses. Selling, general and administrative expenses decreased to $20.3 million, or 27.6% of revenue, during the year ended December 31, 1998 from $27.3 million, or 34.3% of revenue, during the corresponding period in 1997. The decrease in these expenses in 1998 was attributable to the disposition of unprofitable businesses, reduced facilities costs in 1998 due to the relocation of the primary offices of the Company, and ongoing cost containment efforts. 1997 expenses reflected one-time costs for a $600,000 reserve recorded to reduce certain Korean receivables to their estimated realizable value as a result of the Asian financial crisis, professional services related to a lawsuit, and costs of $852,000 associated primarily with the future lease commitments on the unused portion of the former Columbia, Maryland leased facility for which the Company would derive no future benefit.

Gross research and product development expenditures were $4.3 million and $5.1 million for the years ended December 31, 1998 and 1997, respectively. Capitalized software development costs totaled $2.3 million and $3.5 million, during the years ended December 31, 1998 and 1997, respectively. Net research and development costs included in selling, general and administrative expenses were $2.1 million and $1.6 million during the years ended December 31, 1998 and 1997, respectively. The Company continued investing in the conversion of its D/3 DCS product to the Microsoft Windows NT platform and the productization of its SimSuite software tools.

Employee Severance and Termination Costs. The Company recorded a net charge for severance and other employee obligations of $1.1 million in 1997 in connection with cost reduction efforts initiated to offset the impact of a decrease in contract revenues. Of this charge, $976,000 was expended as of December 31, 1997 and the remaining balance was expended in 1998.

Depreciation and Amortization. Depreciation expense amounted to $1.2 million and $2.1 million during the years ended December 31, 1998 and 1997, respectively. This decrease was primarily attributable to the disposition of assets included in the Erudite and the Oil & Gas BU sales.

Amortization of goodwill and intangibles was $365,000 and $219,000 during the years ended December 31, 1998 and 1997, respectively. This increase primarily resulted from the amortization of certain intangible assets acquired as a result of the acquisition of Ryan in December of 1997.

Operating Income (Loss). Operating income amounted to $1.9 million, or 2.6% of revenues, and operating loss amounted to ($9.4) million, or (11.8%) of revenues, during the years ended December 31, 1998 and 1997, respectively. This significant increase in operating income reflected the disposition of unprofitable businesses, increases in customer orders, improved margins and reduced selling, general and administrative expenses in 1998 as compared to 1997.
Gain on Sale of Assets. Gain on sale of assets reflected the net pre-tax gain realized on the disposition of the Erudite and the Oil & Gas BU assets, as previously disclosed. In the third quarter of 1998, the Company recognized a ($5.0) million pre-tax loss on the disposition of the Oil & Gas BU assets. During the second quarter, the Company recorded a gain of $5.6 million on the sale of the Erudite assets. These sales and related gains and losses are described more fully under Note 3, Acquisitions and dispositions, in the "Notes to Consolidated Financial Statements".

Interest Expense. Interest expense decreased to $350,000 in 1998 from $765,000 in 1997. This decrease is attributable primarily to a significant decrease in the Company's borrowings under its lines of credit made during the period to fund working capital requirements.

Other Income (Expense). Other income amounted to $326,000 in 1998, and other expenses amounted to $1.2 million in 1997, resulting almost exclusively from recognized foreign exchange gains in 1998 and recognized foreign exchange losses in 1997 from the Company's Asian operations.

Provision for (Benefit from) Income Taxes. The Company's effective tax rate amounted to 42.2% in 1998. The difference between the statutory U.S. tax rate and the Company's effective tax rate for 1998 is primarily the result of the effects of foreign operations at different tax rates, state income taxes, and other non-deductible expenses reflected in the calculation of the 1998 tax provision. Due to the loss experienced in 1997, the Company recognized a tax benefit of $2.7 million.

Liquidity and Capital Resources.

Operating Activities. Net cash provided by operating activities was $2.6 million during 1999, as reported on the Consolidated Statements of Cash Flows. Significant changes in the Company's assets and liabilities included a $4.4 million reduction in contract receivables partially due to improvements in internal collection processes; a $1.9 million reduction in accounts payable and accrued expenses; and a $3.3 million reduction in billings in excess of revenues.

Investing Activities. Net cash used in investing activities was $4.1 million in 1999, including $1.4 million of capital expenditures, $2.5 million of capitalized software development costs, and $930,000 in cash payments for acquired businesses ($300,000 for the Mitech acquisition in 1999, $530,000 for contingent considerations for prior year acquisitions, and $100,000 for notes payable related to a prior year acquisition). The Company received $731,000 from Keane, Inc. as final payment on the 1998 Erudite sale. In 1998, the Company's investing activities generated $5.3 million in cash, made up primarily of $9.7 million from the sale of assets (see Note 3, Acquisitions and dispositions, in the "Notes to Consolidated Financial Statements") offset by $2.1 million of capital expenditures and $2.3 million of capitalized software development costs. In 1997, the Company used $4.4 million in investing activities, mainly for capital expenditures and capitalized software development costs.

Financing Activities. In 1999, the Company generated $2.0 million net cash from financing activities. The assignment of two long-term customer lease contracts to a finance company generated $3.4 million cash, which was partially offset by the paydown of the Company's credit lines ($.5 million), repayments under capital lease obligations ($143,000) and the deposit of $735,000 into a bank account for which the balance is being used to collateralize two of the Company's outstanding letters of credit. In 1998, the Company's financing activities used cash of approximately $2.6 million, consisting primarily of $2.3 million in repayments under the Companys lines of credit. In 1997, the Company generated $6.2 million of net cash mainly through increases in its lines of credit.

Credit Facilities. On June 4, 1999, the Company entered into a loan and security agreement with a financial institution for a new credit facility with a maturity date of May 31, 2002. Borrowings from this facility were used to pay off the existing debt under the Company's previous credit facility. The new agreement established two lines of bank credit, through the Company's subsidiaries, which were cross-collateralized, and provided for borrowings up to a total of $9.0 million to support working capital needs and foreign letters of credit.

The first line, for $6.0 million, used by the Power business unit, was 90% guaranteed by the Export-Import Bank of the United States ("EX-IM") through March 31, 2000, was collateralized by substantially all of Power's assets, and provided for borrowings up to 90% of eligible receivables and 60% of unbilled receivables. The second line, for $3.0 million, used by the Process business unit, was collateralized by substantially all of Process' assets, and provided for borrowing up to 85% of eligible receivables and 20% of eligible inventory up to a maximum of $600,000 . Both lines were guaranteed by the Company and collateralized by substantially all of the Company's assets. In addition, GP Strategies Corporation ("GP Strategies") and ManTech International Corporation ("ManTech"), both of which are shareholders of the Company, provided limited guarantees for these lines totaling $1.8 million from each company.

The credit lines required the Company to comply with certain financial ratios and precluded the Company from paying dividends and making acquisitions beyond certain limits without the bank's consent. At December 31, 1999, the Company was not in compliance with its minimum EBITDA and minimum tangible net worth covenants; however, the bank has provided a written waiver for these covenants.

As noted above, the EX-IM guarantee was scheduled to expire on March 31, 2000. EX-IM Bank's Working Capital Guarantee Program is designed to facilitate the expansion of U.S. exports by helping small and medium-sized businesses that have exporting potential but need funds to buy or produce goods or provide services for export. The program is intended to help businesses for a limited time, until the businesses have grown their export trade enough to finance them without the EX-IM guarantees. The Company has benefited from this program since the Company's inception in 1994. However, when the EX-IM guarantee was renewed in 1999, GSE was informed by EX-IM that the Company was expected to graduate from the program when the current guarantee expired in 2000. An agreement could not be worked out with the Company's bank to allow GSE to continue its credit facility without the EX-IM guarantee, so the Company negotiated a new loan and security agreement with another financial institution, which was entered into on March 23, 2000. Borrowings from this facility were used to pay off the existing debt under the Company's previous credit facility.

The new agreement established a $10 million line of bank credit for the Company and its subsidiaries, GSE Process Solutions, Inc. and GSE Power Systems, Inc., jointly and severally as co-borrowers. The credit facility has a maturity date of March 23, 2003 and provides for borrowings to support working capital needs and foreign letters of credit ($2 million sublimit). The line is collateralized by substantially all of the Company's assets and provides for borrowings up to 85% of eligible accounts receivable, 50% of eligible unbilled receivables and 40% of eligible inventory up to a maximum of $1.2 million. In addition, ManTech has provided a one-year $900,000 standby letter of credit to the bank as additional collateral for the Company's credit facility. GSE is allowed to borrow up to 100% of the letter of credit value. GP Strategies provided a limited guarantee totaling $1.8 million; ManTech has provided a limited guarantee totaling $900,000.

The loan and security agreement requires the Company to comply with certain financial ratios and precludes the Company from paying dividends and making acquisitions beyond certain limits without the bank's consent. Management believes that these covenants are attainable for the foreseeable future, based on existing budgets and forecasts.

In 1998, in connection with the Company's then existing credit facility, the Company had arranged for certain guarantees to be provided on its behalf by GP Strategies and ManTech. In consideration for these guarantees, the Company granted each of ManTech and GP Strategies warrants to purchase shares of the Company's common stock; each of such warrants provides the right to purchase 150,000 shares of the Company's common stock at $2.375 per share. In 1998, the Company recorded $300,000 as the estimated fair value of such warrants in the consolidated financial statements and amortized such value over the life of the initial guarantee, which expired in June 1999. During 1999, the Company recognized $120,000 of expense related to these warrants; in 1998 the Company recognized $180,000 of expense. The fair value of the warrants was determined using the Black-Scholes valuation model. Assumptions used in the calculation were as follows: dividend yield of 0%, expected volatility of 61%, risk-free interest rates of 5.6% and expected terms of 2.5 years.

As of December 31, 1999, the Company was contingently liable for three letters of credit totaling $765,000. Two of the letters of credit represent payment bonds on contracts, while the remaining one was issued to the landlord of the Company's previous facility (whose lease was terminated in 1998). Of the total amount of letters of credit, approximately $735,000 was issued in 1998 through the Company's bank at the time and was supported by the Company's credit facility. These letters of credit could not be reissued by the Company's new financial institution, and in June 1999, the Company was required to deposit funds with the issuing institution as collateral against the letters of credit.

On January 27, 2000, the Company issued 116,959 shares of its common stock, at fair market value less discount, to ManTech for $500,000. The proceeds of the stock issuance were used for working capital.

Management believes that the Company has sufficient liquidity and working capital resources necessary in 2000 for planned business operations, debt service requirements, planned investments and capital expenditures.

Year 2000.

As previously reported, beginning in 1998, GSE developed and implemented a plan to address the anticipated impacts of the Year 2000 problem on the Company's products and installed base and on its financial and administrative information technology systems. The Company also surveyed selected third parties to determine the status of their Year 2000 compliance programs. In addition, contingency plans were developed specifying what the Company would do if it or important third parties experienced disruptions to critical business activities as a result of the Year 2000 problem. GSE's Year 2000 plan was completed in all material respects prior to the anticipated Year 2000 failure dates. As of March 30, 2000, the Company has not experienced any materially important business disruptions or system failures as a result of Year 2000 issues. However, Year 2000 compliance has many elements and potential consequences, some of which may not be foreseeable or may be realized in future periods. Consequently, there can be no assurance that unforeseen circumstances may not arise, or that the Company will not in the future identify equipment or systems that are not Year 2000 compliant.

The Company estimates that the aggregate costs to address the Year 2000 issue totaled approximately $1.7 million in 1999. The Company believes that most of the customer related costs associated with the Year 2000 issue would have occurred as part of its normal operations. The Company did not track these costs separately. In 1999, the Company spent approximately $238,000, incremental to normal operating costs, on upgrades to its internal systems and outside consultant fees. The Company's policy is to expense as incurred information system maintenance costs and to capitalize the cost of new software and hardware and amortize or depreciate it over the assets' useful lives.

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. When necessary, the Company manages its foreign currency exposure primarily by entering into foreign currency exchange agreements and purchasing foreign currency options.

Other Matters.

To date, 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 and potentially adverse effects of differing tax structures. 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 is also subject to market risk related to the interest rates on its existing line of credit. As of March 30, 2000, such interest rates are based on the prime rate.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA. Page

INDEX TO FINANCIAL STATEMENTS

REPORT OF INDEPENDENT ACCOUNTANTS

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

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations, comprehensive income (loss), changes in stockholders' equity and cash flows present fairly, in all material respects, the financial position of GSE Systems, Inc. and subsidiaries as of December 31, 1999 and 1998, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 1999, in conformity with accounting principles generally accepted in the United States. These financial statements are the responsibility of the Company's management; our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with auditing standards generally accepted in the United States, which 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, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for the opinion expressed above.

PricewaterhouseCoopers LLP

McLean, Virginia
February 29, 2000, except for Note 19, as to which the date is March 23, 2000

PART I - FINANCIAL INFORMATION
Item 1. Financial Statements

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

	December 31, 1999	December 31, 1998
Current assets:		
Cash and cash equivalents	$ 2,695	$ 2,240
Restricted cash	255	-
Contract receivables	16,881	24,426
Note receivable	-	1,000
Inventories	3,255	2,892
Prepaid expenses and other current assets	2,207	1,654
Deferred income taxes	146	150
Total current assets	25,439	32,362
Property and equipment, net	3,094	2,714
Software development costs, net	5,395	4,715
Goodwill, net	2,949	2,781
Deferred income taxes	3,251	3,366
Restricted cash	480	-
Other assets	2,419	2,805
Total assets	$ 43,027	$ 48,743

LIABILITIES AND STOCKHOLDERS' EQUITY

Current liabilities:		
Lines of credit	$ -	$ 6,746
Accounts payable	5,024	8,407
Accrued expenses	3,965	3,140
Accrued compensation an payroll taxes	1,539	1,204

Billings in excess of revenue earned	3,077	6,359
Accrued warranty reserves	620	846
Income taxes payable	30	151
Other current liabilities	2,519	1,451
Total current liabilities	16,774	28,304
Line of credit	6,233	-
Note payable to related party	131	148
Accrued warranty reserves	680	596
Other liabilities	2,039	2,606
Total liabilities	25,857	31,654
Stockholders' equity:		
Common stock $.01 par value, 8,000,000 shares authorized, 5,065,688 shares issued and outstanding	50	50
Additional paid-in capital	21,691	21,678
Retained earnings (deficit) - at formation	(5,112)	(5,112)
Retained earnings - since formation	1,259	1,158
Accumulated other comprehensive loss	(718)	(685)
Total stockholders' equity	17,170	17,089
Total liabilities & stockholders' equity	$ 43,027	$ 48,743

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,		
	1999	1998	1997
Contract revenue	$ 66,699	$ 73,818	$ 79,711
Cost of revenue	41,629	49,814	58,326
Gross profit	25,070	24,004	21,385
Operating expenses			
Selling, general and administrative	22,646	20,345	27,320
Depreciation and amortization	1,680	1,768	2,368
Employee severance and termination costs	-	-	1,124
Total operating expenses	24,326	22,113	30,812
Operating income (loss)	744	1,891	(9,427)
Gain on sale of assets	-	550	-
Interest expense, net	(450)	(350)	(765)
Other income (expense)	40	326	(1,228)
Income (loss) before income taxes	334	2,417	(11,420)
Provision for (benefit from) income taxes	233	1,020	(2,717)
Net income (loss)	$ 101	$ 1,397	$ (8,703)
Basic earnings (loss) per common share	$ 0.02	$ 0.28	$ (1.72)
Diluted earnings (loss) per common share	$ 0.02	$ 0.27	$ (1.72)

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,		
	1999	1998	1997
Net income (loss)	$ 101	$ 1,397	$ (8,703)
Foreign currency translation adjustment	(33)	(532)	(66)
Comprehensive income (loss)	$ 68	$ 865	$ (8,769)

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

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

	Common Stock		Additional Paid-in	Retained Earnings (Deficit)		Accumulated Other	
	Shares	Amount	Capital	At Formation	Since Formation	Comprehensive Loss	Total
Balance, January 1, 1997	5,066	$ 50	$ 21,378	$ (5,112)	$ 8,464	$ (87)	$ 24,693
Foreign currency translation adjustment	-	-	-	-	-	(66)	(66)
Net loss	-	-	-	-	(8,703)		(8,703)
Balance, December 31, 1997	5,066	50	21,378	(5,112)	(239)	(153)	15,924
Foreign currency translation adjustment	-	-	-	-	-	(532)	(532)
Fair value of warrants issued to non-employees	-	-	300	-	-	-	300
Net income	-	-	-	-	1,397	-	1,397
Balance, December 31, 1998	5,066	50	21,678	(5,112)	1,158	(685)	17,089
Foreign currency translation adjustment	-	-	-	-	-	(33)	(33)
Fair value of warrants issued to non-employees	-	-	13	-	-	-	13
Net income	-	-	-	-	101	-	101
Balance, December 31, 1999	5,066	$ 50	$ 21,691	$ (5,112)	$ 1,259	$ (718)	$ 17,170

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

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

	Years ended December 31, 1999	1998	1997
Cash flows from operating activities:			
Net income (loss)	$ 101	$ 1,397	$ (8,703)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	3,481	3,492	3,492
Provision (credit) for doubtful contract receivables	-	(255)	723
Foreign currency transaction (gain) loss	(40)	(326)	1,275
Fair value of warrants issued to non-employees	133	180	-
Deferred income taxes	119	301	(2,277)
Gain on sale of assets	-	(550)	-
Changes in assets and liabilities:			
Contract receivables	4,382	(2,344)	1,464
Inventories	(363)	(185)	727
Prepaid expenses and other assets	(563)	(1,381)	819
Accounts payable, accrued compensation and accrued expenses	(1,888)	(2,600)	(1,152)
Billings in excess of revenues earned	(3,282)	83	644
Accrued warranty reserves	(142)	102	(710)
Other liabilities	744	1,428	198
Income taxes payable	(121)	(114)	(315)
Net cash provided by (used in) operating activities	2,561	(772)	(3,815)
Cash flows from investing activities:			
Proceeds from sale of assets	731	9,697	-
Net cash paid for acquisition of businesses	(930)	-	(578)
Capital expenditures	(1,398)	(2,061)	(918)
Capitalization of software development costs	(2,460)	(2,304)	(3,474)
Proceeds from sale/leaseback transaction	-	-	521
Net cash provided by (used in) investing activities	(4,057)	5,332	(4,449)
Cash flows from financing activities:			
Proceeds from assignment of sales-type leases	3,432	-	-
Restricted cash	(735)	-	-
(Decrease) increase in lines of credit with banks	(513)	(2,287)	6,450
Repayments under capital lease obligations	(143)	(265)	(266)
Decrease in note payable to related party	(17)	(12)	(17)
Net cash provided by (used in) financing activities	2,024	(2,564)	6,167
Effect of exchange rate changes on cash	(73)	(90)	(19)
Net increase (decrease) in cash and cash equivalents	455	1,906	(2,116)
Cash and cash equivalents at beginning of period	2,240	334	2,450
Cash and cash equivalents at end of period	$2,695	$ 2,240	$ 334

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

GSE Systems, Inc. and Subsidiaries

Notes to Consolidated Financial Statements December 31, 1999

1. Business

GSE Systems, Inc. ("GSE Systems", "GSE" or the "Company") develops and delivers business and technology solutions by applying process control, simulation software, systems and services to the energy, process and manufacturing industries worldwide. The Company's solutions and services assist customers in reducing the time-to-market for new product development; improving chemistry for producing products; improving quality, safety and throughput; reducing operating expenses; and enhancing overall productivity.

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.

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. The results of operations of GSE Erudite Software, Inc. ("Erudite") are included through April 30, 1998. All intercompany balances and transactions have been eliminated.

Revenue recognition

Revenue under fixed-price contracts generally is accounted for on the percentage-of-completion method, based on contract costs incurred to date and estimated costs to complete. Estimated contract earnings are reviewed and revised periodically as the work progresses, and the cumulative effect of any change is recognized in the period in which the change is determined. The effect of changes in estimates of contract earnings was to increase gross profit by approximately $353,000 during the year ended December 31, 1999 and decrease gross profit by approximately $45,000 and $410,000 during the years ended December 31, 1998 and 1997, respectively. Estimated losses are charged against earnings in the period such losses are identified. The remaining liability for contract costs to be incurred in excess of contract revenue is reflected as accrued contract reserves in the Company's consolidated balance sheets. Revenue 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.

Accounting estimates

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

Cash and cash equivalents

Cash and cash equivalents consist of cash on hand and highly liquid investments with maturities of three (3) months or less at the date of purchase.

Inventories

Inventories are stated at the lower of cost, as determined by the average cost method, or market. Obsolete or unsaleable inventory is reflected at its estimated net realizable value. Inventory costs include raw materials and purchased parts.

Property and equipment

Property and equipment are recorded at cost and depreciated using the straight-line method with estimated useful lives ranging from three to ten years. Leasehold improvements are amortized over the life of the lease or the estimated useful life, whichever is shorter, using the straight-line method. Upon sale or retirement, the cost and related 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. 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 provided using the straight-line method over the remaining estimated economic life of the product, not to exceed five years.

Goodwill

Goodwill represents the excess of purchase price for acquired businesses over the fair value of net tangible and intangible assets acquired. These amounts are amortized on a straight-line basis over periods ranging from seven to fifteen years.

Research and development

Development expenditures incurred to meet customer specifications under contracts accounted for under the percentage of completion method are charged to contract costs. Company sponsored research and development expenditures are charged to operations as incurred and are included in selling, general and administrative expenses. The amounts incurred for Company sponsored research and development activities relating to the development of new products and services or the improvement of existing products and services, exclusive of amounts capitalized, were approximately $2,915000, $2,051,000, and $1,580,000 for the years ended December 31, 1999, 1998 and 1997, respectively.

Asset impairment

The Company periodically evaluates the recoverability of its long-lived assets by comparing the carrying value of the intangible with the assets' expected future cash flows, undiscounted and without interest costs. Estimates of expected future cash flows represent management's best estimate based on reasonable and supportable assumptions and projections. Impairments are recognized in operating results to the extent that the carrying value exceeds fair value. No impairment losses were recognized in 1999, 1998 or 1997.

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 accumulated other comprehensive income
(loss) in stockholders' equity. Transaction gains and losses, resulting from changes in exchange rates, are included in other income (expense) in the Consolidated Statement of Operations in the period in which they occur. For the years ended December 31, 1999 and 1998, foreign currency transaction gains were approximately $40,000 and $326,000, respectively. In 1997, the Company experienced a foreign currency loss of approximately $1,275,000, resulting primarily from intercompany transactions which were negatively impacted by the poor financial condition of Asian markets.

Warranties

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.

Income taxes

Deferred 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. No provision has been made for the undistributed earnings of the Company's foreign subsidiaries as they are considered permanently invested. Amounts of undistributed earnings are not material to the overall consolidated financial statements.

Earnings per share

Basic earnings per share is computed based on the weighted average number of outstanding common shares for the period. Diluted earnings per share adjusts such weighted average for the potential dilution that could occur if stock options, warrants or other convertible securities were exercised or converted into common stock. Diluted earnings per share is the same as basic earnings per share for the year ended December 31, 1997 because the effects of such items were anti-dilutive.

The number of common shares and common share equivalents used in the determination of basic and diluted earnings (loss) per share was as follows:

	Year ended December 31,		
	1999	1998	1997
Weighted average shares outstanding - Basic	5,065,688	5,065,688	5,065,688
Weighted average shares outstanding - Diluted	5,351,474	5,107,428	5,065,688

The difference between the amounts in 1999 and 1998 represents dilutive options and warrants to purchase shares of common stock computed under the treasury stock method, using the average market price during the related periods.

Reclassifications

Certain reclassifications have been made to prior year amounts to conform with current year presentation. Additionally, certain reclassifications have been made to the December 31, 1997 financial statements to conform with the reporting requirements of FAS No. 130,Reporting Comprehensive Income.

New Accounting Standards

In June 1998, the Financial Accounting Standards Board issued FAS No. 133, Accounting for Derivative Instruments and Hedging Activities This statement requires that an entity recognize all derivatives as either assets or liabilities in the statement of financial position and measure those instruments at fair value. In June 1999, FAS 137, Accounting for Derivative Instruments and Hedging Activities Deferral of the Effective Date of FASB Statement No. 133 - an amendment of FASB Statement No. 133 was issued. The Company will be required to adopt this new accounting standard by March 31, 2001. Management does not anticipate early adoption. The Company does not believe that the effect of the adoption of FAS No. 133 will be material.

In December 1999, the SEC released Staff Accounting Bulletin No. 101, Revenue Recognition in Financial Statements. This bulletin establishes more clearly defined revenue recognition criteria than previously existing accounting pronouncements. This bulletin will become effective for the Company for the quarter ended March 31, 2000. The Company is currently evaluating the full impact of this bulletin to determine the impact on its financial position and results of operations.

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 and manufacturing industries. For the year ended December 31, 1999, one customer accounted for approximately 13% of the Company's revenues. No single customer accounted for a significant (greater than 10%) amount of the Company's revenue during the years ended December 31, 1998 and 1997, and there were no significant contract receivables from a single customer at December 31, 1999 or 1998.

Fair values of financial instruments

The carrying amounts of current assets and current liabilities reported in the Consolidated Balance Sheets approximate fair value.

Off balance sheet risk and foreign exchange contracts

When necessary, the Company enters into forward exchange contracts, options and swaps as hedges against certain foreign currency commitments. The Company also enters into letters of credit and performance guarantees in the ordinary course of business as required by certain contracts and proposal requirements. The Company does not hold any derivative financial instruments for trading purposes. Gains and losses on foreign exchange contracts and swaps are recognized as part of the cost of the underlying transactions being hedged in the period in which the exchange rates changed. Foreign exchange contracts have an element of risk that the counterparty may not be able to meet the terms of the agreement. However, the Company minimizes such risk exposure by limiting counterparties to nationally recognized financial institutions. Foreign exchange options contracts permit but do not require the Company to exchange foreign currencies at a future date with counterparties at a contracted exchange rate. Costs associated with such contracts are amortized over the life of the contract matching the underlying receipts.

3. Acquisitions and dispositions

Acquisitions

In April, 1999, the Company completed two acquisitions for the Process business unit using the purchase method of accounting. On April 20, the Company purchased certain assets and employed the associates of BatchCAD Limited, a United Kingdom-based supplier of batch process development and design consulting services and simulation software tools. The purchase price was approximately $548,000 payable in cash in three equal installments on January 1, 2000, 2001 and 2002 and was allocated as follows (in thousands):

Purchased software (property and equipment)	$481
Trade receivables	45
Property and equipment	22
Total purchase price	$548

On April 30, 1999 the Company acquired all proprietary technology and software assets from, and assumed substantially all customer contracts of, Mitech Corporation, a Massachusetts-based supplier of neural network and artificial intelligence software. The purchase price was $350,000

(consisting of $300,000 in cash and $50,000 payable one year from the closing)
and was allocated 100% to property and equipment as purchased software.

On December 1, 1997, the Company acquired 100% of the outstanding common stock of J.L. Ryan, Inc. ("Ryan") for an initial purchase price of $1,000,000 and contingent consideration based on the performance of the business from 1998 to 2002; a minimum of $250,000 of such earnings payments for each of 1998 and 1999 has been guaranteed by the Company. The Company paid $600,000 in cash upon the closing of the transaction and entered into a promissory note payable in four annual installments of $100,000 each beginning on January 2, 1999. This acquisition was accounted for under the purchase method. The financial results of Ryan have been included in the results of operations from the date of acquisition. The acquisition resulted in total goodwill of $1,133,976, which is being amortized over seven years. For 1999 and 1998, the contingent consideration in excess of the minimum guaranteed amount was approximately $411,000 and $166,000, respectively, which the Company has recorded as additions to goodwill.

Dispositions

On November 10, 1998, the Company completed the sale of certain assets related to activities of its Oil & Gas business unit ("O&G"), to Valmet Automation (USA), Inc. ("Valmet"), pursuant to an Asset Purchase Agreement, effective as of October 30, 1998, by and between the Company and Valmet. The Company recognized a loss before income taxes on this transaction of $5.0 million, including the write-off of approximately $2.9 million in capitalized software development costs, since all operations that would support the recoverability of these capitalized costs were sold. The Company received approximately $742,000 in cash, subject to certain adjustments, and Valmet assumed certain identified liabilities. Included in the Consolidated Statement of Operations for the year ended December 31, 1998, are revenues of $1.1 million and operating losses of $721,000 attributable to O&G prior to the sale to Valmet. See Note 17, Segment Information, for historical revenues and business unit contribution provided by O&G during 1997.

On May 1, 1998, the Company completed the sale of substantially all of the assets of Erudite to Keane, Inc. ("Keane"), pursuant to an Asset Purchase Agreement, dated as of April 30, 1998, by and among the Company, Erudite and Keane. The aggregate purchase price for the Erudite assets was approximately $9.9 million (consisting of $8.9 million in cash and $1.0 million in the form of an uncollateralized promissory note due on April 30, 1999, subject to certain adjustments described in the next paragraph). In connection with the transaction, Keane purchased certain assets with a book value of $4.4 million and assumed certain operating liabilities totaling approximately $2.2 million. The Company recognized a gain before income taxes on this transaction of $5.6 million. In connection with the sale of these assets, the Company wrote off approximately $800,000 in capitalized software development costs, as well as $321,000 of purchased software, since all operations that would support the recoverability of these costs were sold. The write-off of these costs is reflected in the calculation of the gain on the sale. Included in the Consolidated Statement of Operations for the year ended December 31, 1998, are revenues of $5.3 million and operating losses of $64,000 attributable to Erudite prior to the sale to Keane. See Note 17, Segment Information, for historical revenues and business unit contribution provided by Erudite during 1997.

As noted above, the purchase price for the sale of Erudite Software was subject to post-closing adjustments based upon a balance sheet as of the closing date (the "Closing Balance Sheet"). Due to certain differences in valuation amounts of the Closing Balance Sheet, the purchase price was reduced by $269,000, which had been provided for in 1998. Accordingly, of the $1.0 million promissory note due to the Company on April 30, 1999, the Company received $731,000, plus $60,000 interest income.

4. 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, 1999	1998
Billed receivables	$ 9,797	$16,469
Recoverable costs and accrued profit not billed	7,593	8,839
Allowance for doubtful accounts	(509)	(882)
Total contract receivables	$16,881	$24,426

5. Inventories

Inventories consist of the following (in thousands):

	December 31,	
	1999	1998
Raw materials	$ 2,536	$ 1,873
Service parts	719	1,019
Total inventories	$ 3,255	$ 2,892

6. Prepaid expenses and other current assets

Prepaid expenses and other current assets consist of the following (in thousands):

	1999	1998
Investment in sales-type lease - current portion	$ 1,137	$ 560
Prepaid expenses	641	889
Employee advances	98	159
Other current assets	331	46
Total	$ 2,207	$ 1,654

7. Property and equipment

Property and equipment consist of the following (in thousands):

	December 31,	
	1999	1998
Computer equipment	$ 7,820	$ 7,300
Leasehold improvements	817	657
Furniture and fixtures	2,944	2,205
	11,581	10,162
Accumulated depreciation and amortization	(8,487)	(7,448)
Property and equipment, net	$ 3,094	$ 2,714

Depreciation and amortization expense was approximately $1,292,000, $1,218,000 and $2,149,000 for the years ended December 31, 1999, 1998 and 1997, respectively.

The Company has approximately $404,000 in assets held under capital lease as of December 31, 1999 and 1998. Accumulated amortization on these assets, included in accumulated depreciation and amortization above, was approximately $386,000 and $142,000 as of December 31, 1999 and 1998, respectively.

8. Software development costs

Software development costs, net, consist of the following (in thousands):

	December 31, 1999	1998
Capitalized software development costs	$9,888	$ 7,407
Accumulated amortization	(4,493)	(2,692)
Software development costs, net	$ 5,395	$ 4,715

Software development costs capitalized were approximately $2,460,000, $2,304,000 and $3,474,000 for the years ended December 31, 1999, 1998 and 1997, respectively. Amortization of software development costs capitalized, excluding write-offs in connection with asset dispositions, was approximately $1,801,000, $1,909,000 and $1,124,000 for the years ended December 31, 1999, 1998 and 1997, respectively, and are included in cost of revenue.

9. Goodwill

Goodwill consists of the following (in thousands):

	December 31, 1999	1998
Goodwill, at cost	$ 4,287	$ 3,731
Accumulated amortization	(1,338)	(950)
Goodwill, net	$ 2,949	$ 2,781

Amortization expense for goodwill was approximately $388,000, $365,000 and $219,000 for the years ended December 31, 1999, 1998 and 1997, respectively.

10. Notes payable and financing arrangements

Notes payable and financing arrangements consist of the following (in thousands):

	December 31, 1999	1998
Lines of credit with bank	$ 6,233	$ 6,746
Obligations under sales-type lease	2,465	1,680
Notes payable, other	1,485	1,760
Note payable to related party	149	174
Capital lease obligations	10	153
Total notes payable and financing arrangements	10,342	10,513
Less amounts payable within one year	(1,938)	(8,530)
Long-term portion	$ 8,404	$ 1,983

Lines of Credit

On June 4, 1999, the Company entered into a loan and security agreement with a financial institution for a new credit facility with a maturity date of May 31, 2002. Borrowings from this facility were used to pay off the existing debt under the Company's previous credit facility. The new agreement established two lines of bank credit, through the Company's subsidiaries, which were cross-collateralized, and provided for borrowings up to a total of $9.0 million to support working capital needs and foreign letters of credit. The interest rate on these lines of credit was based on the bank's prime rate plus 1 1/2% (10% as of December 31, 1999), with interest only payments due monthly.

The first line, for $6.0 million, used by the Power business unit, was 90% guaranteed by the Export-Import Bank of the United States "EX-IM") through March 31, 2000, was collateralized by substantially all of Power's assets, and provided for borrowings up to 90% of eligible receivables and 60% of unbilled receivables. The second line, for $3.0 million, used by the Process business unit, was collateralized by substantially all of Process' assets, and provided for borrowing up to 85% of eligible receivables and 20% of eligible inventory (up to a maximum of $600,000). Both lines were guaranteed by the Company and collateralized by substantially all of the Company's assets. In addition, GP Strategies Corporation ("GP Strategies") and ManTech International Corporation ("ManTech"), both of which are shareholders of the Company, provided limited guarantees for these lines totaling $1.8 million from each company.

The credit lines required the Company to comply with certain financial ratios and precluded the Company from paying dividends and making acquisitions beyond certain limits without the bank's consent. At December 31, 1999, the Company was not in compliance with its minimum EBITDA and minimum tangible net worth covenants; however, the bank has provided a written waiver for these covenants.

As noted above, the EX-IM guarantee was scheduled to expire on March 31, 2000. EX-IM Bank's Working Capital Guarantee Program is designed to facilitate the expansion of U.S. exports by helping small and medium-sized businesses that have exporting potential but need funds to buy or produce goods or provide services for export. The program is intended to help businesses for a limited time, until the businesses have grown their export trade enough to finance them without the EX-IM guarantees. The Company has benefited from this program since the Company's inception in 1994. However, when the EX-IM guarantee was renewed in 1999, GSE was informed by EX-IM that the Company was expected to graduate from the program when the current guarantee expired in 2000. An agreement could not be worked out with the Company's bank to allow GSE to continue its credit facility without the EX-IM guarantee, so the Company has negotiated a new loan and security agreement with another financial institution. See Note 19, Subsequent events, for information regarding the new loan and security agreement.

In 1998, in connection with the Company's then existing credit facility, the Company had arranged for certain guarantees to be provided on its behalf by GP Strategies and ManTech. In consideration for these guarantees, the Company granted each of ManTech and GP Strategies warrants to purchase shares of the Company's common stock; each of such warrants provides the right to purchase 150,000 shares of the Company's common stock at $2.375 per share. In 1998, the Company recorded $300,000 as the estimated fair value of such warrants in the consolidated financial statements and amortized such value over the life of the initial guarantee, which expired in June 1999. During 1999, the Company recognized $120,000 of expense related to these warrants; in 1998 the Company recognized $180,000 of expense. The fair value of the warrants was determined using the Black-Scholes valuation model. Assumptions used in the calculation were as follows: dividend yield of 0%, expected volatility of 61%, risk-free interest rates of 5.6% and expected terms of 2.5 years.

Obligations under sales-type lease

In March 1999 and December 1998, the Company entered into two separate contracts with a customer for the lease of certain hardware and software under two 36-month leases. The Company has accounted for the leases as sales-type leases. During 1999, the Company assigned the payments due under the sales-type leases to a third party financing company and received proceeds of $3,432,000. Since the Company remains contingently liable for amounts due to the third party financing company, the remaining investment in and obligation under the sales-type leases are reflected in the Company's balance sheets as follows (in thousands):

	1999	1998
Net investment in sales-type lease		
Prepaid expense and other assets	$1,137	$ 560
Other assets	1,328	1,120
	$2,465	$1,680
Obligation under sales-type lease		
Other current liabilities	$1,137	$ 560
Other liabilities	1,328	1,120
	$2,465	$1,680

As of December 31, 1999, the components of the net investment in the sales-type leases are as follows (in thousands):

Minimum rentals receivable	$ 2,834
Less: unearned interest income	(369)
Net investment in sales-type leases	$ 2,465

Minimum rentals receivable under this lease at December 31, 1999 are as follows (in thousands):

2000	$ 1,420
2001	1,414
Total	$ 2,834

Notes payable, other

Notes payable, other is comprised of the following (in thousands):

	December 31, 1999	1998
Acquisitions	$ 1,148	$ 1,323
Insurance and other	337	437
Total notes payable, other	$ 1,485	$ 1,760
Less amounts payable within one year	(773)	(1,035)
Long-term portion	$ 712	$ 725

Capital lease obligations

The Company entered into capital lease agreements for furniture and equipment, totaling $58,000, and $102,000 during the years ended December 31, 1998 and 1997, respectively. These obligations bear interest between 9% and 11% per annum and expire during 2000.

Debt maturities

Aggregate maturities of debt as of December 31, 1999 are as follows:

2000	$1,938
2001	1,585
2002	6,725
2003	18
2004	18
2005 and thereafter	58
Total	$10,342

11. Income taxes

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

	Years ended December 31,		
	1999	1998	1997
Domestic	$ (1,386)	$ 1,379	$ (8,850)
Foreign	1,720	1,038	(2,570)
	$ 334	$ 2,417	$(11,420)

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

	December 31,		
	1999	1998	1997
Current:			
Federal	$ -	$ -	$ (27)
State	30	157	-
Foreign	84	257	(413)
	114	414	(440)
Deferred:			
Federal	(88)	556	(2,388)
State	-	-	(229)
Foreign	207	50	340
	119	606	(2,277)
Total	$ 233	$ 1,020	$ (2,717)

The (benefit from) provision for income taxes varies from the amount of income tax determined by applying the applicable U.S. statutory rate to pre-tax (loss) income as a result of the following:

	Effective tax rate percentage (%) Years ended December 31,		
	1999	1998	1997
Statutory U.S. tax rate	34.0 %	34.0 %	(34.0)%
State income tax, net of federal tax benefit	2.7	2.7	(2.7)
Effect of foreign operations	7.1	(2.2)	3.8
Gain on debt forgiveness of foreign entities	(115.4)	-	-
Change in valuation allowance	-	(0.8)	7.8
Adjustments to prior year provision based on actual 1998 tax return amounts	97.6	-	-
Other, principally permanent differences	43.8	8.5	1.3
Effective tax rate	69.8 %	42.2 %	(23.8)%

At December 31, 1999, the Company had available $11,196,000 and $1,650,000 of domestic and foreign net operating loss carryforwards, respectively, which expire between 2007 and 2019. In addition, the Company had $362,000 of foreign tax credit carryforwards which expire between 2000 and 2004. These carryforwards will be utilized to reduce taxable income in subsequent years. A portion of the net operating losses were generated by certain of the Company's predecessors prior to the formation of the Company and, as a result, there are limitations on the amounts that can be utilized to offset taxable income in a given year.

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)

	Years ended December 31, 1999	1998
Net operating loss carryforwards	$ 4,563	$ 4,945
Software development costs	(1,980)	(1,731)
Book reserves not deductible for tax purposes	1,165	876
Foreign tax credits	362	338
Property and equipment	326	340
Swedish tax deferral	(299)	(645)
Accrued expenses	109	164
Cash to accrual adjustment	(29)	(58)
Contract loss reserves	-	48
Other	238	297
	4,455	4,574
Valuation allowance	(1,058)	(1,058)
Total	$ 3,397	$ 3,516

The valuation allowance at December 31, 1999 and 1998 primarily relates to the future utilization of net operating loss carryforwards and foreign tax credits that the Company has determined are not realizable at this time. Management believes that it is more likely than not that the net deferred tax asset as of December 31, 1999 is realizable.

12. Capital stock

As of December 31, 1999, the Company had 10,000,000 total shares of capital stock authorized, of which 8,000,000 are common stock and 2,000,000 are preferred stock. As of December 31, 1999 and 1998, there are no shares of preferred stock outstanding. 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

13. Stock options

Long term incentive plan

During 1995, the Company established the 1995 Long-Term Incentive Stock Option Plan (the "Plan"), which includes all officers, key employees and non-employee members of the Company's Board of Directors. All options to purchase shares of the Company's common stock under the Plan expire 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. Under the original terms of the Plan, the Company had reserved 425,000 shares of common stock for issuance of stock options, which amount was increased to 625,000 shares in 1996 by action of the Company's directors and stockholders.

In 1997, the executive and compensation committees of the Company's Board of Directors determined that the purposes of the Plan were no longer being met with respect to those individuals holding nonstatutory stock options with exercise prices greater than the then-current market value of the Company's common stock. As a result, the Company offered certain employees and non-management directors who were holders of outstanding options under the Plan as of December 1, 1997 the opportunity to exchange such options for replacement stock options at an exercise price of $3.875 per share, the fair market value of the Company's common stock at the close of business on that date. Each option holder accepting such offer was required to surrender his or her existing option and enter into new stock option agreements whereby each option's three-phased vesting period (40% vested as of the first anniversary of the date of grant, 70% vested as of the second anniversary of the date of grant, and 100% vested as of the third anniversary of the date of grant) would re-commence as of December 1, 1997, the new date of grant. A total of 84 individuals were eligible to participate in this replacement of options, and those individuals' existing options had an average exercise price of $13.26 per share prior to the replacement. Of such individuals, 81 participated in the replacement of options, representing a total of 295,837 options which are included in the stock option activity table as new options granted and options cancelled.

In November 1998, the Company amended the Plan such that the term of any future options granted would be seven years and that upon termination, the option holder would have 90 days in which to exercise options. Prior to the amendment, the term of options granted was ten years and there were no time frames related to termination.

On April 5, 1999, the Company amended and restated the Plan. The amendment increased the number of shares available for issuance under the Plan, from 625,000 shares to 1,175,000 shares and also increased the maximum number of shares with respect to which awards may be granted in any one fiscal year to any one person from 100,000 shares to 400,000 shares. The class of eligible individuals was expanded to include consultants, and the Plan was modified to permit the Company to grant phantom stock awards and performance-based awards. The amendment eliminated the Independent Director Program previously provided under the Plan. Under the Independent Director Program, each non-employee director of the Company received a nonqualified stock option for 1,500 shares on initial election or appointment to the Board and on each following December 31st while serving as a member of the board of directors. Pursuant to the amendment, all awards granted under the Plan, including those granted to non-employee directors, are determined at the discretion of the board of directors or the compensation committee of the board of directors. The amendment will not adversely affect the rights or obligations of award holders with respect to any of their awards granted prior to the amendment. In December 1999, the number of shares available for issuance under Plan was further increased by the Company pending shareholder approval.

Stock option activity under the Plan is as follows:

Stock option activity under the plan is as follows:

	1999		1998		1997	
	Shares	Weigted Average Exercise Price	Shares	Weigted Average Exercise Price	Shares	Weigted Average Exercise Price
Options outstanding, beginning of period	535,206	$ 5.93	595,015	$ 6.89	413,366	$ 13.61
Options canceled	(45,601)	(5.62)	(246,009)	(4.77)	(306,044)	(11.57)
Options granted	678,000	4.07	186,200	2.79	487,693	4.12
Options outstanding, end of period	1,167,605	4.93	535,206	5.93	595,015	6.89

The following table summarizes information relating to currently outstanding and exercisable options at December 31, 1999:

Options Outstanding				Options Exercisable	
Range of Exercise Prices	Options Outstanding	Weighted Average Remaining Contract Life in Years	Weighted Average Exercise Price	Options Outstanding	Weighted Average Exercise Price
$1.48-$2.95	162,800	6.2	$ 2.69	55,480	$ 2.68
$2.96-$4.43	858,364	6.8	3.98	180,292	3.82
$4.44-$5.90	20,000	6.5	5.88	-	-
$5.91-$10.32	-	-	-	-	-
$10.33-11.80	200	6.6	11.25	200	11.25
$11.81-$13.27	-	-	-	-	-
$13.28-$14.75	126,241	5.7	14.11	126,241	14.11
	1,167,605	6.6	4.93	362,213	7.24

The Company accounts for grants under the Plan in accordance with Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees," and related interpretations. Accordingly, no compensation expense has been recognized as all options granted under the Plan have been granted at an exercise price equal to the fair value of the underlying common stock on the date of grant. Had compensation expense been determined based on the fair value at the grant dates for awards under the Plan consistent with the recognition method of FAS No. 123, "Accounting for Stock Based Compensation," the Compan's pro forma net income (loss) and basic and diluted earnings (loss) per common share would have been approximately ($615,000) and ($.12), respectively, in 1999; $900,000 and $.18, respectively, in 1998; and ($10,276,000) and ($2.03), respectively, in 1997.

The fair value of each option is estimated on the date of grant using a Black-Scholes option-pricing model with the following weighted-average assumptions used for grants during the years ended December 31, 1999, 1998, and 1997, respectively: expected volatility of 82%, 61% and 80%, dividend yield of 0%, risk-free interest rates ranging from 5.6% to 6.6%, and expected terms ranging from 3 to 7 years.

At December 31, 1999, the Company had 7,395 shares of common stock reserved for the future grants under the Plan. The weighted average fair value of options granted during 1999, 1998 and 1997 was $2.82 per share, $2.79 per share and $3.00 per share, respectively.

In 1997, the Company granted one of its senior executives a stock option to acquire 25,000 shares of common stock at an exercise price of $11.25. This grant was not made pursuant to the Plan. This option expires ten years from the date of grant and was exercisable in three installments with 40% vesting on the first anniversary of the date of grant and 30% vesting on each of the second and third anniversaries of the date of grant. During 1999, the executive terminated employment with the Company and was vested in 70% of the stock options at the date of termination. In accordance with the provisions of the Plan, no further vesting will occur.

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, 1999 are approximately as follows (in thousands):

2000	$ 2,017
2001	1,759
2002	1,379
2003	1,305
2004	1,339
Thereafter	4,591
Total	$12,390

The future minimum lease payments above include approximately $28,000 for noncancelable leases entered into during the first quarter of 2000. Total rent expense under operating leases was approximately $2,013,000, $2,134,000, and $3,220,000 for the years ended December 31, 1999, 1998 and 1997, respectively.

In early 1998, the Company entered into agreements whereby the lease for its then-existing Columbia facility was terminated. The operations that occupied this facility were relocated into two separate facilities during the second quarter of 1998. One of these facilities is in Columbia, Maryland (approximately 53,000 square feet) and is occupied by the operations of Power Systems, as well the Company's corporate headquarters offices and support functions; the other facility is in Baltimore, Maryland (approximately 39,000 square feet) and is occupied by the operations of Process Solutions. Each of the leases for these smaller facilities has a term of ten years.

In addition, the Company leases office space domestically in Alabama, Georgia, Louisiana, Texas, Pennsylvania, North and South Carolina, and internationally in Belgium, Japan, Sweden, Taiwan, and the United Kingdom. The Company leases these facilities for terms ending between 2000 and 2002. During 1999, as part of the wind down of the Oil & Gas BU, the Company's facilities in Singapore and Korea were shut down

Letters of credit and performance bonds

As of December 31, 1999, the Company was contingently liable for three letters of credit totaling approximately $765,000. Two of the letters of credit represent payment bonds on contracts, while the remaining one was issued to the landlord of the Company's previous facility (whose lease was terminated in 1998). Of the total amount of letters of credit, approximately $735,000 was issued in 1998 through the Company's bank at the time and was supported by the Company's credit facility. These letters of credit could not be reissued by the Company's new financial institution, and in June 1999, the Company was required to deposit funds with the issuing institution as collateral against the letters of credit. Restricted cash of $255,000 will be released by the bank in 2000 upon the expiration of the related letters of credit.

During 1998, the Company placed approximately $332,000 in escrow as a performance bond deposit in connection with a simulator contract in Taiwan. Of this amount, approximately $221,000 will be held in escrow until April 30, 2000 and approximately $111,000 will be held in escrow until April 30, 2003. These deposits are classified in other assets on the Consolidated Balance Sheet at December 31, 1999

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

A subsidiary of the Company subleased office space to ManTech based on square footage used through May 1998. For the years ended December 31, 1998 and 1997 , such charges amounted to $30,000 and $117,000, respectively.

During 1997, ManTech entered into arrangements for the consulting services of a member of the Company's finance staff. Payments to the Company for such services were $92,000 for the year ended December 31, 1997.

In 1997, a subsidiary of the Company entered into certain agreements regarding the formation of a joint venture with a company organized in the People's Republic of China. In connection with the initial capitalization of this joint venture, each of ManTech and GP Strategies made advances of $126,000 on behalf of the Company. During 1998, ManTech assumed control of the joint venture. The operations of the joint venture were immaterial during the years ended December 31, 1998 and 1997.

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. Contributions are invested by an independent investment company in one or more of several investment alternatives. The choice of investment alternatives is at the election of each participating employee. The Company's contributions to the plan were approximately $359,000, $468,000 and $524,000 for the years ended December 31, 1999, 1998 and 1997, respectively.

During 1997, the Company recorded a net charge for severance and other employee obligations of $1.1 million in connection with cost reduction efforts initiated to offset the impact of a decrease in contract revenues. Of this charge, $976,000 was expended as of December 31, 1997, with the remainder expended in 1998.

17. Segment information

In 1998, the Company adopted FAS No. 131, "Disclosures about Segments of an Enterprise and Related Information," which establishes standards for reporting and disclosure requirements for operating segments. The prior years' segment information has been restated to present GSE's two reportable segments, Process and Power, its core business units.

The accounting policies of the segments are the same as those described in the "Summary of Significant Accounting Policies". The Company is primarily organized on the basis of these two business units. The Company has a wide range of knowledge of control and simulation systems and the processes those systems are intended to improve, control and model. The Company's knowledge is concentrated heavily in the process industries, which include the chemicals, food & beverage, and pharmaceuticals fields, as well as in the power generation industry. The Process business unit is primarily engaged in process control and simulation in a variety of commercial industries. Contracts typically range from three to nine months. The Power business unit is primarily engaged in simulation for the power generation industry, with the vast majority of customers being in the nuclear power industry. Contracts typically range from 18 months to three years.

GSE evaluates the performance of its business units utilizing "Business Unit Contribution", which is substantially equivalent to earnings before interest and taxes (EBIT) before allocating any corporate expenses. The segment information regarding the two divested businesses is also included below (see Note 3, Acquisitions and dispositions).

The table below presents information about reported segments:

(in thousands) Years ended December 31,			
	1999		
	Process	Power	Total
Contract revenue	$34,638	$32,061	$66,699
Business unit contribution	$ 1,026	$ 5,093	$ 6,119
	1998		
	Process	Power	Total
Contract revenue	$36,484	$30,930	$67,414
Business unit contribution	$ 3,444	$ 4,535	$ 7,979
	1997		
	Process	Power	Total
Contract revenue	$34,837	$24,552	$59,389
Business unit contribution	$ 3,480	$ 718	$ 4,198

A reconciliation of segment revenue to consolidated revenue and segment business unit contribution to consolidated income before taxes for the years ended December 31, 1999, 1998 and 1997 is as follows:

	(in thousands) Years ended December 31,		
	1999	1998	1997
Total segment contract revenue	$66,699	$67,414	$59,389
Erudite	-	5,267	17,999
Oil & Gas	-	1,137	2,323
Consolidated contract revenue	$66,699	$73,818	$79,711
Segment business unit contribution	$ 6,119	$ 7,979	$ 4,198
Erudite and Oil & Gas business unit losses	-	(491)	(4,848)
Corporate expenses	(5,335)	(5,271)	(8,881)
Severance cost	-	-	(1,124)
Gain on disposition of assets	-	550	-
Interest expense, net	(450)	(350)	(765)
Consolidated income (loss) before taxes	$ 334	$ 2,417	$(11,420)

The Company designs, develops and delivers business and technology solutions to the energy, process and manufacturing industries worldwide. Revenue, operating income and identifiable assets for the Company's United States, European and Asian operations are as follows (in thousands):

	Year Ended December 31, 1999				
	United States	Europe	Asia	Eliminations	Consolidated
Contract revenue	$ 60,150	$6,549	$ -	$ -	$ 66,699
Transfers between geographic locations	832	223	-	(1,055)	-
Total contract revenue	$ 60,982	$6,772	$ -	$ (1,055)	$ 66,699
Operating income (loss)	$ 1,690	($946)	$ -	$ -	$ 744
Identifiable assets	$ 47,002	$4,568	$ 414	$ (8,956)	$ 43,027

	Year Ended December 31, 1998				
	United States	Europe	Asia	Eliminations	Consolidated
Contract revenue	$ 62,689	$8,241	$ 2,888	$ -	$ 73,818
Transfers between geographic locations	1,761	423		(2,184)	-
Total contract revenue	$ 64,450	$8,664	$ 2,888	$ (2,184)	$ 73,818
Operating income (loss)	$ 1,571	$ 592	$ (272)	$ -	$ 1,891
Identifiable assets	$ 50,904	$5,836	$ 953	$ (8,950)	$ 48,743

	Year Ended December 31, 1997				
	United States	Europe	Asia	Eliminations	Consolidated
Contract revenue	$ 70,580	$5,907	$ 3,224	$ -	$ 79,711
Transfers between geographic locations	1,582	-	1,314	(2,896)	-
Total contract revenue	$ 72,162	$5,907	$ 4,538	$ (2,896)	$ 79,711
Operating income (loss)	$ (6,930)	$ (324)	$ (2,173)	$ -	$ (9,427)
Identifiable assets	$ 50,296	$3,686	$ 2,111	$ (7,731)	$ 48,362

18. Supplemental disclosure of cash flow information

	(in thousands) Years ended December 31,		
	1999	1998	1997
Non-cash investing & financing activities:			
Obligations under capital leases	$ -	$ 58	$ 102
Notes payable to related party for investment in joint venture	$ -	$ -	$ 252
Asset acquisitions financed with debt to seller (see Note 3):			
Notes payable issued	$598	$250	$ 900
Interest	$481	$580	$ 741
Income taxes	$683	$426	$ 233

19. Subsequent events

Lines of credit

On March 23, 2000, the Company entered into a new loan and security agreement with a financial institution for a new credit facility with a maturity date of March 23, 2003. Borrowings from this facility were used to pay off the existing debt under the Company's previous credit facility.

The new agreement established a $10 million line of bank credit for the Company and its subsidiaries, GSE Process Solutions, Inc. and GSE Power Systems, Inc, jointly and severally as co-borrowers. The credit facility provides for borrowings to support working capital needs and foreign letters of credit ($2 million sublimit). The line is collateralized by substantially all of the Company's assets and provides for borrowings up to 85% of eligible accounts receivable, 50% of eligible unbilled receivables and 40% of eligible inventory (up to a maximum of $1.2 million). In addition, ManTech has provided a one-year $900,000 standby letter of credit to the bank as additional collateral for the Company's credit facility. GSE is allowed to borrow up to 100% of the letter of credit value. GP Strategies provided a limited guarantee totaling $1.8 million ManTech has provided a limited guarantee totaling $900,000. The interest rate on this line of credit is based on the bank's prime rate (9% as of March 30, 2000), with interest only payments due monthly.

The loan and security agreement requires the Company to comply with certain financial ratios and precludes the Company from paying dividends and making acquisitions beyond certain limits without the bank's consent.

Capital stock issued

On January 27, 2000, the Company issued 116,959 shares of its common stock, at fair market value less discount, to ManTech for $500,000. The proceeds of the stock issuance were used for working capital.

Investment (unaudited)

In February, 2000 the Company participated in the founding of Avantium Technologies, a high technology company that will employ high speed experimentation and simulation ("SE&S") technologies in contract research and development in the area of new product development and process chemistry. GSE is an equity shareholder along with Shell International Chemical, SmithKline Beecham, W.R. Grace, three Dutch universities (Technical University of Delft, Technical University of Eindhoven, and Twente University) and three venture capital firms (Alpinvest, The Generics Group, and S.R.One, the SmithKline Beecham venture funding company). Avantium Technologies will deploy HSE&S techniques to rapidly discover and optimize new processes and products of interest to the petrochemicals, fine chemicals and pharmaceutical industries. GSE will provide the basis for the informatics system that will automate and maximize Avantium's lab environment. Additionally, the Company will utilize its core simulation technologies to assist in the optimization of experimentation as well as analysis of the resulting data.

GSE SYSTEMS, INC.
FORM 10-K
For the Year Ended December 31, 1999

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

On October 19, 1999, GSE Systems, Inc. ("Registrant") notified their independent accountants PricewaterhouseCoopers LLP ("PwC") that PwC would not be reappointed as the Registrant's independent accountants for the fiscal year ending December 31, 2000.

The reports of PwC on the Registrant's financial statements for each of the past three fiscal years contained no adverse opinions or disclaimers of opinion and were not qualified or modified as to uncertainty, audit scope or accounting principle.

In connection with its audits for the three most recent years, there have been no disagreements between the Registrant and PwC on any matter of accounting principle or practices, financial statement disclosure, or auditing scope or procedure, which disagreements if not resolved to the satisfaction of PwC, would have caused them to make reference thereto in their report on financial statements for such fiscal years.

During the three most recent fiscal years, there have been no reportable events (as defined in Regulation S-K Item 304 (a) (1) (v)).

The Registrant has requested that PwC furnish it with a letter addressed to the SEC stating whether or not it agrees with the above statements. A copy of such letter, dated March 30, 2000, is filed as Exhibit 16.1 to this Form 10-K.

PART III

The information required in response to Items 10, 11, 12 and 13 is hereby incorporated by reference to the information under the captions "Election of Directors", "Principal Executive Officers of the Company Who Are Not Also Directors", "Executive Compensation", "Voting Securities and Principal Stockholders", "Security Ownership of Management", and "Certain Related Transactions" in the Proxy Statement for the Company's 2000 Annual Meeting of Shareholders.

PART IV

ITEM 14. EXHIBITS, FINANCIAL STATEMENT SCHEDULES, AND REPORTS ON FORM 8-K.

(a)(1) List of Financial Statements

The following financial statements are included in Item 8:

GSE Systems, Inc. and Subsidiaries

Report of Independent Accountants
Consolidated Balance Sheets as of December 31, 1999 and 1998 Consolidated Statements of Operations for the years ended December 31, 1999, 1998 and 1997
Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 1999, 1998 and 1997
Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 1999, 1998 and 1997 Consolidated Statements of Cash Flows for the years ended December 31, 1999 and 1998 and 1997
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.

(b) Reports on Form 8-K:

No current report on Form 8-K was filed by the Registrant with the Securities and Exchange Commission during the quarter ended December 31, 1999.

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/ Christopher M. Carnavos
Christopher M. Carnavos
Director, Chief Executive Officer and President

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 30, 2000 — */s/ CHRISTOPHER M. CARNAVOS*
Christopher M. Carnavos, Director,
Chief Executive Officer and President
(Principal Executive Officer)

Date: March 30, 2000 — */s/ JEFFERY G. HOUGH*
Jeffery G. Hough, Senior Vice President
and Chief Financial Officer
Principal Financial and Accounting Officer)

Date: March 30, 2000

(Jerome I. Feldman, Chairman of the Board) *By/s/JEFFERY G. HOUGH*
(Scott N. Greenberg, Director) *Jeffery G. Hough*
(John A. Moore, Jr. Director) *Attorney-in-Fact*
(George J. Pedersen, Director)

A Power of Attorney, dated March 30, 2000, authorizing Jeffery G. Hough to sign this Annual Report on Form 10-K for the fiscal year ended December 31, 1999 on behalf of certain of the directors of the Registrant

is filed as Exhibit 24 to this Annual Report.

EXHIBIT INDEX

The following exhibits are either filed herewith or have been previously filed with the Securities and Exchange Commission and are referred to and incorporated by reference.

Exhibit

Exhibit Description of Exhibit Number Page

3. Articles of Incorporation and Bylaws

a. Second Amended and Restated Certificate of Incorporation of the Company.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.

b. Form of Amended and Restated Bylaws of the Company. Previously filed in connection with Amendment No. 1 to the GSE Systems, Inc. Form S-1 Registration Statement as filed with the Securities and Exchange Commission on June 14, 1995 and incorporated herein by reference.

4. Instruments Defining Rights of Security Holders, including Indenture.

a. 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.

10. Material Contracts

a. 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

b. GSE Systems, Inc. 1995 Long-Term Incentive Plan, amended as of April 5,1999.* 10.1 X-10.-1

c. 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. *

d. Letter Agreement dated January 8, 1997 between GSE Systems, Inc. and Christopher M. Carnavos. Previously filed in connection with the GSE Systems, Inc. Form 10-K as filed with the Securities and Exchange Commission on March 31, 1998 and incorporated herein by reference.

Exhibit	Description of Exhibit	Exhibit Number	Page
	e. Office Lease Agreement between Sterling Rutherford Plaza, L.L.C. and GSE Systems, Inc. (dated as of February 10, 1998). Previously filed in connection with the GSE Systems, Inc. Form 10-K as filed with the Securities and Exchange Commission on March 31, 1998 and incorporated herein by reference.		
	f. Office Lease Agreement between Red Branch Road, L.L.C. and GSE Systems, Inc. (dated February 10, 1998). Previously filed in connection with the GSE Systems, Inc. Form 10-K as filed with the Securities and Exchange Commission on March 31, 1998 and incorporated herein by reference.		
	g. Loan and Security Agreement among GSE Systems, Inc., GSE Process Solutions, Inc., GSE Power Systems, Inc., and National Bank of Canada, dated March 23,2000.	10.2	X-10.2-1
	h. $10,000,000 Promissory Note dated March 23, 2000, from GSE Systems, Inc., GSE Process Solutions, Inc., and GSE Power Systems, Inc. to National Bank of Canada.	10.3	X-10.3-1
	i. ManTech International Corporation Guarantee to National Bank of Canada, dated March 23, 2000.	10.4	X-10.4-1
	j. GP Strategies, Inc. Guarantee to National Bank of Canada, dated March 23, 2000.	10.5	X-10.5-1
	k. Subscription and Shareholders' Agreement by and among Avantium International B.V., B.V. Licht en Kracht Maatschappij, SmithKline Beecham PLC, S.R. One,Limited, GSE Systems, Inc. Delft University of Technology, Universiteit Twente, Eindhoven University of Technology, the Generics Group Limited, and Alpinvest Holding NV, dated February 24, 2000.	10.6	X-10.6-1
	l. Software License and Intellectual Property Agreement between GSE Systems, Inc.and Avantium International B.V . dated February 24, 2000.	10.7	X-10.7-1
	16. Letter regarding change in Certified Accountant		
	a. Letter from PricewaterhouseCoopers, dated March 30, 2000, regarding change in certifying accountants.	16.1	X-16.1-1
	21. Subsidiaries.		
	a. List of Subsidiaries of Registrant at December 31, 1999.	21.1	X-21.1-1

Exhibit	Description of Exhibit	Exhibit Number	Page
23. Consents of Experts and Counsel			
	a. Consent of Independent Accountants.	23.1	X-23.1-1
24. Power of Attorney			
a. Power of Attorney for Directors and Officers' Signatures on SEC Form 10-K.		24.1	X-24.1-1
27. Financial Data Schedule			
a. Financial Data Schedule for the year ended December 31, 1999, submitted to the Securities and Exchange Commission in electronic format.			
99. Additional Exhibits			
a. Form of Right of First Refusal Agreement. 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.			

* Management contracts or compensatory plans required to be filed as

exhibits pursuant to Item 14 (c) of this report.

Exhibit 10.1

GSE SYSTEMS, INC.
1995 LONG-TERM INCENTIVE PLAN
(As Amended and Restated Effective April 5, 1999)

1. Restatement, Purpose and Types of Awards GSE Systems, Inc., a Delaware corporation (the "Corporation"), maintained the GSE Systems, Inc. 1995 Long-Term Incentive Plan (As Amended through November 20, 1998) (the "Prior Plan"). The Prior Plan has been amended and restated, as set forth herein, effective April 5, 1999, subject to the approval of the shareholders of the Corporation within twelve months of such effective date (the "Plan"). Notwithstanding anything herein to the contrary, nothing in this Plan shall adversely affect the rights or obligations, under any Award granted under the Prior Plan, of any grantee or holder of the Award without such person's approval.

The purpose of the Plan is to promote the long-term growth and profitability of the Corporation by: (i) providing key people with incentives to improve stockholder value and to contribute to the growth and financial success of the Corporation; and (ii) enabling the Corporation to attract, retain and reward the best-available persons. The Plan permits the granting of stock options (including incentive stock options qualifying under Code section 422 and nonqualified stock options), stock appreciation rights, restricted or unrestricted stock awards, phantom stock, performance awards, or any combination of the foregoing.

2. Definitions Under this Plan, except where the context otherwise indicates, the following definitions apply:

(a) "Affiliate" shall mean any entity, whether now or hereafter existing, which controls, is controlled by, or is under common control with, the Corporation (including, but not limited to, joint ventures, limited liability companies, and partnerships). For this purpose, "control" shall mean ownership of 50% or more of the total combined voting power or value of all classes of stock or interests of the entity.

(b) "Award" shall mean any stock option, stock appreciation right, stock award, phantom stock award, or performance award.

(c) "Board" shall mean the Board of Directors of the Corporation.

(d) "Code" shall mean the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder.

(e) "Common Stock" shall mean shares of common stock of the Corporation, $.01 par value.

(f) "Exchange Act" shall mean the Securities Exchange Act of 1934, as amended.

(g) "Fair Market Value" of a share of the Corporation's Common Stock for any purpose on a particular date shall mean the last reported sale price per share of Common Stock, regular way, on such date or, in case no such sale takes place on such date, the average of the closing bid and asked prices, regular way, in either case as reported in the principal consolidated transaction reporting system with respect to securities listed or admitted to trading on a national securities exchange or included for quotation on the American Stock Exchange, or if the Common Stock is not so listed or admitted to trading or included for quotation, the last quoted price, or if the Common Stock is not so quoted, the average of the high bid and low asked prices, regular way, in the over-the-counter market, as reported by the American Stock Exchange or, if such system is no longer in use, the principal other automated quotations system that may then be in use or, if the Common Stock is not quoted by any such organization, the average of the closing bid and asked prices, regular way, as furnished by a professional market maker making a market in the Common Stock as selected in good faith by the Administrator or by such other source or sources as shall be selected in good faith by the Administrator. If, as the case may be, the relevant date is not a trading day, the determination shall be made as of the next preceding trading day. As used herein, the term "trading day" shall mean a day on which public trading of securities occurs and is reported in the principal consolidated reporting system referred to above, or if the Common Stock is not listed or admitted to trading on a national securities exchange or included for quotation on the American Stock Exchange, any business day.

(h) "Grant Agreement" shall mean a written document memorializing the terms and conditions of an Award granted pursuant to the Plan and shall incorporate the terms of the Plan.

(i) "Parent" shall mean a corporation, whether now or hereafter existing, within the meaning of the definition of "parent corporation" provided in Code section 424(e), or any successor thereto.

(j) "Subsidiary" and "subsidiaries" shall mean only a corporation or corporations, whether now or hereafter existing, within the meaning of the definition of "subsidiary corporation" provided in Section 424(f) of the Code, or any successor thereto.

3. Administration

(a) Administration of the Plan. The Plan shall be administered by the Board or by such committee or committees as may be appointed by the Board from time to time (the Board, committee or committees hereinafter referred to as the "Administrator").

(b) Powers of the Administrator. The Administrator shall have all the powers vested in it by the terms of the Plan, such powers to include authority, in its sole and absolute discretion, to grant Awards under the Plan, prescribe Grant Agreements evidencing such Awards and establish programs for granting Awards.

The Administrator shall have full power and authority to take allother Actions necessary to carry out the purpose and intent of the Plan, including, but not limited to, the authority to: (i) determine the eligible persons to whom, and the time or times at which Awards shall be granted; (ii) determine the types of Awards to be granted;
(iii) determine the number of shares to be covered by or used for reference purposes for each Award; (iv) impose such terms, limitations, restrictions and conditions upon any such Award as the Administrator shall deem appropriate; (v) modify, amend, extend or renew outstanding Awards, or accept the surrender of outstanding wards and substitute new Awards (provided however, that, except as provided in Section 7(d) of the Plan, any modification that would materially adversely affect any outstanding Award shall not be made without the consent of the holder);
(vi) accelerate or otherwise change the time in which an Award may be exercised or becomes payable and to waive or accelerate the lapse, in whole or in part, of any restriction or condition with respect to such Award, including, but not limited to, any restriction or condition with respect to the vesting or exercisability of an Award following termination of any grantee's employment or other relationship with the Corporation; and
(vii) establish objectives and conditions, if any, for earning Awards and determining whether Awards will be paid after the end of a performance period. The Administrator shall have full power and authority, in its sole and absolute discretion, to administer and interpret the Plan and to adopt and interpret such rules, regulations, agreements, guidelines and instruments for the administration of the Plan and for the conduct of its business as the Administrator deems necessary or advisable.

(c) Non-Uniform Determinations. The Administrator's determinations under the Plan (including without limitation, determinations of the persons to receive Awards, the form, amount and timing of such Awards, the terms and provisions of such Awards and the Grant Agreements evidencing such Awards) need not be uniform and may be made by the Administrator selectively among persons who receive, or are eligible to receive, Awards under the Plan, whether or not such persons are similarly situated.

(d) Limited Liability. To the maximum extent permitted by law, no member of the Administrator shall be liable for any action taken or decision made in good faith relating to the Plan or any Award thereunder.

(e) Indemnification. To the maximum extent permitted by law and by the Corporation's charter and by-laws, the members of the Administrator shall be indemnified by the Corporation in respect of all their activities under the Plan.

(f) Effect of Administrator's Decision. All actions taken and decisions and determinations made by the Administrator on all matters relating to the Plan pursuant to the powers vested in it hereunder shall be in the Administrator's sole and absolute discretion and shall be conclusive and binding on all parties concerned, including the Corporation, its stockholders, any participants in the Plan and any other employee, consultant, or director of the Corporation, and their respective successors in interest.

4. Shares Available for the Plan; Maximum Awards

Subject to adjustments as provided in Section 7(d), the shares of Common Stock that may be issued with respect to Awards granted under the Plan (including, for purposes of this Section 4, the Prior Plan) shall not exceed an aggregate of 1,175,000 shares of Common Stock. The Corporation shall reserve such number of shares for Awards under the Plan, subject to adjustments as provided in Section 7(d). If any Award, or portion of an Award, under the Plan expires or terminates unexercised, becomes unexercisable or is forfeited or otherwise terminated, surrendered or canceled as to any shares, or if any shares of Common Stock are surrendered to the Corporation in connection with any Award (whether or not such surrendered shares were acquired pursuant to any Award), the shares subject to such Award and the surrendered shares shall thereafter be available for further Awards under the Plan; provided, however, that any such shares that are surrendered to the Corporation in connection with any Award or that are otherwise forfeited after issuance shall not be available for purchase pursuant to incentive stock options intended to qualify under Code section 422.

Subject to adjustments as provided in Section 7(d), the maximum number of shares of Common Stock subject to Awards of any combination that may be granted during any one fiscal year of the Corporation to any one individual under this Plan shall be limited to 400,000. Such per-individual limit shall not be adjusted to effect a restoration of shares of Common Stock with respect to which the related Award is terminated, surrendered or canceled. 5. Participation

Participation in the Plan shall be open to all employees, officers, directors, and consultants of the Corporation, or of any Affiliate of the Corporation, as may be selected by the Administrator from time to time.

6. Awards

The Administrator, in its sole discretion, establishes the terms of all Awards granted under the Plan. Awards may be granted individually or in tandem with other types of Awards. All Awards are subject to the terms and conditions provided in the Grant Agreement.

(a) Stock Options. The Administrator may from time to time grant to eligible participants Awards of incentive stock options as that term is defined in Code section 422 or nonqualified stock options; provided, however, that Awards of incentive stock options shall be limited to employees of the Corporation or of any Parent or Subsidiary of the Corporation. Options intended to qualify as incentive stock options under Code section 422 must have an exercise price at least equal to Fair Market Value on the date of grant, but nonqualified stock options may be granted with an exercise price less than Fair Market Value. No stock option shall be an incentive stock option unless so designated by the Administrator at the time of grant or in the Grant Agreement evidencing such stock option.

(b) Stock Appreciation Rights. The Administrator may from time to time grant to eligible participants Awards of Stock Appreciation Rights ("SAR"). An SAR entitles the grantee to receive, subject to the provisions of the Plan and the Grant Agreement, a payment having an aggregate value equal to the product of (i) the excess of (A) the Fair Market Value on the exercise date of one share of Common Stock over (B) the base price per share specified in the Grant Agreement, times (ii) the number of shares specified by the SAR, or portion thereof, which is exercised. Payment by the Corporation of the amount receivable upon any exercise of an SAR may be made by the delivery of Common Stock or cash, or any combination of Common Stock and cash, as determined in the sole discretion of the Administrator. If upon settlement of the exercise of an SAR a grantee is to receive a portion of such payment in shares of Common Stock, the number of shares shall be determined by dividing such portion by the Fair Market Value of a share of Common Stock on the exercise date. No fractional shares shall be used for such payment and the Administrator shall determine whether cash shall be given in lieu of such fractional shares or whether such fractional shares shall be eliminated.

(c) Stock Awards. The Administrator may from time to time grant restricted or unrestricted stock Awards to eligible participants in such amounts, on such terms and conditions, and for such consideration, including no consideration or such minimum consideration as may be required by law, as it shall determine. A stock Award may be paid in Common Stock, in cash, or in a combination of Common Stock and cash, as determined in the sole discretion of the Administrator.

(d) Phantom Stock. The Administrator may from time to time grant Awards to eligible participants denominated in stock-equivalent units ("phantom stock") in such amounts and on such terms and conditions as it shall determine. Phantom stock units granted to a participant shall be credited to a bookkeeping reserve account solely for accounting purposes and shall not require a segregation of any of the Corporation's assets. An Award of phantom stock may be settled in Common Stock, in cash, or in a combination of Common Stock and cash, as determined in the sole discretion of the Administrator. Except as otherwise provided in the applicable Grant Agreement, the grantee shall not have the rights of a stockholder with respect to any shares of Common Stock represented by a phantom stock unit solely as a result of the grant of a phantom stock unit to the grantee.

(e) Performance Awards. The Administrator may, in its discretion, grant performance awards which become payable on account of attainment of one or more performance goals established by the Administrator. Performance awards may be paid by the delivery of Common Stock or cash, or any combination of Common Stock and cash, as determined in the sole discretion of the Administrator. Performance goals established by the Administrator may be based on the Corporation's or an Affiliate's operating income or one or more other business criteria selected by the Administrator that apply to an individual or group of individuals, a business unit, or the Corporation or an Affiliate as a whole, over such performance period as the Administrator may designate.

7. Miscellaneous

(a) Withholding of Taxes. Grantees and holders of Awards shall pay to the Corporation or its Affiliate, or make provision satisfactory to the Administrator for payment of, any taxes required to be withheld in respect of Awards under the Plan no later than the date of the event creating the tax liability. The Corporation or its Affiliate may, to the extent permitted by law, deduct any such tax obligations from any payment of any kind otherwise due to the grantee or holder of an Award. In the event that payment to the Corporation or its Affiliate of such tax obligations is made in shares of Common Stock, such shares shall be valued at Fair Market Value on the applicable date for such purposes.

(b) Loans. The Corporation or its Affiliate may make or guarantee loans to grantees to assist grantees in exercising Awards and satisfying any withholding tax obligations.

(c) Transferability. Except as otherwise determined by the Administrator, and in any event in the case of an incentive stock option or a stock appreciation right granted with respect to an incentive stock option, no Award granted under the Plan shall be transferable by a grantee otherwise than by will or the laws of descent and distribution. Unless otherwise determined by the Administrator in accord with the provisions of the immediately preceding sentence, an Award may be exercised during the lifetime of the grantee, only by the grantee or, during the period the grantee is under a legal disability, by the grantee's guardian or legal representative.

(d) Adjustments; Business Combinations. In the event of changes in the Common Stock of the Corporation by reason of any stock dividend, spin-off, split-up, recapitalization, merger, consolidation, business combination or exchange of shares and the like, the Administrator shall, in its discretion, make appropriate adjustments to the maximum number and kind of shares reserved for issuance or with respect to which Awards may be granted under the Plan as provided in Section 4 of the Plan and to the number, kind and price of shares covered by outstanding Awards, and shall, in its discretion and without the consent of holders of Awards, make any other adjustments in outstanding Awards, including but not limited to reducing the number of shares subject to Awards or providing or mandating alternative settlement methods such as settlement of the Awards in cash or in shares of Common Stock or other securities of the Corporation or of any other entity, or in any other matters which relate to Awards as the Administrator shall, in its sole discretion, determine to be necessary or appropriate.

Notwithstanding anything in the Plan to the contrary and without the consent of Holders of Awards, the Administrator, in its sole discretion, may make any modifications to any Awards, including but not limited to cancellation, forfeiture, surrender or other termination of the Awards in whole or in part regardless of the vested status of the Award, in order to facilitate any business combination that is authorized by the Board to comply with requirements for treatment as a pooling of interests transaction for accounting purposes under generally accepted accounting principles. The Administrator is authorized to make, in its discretion and without the consent of holders of Awards, adjustments in the terms and conditions of, and the criteria included in, Awards in recognition of unusual or nonrecurring events affecting the Corporation, or the financial statements of the Corporation or any Affiliate, or of changes in applicable laws, regulations, or accounting principles, whenever the Administrator determines that such adjustments are appropriate in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the Plan.

(e) Substitution of Awards in Mergers and Acquisitions. Awards may be granted under the Plan from time to time in substitution for Awards held by employees or directors of entities who become or are about to become employees or directors of the Corporation or an Affiliate as the result of a merger or consolidation of the employing entity with the Corporation or an Affiliate, or the acquisition by the Corporation or an Affiliate of the assets or stock of the employing entity. The terms and conditions of any substitute Awards so granted may vary from the terms and conditions set forth herein to the extent that the Administrator deems appropriate at the time of grant to conform the substitute Awards to the provisions of the awards for which they are substituted.

(f) Termination, Amendment and Modification of the Plan. The Board may terminate, amend or modify the Plan or any portion thereof at any time.

(g) Non-Guarantee of Employment or Service. Nothing in the Plan or in any Grant Agreement thereunder shall confer any right on an individual to continue in the service of the Corporation or shall interfere in any way with the right of the Corporation to terminate such service at any time with or without cause or notice.

(h) No Trust or Fund Created. Neither the Plan nor any Award shall create or be construed to create a trust or separate fund of any kind or a fiduciary relationship between the Corporation and a grantee or any other person. To the extent that any grantee or other person acquires a right to receive payments from the Corporation pursuant to an Award, such right shall be no greater than the right of any unsecured general creditor of the Corporation.

(i) Governing Law. The validity, construction and effect of the Plan, of Grant Agreements entered into pursuant to the Plan, and of any rules, regulations, determinations or decisions made by the Administrator relating to the Plan or such Grant Agreements, and the rights of any and all persons having or claiming to have any interest therein or thereunder, shall be determined exclusively in accordance with applicable federal laws and the laws of the State of Maryland without regard to its conflict of laws principles.

(j) Effective Date; Termination Date. The Plan is effective as of April 5, 1999, the date on which the Plan, as an amendment and restatement of the Prior Plan, was approved by the Board, subject to the approval of the stockholders of the Corporation within twelve months of such effective date. No Award shall be granted under the Plan after the close of business on June 30, 2005. Subject to other applicable provisions of the Plan, all Awards made under the Plan prior to such termination of the Plan shall remain in effect until such Awards have been satisfied or terminated in accordance with the Plan and the terms of such Awards.

Date Approved by the Stockholders: May 27, 1999.

Exhibit 10.2
LOAN AND SECURITY AGREEMENT

between

GSE SYSTEMS, INC.,
A Delaware Corporation,

GSE PROCESS SOLUTIONS, INC.,
A Delaware Corporation

and

GSE POWER SYSTEMS, INC.,
A Delaware Corporation

Borrowers

and

NATIONAL BANK OF CANADA,
A Canadian Chartered Bank,

Lender

$10,000,000.00 Revolving Credit Facility

Dated: March 23, 2000

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Schedules and Exhibits

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LOAN AND SECURITY AGREEMENT

THIS LOAN AND SECURITY AGREEMENT is dated as of March 23, 2000 by and between GSE SYSTEMS, INC., a Delaware corporation, GSE PROCESS SOLUTIONS, INC., a Delaware corporation, and GSE POWER SYSTEMS, INC., a Delaware corporation (collectively, BORROWERS); and NATIONAL BANK OF CANADA, a Canadian chartered bank (LENDER).

RECITALS

The BORROWERS have requested that the LENDER extend various credit accommodations to the BORROWERS. The LENDER is willing to provide the requested credit accommodations upon the terms and conditions of this Loan And Security Agreement, and upon the granting by the BORROWERS to the LENDER of the security interests, liens, and other assurances of payment provided for in this Loan And Security

Agreement.

The BORROWERS businesses are a mutual and collective enterprise and the BORROWERS believe that the consolidation of their facilities and other financial accommodations in accordance with the terms of this Loan And Security Agreement will enhance the aggregate borrowing powers of the BORROWERS and ease the administration of their credit relationship with the LENDER, all to the mutual advantage of the BORROWERS. In order to utilize the financial powers of the BORROWERS in the most efficient and economical manner, and in order to facilitate the administration of their financing needs, the LENDER will, at the request of a BORROWER, extend financial accommodations to all of the BORROWERS on a combined basis in accordance with the provisions set forth in this Loan And Security Agreement. The LENDERS willingness to extend credit to the BORROWERS and to administer the collateral security therefor on a combined basis as more fully set forth in this Loan And Security Agreement is done solely as an accommodation to the BORROWERS and at the BORROWERS joint request and in furtherance of the BORROWERS mutual and collective enterprise.

NOW, THEREFORE, in consideration of these premises and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

ARTICLE 1
DEFINITIONS

As used in this Loan And Security Agreement, the terms set forth in this Article 1 have the meanings set forth below, unless the specific context of this Loan And Security Agreement clearly requires a different meaning. Terms defined in this Article 1 or elsewhere in this Loan And Security Agreement are in all capital letters throughout this Loan And Security Agreement. The singular use of any defined term includes the plural and the plural use includes the singular.

Section 1.1. Account Debtor. The term CCOUNT DEBTOR means collectively each PERSON: (a) to or for whom any or all of the BORROWERS has provided or has agreed to provide any goods or services; or (b) which owes any or all of the BORROWERS any sum of money as a result of goods sold or services provided by any or all of the BORROWERS; or
(c) which is the maker or endorser on any INSTRUMENT payable to any or all of the BORROWERS or otherwise owes any or all of the BORROWERS any sum of money on account of any loan or other payment obligation. With respect to each RECEIVABLE which is payable by any governmental authority, ACCOUNT DEBTOR includes, without limitation, the agency, instrumentality or official which has the on such ACCOUNT or other RECEIVABLE.

Section 1.2. Accounts, Chattel Paper, Documents, Equipment, Fixtures, General Intangibles, Goods, Instruments and Investment Property. The terms ACCOUNTS, CHATTEL PAPER, DOCUMENTS, EQUIPMENT, GENERAL INTANGIBLES, GOODS, INSTRUMENTS, and INVESTMENT PROPERTY shall have the same respective meanings as are given to those terms in the New York Uniform Commercial Code-Secured Transactions, Article 9, as amended. The term FIXTURES shall have the meaning provided by the common law of the state in which the fixtures are located.

Section 1.3. Acquisition. The term ACQUISITION means any transaction, or any series of related transactions, consummated after the date of this AGREEMENT, by means of which any of the BORROWERS (a) acquires any going business or all or substantially all of the assets of any PERSON, whether through purchase of assets, merger or otherwise, (b) directly or indirectly acquires control of at least a majority (in number of votes) of the securities of a corporation which have ordinary voting power for the election of directors, or (c) directly or indirectly acquires control of a majority ownership interest in any PERSON that is not a corporation.

Section 1.4. Acquisition Agreement. The term ACQUISITION AGREEMENT means the agreement between a BORROWER and a TARGET or the seller or sellers of a TARGET, pursuant to which such BORROWER agrees to acquire substantially all of the assets or CAPITAL STOCK of a TARGET, or merge with a TARGET, together with all amendments to such agreement.

Section 1.5. Additional Collateral Borrowing Base. The term ADDITIONAL COLLATERAL BORROWING BASE means, at any date of determination thereof, the product, as at such time, of (a) ELIGIBLE ADDITIONAL COLLATERAL VALUE and (b) the ADDITIONAL COLLATERAL CREDIT PERCENTAGE.

Section 1.6. Additional Collateral Credit Percentage. The term ADDITIONAL COLLATERAL CREDIT PERCENTAGE means one hundred percent (100%).

Section 1.7. Adjusted Base Rate. The term ADJUSTED BASE RATE means the
BASE RATE plus the APPLICABLE MARGIN.

Section 1.8. Adjusted LIBOR Rate. The term ADJUSTED LIBOR RATE means, for any INTEREST PERIOD: (a) the LIBOR RATE for such INTEREST PERIOD; plus (b) the APPLICABLE MARGIN.

Section 1.9. Affiliate. The term AFFILIATE means collectively any PERSON: (a) that directly or indirectly, through one or more intermediaries, controls or is controlled by, or is under common control with any or all of the BORROWERS, including, without limitation, the officers, managers and directors of the BORROWERS; (b) that directly or beneficially owns or holds five percent (5%) or more of any equity interests in any or all of the BORROWERS; or (c) five percent (5%) or more of whose equity interests are owned directly or controlled by any

or all of the BORROWERS. As used herein, the term control (including, with correlative meanings, the terms controlled by and under common control with) shall mean possession, directly or indirectly, of the power to direct the management or policies of a PERSON, whether through ownership of equity interests, by contract or otherwise.

Section 1.10. Agreement. The term AGREEMENT means this Loan And Security Agreement, as amended, extended, or modified from time to time by the parties hereto, as well as all schedules, exhibits and attachments hereto.

Section 1.11. Applicable Margin. The term APPLICABLE MARGIN means that percentage to be added to either the BASE RATE or the LIBOR RATE in order to determine an applicable ADJUSTED BASE RATE or ADJUSTED LIBOR RATE, which percentage shall be determined in accordance with the following schedule:

BASE RATE	**LIBOR RATE**
0.00%	2.50%

Section 1.12. Base Rate. The term BASE RATE means that fluctuating rate of interest publicly announced by National Bank of Canada, New York, from time to time as its Prime Rate and as a base rate for calculating interest on certain loans. If and when the BASE RATE changes, the interest rate will change automatically without notice to the BORROWERS, effective on the date of any such change.

Section 1.13. Base Rate Borrowing. The term BASE RATE BORROWING means any portion of the LOAN upon which interest accrues at the ADJUSTED BASE RATE.

Section 1.14. Billed Commercial Accounts Borrowing Base. The term BILLED COMMERCIAL ACCOUNTS BORROWING BASE means, at any date of determination thereof, the product, as at such time, of (a) ELIGIBLE BILLED COMMERCIAL ACCOUNTS and (b) the BILLED COMMERCIAL ACCOUNTS CREDIT PERCENTAGE.

Section 1.15. Billed Commercial Accounts Credit Percentage. The term BILLED COMMERCIAL ACCOUNTS CREDIT PERCENTAGE means eighty-five percent (85%).

Section 1.16. Billed Government Accounts Borrowing Base. The term BILLED GOVERNMENT ACCOUNTS BORROWING BASE means, at any date of determination thereof, the product, as at such time, of (a) ELIGIBLE BILLED GOVERNMENT ACCOUNTS and (b) the BILLED GOVERNMENT ACCOUNTS CREDIT PERCENTAGE.

Section 1.17. Billed Government Accounts Credit Percentage. The term BILLED GOVERNMENT ACCOUNTS CREDIT PERCENTAGE means eighty-five (85%).

Section 1.18. Borrowing Base. The term BORROWING BASE means, at any date of determination thereof, the sum, as at such time, of: (a) the BILLED COMMERCIAL ACCOUNTS BORROWING BASE; (b) the BILLED GOVERNMENT ACCOUNTS BORROWING BASE; (c) the UNBILLED GOVERNMENT ACCOUNTS BORROWING BASE; (d) the INVENTORY BORROWING BASE; and (e) the ADDITIONAL COLLATERAL BORROWING BASE; minus (e) such reserves as the LENDER deems appropriate from time to time, including without limitation, reserves determined by the LENDER to be appropriate with respect to bankers acceptances, GUARANTY INDEBTEDNESS, INTEREST RATE PROTECTION AGREEMENTS, risks under ENVIRONMENTAL LAWS, and other obligations of any of the BORROWERS, provided, however, with respect to any such reserve taken, so long as no DEFAULT or EVENT OF DEFAULT shall have occurred, the LENDER shall release such reserve upon receipt by the LENDER of evidence satisfactory to the LENDER in its reasonable credit judgment that the event, circumstance, or risk giving rise to such reserve has been cured to the satisfaction of the LENDER.

Section 1.19. Business Day. The term BUSINESS DAY means any day other than a Saturday, Sunday, or other day on which commercial banking institutions in the State of New York are required to be closed and, if the applicable BUSINESS DAY relates to any LOAN to which the LIBOR RATE applies, such day must also be a day on which banks are open for dealings in dollar deposits in the London interbank market.

Section 1.20. Capital Adequacy Requirement. The term CAPITAL ADEQUACY REQUIREMENT means any LAW imposing any capital adequacy requirement or any other similar requirement (including but not limited to the capital adequacy regulations contained in Parts 3, 208 and 225 of Title 12 of the Code of Federal Regulations, as amended), any change in such LAWS or in the interpretation or application thereof, and any request or directive regarding capital adequacy (whether or not having the force of law) from any central bank or government authority.

Section 1.21. Capital Lease. The term CAPITAL LEASE means a lease with respect to which the lessee's obligations thereunder should, in accordance with G.A.A.P., be capitalized and reflected as a liability on the balance sheet of the lessee.

Section 1.22. Capital Lease Obligations. The term CAPITAL LEASE OBLIGATIONS means any indebtedness incurred as a lessee pursuant to a CAPITAL LEASE.

Section 1.23. Capital Stock. The term CAPITAL STOCK means any and all shares, participations, and other equivalents (however designated) of capital stock of a corporation, any and all other equivalent ownership interests in a PERSON (other than a corporation) and any and all

warrants, or options to purchase any of the foregoing.

Section 1.24. Closing. The term CLOSING means the execution and delivery of this AGREEMENT, the NOTE, and various other LOAN DOCUMENTS. The date of CLOSING is the date written above as the date of this AGREEMENT.

Sectio 1.25. Code. The term CODE means the Internal Revenue Code of 1986, as amended, and all Treasury regulations, revenue rulings, revenue procedures or announcements issued thereunder.

Section 1.26. Collateral. The term COLLATERA means all of the tangible and intangible assets of any or all of the BORROWERS, wherever located, whether now owned or hereafter acquired by the BORROWERS, together with all substitutions therefor, and all replacements and renewals thereof, and all accessions, additions, replacement parts, manuals, warranties and packaging relating thereto, including but not limited to the following tangible and intangible assets and property rights of any of the BORROWERS: (a) ACCOUNTS; (b) CHATTEL PAPER; (c) DOCUMENTS; (d) EQUIPMENT; (e) FIXTURES; (f) GENERAL INTANGIBLES, including, but not limited to, INTELLECTUAL PROPERTY; (g) GOODS; (h) INSTRUMENTS; (i) INVENTORY, including returned, rejected, or repossessed INVENTORY and rights of reclamation and stoppage in transit with respect to INVENTORY; (j) INVESTMENT PROPERTY; (k) RECEIVABLES; (l) deposit accounts (including, without limitation, the COLLECTION ACCOUNT); (m) letter of credit rights; and (n) all RECORDS relating to or pertaining to any of the above listed COLLATERAL; provided, however, the COLLATERAL shall not include CAPITAL STOCK of any SUBSIDIARY which is not a DOMESTIC SUBSIDIARY in excess of 65% of any series of such stock.

Section 1.27. Collection Account. The term COLLECTION ACCOUNT means a bank account designated by the LENDER from which the LENDER alone has power of access and withdrawal.

Section 1.28. Commercial Account. The term COMMERCIAL ACCOUNT means the commercial checking account to be established and maintained by any or all of the BORROWERS with the LENDER and which may be utilized as the means of advancing funds under the LOAN.

Sectio 1.29. Credit Facility. The term CREDIT FACILITY means the credit facility extended by the LENDER to the BORROWERS, jointly and severally as co-obligors, pursuant to the terms and conditions of this AGREEMENT and the other LOAN DOCUMENTS, providing for, among other things, the LOAN and LETTERS OF CREDIT.

Section 1.30. Default. The term DEFAULT means any event, occurrence or omission which, with the giving of notice, the passage of time, or both, would constitute an EVENT OF DEFAULT.

Section 1.31. Dollar Cap. The term DOLLAR CAP means Ten Million Dollars ($10,000,000.00).

Section 1.32. Domestic Subsidiary. The term DOMESTIC SUBSIDIARY means any SUBSIDIARY organized under the laws of any State of the United States.

Section 1.33. EBITDA. The term EBITDA means, for any period, the sum of the following determined on a consolidated basis, without duplication, for the BORROWERS and their consolidated SUBSIDIARIES in accordance with G.A.A.P.: (a) net income for such period plus (b) the sum of the following to the extent deducted in determining net income for such period: (i) income taxes; (ii) total interest expense; (iii) amortization and depreciation; and (iv) extraordinary losses, minus
(c) the sum of the following if not deducted in determining net income for such period: (i) interest income; and (ii) any extraordinary gains, including but not limited to gains arising from the sale of assets not in the ordinary course of business.

Section 1.34. Eligible Additional Collateral Value. The term ELIGIBLE ADDITIONAL COLLATERAL VALUE means, at any date of determination thereof, the STATED AMOUNT of a duly issued irrevocable standby letter of credit having an original undrawn face amount of Nine Hundred Thousand Dollars ($900,000.00) naming the LENDER as beneficiary, which is issued on behalf of ManTech International Corporation by Mellon Bank, First Union National Bank or another bank acceptable to the LENDER, has terms and provisions acceptable to the LENDER and an expiration date acceptable to the LENDER.

Section 1.35. Eligible Billed Commercial Accounts. The term ELIGIBLE BILLED COMMERCIAL ACCOUNTS means, at any date of determination thereof, the aggregate amount, as at such time, of bona fide ACCOUNTS
(excluding any ACCOUNTS that arise out of a GOVERNMENT CONTRACT)
created or acquired by any BORROWER in the ordinary course of its business which have been billed to the ACCOUNT DEBTOR thereon and which are payable in conformity with such billing, and which are, but only in the amounts such ACCOUNTS are, acceptable to the LENDER. The criteria for eligibility as ELIGIBLE BILLED COMMERCIAL ACCOUNTS may be fixed and revised from time to time by the LENDER in its reasonable discretion in accordance with its internal credit policies, and any such determinations by the LENDER will be promptly communicated to the BORROWERS. An ACCOUNT in no event shall be deemed an ELIGIBLE BILLED COMMERCIAL ACCOUNT unless: (a) the ACCOUNT is a bona fide, existing, and legally enforceable obligation of the named ACCOUNT DEBTOR arising from goods sold or leased or from services performed in the ordinary course of business on terms that are normal and customary in the business of such BORROWER, the ACCOUNT is actually and absolutely owing to such BORROWER and is not contingent for any reason, and such BORROWER has lawful title to such ACCOUNT; (b) the delivery of the goods or the performance of the services has been completed; (c) no return, rejection, or repossession, has occurred (or if a return, rejection or repossession has occurred, only to the extent such ACCOUNT is in

excess of the maximum amount of such return, rejection or repossession and provided the balance of such ACCOUNT otherwise represents a valid, uncontested and legally enforceable obligation of the ACCOUNT DEBTOR and satisfies all of the other criteria set forth herein); (d) the goods delivered or the services performed have been delivered or performed, as the case may be, in accordance with the terms of the contract between the applicable BORROWER and the ACCOUNT DEBTOR, without dispute, objection, complaint, offset, defense, counterclaim, adjustment or allowance (including without limitation discounts, advertising allowances, or contra accounts) (or if such ACCOUNT is subject to any such dispute, objection, complaint, offset, defense, counterclaim, adjustment, or allowance, only to the extent such ACCOUNT is in excess of the maximum amount of such dispute, objection, complaint, offset, defense, counterclaim, adjustment, or allowance, and provided the balance of such ACCOUNT otherwise represents a valid, uncontested and legally enforceable obligation of the ACCOUNT DEBTOR and satisfies all of the other criteria set forth herein); (e) the ACCOUNT is not payable by an ACCOUNT DEBTOR to whom any or all of the BORROWERS owes money (or if so, only to the extent that such ACCOUNT is in excess of the total amount owed by any or all of the BORROWERS to the ACCOUNT DEBTOR and provided the balance of such ACCOUNT otherwise represents a valid, uncontested and legally enforceable obligation of the ACCOUNT DEBTOR and satisfies all of the other criteria set forth herein); (f) the ACCOUNT DEBTORS obligation to pay the ACCOUNT is not subject to any repurchase obligation or return right, as with sales made on a bill-and-hold, guaranteed sale, sale-and-return, sale on approval, or consignment basis; (g) the ACCOUNT is not evidenced by CHATTEL PAPER or an INSTRUMENT or any kind; (h) the ACCOUNT has not been turned over to any PERSON other than a BORROWER for collection; (i) the ACCOUNT is evidenced by an invoice and no more than ninety (90) days have elapsed from the billing or invoice date; (j) no prior, contemporaneous, or subsequent assignment, claim, lien, or security interest, other than that of the LENDER, applies to the ACCOUNT; (k) no bankruptcy or insolvency proceedings or payment moratoriums of any kind apply to the ACCOUNT;
(l) the ACCOUNT DEBTOR is not, in the LENDERS sole opinion, unlikely to pay because of death, incompetency, disappearance, financial inability, potential bankruptcy, insolvency, damage to or disposition of the goods, default, or any other reason whatsoever; (m) no bonding company or surety asserts or has the ability to assert any claim based upon the legal doctrine of equitable subrogation, or under any other right to claim a lien into or right to payment of the ACCOUNT; (n) the ACCOUNT does not arise from or pertain to any transaction with any employee, officer, agent, director, stockholder or other AFFILIATE unless arising in the ordinary course of business on an arms-length basis;
(o) the ACCOUNT is not payable from any ACCOUNT DEBTOR located outside of the geographic boundaries of the United States of America or Canada unless such ACCOUNT (i) is credit guaranteed in full by a policy of credit insurance insuring comprehensive (commercial and political) risks, acceptable to the LENDER in its sole discretion, or
(ii) if approved by the LENDER, is payable in the full amount of the face value of the ACCOUNT in U.S. Dollars and fully secured by a perfected assignment of proceeds of an irrevocable letter of credit acceptable to the LENDER in form and substance and issued by a United States financial institution satisfactory to the LENDER in its sole discretion; (p) a BORROWER is legally empowered to collect the ACCOUNT against the ACCOUNT DEBTOR in the jurisdiction in which the ACCOUNT DEBTOR is located; (q) the ACCOUNT is not payable by an ACCOUNT DEBTOR with respect to which more than fifty percent (50%) of the dollar amount of that ACCOUNT DEBTORS RECEIVABLES to any or all of the BORROWERS are more than ninety (90) days due from the date of invoice;
(r) the ACCOUNT does not arise from any contract or agreement with any state, local or foreign government; and (s) the LENDER has a perfected first priority security interest therein. An ACCOUNT which otherwise satisfies the LENDERS criteria for eligibility shall also be subject to the following eligibility limitations: (A) if the ACCOUNT is due from an ACCOUNT DEBTOR whose billed ACCOUNTS in the aggregate constitute in excess of fifteen percent (15%) of all billed ACCOUNTS of the BORROWERS, only the portion of the aggregate amount of the billed ACCOUNTS from that ACCOUNT DEBTOR which does not exceed fifteen percent (15%) of all billed ACCOUNTS of the BORROWERS may be eligible; and (B) to the extent the ACCOUNT contains finance charges, delivery charges or sales taxes, such finance charges, delivery charges or sales taxes shall not be eligible.

Section 1.36. Eligible Billed Government Accounts. The term ELIGIBLE BILLED GOVERNMENT ACCOUNTS means, at any date of determination thereof, the aggregate amount, at such time, of bona fide ACCOUNTS arising out of GOVERNMENT CONTRACTS and created or acquired by any BORROWER in the ordinary course of its business, which have been billed to the ACCOUNT DEBTOR thereon and which are payable in conformity with such billing, and which are, but only in the amounts such ACCOUNTS are, acceptable to the LENDER. The criteria for eligibility as an ELIGIBLE BILLED GOVERNMENT ACCOUNT may be fixed and revised from time to time by the LENDER in its reasonable discretion in accordance with its internal credit policies, and any such determinations by the LENDER will be promptly communicated to the BORROWERS. An ACCOUNT shall in no event be deemed an ELIGIBLE BILLED GOVERNMENT ACCOUNT unless: (a) the ACCOUNT and the respective GOVERNMENT CONTRACT shall be in compliance with all applicable LAWS, including federal procurement LAWS and regulations; (b) if so requested by the LENDER, the applicable BORROWER shall have complied with all provisions necessary to protect the LENDERS interest under the Assignment of Claims Act of 1940, as amended, and all regulations promulgated thereunder; (c) the LENDER is satisfied as to the absence of setoffs, counterclaims, and other defenses to payment on the part of the United States of America; (d) such ACCOUNT shall not constitute or include any retainage; (e) the LENDER is satisfied that funds for the payment of such ACCOUNT have been appropriated by the United States of America or such agency, department or instrumentality thereof, such ACCOUNT and GOVERNMENT CONTRACT are enforceable against the full faith and credit of the United States of America, and funds for the payment of such ACCOUNT are available; and (f) the ACCOUNT satisfies and continues to satisfy requirements contained in the definition of ELIGIBLE BILLED COMMERCIAL ACCOUNTS set forth in Section 1.35 of this AGREEMENT; provided, however, (i) in lieu of clause (i), the ACCOUNT shall be evidenced by an invoice and no more than one hundred twenty (120) days shall have elapsed from the billing or invoice date, (ii) in lieu of clause (q), the ACCOUNT is not payable under a GOVERNMENT CONTRACT with respect to which more than fifty percent (50%) of the aggregate dollar amount of all ACCOUNTS payable to any or all of the BORROWERS thereunder are more than one hundred twenty (120) days due from the date of invoice; (iii) and in lieu of clause (A), if the ACCOUNT is payable under a GOVERNMENT CONTRACT as to which all billed ACCOUNTS payable to any of the BORROWERS thereunder in the aggregate constitute in excess of fifteen percent (15%) of all billed ACCOUNTS of the BORROWERS, only the portion of the aggregate amount of the ACCOUNTS pursuant to such GOVERNMENT CONTRACT which does not exceed fifteen percent (15%) of all billed ACCOUNTS of the BORROWERS may be eligible.

Section 1.37. Eligible Inventory. The term ELIGIBLE INVENTORY means, at any date of determination thereof, the aggregate amount, as at such time, of INVENTORY owned by any or all of the BORROWERS which is acceptable to the LENDER to be included in the calculation of

the BORROWING BASE. The criteria for eligibility may be fixed and revised by the LENDER from time to time in its reasonable discretion in accordance with its internal credit policies, and any such determinations by the LENDER will be promptly communicated to the BORROWERS. INVENTORY in no event shall be deemed to be ELIGIBLE INVENTORY unless: (a) the LENDER has a first priority perfected security interest in its INVENTORY; (b) it is normally and currently saleable in the ordinary course of business of any or all of the BORROWERS; (c) it is not work in process; (d) it is located on the premises of a BORROWER; (e) it does not consist of defective, damaged, obsolete, returned or repossessed items of INVENTORY or used goods or goods taken in trade; (f) it does not consist of slow moving items or items determined by the LENDER in its sole discretion to be stale or dated merchandise; (g) it does not consist of packing or packaging materials, general supplies, catalogs, promotion materials, specialty inventory, inventory on loan to any PERSON, items used as demonstrators, prototypes, or salesman's samples; (h) it does not consist of an item consigned to any or all of the BORROWERS or with respect to which any PERSON claims a lien; (i) it has not been consigned by any or all of the BORROWERS to a consignee; (j) it is not held by any PERSON (other than a BORROWER) or located upon any premises not owned in fee simple by a BORROWER unless such PERSON or the owner of such premises has executed a lien waiver agreement in form and substance satisfactory to the LENDER; and (k) it has not been deemed unmerchantable or otherwise unsatisfactory by the LENDER for any reason, in the LENDERS sole discretion, by written notice to the BORROWERS. The value of any INVENTORY deemed to meet the criteria for ELIGIBLE INVENTORY shall be determined at the least of: (i) the BORROWERS net purchase or manufacturing cost; (ii) the lowest then-existing market price; (iii) the BORROWERS lowest selling price, less estimated expenses for packing, selling and delivery; or (iv) any price ceiling which may be established by governmental order, regulation, or restriction. The LENDER shall be the discretionary judge of the value of any INVENTORY, based upon such information as it deems, in its reasonable discretion, to be relevant or applicable in making that determination.

Section 1.38. Eligible Unbilled Government Accounts. The term ELIGIBLE UNBILLED GOVERNMENT ACCOUNTS means, at any date of determination thereof, the aggregate amount, at such time, of those bona fide ACCOUNTS which would be ELIGIBLE BILLED GOVERNMENT ACCOUNTS, but for the fact that such ACCOUNTS have not been invoiced as a result of normal frequency of billing under the particular GOVERNMENT CONTRACTS, and which ACCOUNTS are acceptable, but only in the amounts such ACCOUNTS are acceptable to the LENDER. The criteria for eligibility as an ELIGIBLE UNBILLED GOVERNMENT ACCOUNT may be fixed and revised by the LENDER in its reasonable discretion in accordance with its internal credit policies, and any such determinations by the LENDER will be promptly communicated to the BORROWERS. An ACCOUNT shall in no event be deemed eligible unless: (a) such ACCOUNT represents costs incurred by or profits accrued to a BORROWER and recoverable under a GOVERNMENT CONTRACT; (b) such ACCOUNT shall not constitute or include any retainage; (c) no more than sixty (60) days have elapsed from the date services were completed or goods delivered; (d) upon issuance of an invoice therefor an ELIGIBLE BILLED GOVERNMENT ACCOUNT will arise in favor of a BORROWER; and (e) such ACCOUNT is not simultaneously reported as an ELIGIBLE BILLED GOVERNMENT ACCOUNT on any Borrowing Base Certificate provided to the LENDER.

Section 1.39. Employee Benefit Plan. The term EMPLOYEE BENEFIT PLAN means an employee benefit plans as defined in Section 3(3) of ERISA.

Section 1.40. Environmental Laws. The term ENVIRONMENTAL LAWS means individually or collectively any local, state or federal LAW, statute, rule, regulation, order, ordinance, common law, permit or license term or condition, or state super-lien or environmental clean-up or disclosure statutes pertaining to the environment or to environmental contamination, regulation, management, control, treatment, storage, disposal, containment, removal, clean-up, reporting, or disclosure, including, but not limited to, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as now or hereafter amended (including, but not limited to, the Super-fund Amendments and Reauthorization Act); the Resource Conservation and Recover Act, as now or hereafter amended (including, but not limited to, the Hazardous and Solid Waste Amendments of 1984); the Toxic Substances Control Act, as now or hereafter amended; the Clean Water Act, as now or hereafter amended; the Safe Drinking Water Act, as now or hereafter amended; or the Clean Air Act, as now or hereafter amended.

Section 1.41. EPA Permit. The term EPA PERMITS has the meaning given that term in Section 5.23 of this AGREEMENT.

Section 1.42. ERISA. The term ERISAS means the Employee Retirement Income Security Act of 1974 and regulations issued thereunder, as amended from time to time and any successor statute.

Section 1.43. ERISA Affiliate. The term ERISA AFFILIATE means, in relation to any PERSON, any trade or business (whether or not incorporated) which is a member of a group of which that PERSON is a member and which is under common control within the meaning of the regulations promulgated under Section 414 of the CODE.

Section 1.44. ERISA Liabilities. The term ERISA LIABILITIES means the aggregate of all unfunded vested benefits under any employee pension benefit plan, within the meaning of Section 3(2) of ERISA, of any of the BORROWERS or any ERISA AFFILIATE of any of the BORROWERS under any plan covered by ERISA that is not a MULTIEMPLOYER PLAN and all potential withdrawal liabilities of any of the BORROWERS or any ERISA AFFILIATE under all MULTIEMPLOYER PLANS.

Section 1.45. Event Of Default. The term EVENT OF DEFAULT means any of the events set forth in Article 8 of this AGREEMENT, provided that any requirement for the giving of notice, the lapse of time, or both, or any other expressly stated condition, has been satisfied.

Section 1.46. Facilities. The term FACILITIES means all real property and the improvements thereon used or occupied or leased by any of the BORROWERS or otherwise used at any time by any of the BORROWERS in the operation of its business or for the manufacture, storage, or location of any of the COLLATERAL.

Section 1.47. Federal Funds Effective Rate. The term FEDERAL FUNDS EFFECTIVE RATE means for any period, a fluctuating interest rate per annum equal for each day during such period to the weighted average of the rates on overnight Federal funds transactions with members of

the Federal Reserve System arranged by Federal funds brokers, as published for such day (or, if such day is not a BUSINESS DAY, for the preceding BUSINESS DAY) by the Federal Reserve Bank of New York or, if such rate is not so published for any day that is a BUSINESS DAY, the average of the quotations for such day on such transactions received by the LENDER from three (3) Federal funds brokers of recognized standing selected by the LENDER.

Section 1.48. Fiscal Year. The term FISCAL YEAR means the fiscal year of each of the BORROWERS which is the twelve (12) month accounting period commencing January 1 and ending December 31 of each calendar year.

Section 1.49. G.A.A.P. The term G.A.A.P. means, with respect to any date of determination, generally accepted accounting principles as used by the Financial Accounting Standards Board and/or the American Institute of Certified Public Accountants consistently applied and maintained throughout the periods indicated.

Section 1.50. GSE Power Systems AB Note. The term GSE POWER SYSTEMS AB NOTE means the Promissory Note dated May 1, 1999 from GSE SYSTEMS and payable to the order of GSE Power Systems AB in the original principal amount of Eleven Million, Three Hundred Twenty-Seven Thousand, One Hundred Thirty-Four and 94/100 Swedish kronor (SEK 11.327.134,94).

Section 1.51. GSE Systems. The term GSE SYSTEMS means GSE Systems, Inc., a Delaware corporation.

Section 1.52. Guaranteed Pension Plan. The term GUARANTEED PENSION PLAN means any pension plan maintained by any of the BORROWERS or an ERISA AFFILIATE of any of the BORROWERS, or to which any of the BORROWERS or an ERISA AFFILIATE contributes, some or all of the benefits under which are guaranteed by the United States Pension Benefit Guaranty Corporation.

Section 1.53. Guarantors. The term GUARANTORS means collectively GSE Systems International, Ltd., a Delaware corporation, MSHI, Inc., a Virginia corporation, GSE Erudite Software, Inc., a Delaware corporation, GP International Engineering & Simulation, Inc., a Delaware corporation, GSE Services Company, LLC, a Delaware limited liability company, and all other direct or indirect DOMESTIC SUBSIDIARIES of any of the BORROWERS.

Section 1.54. Guaranty Agreements. The term GUARANTY AGREEMENTS means collectively the Guaranty Agreements executed from time to time by the GUARANTORS or the LIMITED GUARANTORS for the benefit of the LENDER.

Section 1.55. Guaranty Indebtedness. The term GUARANTY INDEBTEDNESS means any obligation, contingent or otherwise, of any referenced PERSON directly or indirectly guaranteeing any debt or obligation of any other PERSON and, without limiting the generality of the foregoing, any obligation, direct or indirect, contingent or otherwise, of such PERSON: (a) to purchase or pay (or advance or supply funds for the purchase or payment of) such debt or obligation (whether arising by virtue of partnership arrangements, by agreement to keep-well, to purchase assets, goods, securities or services, to take-or-pay, or to maintain financial statement conditions or otherwise, other than agreements to purchase goods at an arms length price in the ordinary course of business); or (b) entered into for the purpose of assuring in any other manner the holder of such debt or obligation of the payment thereof or to protect such holder against loss in respect thereof (in whole or in part). The term GUARANTY INDEBTEDNESS shall not include endorsements for collection or deposit in the ordinary course of business.

Section 1.56. Government Contract. The term GOVERNMENT CONTRACT means a contract between any BORROWER and any agency, department or instrumentality of the United States of America where such BORROWER is the prime contractor.

Section 1.57. Indebtedness. The term INDEBTEDNESS means, as to any referenced PERSON (determined without duplication): (a) indebtedness of such PERSON for borrowed money (whether by loan or the issuance and sale of debt securities), or for the deferred purchase or acquisition price of property or services (other than accounts payable incurred in the ordinary course of business); (b) obligations of such PERSON in respect of letters of credit or similar instruments issued or accepted by financial institutions for the account of such PERSON (whether or not such obligations are contingent); (c) CAPITAL LEASE OBLIGATIONS of such PERSON; (d) obligations of such PERSON to redeem or otherwise retire equity interests in such PERSON; (e) indebtedness of others of the type described in clause (a), (b), (c) or (d) above secured by a lien on any of the property of such PERSON, whether or not the respective obligation so secured has been assumed by such PERSON; and
(f) GUARANTY INDEBTEDNESS.

Section 1.58. Insolvency Proceedings. The term INSOLVENCY PROCEEDINGS means, with respect to any referenced PERSON, any case or proceeding commenced by or against such PERSON, under any provision of the United States Bankruptcy Code, as amended, or under any other federal or state bankruptcy or insolvency law, or any assignments for the benefit of creditors, formal or informal moratoriums, receiverships, compositions or extensions with some or all creditors with respect to any indebtedness of such PERSON.

Section 1.59. Intellectual Property. The term INTELLECTUAL PROPERTY means all present and future designs, patents, patent rights and applications therefor, trademarks and registrations or registrations therefor, copyrights, software or computer programs, license rights, trade secrets, methods, processes, know-how, drawings, specifications, descriptions, and all memoranda, notes and records with respect to any research and development, whether now owned or hereafter acquired, all goodwill associated with any of the foregoing, and all proceeds of all of the foregoing.

Section 1.60. Interest Period. The term INTEREST PERIOD means with respect to any LIBOR BORROWING, each period commencing on

the date such LIBOR BORROWING is made or converted to a LIBOR BORROWING and ending on the numerically corresponding date in the first, second, or third calendar month thereafter (or, if there is no numerically corresponding day, on the last BUSINESS DAY of such month), as the BORROWERS may select.

Sectio 1.61. Interest Rate Protection Agreement. The term INTEREST RATE PROTECTION AGREEMENT means, for any referenced PERSON, an interest rate swap, cap or collar agreement or similar arrangement and documentation between such PERSON and one or more financial institutions providing for the transfer or mitigation of interest risks either generally or under specific contingencies.

Section 1.62. Inventory. The term INVENTORY shall have the same meaning as provided to such term in the New York Uniform Commercial Code - Secured Transactions, Article 9, as amended, together with all of the BORROWERS goods, merchandise, materials, raw materials, goods in process, finished goods, work in progress, bindings or component materials, packaging and shipping materials and other tangible or intangible personal property, now owned or hereafter acquired and held for sale or lease or furnished or to be furnished under contracts of service or which contribute to the finished products or the sale, promotion, storage and shipment thereof, whether located at facilities owned or leased by any of the BORROWERS, in the course of transport to or from ACCOUNT DEBTORS, used for demonstration, placed on consignment, or held at storage locations.

Section 1.63. Inventory Borrowing Base. The term INVENTORY BORROWING BASE means, at any date of determination thereof, the lesser, as at such time, of (a) the product of (i) ELIGIBLE INVENTORY and (ii) the INVENTORY CREDIT PERCENTAGE, and (b) the INVENTORY MAXIMUM CREDIT AMOUNT.

Section 1.64. Inventory Credit Percentage. The termINVENTORY CREDIT PERCENTAGE means forty percent (40%).

Section 1.65. Inventory Maximum Credit Amount. The term INVENTORY MAXIMUM CREDIT AMOUNT means One Million Two Hundred Thousand Dollars ($1,200,000.00).

Section 1.66. Laws. The term LAWS means all ordinances, statutes, rules, regulations, orders, injunctions, writs or decrees of any government or political subdivision or agency thereof, or any court or similar entity established by any thereof.

Section 1.67. L/C Exposure. The term L/C EXPOSURE means, collectively, at any time of determination the sum, as at such time of: (a) the STATED AMOUNT of all LETTERS OF CREDIT issued and outstanding; and (b) all REIMBURSEMENT OBLIGATIONS.

Section 1.68. Lender Expenses. The term LENDER EXPENSES means the out-of-pocket expenses or costs incurred by the LENDER arising out of, pertaining to, or in any way connected with this AGREEMENT, any of the other LOAN DOCUMENTS or the OBLIGATIONS, or any documents executed in connection herewith or transactions hereunder. The term LENDER EXPENSES shall include, without limitation: (a) the costs or expenses required to be paid by any or all of the BORROWERS pursuant to this AGREEMENT or any of the other LOAN DOCUMENTS; (b) costs and expenses in connection with COLLECTION ACCOUNTS; (c) LETTER OF CREDIT fees and charges; (d) taxes and insurance premiums advanced or otherwise paid by the LENDER in connection with the COLLATERAL or on behalf of any or all of the BORROWERS; (e) filing, recording, title insurance, environmental and consulting fees, audit fees, search fees and other expenses paid or incurred by the LENDER in connection with the LENDERS transactions with any or all of the BORROWERS contemplated by this AGREEMENT or any of the other LOAN DOCUMENTS or otherwise related to the CREDIT FACILITY or any of the OBLIGATIONS; (f) costs and expenses incurred by the LENDER in the collection of the ACCOUNTS (with or without the institution of legal action), or to enforce any provision of this AGREEMENT, or in gaining possession of, maintaining, handling, evaluating, preserving, storing, shipping, selling, preparing for sale and/or advertising to sell the COLLATERAL or any other property of any of the BORROWERS whether or not a sale is consummated; (g) costs and expenses of litigation incurred by the LENDER, or any participant of the LENDER in any of the OBLIGATIONS, in enforcing or defending this AGREEMENT or any portion hereof or in collecting any of the OBLIGATIONS; (h) reasonable attorneys fees and expenses incurred by the LENDER in obtaining advice or the services of its attorneys with respect to the structuring, drafting, negotiating, reviewing, amending, terminating, enforcing or defending of this AGREEMENT, or any portion hereof or any agreement or matter related hereto, whether or not litigation is instituted; and (i travel expenses related to any of the foregoing.

Section 1.69. Letters Of Credit. The term LETTERS OF CREDIT means collectively standby letters of credit issued from time to time by the LENDER for the account or benefit of any or all of the BORROWERS.

Section 1.70. LIBOR Borrowing. The term LIBOR BORROWING means each advance of proceeds of a LOAN which is accruing interest based upon the ADJUSTED LIBOR RATE for a separate INTEREST PERIOD.

Section 1.71. LIBOR Rate. The term LIBOR RATE means, with respect to any LIBOR BORROWING for any INTEREST PERIOD, the interest rate per annum determined by the LENDER by dividing (the resulting quotient rounded upwards, to the next whole multiple of one-sixteenth of one percent (.0625%) (a) the rate of interest determined by the LENDER in accordance with its usual procedures to be the weighted average (rounded, if necessary, to the nearest one-hundredth of one percent (.01%)) of the rate quotation offered to the LENDER by leading banks in the London Interbank Eurodollar Market for Dollar deposits for amounts in immediately available funds comparable to the outstanding principal amount of the LIBOR BORROWING for which an interest rate is then being determined and having a borrowing date and a maturity comparable to such INTEREST PERIOD, as of 11:00 a.m. or as soon thereafter as practicable, two (2) BUSINESS DAYS preceding the first day of such INTEREST PERIOD by (b) a number equal to 1.00 minus the RESERVE REQUIREMENT. In each instance, the LENDERS determination of the LIBOR RATE shall be conclusive, absent manifest error.

Section 1.72. Limited Guarantors. The term LIMITED GUARANTORS means collectively, GP Strategies Corporation, a Delaware corporation, and ManTech International Corporation, a New Jersey corporation.
Section 1.73. Loan. The term LOAN means the revolving loan extended by the LENDER to the BORROWERS as joint and several co-obligors in accordance with the terms set forth in this AGREEMENT.

Section 1.74. Loan Documents. The term LOAN DOCUMENTS means all agreements, instruments and documents, together with all other loan agreements (including without limitation this AGREEMENT), notes (including without limitation the NOTE), security agreements, guarantees, subordination agreements, intercreditor agreements, pledges, affidavits, powers of attorney, consents, assignments, landlord and mortgage waivers, opinions, collateral assignments, reimbursement agreements, contracts, notices, leases, financing statements, mortgages, deeds of trusts, assignments of rents or contract proceeds, intellectual property security agreements, letter of credit applications and agreements, cash collateral account agreements, INTEREST RATE PROTECTION AGREEMENTS, and all other written matter, whether heretofore, now or hereafter executed by or on behalf of any or all of the BORROWERS, any of the GUARANTORS, any of the LIMITED GUARANTORS or by any other PERSON in connection with any of the OBLIGATIONS.

Section 1.75. Lock Box. The term LOCK BOX has the meaning given that term in Section 3.5 of this AGREEMENT.

Section 1.76. Material Adverse Event. The term MATERIAL ADVERSE EVENT means the occurrence of any event, condition, or omission which the LENDER in the good faith reasonable exercise of the LENDERS discretion determines could be expected to have a material adverse effect upon: (a) the condition (financial or otherwise), results of operations, properties, assets, liabilities (including, without limitation, tax liabilities, liabilities under ENVIRONMENTAL LAWS, and ERISA LIABILITIES), businesses, operations, capitalization, equity, licenses, franchises or prospects of any of the BORROWERS, any of the GUARANTORS, or any of the LIMITED GUARANTORS; (b) the ability of any of the BORROWERS, any of the GUARANTORS, or any of the LIMITED GUARANTORS to perform any of the OBLIGATIONS when and as required by the terms of the LOAN DOCUMENTS; (c) the rights and remedies of the LENDER as provided by the LOAN DOCUMENTS; or (d) the value, condition, use, or availability of any of the COLLATERAL or upon any of the LENDERS liens and security interests securing the OBLIGATIONS.

Section 1.77. Maximum Credit Amount. The term MAXIMUM CREDIT AMOUNT means the lesser of the BORROWING BASE or the DOLLAR CAP.

Section 1.78. Multiemployer Plan. The term MULTIEMPLOYER PLAN means a multiemployer plan as defined in Section 4001(a)(3) of ERISA which is maintained for employees of the BORROWERS, or any ERISA AFFILIATE of the BORROWERS.

Section 1.79. Net Profit After Taxes. The term NET PROFIT AFTER TAXES means, for any period, the aggregate net income of the BORROWERS and their consolidated SUBSIDIARIES for such period determined in conformity with G.A.A.P., after payment of or provision for, or distributions with respect to, taxes applicable to such period; provided, however, in no event shall such amount be less than One Dollar ($1.00).

Section 1.80. Note. The term NOTE means the Promissory Note of even date herewith from the BORROWERS as co-makers thereof which is payable to the order of the LENDER in the stated principal amount of Ten Million Dollars ($10,000,000.00).

Section 1.81. Obligations. The term OBLIGATIONS means collectively all of the obligations of each of the BORROWERS to pay to the LENDER:
(a) all sums due to the LENDER arising out of or in connection with the LOAN or otherwise pursuant to the terms of the LOAN DOCUMENTS and all renewals, refinancings, extensions, substitutions, amendments, restatements, modifications, supplements or replacements thereof, whether direct or indirect, joint or several, absolute or contingent, contemplated or uncontemplated, now existing or hereafter arising, including, but not limited to, all amounts of principal, interest, charges, reimbursements, advancements, escrows and fees; (b) other indemnification obligations owed by any or all of the BORROWERS to the LENDER in accordance with the terms of the LOAN DOCUMENTS; (c) all LENDER EXPENSES; (d all overdrafts of any of the BORROWERS upon any accounts with the LENDER; (e) payments, duties or obligations owed to the LENDER arising from or with respect to INTEREST RATE PROTECTION AGREEMENTS, foreign exchange facilities or currency transactions, existing or arising from time to time; (f) all sums outstanding on account of REIMBURSEMENT OBLIGATIONS and any other sums owed to the LENDER arising out of or relating to any LETTERS OF CREDIT including, without limitation, all indemnification obligations, obligations to deposit cash collateral, and obligations to pay fees; (g) all duties of payment and performance owed to the LENDER in connection with any guaranties; (h) all other indebtedness or liability of any of the BORROWERS to the LENDER, whether direct or indirect, joint or several, absolute or contingent, contemplated or not presently contemplated, now existing or hereafter arising in connection with the CREDIT FACILITY; and (i) any indebtedness or liability which may exist or arise as a result of any payment made by or for the benefit of any of the BORROWERS being avoided or set aside for any reason including, without limitation, any payment being avoided as a preference under Sections 547 and 550 of the United States Bankruptcy Code, as amended, or under any state law governing insolvency or creditors rights.

Section 1.82. Permitted Acquisitions. The term PERMITTED ACQUISITION means an ACQUISITION by any BORROWER pursuant to an ACQUISITION AGREEMENT provided: (a) no DEFAULT or EVENT OF DEFAULT shall have occurred or shall occur after giving effect to such ACQUISITION; (b) the BORROWERS and the consolidated SUBSIDIARIES shall have demonstrated in a writing delivered to the LENDER full compliance with all of the terms and provisions of this AGREEMENT (including but not limited to the financial covenants set forth in Sections 6.21, 6.22, 6.23, and 6.24 hereof) before giving effect to such ACQUISITION and, on a pro forma basis, after giving effect to such ACQUISITION; (c) the BORROWERS and the consolidated SUBSIDIARIES shall have demonstrated to the LENDER in writing that,

after giving full effect to the ACQUISITION, the TANGIBLE NET WORTH of the BORROWERS and the consolidated SUBSIDIARIES shall not be less than their TANGIBLE NET WORTH immediately prior to such ACQUISITION; (d) the net income (determined in accordance with G.A.A.P.) of the TARGET for the most 12-month period most recently preceding the ACQUISITION is not less than One Dollar ($1.00), unless the ACQUISTION is a true asset purchase only; (e) the TARGET is a going concern (unless the ACQUISITION is a true asset purchase only), organized under one of the states of the United States and located solely in (or if an asset purchase, whose assets are located solely in), the United States, and is in substantially the same line of business as the BORROWERS or a complementary line of business; (f) a BORROWER is the surviving, controlling corporation upon the consummation of such ACQUISITION; (g) such ACQUISITION was not preceded by an unsolicited tender offer for the CAPITAL STOCK of the TARGET that was not recommended or approved by the TARGETS board of directors or similar governing body, and the BORROWER shall have delivered to the LENDER evidence satisfactory to the LENDER that the board of directors or similar governing body of the TARGET has approved such ACQUISITION; (h) the TARGET is not subject to any material pending litigation which could reasonably be expected to have a material adverse effect on the BORROWERS or any SUBSIDIARY; (i) the BORROWERS have given the LENDER at least fifteen
(15) BUSINESS DAYS prior written notice of the closing of the ACQUISITION; and (j) if the aggregate value of cash and securities paid and issued in connection with such transaction (including the maximum amount of any compensation or consideration which such BORROWER is obligated to pay in connection therewith in addition to the purchase price) is One Million Dollars ($1,000,000.00) or more, such transaction has been approved by the LENDER, which approval shall be subject to the review by the LENDER of all documentation and financial analysis related to the transaction as the LENDER shall reasonably require.

Section 1.83. Permitted Liens. The term PERMITTED LIENS means: (a) liens for taxes, assessments, or similar charges incurred in the ordinary course of business that are (i) not yet due and payable or
(ii) due and payable but are being contested in good faith by appropriate proceedings in accordance with the terms and conditions of Section 6.8 hereof, provided that, in the case of liens under this clause (ii), a reserve against the BORROWING BASE shall have been established in the amount of the claims for any such taxes, assessments, or similar charges; (b) liens in favor of the LENDER; (c) any existing liens specifically described on Schedule 1.82 hereof; (d) any lien on specifically allocated money or securities to secure payments under workers compensation, unemployment insurance, social security and other similar LAWS, or to secure the performance of bids, tenders or contracts (other than for the repayment of borrowed money) or to secure statutory obligations or appeal bonds, or to secure leases, or indemnity, performance or other similar bonds in the ordinary course of business; (e) purchase money security interests for EQUIPMENT not to exceed in aggregate amount outstanding at any one time the sum of Fifty Thousand Dollars ($50,000.00), provided that such purchase money security interests do not attach to any assets other than the specific item(s) of EQUIPMENT acquired with the proceeds of the loan secured by such purchase money security interests; (f) statutory liens of landlords, carriers, warehousemen, mechanics, materialmen and other similar liens imposed by LAW which are incurred in the ordinary course of business for sums not more than thirty (30) days delinquent or the validity of which is being contested in good faith by appropriate proceedings promptly instituted and diligently conducted, the outcome of such contest proceedings, if adversely determined, could not have a material adverse effect on any of the BORROWERS or the GUARANTORS, such contest proceedings have the effect of preventing the forfeiture or sale of such property subject to such liens, and reserves satisfactory to the LENDER against the BORROWING BASE shall have been established for payment of such sums, fees and expenses for which any of the BORROWERS would be liable if unsuccessful in such contest; and provided that such liens do not, in any case, materially detract from the value of the property subject thereto or interfere with the ordinary conduct of the business of any of the BORROWERS; (g) easements, rights-of-way, restrictions and other similar charges or encumbrances which, in the aggregate, are not material in amount, and which in any case do not materially detract from the value of the property subject thereto or interfere with the ordinary conduct of the business of any of the BORROWERS; (h) liens securing judgments, but only to the extent, for an amount, and for a period not resulting in a DEFAULT or an EVENT OF DEFAULT; and (i) subsequently arising liens which are expressly approved by the LENDER in writing in advance of the creation of any such liens.

Section 1.84. Person. The term PERSON means any individual, corporation, partnership, limited liability company, association, joint-stock company, trust, estate, unincorporated organization, joint venture, court, government or political subdivision or agency thereof, or other legal entity.

Section 1.85. Quarter. The term QUARTER means each of the periods of three calendar months beginning on each January 1, April 1, July 1, and October 1 of each calendar year.

Section 1.86. Receivables. The term RECEIVABLES means all of the ACCOUNTS, INSTRUMENTS, DOCUMENTS, GENERAL INTANGIBLES, CHATTEL PAPER, notes, notes receivable, drafts, acceptances, and choses in action, of any or all of the BORROWERS, now existing or hereafter created or acquired, and all proceeds and products thereof, and all rights thereto, arising from the sale or lease of or the providing of INVENTORY, GOODS, or services by any of the BORROWERS to ACCOUNT DEBTORS, as well as all other rights, contingent or non-contingent, of any kind of any of the BORROWERS to receive payment, benefit, or credit from any PERSON, including, but not limited to contracts with customers (including but not limited to GOVERNMENT CONTRACTS), deposits, prepayments and any rights to receive payment under any policy of credit insurance.

Section 1.87. Records. The term RECORDS means correspondence, memoranda, tapes, discs, papers, books and other documents, or transcribed information of any type, whether expressed in ordinary, computer or machine language.

Section 1.88. Regulated Substance. The term REGULATED SUBSTANCE means any substance which, pursuant to any ENVIRONMENTAL LAW, is identified as a hazardous substance (or other term having similar import) or is otherwise subject to special requirements in connection with the use, storage, transportation, disposition or other handling thereof.

Section 1.89. Regulatory Change. The term REGULATORY CHANGE means any change after the CLOSING in the laws of the United States,

any state thereof, or any foreign nation or state, or the adoption or making after such date, of any interpretations, directives or requests applying to a class of depository institutions, including the LENDER, of or under any law of the United States, any states thereof, or any foreign nation or state (whether or not any such interpretation, directive or request has the force of law) by any court or governmental authority or monetary authority with authority with respect to the interpretation or administration of such law.

Section 1.90. Reimbursement Obligations. The term REIMBURSEMENT OBLIGATIONS means, at any particular time, the aggregate amount of all drawings made under LETTERS OF CREDIT which, as at such time, have not been reimbursed to the LENDER by the BORROWERS.

Section 1.91. Release. The term RELEASE means a release as defined in Section 101(22) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as now or hereafter amended.

Section 1.92. Reserve Requirement. The term RESERVE REQUIREMENT means, for any INTEREST PERIOD, the average rate at which reserves (including any marginal, supplemental or emergency reserves) are required to be maintained during such INTEREST PERIOD under Regulation D of the Board of Governors of the Federal Reserve System, from time to time in effect (or any successor or other regulation relating to reserve requirements applicable to member banks of the Federal Reserve System) by member banks of the Federal Reserve System with deposits exceeding One Billion Dollars ($1,000,000,000) against Eurocurrency Liabilities as currently defined in Regulation D.

Section 1.93. Restricted Payment. The term RESTRICTED PAYMENT means collectively: (a) any dividend or other payment or distribution, direct or indirect, on account of any equity interest in any of the BORROWERS or any of their respective SUBSIDIARIES now or hereafter outstanding, except a dividend or distribution payable solely in the same class or type of equity interest to the holders of that class or type; (b) any payment or prepayment of principal of, premium, if any, or interest on, or any redemption, conversion, exchange, retirement, sinking fund or similar payment, purchase or other acquisition for value, direct or indirect, by any of the BORROWERS of any SUBORDINATED DEBT, the GSE POWER SYSTEMS AB NOTE, or any equity interest in any of the BORROWERS or any of their respective SUBSIDIARIES now or hereafter outstanding; (c) any payment made by any of the BORROWERS or any of their respective SUBSIDIARIES to retire, or to obtain the surrender of, any outstanding warrants, options or other rights to acquire equity interests in any of the BORROWERS or any of their respective SUBSIDIARIES now or hereafter outstanding; or (d) any payment by any of the BORROWERS or any of their respective SUBSIDIARIES to any AFFILIATE or any other PERSON of any management, consulting or similar fees outside the ordinary course of business or which are not in amounts comparable to sums paid in the marketplace for similar services.

Section 1.94. Solvent. The term SOLVENT means, as to any referenced PERSON, that as of the date of determination both: (a) (i) the then fair saleable value of the property of such PERSON is greater than the total amount of liabilities (including contingent liabilities) of such PERSON and is not less than the amount that will be required to pay the probable liabilities on such PERSONS then existing debts as they become absolute and matured considering all financing alternatives and potential asset sales reasonably available to such PERSON; (ii) such PERSONS capital is not unreasonably small in relation to its business or any contemplated or undertaken transaction; and (iii) such PERSON does not intend to incur, or believe (nor should it reasonably believe) that it will incur, debts beyond its ability to pay such debts as they become due; and (b) such PERSON is solvent within the meaning given that term and similar terms under applicable laws relating to fraudulent transfers and conveyances. For purposes of this definition, the amount of any contingent liability at any time shall be computed as the amount that, in light of all the facts and circumstances existing at such time, represents the amount that can reasonably be expected to become an actual or matured liability.

Section 1.95. Stated Amount. The term STATED AMOUNT means with respect to each LETTER OF CREDIT, the lesser of (a) the face amount thereof, or (b) the amount remaining available for drawing thereunder (regardless of whether any conditions for drawing could then be satisfied).

Section 1.96. Subordinated Debt. The term SUBORDINATED DEBT means the INDEBTEDNESS of any of the BORROWERS to any PERSON which is expressly subordinated to the repayment and enforcement of the OBLIGATIONS pursuant to a written agreement acceptable to the LENDER.

Section 1.97. Subsidiary. The term SUBSIDIARY means, with respect to any PERSON, any other PERSON of which securities or other ownership interests representing an aggregate of fifty percent (50%) or more of the equity or the ordinary voting power are, at the time as of which any determination is being made, owned or controlled directly, or indirectly through one or more intermediaries, by such PERSON.

Section 1.98. Tangible Net Worth. The term TANGIBLE NET WORTH means, as at the end of any period, the difference obtained by subtracting
(a) TOTAL LIABILITIES as at the end of such period from (b) TOTAL ASSETS as at the end of such period, exclusive of goodwill, trademarks, tradenames, licenses and such other assets as are properly classified as intangible assets in accordance with G.A.A.P. consistently applied, and exclusive of all transactions with, and all amounts due or to become due to any of the BORROWERS or any of the consolidated SUBSIDIARIES from, and all investments in, AFFILIATES. For purposes of this Section 1.98, investments in AFFILIATES shall not include the initial non-cash investment by GSE SYSTEMS in exchange for an equity interest in Avantium International BV.

Section 1.99. Target. The term TARGET means any PERSON, a majority of the CAPITAL STOCK of which, a division or similar business unit of which, or all or substantially all of the assets and business of any of the foregoing of which, are to be acquired by a BORROWER, pursuant to the terms of an ACQUISITION AGREEMENT.

Section 1.100. Termination Event. The term TERMINATION EVENT means:
(a) a Reportable Event described in Section 4043 of ERISA and the regulations issued thereunder, but not including any such event for which the 30-day notice requirement has been waived by applicable regulation; (b) the withdrawal of any of the BORROWERS or an ERISA AFFILIATE of any of the BORROWERS from a GUARANTEED PENSION PLAN during a plan year in which it was a substantial employer as defined in Section 4001(a)(2) of ERISA; (c) the filing of a notice of intent to terminate a GUARANTEED PENSION PLAN or the treatment of a GUARANTEED PENSION PLAN amendment as a termination under Section 4041 of ERISA; (d) the institution of proceedings to terminate a GUARANTEED PENSION PLAN by the Pension Benefit Guaranty Corporation; (e) the withdrawal or partial withdrawal of any of the BORROWERS or an ERISA AFFILIATE of any of the BORROWERS from a MULTIEMPLOYER PLAN; or (f) any other event or condition which might reasonably be expected to constitute grounds under ERISA for the termination of, or the appointment of a trustee to administer, any GUARANTEED PENSION PLAN.

Section 1.101. Termination Date. The term TERMINATION DATE means March 23, 2003

Section 1.102. Total Assets. The term TOTAL ASSETS means, as at the end of any period, the aggregate amount which, in accordance with G.A.A.P. consistently applied, would be included in a total assets or comparable account reflected in a balance sheet of the BORROWERS and their consolidated SUBSIDIARIES as at the end of such period.

Section 1.103. Total Current Assets. The term TOTAL CURRENT ASSETS means, as at the end of any period, the aggregate amount which, in accordance with G.A.A.P. consistently applied, would be included in a total current assets or comparable account reflected in a balance sheet of the BORROWERS and their consolidated SUBSIDIARIES as at the end of such period, exclusive of deferred assets other than prepaid items such as insurance, taxes, interest, commissions, rents, royalties and the like, and exclusive of all transactions with, and all amounts due or to become due to any of the BORROWERS and their consolidated SUBSIDIARIES from, and all investments in, AFFILIATES.

Section 1.104. Total Current Liabilities. The term TOTAL CURRENT LIABILITIES means, as at the end of any period, the aggregate amount which, in accordance with G.A.A.P. consistently applied, would be included in a total current liabilities or comparable account reflected in a balance sheet of the BORROWERS and their consolidated SUBSIDIARIES as at the end of such period, including all reserves, accruals and deferred charges and the aggregate amount of current indebtedness of persons other than the BORROWERS and their consolidated SUBSIDIARIES for which any BORROWER or their consolidated SUBSIDIARIES is liable, contingently or noncontingently, or which are secured by property of any of the BORROWERS or any consolidated SUBSIDIARIES.

Section 1.105. Total Liabilities. The term TOTAL LIABILITIES means, as at the end of any period, the aggregate amount which, in accordance with G.A.A.P. consistently applied, would be included in a total liabilities or comparable account reflected in a balance sheet of the BORROWERS and their consolidated SUBSIDIARIES as at the end of such period, including all reserves, accruals and deferred charges and the aggregate amount of the liabilities of PERSONS other than the BORROWERS for which any of the BORROWERS and their consolidated SUBSIDIARIES is liable, contingently or noncontingently, or which are secured by property of any of the BORROWERS or any consolidated SUBSIDIARIES.

Section 1.106. Unbilled Government Accounts Borrowing Base. The term UNBILLED GOVERNMENT ACCOUNTS BORROWING BASE means, at any date of determination thereof, the lesser, as at such time, of (a) the product of (i) ELIGIBLE UNBILLED GOVERNMENT ACCOUNTS and (ii) the UNBILLED GOVERNMENT ACCOUNTS CREDIT PERCENTAGE, and (b) UNBILLED GOVERNMENT ACCOUNTS MAXIMUM CREDIT AMOUNT.

Section 1.107. Unbilled Government Accounts Credit Percentage. The term UNBILLED GOVERNMENT ACCOUNTS CREDIT PERCENTAGE means fifty percent (50%).

Section 1.108. Unbilled Government Accounts Maximum Credit Amount. The term UNBILLED GOVERNMENT ACCOUNTS MAXIMUM CREDIT AMOUNT means Two
Million Two Hundred Fifty Thousand Dollars ($2,250,000.00).

Section 1.109. Working Capital. The term WORKING CAPITAL means, as at the end of any period, the difference obtained by subtracting (a) TOTAL CURRENT LIABILITIES as at the end of such period, plus the aggregate amount of all outstanding balances under the CREDIT FACILITY, as at the end of such period, from (b) TOTAL CURRENT ASSETS as at the end of such period.

Section 1.110. Year 2000 Compliant. The term YEAR 2000 COMPLIANT means, with respect to any PERSON, that all computer hardware and software that are material to the business and operations of such PERSON will on a timely basis be able to perform properly date-sensitive functions for all dates before, on, and after January 1, 2000, including functions with respect to any leap year.

Section 1.111. Year 2000 Problem. The term Year 2000 PROBLEM shall have the meaning set forth in Section 6.20 hereof.

ARTICLE 2
TERMS OF THE CREDIT FACILITY

Section 2.1. Agreement To Extend The Loan. Subject to the terms and conditions stated in this AGREEMENT and the LOAN DOCUMENTS, the LENDER agrees to extend the LOAN to the BORROWERS as co-obligors. The LENDER shall advance proceeds of the LOAN to the

BORROWERS by depositing into the COMMERCIAL ACCOUNT or in accordance with such other procedures as may be agreed to between the LENDER and the BORROWERS, such sums as any of the BORROWERS may request during the period from and including the date of CLOSING to but not including the TERMINATION DATE; provided that the aggregate outstanding principal balance of the LOAN plus the L/C EXPOSURE shall never exceed at any time the MAXIMUM CREDIT AMOUNT. All requests for advances of proceeds of the LOAN shall be in minimum amounts of not less than One Hundred Thousand Dollars ($100,000.00). The BORROWERS shall not request or permit any advance of proceeds of the LOAN which would cause the aggregate amount of advances made to or for the BORROWERS and outstanding under the LOAN DOCUMENTS to exceed the limitations herein set forth. In the event that the principal balance outstanding under the LOAN plus the L/C EXPOSURE ever exceeds the MAXIMUM CREDIT AMOUNT (or any of the percentages or sublimits set forth therein) the BORROWERS shall immediately, upon demand of the LENDER, pay to the LENDER in cash the amount of such excess and prior to such repayment such over advances shall bear interest at the highest rate provided under this AGREEMENT. Subject to the terms and conditions of the LOAN DOCUMENTS, the BORROWERS may borrow, repay and reborrow advances under the LOAN during the above-described period. Any termination of the CREDIT FACILITY by the LENDER, whether on the TERMINATION DATE or upon and after the occurrence of an EVENT OF DEFAULT, shall relieve the LENDER of the LENDERS obligation to lend money or to make financial accommodations to or for any or all of the BORROWERS and the BORROWERS accounts, and shall in no way release, terminate, discharge or excuse any of the BORROWERS from its absolute duty to pay or perform the OBLIGATIONS. All repayments shall be credited to the balance due from the BORROWERS pursuant to the normal and customary practices of the LENDER. All amounts received by LENDER in payment of RECEIVABLES shall be credited to the BORROWERS account after allowing the LENDERS customary period of time for collection and clearance, but shall be conditional upon final payment to the LENDER.

Section 2.1.1. Note; Interest, And Lenders Records. The obligations of the BORROWERS, jointly and severally, to repay to the LENDER the LOAN shall be evidenced by the NOTE. Interest shall accrue on the unpaid principal balance of the LOAN at the rate or rates described in Section 2.3 of this AGREEMENT. The date and amounts of each advance made by the LENDER and each payment made by any of the BORROWERS shall be recorded by the LENDER on the books and records of the LENDER, but any failure to record such dates or amounts shall not relieve any of the BORROWERS of its duties and obligations under the LOAN DOCUMENTS. Interest accrued upon the LOAN shall be computed on outstanding balances as reflected on the LENDERS books and records.

Section 2.1.2. Term. All sums due under the LOAN shall be paid in full on TERMINATION DATE.

Section 2.1.3. Purpose. The proceeds of the LOAN shall be used by the BORROWERS solely for the BORROWERS general corporate purposes, including working capital needs.

Section 2.2. Letters Of Credit.

Section 2.2.1. Availability. Subject to the terms and conditions of this AGREEMENT and the LOAN DOCUMENTS, including but not limited to the terms of all reimbursement agreements, applications and other documents required by the LENDER in the issuance of LETTERS OF CREDIT, the CREDIT FACILITY may be used by the BORROWERS for, and the LENDER agrees to issue, LETTERS OF CREDIT as requested by any of the BORROWERS for the account of the BORROWERS on any BUSINESS DAY from the date of CLOSING through but not including the TERMINATION DATE; and provided (a) the L/C EXPOSURE (after giving effect to any requested issuance) shall not at any time exceed Two Million Dollars ($2,000,000.00); (b) the sum of the L/C EXPOSURE (after giving effect to the requested issuance) plus the aggregate unpaid principal balance of the LOAN shall not exceed the MAXIMUM CREDIT AMOUNT; (c) no LETTER OF CREDIT (including any extension or renewal thereof, whether or not automatic) shall expire on a date which is later than one (1) year from the date of issuance thereof; (d) no LETTER OF CREDIT (including any extension or renewal thereof, whether or not automatic) shall expire on a date which is on or after thirty (30) days prior to the TERMINATION DATE, unless such LETTER OF CREDIT is secured by cash collateral satisfactory to the LENDER in an amount equal to one hundred percent (100%) of the STATED AMOUNT, to be applied in accordance with Section 9.4 hereof; and (e) the issuance of any requested LETTER OF CREDIT shall not conflict with or cause the LENDER to exceed any limits imposed by any LAWS applicable to the LENDER. If at any time the L/C EXPOSURE exceeds any such permitted amounts, the BORROWERS shall furnish to the LENDER cash collateral satisfactory to the LENDER in an amount equal to such excess to be applied in accordance with Section 9.4 hereof.

Section 2.2.2. Requests for Letters of Credit. Each LETTER OF CREDIT shall be issued only in accordance with the then current practices of the LENDER relating to its issuance of standby letters of credit, including the payment by the BORROWERS of all applicable fees and charges in connection therewith. Each LETTER OF CREDIT shall be in such form as may be approved from time to time by the LENDER. Each request for a LETTER OF CREDIT shall be made to the LENDER pursuant to a written application and agreement for letter of credit complying with the LENDERS then current requirements, at least five (5) BUSINESS DAYS before the proposed date of issuance of such LETTER OF CREDIT.

Section 2.2.3. Letter of Credit Fees And Other Charges. The BORROWERS, jointly and severally, shall pay to the LENDER a fee with respect to each outstanding LETTER OF CREDIT computed on the face amount of such LETTER OF CREDIT at an annual percentage rate equal to two and one-half percent (2.5%). The aforesaid letter of credit fee shall be payable quarterly in arrears on the last BUSINESS DAY of each QUARTER and on the TERMINATION DATE. In addition, the BORROWERS, jointly and severally, shall pay to the LENDER such other normal and customary fees, costs and expenses that may be charged or incurred by the LENDER in connection with issuing, effecting payment under, amending, continuing, extending, or renewing or otherwise administering any LETTER OF CREDIT including, without limitation, correspondent bank fees, amendment fees, reissuance costs, cancellation fees and all reasonable out-of-pocket costs and expenses. Each LETTER OF CREDIT fee shall be non-refundable, even if the LETTER OF CREDIT is surrendered or drawn before the expiration date thereof.

Section 2.2.4. Payment of Reimbursement Obligations. REIMBURSEMENT OBLIGATIONS, together with any taxes, charges or other costs or expenses incurred by LENDER in connection with such payment, shall be due and payable by the BORROWERS, jointly and severally, immediately upon the payment by the LENDER of the draw giving rise thereto. Each of the BORROWERS acknowledges and agrees that it shall be jointly and severally, irrevocably and unconditionally obligated forthwith to reimburse the LENDER, immediately upon any drawing under any LETTER OF CREDIT, without presentment, demand, protest or other formalities or notices of any kind.

Section 2.2.5. Conversion of Reimbursement Obligations to Loans. Immediately upon the payment of each drawing or acceptance under any LETTER OF CREDIT, unless the amount of such drawing or acceptance is immediately reimbursed to the LENDER, by one or more of the BORROWERS from its separate funds: (a) the BORROWERS shall be deemed to have made an irrevocable request for a BASE RATE BORROWING under the LOAN in an amount equal to such drawing or acceptance; and (b) the REIMBURSEMENT OBLIGATION resulting from the payment by the LENDER of such drawing or acceptance shall be converted to a BASE RATE BORROWING under the LOAN in a corresponding principal amount. Anything to the contrary in this AGREEMENT notwithstanding, except as otherwise provided above in this subsection, each advance which is to be made pursuant to this subsection shall be made regardless of whether the conditions precedent required of any of the BORROWERS under Section 4.2 are satisfied at the time thereof.

Section 2.2.6. Payment of L/C Exposure Upon Termination Date. If any LETTERS OF CREDIT remain outstanding on the TERMINATION DATE, the BORROWERS shall, without demand or the taking of any other action by the LENDER, pay to the LENDER an amount in immediately available funds equal to 100% of the L/C EXPOSURE, which funds shall be held by the LENDER in a restricted collateral account maintained by the LENDER in its own name. Such funds shall be applied in accordance with Section 9.4 hereof.

Section 2.2.7. Payment Obligations Unconditional. The payment obligations of the BORROWERS under this Section 2.2 shall be absolute, unconditional, and irrevocable and shall be paid strictly in accordance with this AGREEMENT regardless of the circumstances. Without limiting the foregoing, none of the following circumstances shall reduce, discharge, stay, defer or impair in any other manner the payment obligations of any of the BORROWERS under this Section 2.2:

a. any lack of validity or enforceability of any LETTER OF CREDIT or any LOAN DOCUMENT;

b. any amendment, waiver, release or termination of or any consent to departure from the terms of any LETTER OF CREDIT or any LOAN DOCUMENT;

c. any extension of time or other modification or the terms and conditions governing the making and honoring of any drawing, or any extension of time or other modification of the terms and conditions for any other act to be performed under the terms of any LETTER OF CREDIT;

d. the existence of any dispute, claim, set-off, defense or other right which any of the BORROWERS may have at any time against any beneficiary under, or any transferee of, any LETTER OF CREDIT (or any PERSONS for whom any such beneficiary or transferee may hold a LETTER OF CREDIT or any interest therein), or the LENDER or any other PERSON, regardless of whether such dispute, claim, set-off, defense or other right is held or asserted in connection with this AGREEMENT or any unrelated transaction;

e. the surrender or impairment of any security for the OBLIGATIONS;

f. any question of form, validity, accuracy, legal effect, or genuineness of drafts, endorsements, documents or required statements, even if such drafts, endorsements, documents or statements should in fact prove to be in any or all respects invalid, inaccurate, fraudulent or forged or any failure of any draft to bear any reference or adequate reference to any LETTER OF CREDIT;

g. payment by the LENDER under any LETTER OF CREDIT against presentation of a draft, certificate or other documentation which does not comply with the terms of such LETTER OF CREDIT, except to the extent that such payment constitutes gross negligence or wilful misconduct of the LENDER; or

h. any other circumstance or occurrence whatsoever, whether or not similar to any of the foregoing, except to the extent resulting from the gross negligence or wilful misconduct of the LENDER.

Section 2.2.8. Suspension of Commitment to Issue Letters of Credit. In the event any provision of any LAW ever would prohibit or restrict the LENDER from issuing any LETTER OF CREDIT, the agreement of the LENDER to issue LETTERS OF CREDIT hereunder shall immediately be suspended until such restrictions cease to be applicable. In the event of any such suspension, the BORROWERS may continue to obtain advances under the LOAN, subject to the terms and conditions of this AGREEMENT.

Section 2.2.9. Rights And Remedies Of The Lender. In the event that, coincident with or subsequent to the occurrence of, and during the continuance of, a DEFAULT or an EVENT OF DEFAULT (but without limiting any right and remedies of the LENDER arising as a result of any such EVENT OF DEFAULT), the LENDER becomes aware of the possibility of a draw, or enforcement of the LENDERs obligations, under a LETTER OF CREDIT, the LENDER, at its option, may, but shall not be required to, make an advance (regardless of whether the conditions precedent to advances or issuances of LETTERS OF CREDIT have been satisfied) of proceeds of the LOAN in an amount equal to the STATED AMOUNT of such LETTER OF CREDIT, together with any LENDER EXPENSES charged or incurred or reasonably expected to be charged or incurred in connection therewith in accordance with Section 2.2.2 hereof, to be deposited in the cash collateral account described in Section 9.4 hereof and applied in accordance therewith. All such advances shall be secured by all of the COLLATERAL and shall

bear interest and be payable at the same rate (including the default rate of interest) and in the same manner as the LOAN. If any LETTER OF CREDIT is drawn upon to discharge any obligation of any of the BORROWERS to the beneficiary of such LETTER OF CREDIT, in whole or in part, the LENDER shall be fully subrogated to the rights of such beneficiary with respect to the obligations owed by such BORROWER to such beneficiary discharged with the proceeds of the LETTER OF CREDIT.

Section 2.2.10. Indemnification. The BORROWERS jointly and severally and unconditionally and irrevocably agree to indemnify the LENDER and to hold the LENDER harmless from any and all losses, claims or liabilities arising from any transactions or occurrences relating to LETTERS OF CREDIT issued, established, opened or accepted for the account of any of the BORROWERS, and any drafts or acceptances thereunder, and all OBLIGATIONS incurred in connection therewith, other than losses, claims or liabilities arising from the gross negligence or willful misconduct of the LENDER.

Section 2.3. Interest Rates. Interest shall accrue on the unpaid principal balances of the LOAN and on all REIMBURSEMENT OBLIGATIONS at the rate or rates described in this Section 2.3.

Section 2.3.1. Calculation Of Interest. Interest shall be calculated on the basis of a 360 days per year factor applied to actual days in which there exists unpaid principal balances of the LOAN or REIMBURSEMENT OBLIGATIONS.

Section 2.3.2. Adjusted Base Rate. Except as provided in
Section 2.3.3. of this AGREEMENT, the LOAN, and each advance thereunder, shall bear interest on the unpaid principal balances at a fluctuating annual rate which shall at all times equal the ADJUSTED BASE RATE. Changes in the interest rate shall be made when and as changes in the BASE RATE occur. For each BASE RATE BORROWING, all accrued and unpaid interest shall be payable monthly in arrears on the 1st calendar day of each month, commencing on April 1, 2000. Payments made upon the LOAN shall be first applied to BASE RATE BORROWINGS and then to any LIBOR BORROWING outstanding under the LOAN. All REIMBURSEMENT OBLIGATIONS shall bear interest on the unpaid balances thereof at a fluctuating annual rate which shall at all times equal the ADJUSTED BASE RATE. All accrued and unpaid interest on REIMBURSEMENT OBLIGATIONS shall be payable immediately upon demand of the LENDER.

Section 2.3.3. Adjusted LIBOR Rate Option. Subject to the terms of this Section, interest may accrue, at the election of the BORROWERS during INTEREST PERIODS selected by the BORROWERS on portions of the outstanding principal balances of the LOAN for which such a rate election is not then in effect, at a rate equal to the ADJUSTED LIBOR RATE. Any LIBOR BORROWING or election for a LIBOR BORROWING pursuant to the provisions of this Section shall be subject to the following terms and conditions:

a. Repayment Of Interest. For each of the LIBOR BORROWINGS, accrued interest shall be paid in arrears on (i) the last day of each applicable INTEREST PERIOD, and (ii) as to any INTEREST PERIOD which is longer than three (3) months, on the ninetieth (90th) day of each such INTEREST PERIOD and on the last day of each such INTEREST PERIOD.

b. Notice Of Election. By 10:00 a.m. on that BUSINESS DAY which occurs three (3) BUSINESS DAYS prior to the BUSINESS DAY on which the BORROWERS desire that an INTEREST PERIOD commence, the BORROWERS shall deliver written notice to the LENDER in the form attached hereto as Exhibit 2.3.3(b) specifying: (i) the commencement date of and length of the relevant INTEREST PERIOD, and (ii) the dollar amount of that portion of the total aggregate principal amount of the particular LOAN identified by the BORROWERS, which is to bear interest at the ADJUSTED LIBOR RATE, which amount shall be not be less than Five Hundred Thousand Dollars ($500,000). If no notice of election is received in respect of an outstanding LIBOR BORROWING that is expiring, the interest rate shall, at the end of the INTEREST PERIOD, accrue at the ADJUSTED BASE RATE.

c. Interest Periods. There shall be no more than six (6) INTEREST PERIODS outstanding at any one time. No INTEREST PERIOD may expire after the TERMINATION DATE.

d. Availability. If the LENDER should determine at any time that a REGULATORY CHANGE or a change in market conditions has made it impractical for the LENDER to offer pricing based on the ADJUSTED LIBOR RATE, the LENDER shall forthwith give notice of its determination to the BORROWERS, and all advances which are then accruing interest at an ADJUSTED LIBOR RATE shall, on the last day (s) of the then applicable current INTEREST PERIOD(S) automatically and without further notice, begin to accrue interest at the ADJUSTED BASE RATE. Until such time as the LENDER shall determine that a REGULATORY CHANGE or a change in market conditions has again made it practical for the LENDER to offer pricing on the ADJUSTED LIBOR RATE, the LENDER shall not be obligated to further offer pricing based upon the ADJUSTED LIBOR RATE, and any notice from the BORROWERS requesting such a rate option shall be ineffective.

e. Additional Costs. The BORROWERS, jointly and severally, shall compensate the LENDER from time to time, upon demand, for all losses, expenses, costs and liabilities (including, without limitation, in the event of any repayment or prepayment described in clause (i) below, all interest paid to lenders of funds borrowed by the LENDER to carry LIBOR BORROWINGS) which the LENDER shall sustain if (i) any repayment or prepayment of any LIBOR BORROWING shall occur on a date which is not the last day of the applicable INTEREST PERIOD (S), or (ii) any REGULATORY CHANGE (A) subjects the LENDER to additional taxes of any kind with respect to LIBOR BORROWING, other than changes in federal income tax rates applicable to the LENDER, (B) imposes, modifies or deems applicable any reserve, special deposit or similar requirement against assets held by or the deposits in or for the account of, or loans by, the LENDER (other than such reserves as are taken into account as of the date of CLOSING in calculating the ADJUSTED LIBOR RATE), or (C) imposes on the LENDER, directly or indirectly, any other conditions affecting the LIBOR BORROWINGS or the cost of U.S. dollar deposits obtained by the LENDER in obtaining the funds to carry LIBOR BORROWINGS; and the result of any of the foregoing is to increase the costs to the LENDER of making or maintaining loans accruing interest at the ADJUSTED LIBOR RATE or decrease the yields of the LENDER. The LENDER shall, upon the

request of the BORROWERS, provide the BORROWERS with a certificate as to any amounts payable under this Section, showing in reasonable detail the basis for the calculation thereof, which calculation, absent manifest error, shall be presumed to be correct.

f. Prepayment And Termination. No LIBOR BORROWING may be prepaid prior to the expiration of the applicable INTEREST PERIOD unless the BORROWERS have fully compensated the LENDER as provided above in
Section 2.3.3.e. of this AGREEMENT.

g. Termination Of Right To Elect LIBOR Borrowings. Notwithstanding anything to the contrary set forth in this AGREEMENT, and without limiting any other rights and remedies of the LENDER, upon the occurrence of an EVENT OF DEFAULT which is then continuing, the LENDER may suspend the right of the BORROWERS to convert any BASE RATE BORROWING into a LIBOR BORROWING or to permit any LIBOR BORROWING to continue as a LIBOR BORROWING, in which case (i) all BASE RATE BORROWINGS shall be continued as BASE RATE BORROWINGS and (ii) all LIBOR BORROWINGS having thirty (30) days or more remaining in the respective INTEREST PERIODS may, in the sole discretion of the LENDER, be converted immediately or at any time to BASE RATE BORROWINGS, but shall, in any event, be converted on the last days of the respective INTEREST PERIODS therefor, and (iii) all LIBOR BORROWINGS having less than thirty (30) days remaining in the respective INTEREST PERIODS shall be converted on the last days of the respective INTEREST PERIODS therefor.

Section 2.3.4. Default Rate. Upon the occurrence of an EVENT OF DEFAULT, and even if the LOAN or the REIMBURSEMENT OBLIGATIONS have not been accelerated, the interest rate payable on the LOAN, the REIMBURSEMENT OBLIGATIONS and the other OBLIGATIONS may be increased by the LENDER to a rate equal to two percentage points (2%) above the rate of interest otherwise in effect, until such EVENT OF DEFAULT has been cured to the satisfaction of the LENDER or waived. The default rate set forth in this Section shall continue to apply whether or not judgment shall be entered on any of the OBLIGATIONS.

Section 2.3.5. Maximum Rate Of Interest. Any provision contained in the LOAN DOCUMENTS to the contrary notwithstanding, the holder of the NOTE shall not be entitled to receive or collect, nor shall any of the BORROWERS be obligated to pay, interest thereunder in excess of the maximum rate of interest permitted by the laws of any state determined to be applicable thereto or the laws of the United States of America applicable to loans in such applicable state or states, and if any provision of this AGREEMENT, the NOTE or of any of the other LOAN DOCUMENTS shall ever be construed or held to permit or require the charging, collection or payment of any amount of interest in excess of that permitted by such laws applicable thereto, the provisions of this
Section shall control and shall override any contrary or inconsistent provision. The intention of the parties is to at all times conform strictly with all applicable usury laws, and other applicable laws limiting the maximum rates of interest which may be lawfully charged upon the LOANS and REIMBURSEMENT OBLIGATIONS. The interest to be paid pursuant to the NOTE shall be held subject to reduction to the amount allowed under said usury or other laws as now or hereafter construed by the courts having jurisdiction, and any sums of money paid in excess of the interest rate allowed by applicable law shall be applied in reduction of the principal amount owing pursuant to the NOTE. EACH OF THE BORROWERS EXPRESSLY ACKNOWLEDGES AND UNCONDITIONALLY AND IRREVOCABLY STIPULATES FOR ALL PURPOSES THAT IT HAS BEEN CONTEMPLATED AT ALL TIMES BY THE PARTIES THAT THE LAWS OF THE STATE OF NEW YORK WILL GOVERN THE MAXIMUM RATE OF INTEREST THAT IT IS PERMISSIBLE FOR THE LENDER TO CHARGE THE BORROWERS.

Section 2.4. Payments To Be Made To The Lender. Except as expressly provided to the contrary in any of the LOAN DOCUMENTS, all payments of principal, interest, fees and other sums to be paid by the BORROWERS to the LENDER in accordance with the terms of the LOAN DOCUMENTS shall be made in U.S. Dollars, in immediately available funds, without deduction, set-off or counterclaim to the LENDER not later than 10:00
a.m. (Eastern time) on the date on which such payments shall become due (each such payment made after such time on such due date to be deemed to be made on the next succeeding BUSINESS DAY). If the due date of any payment under the LOAN DOCUMENTS would otherwise fall on a day that is not a BUSINESS DAY, such date shall be extended to the next succeeding BUSINESS DAY, and interest shall be payable for any principal so extended from the period of such extension.

Section 2.5. Application Of Payments. All payments upon the OBLIGATIONS shall be applied first to charges, if any, next to fees, next to interest, and then to principal or in such other order or proportion as the LENDER, in the discretion of the LENDER, may determine.

Section 2.6. Late Payment Charge. Any payment of principal, interest, or fees due from time to time upon or in connection with the LOAN or the REIMBURSEMENT OBLIGATIONS which is received by the LENDER more than fifteen (15) calendar days after its due date shall incur a late payment charge equal to five percent (5%) of the amount of the payment due. All late payment charges shall be payable upon the demand of the LENDER. The existence of the right by the LENDER to receive a late payment charge shall not constitute a grace period or provide any right to any of the BORROWERS to make a payment other than on such payments scheduled due date. Notwithstanding the foregoing, no late charge shall be payable in connection with any delinquent payment resulting from the failure of the LENDER to debit any COLLECTION ACCOUNT of the BORROWERS in which sufficient collected funds were present to satisfy any required payment, if the LENDER was authorized to make such debit.

Section 2.7. Facility Fee. For each QUARTER or portion thereof during which the CREDIT FACILITY is in existence and has not been terminated, until the payment in full and termination of the CREDIT FACILITY, the BORROWERS shall pay to the LENDER a facility fee equal to one quarter of one percent (0.25%) per annum on that sum obtained by subtracting the average daily disbursed principal balance of the LOAN plus the aggregate STATED AMOUNT outstanding under all LETTERS OF CREDIT during such QUARTER or portion thereof from the DOLLAR CAP. The facility fee shall be payable quarterly in arrears, on the first day of each succeeding April, July, October and January

or on the last day of a portion of a QUARTER commencing with the first of such payments to be made on April 1, 2000. The facility fee is not to be considered a fee being paid by the BORROWERS to the LENDER as an inducement to the LENDER to make advances or issue LETTERS OF CREDIT, nor shall it be considered to modify or limit the ability of the LENDER to terminate in accordance with the provisions of this AGREEMENT the ability of the BORROWERS to borrow under the LOAN, or obtain LETTERS OF CREDIT but is instead intended as part of the compensation which is earned by the LENDER for agreeing to provide the CREDIT FACILITY in accordance with the terms of the LOAN DOCUMENTS. The facility fee shall be calculated on the basis of three hundred sixty (360) days per year factor.

Section 2.8. Commitment Fee. The BORROWERS, jointly and severally, shall pay to the LENDER on or before CLOSING a non-refundable and unconditional fee of Fifty Thousand Dollars ($50,000.00), which shall be the absolute property of the LENDER upon payment. This fee shall not be considered to be a payment of any of the LENDERS expenses incurred in connection with the LOAN and shall be paid independent of the amount of proceeds of the LOAN ultimately advanced to the BORROWERS, even if that amount is less than the stated principal amount of the LOAN.

Section 2.9. Examination Fee. The BORROWERS, jointly and severally, shall pay to the LENDER, as billed by the LENDER, an examination fee equal to Two Thousand Dollars ($2,000.00) for each field examination by the LENDER of the BORROWERS books and records. The BORROWERS shall not be billed for more than one (1) field examination in any consecutive ninety (90) day period, unless an EVENT OF DEFAULT has occurred and continues for more than thirty (30) days.

Section 2.10. Termination Fee. In the event the BORROWERS terminate the CREDIT FACILITY and repay the LOAN in full with funds derived from any source other than revenues from the BORROWERS normal business operations, the BORROWERS, jointly and severally, shall pay to the LENDER termination fee equal to the following percentage of the DOLLAR CAP: (a) one and one-half percent (1.5%) if the prepayment in full occurs at any time on or before March 22, 2001; (b) one percent (1.00%) if the prepayment occurs at any time after March 22, 2001 but on or before March 22, 2002; (c) one-half of one percent (0.50%) if the prepayment occurs at any time after March 22, 2002, but on or before March 22, 2003; (d) zero percent (0%) if the prepayment in full occurs after March 22, 2003. Notwithstanding the foregoing, the termination fee described in this Section 2.10 shall not be due if the prepayment and termination of the CREDIT FACILITY occurs in the absence of any DEFAULT or EVENT OF DEFAULT and the BORROWERS elect to prepay and terminate the CREDIT FACILITY as a result of (a) a determination by the LENDER that, pursuant to 2.2.3.d. hereof, a REGULATORY CHANGE has occurred and made it impractical for the LENDER to offer pricing based on the ADJUSTED LIBOR RATE or (b) having been billed by the LENDER for additional costs arising as a result of a REGULATORY CHANGE pursuant to subsections 2.3.3.e (ii)(A), (B) or (C) hereof, provided such REGULATORY CHANGE and the additional costs arising as a result thereof are applicable only to the LENDER and not to a class of lenders, banks or financial institutions including the LENDER or any corporation controlling the LENDER, and are not applicable to the LENDER as a result of its obligations hereunder, the creditworthiness of any of the BORROWERS, or the occurrence of any DEFAULT or EVENT OF DEFAULT; and provided further that nothing in this clause (b) shall affect or alter the obligation of the BORROWERS, jointly and severally, to pay to the LENDER the full amount of all such additional costs.

Sectio 2.11. Capital Adequacy. If the LENDER determines at any time that the adoption or implementation of any CAPITAL ADEQUACY REQUIREMENT, or the compliance therewith by the LENDER or any corporation or other PERSON controlling the LENDER, affects the amount of capital to be maintained by the LENDER or any PERSON controlling the LENDER as a result of its obligations hereunder, or reduces the effective rate of return on the LENDERS or such controlling PERSONS capital to a level below that which the LENDER or such controlling PERSON would have achieved but for such CAPITAL ADEQUACY REQUIREMENT as a consequence of its obligations hereunder (taking into consideration the LENDERS or such controlling PERSONS policies with respect to capital adequacy), then after submission by the LENDER to the BORROWERS of a written request therefor and a statement of the basis for such determination, the BORROWERS shall pay to the LENDER such additional amounts as will compensate the LENDER or the controlling PERSON for the cost of maintaining the increased capital or for the reduction in the rate of return on capital, together with interest thereon at the highest rate of interest then in effect under the NOTE from the date the LENDER requests such additional amounts until those amounts are paid in full.

Section 2.12. Payments. All payments received by the LENDER which are to be applied to reduce the OBLIGATIONS shall be credited to the balances due from any or all of the BORROWERS pursuant to the normal and customary practices of the LENDER, but shall be provisional and shall not be considered final unless and until such payment is not subject to avoidance under any provision of the United States Bankruptcy Code, as amended, including Sections 547 and 550, or any state law governing insolvency or creditors rights. If any payment is avoided or set aside under any provision of the United States Bankruptcy Code, including Sections 547 and 550, or any state law governing insolvency or creditors rights, the payment shall be considered not to have been made for all purposes of this AGREEMENT and the LENDER shall adjust its records to reflect the fact that the avoided payment was not made and has not been credited against the OBLIGATIONS.

Section 2.13. Advancements. If any of the BORROWERS fails to perform any of its agreements or covenants contained in this AGREEMENT or if any of the BORROWERS fails to protect or preserve the COLLATERAL or the status and priority of the security interest of the LENDER in the COLLATERAL, the LENDER may make advances to perform the same on behalf of such BORROWER to protect or preserve the COLLATERAL or the status and priority of the security interest of the LENDER in the COLLATERAL, and all sums so advanced shall immediately upon advance become secured by the security interests granted in this AGREEMENT, and shall become part of the principal amount owed to the LENDER with interest to be assessed at the applicable rate thereon and subject to the terms and provisions of this AGREEMENT and all of the LOAN DOCUMENTS. The BORROWERS shall repay on demand all sums so advanced on any BORROWERS behalf, plus all expenses or costs incurred by the LENDER, including reasonable legal fees, with interest thereon at the highest rate authorized in the NOTE. The provisions of this Section shall not be construed to prevent the institution of the rights and remedies of the LENDER upon the occurrence of an EVENT OF DEFAULT. The authorization contained in this Section is not intended to impose any duty or obligation on the LENDER to perform any action or make any advancement on behalf of any or all of the BORROWERS and is intended to be for the sole benefit and protection of the LENDER.

Section 2.14. Cross-Guaranty; Waiver Of Suretyship Defenses; Subordination.

Section 2.14.1. Cross-Guaranty. Each BORROWER guarantees to the LENDER the payment in full of all of the OBLIGATIONS of the other BORROWERS and further guarantees the due performance by the other BORROWERS of their respective duties and covenants made in favor of the LENDER hereunder and under the other LOAN DOCUMENTS. Each BORROWER agrees that neither this cross guaranty nor the joint and several liability of the BORROWERS provided in this AGREEMENT nor the LENDERs liens and rights in any of the COLLATERAL shall be impaired or affected by any modification, supplement, extension or amendment of any contract or agreement to which the parties hereto may hereafter agree, nor by any modification, release or other alteration of any of the rights of the LENDER with respect to any of the COLLATERAL, nor by any delay, extension of time, renewal, compromise or other indulgence granted by the LENDER with respect to any of the OBLIGATIONS, nor by any other agreements or arrangements whatever with the other BORROWERS or with any other PERSON, each BORROWER hereby waiving all notice of any such delay, extension, release, substitution, renewal, compromise or other indulgence, and hereby consenting to be bound thereby as fully and effectively as if it had expressly agreed thereto in advance. The liability of each BORROWER hereunder is direct and unconditional as to all of the OBLIGATIONS, and may be enforced without requiring the LENDER first to resort to any other right, remedy or security.

Section 2.14.2. Postponement of Subrogation. Until all of the OBLIGATIONS are paid in full, no BORROWER shall have any right of subrogation, reimbursement or indemnity whatsoever, nor any right of recourse to security for any of the OBLIGATIONS, and nothing shall discharge or satisfy the liability of a BORROWER hereunder, until the full, final and absolute payment and performance of all of the OBLIGATIONS at any time after all commitments of the LENDER under this AGREEMENT are terminated. Any and all present and future debts and obligations of each BORROWER to each of the other BORROWERS are hereby waived and postponed in favor of and subordinated to the full payment and performance of all present and future OBLIGATIONS; provided, however, so long as no DEFAULT or EVENT OF DEFAULT has occurred, each of the BORROWERS may repay debts and obligations to any other BORROWER.

Section 2.14.3. Subordination. Each BORROWER hereby subordinates any claims (other than claims evidenced by notes which have been assigned and delivered to the LENDER), including, without limitation, any other right of payment, subrogation, contribution and indemnity that it may have from or against the other BORROWERS, and any successor or assign of the other BORROWERS, including, without limitation, any trustee, receiver or debtor-in-possession, howsoever arising, due or owing and whether heretofore, now or hereafter existing, to all of the OBLIGATIONS of the other BORROWERS to the LENDER; provided, however, so long as no DEFAULT or EVENT OF DEFAULT has occurred, each of the BORROWERS may accept payments from any other BORROWER.

Section 2.14.4. Joint And Several Liability; Appointment Of Agent. Notwithstanding anything to the contrary contained herein, the BORROWERS shall be jointly and severally liable to the LENDER for all OBLIGATIONS, regardless of whether such OBLIGATIONS arise as a result of credit extensions to one BORROWER, it being stipulated and agreed that the LOAN, the LETTERS OF CREDIT, and all of the credit extensions hereunder to one BORROWER inure to the benefit of all BORROWERS, and that the LENDER is relying on the joint and several liability of the BORROWERS in extending the LOAN and in issuing any of the LETTERS OF CREDIT and in providing credit hereunder. To facilitate the administration of the LOAN, each of GSE Process Solutions, Inc., and GSE Power Systems, Inc., hereby irrevocably appoints GSE SYSTEMS as its true and lawful agent and attorney-in-fact with full power and authority to execute, deliver and acknowledge, as appropriate, all LOAN DOCUMENTS or certificates from time to time deemed necessary or appropriate by the LENDER in connection with the LOAN, any LETTERS OF CREDIT, or the issuance or administration of any of the other OBLIGATIONS. This power-of-attorney is coupled with an interest and cannot be revoked, modified or amended without the prior written consent of the LENDER. Upon the request of the LENDER, GSE Process Solutions, Inc. and GSE Power Systems, Inc., shall execute, acknowledge and deliver to the LENDER a form of power of attorney confirming and restating the power-of-attorney granted herein.

ARTICLE 3
URITY FOR THE OBLIGATIONS

The payment, performance and satisfaction of the OBLIGATIONS shall be secured by the following assurances of payment and security.

Section 3.1. Grant Of Security Interest. In order to secure the repayment and performance of all OBLIGATIONS, both currently existing and arising in the future, each of the BORROWERS grants to the LENDER an immediate and continuing security interest in and to the COLLATERAL. Each of the BORROWERS further pledges, hypothecates and grants to the LENDER a continuing security interest in and to, all amounts that may be owing at any time and from time to time by the LENDER to any of the BORROWERS in any capacity, including but not limited to any balance or share belonging to any of the BORROWERS of any deposit or other account with the LENDER, which security interest shall be independent of and in addition to any right of set-off to which the LENDER may be entitled.

Sectio 3.2. Proceeds And Products. The LENDERS security interests provided for herein shall apply to the proceeds, including but not limited to insurance proceeds, and the products of the COLLATERAL.

Section 3.3. Priority Of Security Interests. Each of the security interests, pledges, and liens granted by each of the BORROWERS to the LENDER pursuant to any of the LOAN DOCUMENTS shall be perfected first priority security interests, pledges, and liens (except for security interests in motor vehicles for which a notation of lien on a certificate of title is required).

Section 3.4. Future Advances. The security interests, liens, and pledges granted by each of the BORROWERS to the LENDER pursuant to the LOAN DOCUMENTS shall secure all current and all future advances made by the LENDER to the BORROWERS, or for the account or benefit of any of the BORROWERS, and the LENDER may advance or readvance upon repayment by any of the BORROWERS all or any

portion of the sums loaned to the BORROWERS and any such advance or readvance shall be fully secured by the security interests, liens, and pledges created by the LOAN DOCUMENTS.

Section 3.5. Receivable Collections. The BORROWERS shall establish a COLLECTION ACCOUNT arrangement acceptable to the LENDER at a bank acceptable to the LENDER. Each of the BORROWERS shall deposit or cause to be deposited into the COLLECTION ACCOUNT, immediately upon receipt thereof, all cash, checks, drafts, and other instruments for the payment of money, properly endorsed, which have been received by it in full or partial payment of any RECEIVABLE. Prior to any such deposit by any of the BORROWERS into the COLLECTION ACCOUNT, none of the BORROWERS will commingle such items of payment with any of its other funds or property but will hold them separate and apart. Upon the written request of the LENDER each of the BORROWERS shall instruct all of its ACCOUNT DEBTORS to make all payments on its RECEIVABLES to a post office box in which the LENDER alone shall have sole access (LOCK BOX). If payment of any BORROWERS RECEIVABLES is paid into the LOCK BOX the LENDER shall, on each BUSINESS DAY, withdraw the items of payment from the LOCK BOX and deposit them into the COLLECTION ACCOUNT. The LENDER, from time to time, shall apply all of the collected funds held in the COLLECTION ACCOUNT toward payment of all or any part of the OBLIGATIONS, whether or not then due, in such order of application as the LENDER may determine. The LENDER shall have no obligation to provide any provisional or other credit for any deposited funds which are not collected funds free of any rights of return.

Section 3.6. Collection Of Receivables By Lender. The LENDER shall have the right during any continuing EVENT OF DEFAULT to send notices of assignment or notices of the LENDERS security interest to any and all ACCOUNT DEBTORS or any third party holding or otherwise concerned with any of the COLLATERAL, and thereafter the LENDER shall have the sole right to collect the RECEIVABLES and to take possession of the COLLATERAL and RECORDS relating thereto. All of the LENDERS collection expenses shall be charged to the BORROWERS accounts and added to the OBLIGATIONS. During any continuing EVENT OF DEFAULT the LENDER shall have the right to receive, indorse, assign and deliver in the LENDERS name or any of the BORROWERS name any and all checks, drafts and other instruments for the payment of money relating to the RECEIVABLES, and each of the BORROWERS hereby waives notice of presentment, protest and non-payment of any instrument so endorsed. If the LENDER is collecting the RECEIVABLES, each of the BORROWERS hereby constitutes the LENDER or the LENDERS designee as its attorney-in-fact with power with respect to the RECEIVABLES: (a) to indorse its name upon all notes, acceptances, checks, drafts, money orders or other evidences of payment of COLLATERAL that may come into the LENDERS possession; (b) to sign its name on any invoices relating to any of the RECEIVABLES, drafts against ACCOUNT DEBTORS, assignments and verifications of RECEIVABLES and notices to ACCOUNT DEBTORS; (c) to send verifications of RECEIVABLES to any ACCOUNT DEBTOR; (d) to notify the Post Office to change the address for delivery of mail addressed to it to such address as the LENDER may designate; (e) to receive and open all mail addressed to it and to remove therefrom all cash, checks, drafts and other payments of money; and (f) to do all other acts and things necessary, proper, or convenient to carry out the terms and conditions and purposes and intent of this AGREEMENT. All acts of such attorney or designee are hereby ratified and approved, and such attorney or designee shall not be liable for any acts of omission or commission, nor for any error of judgment or mistake of fact or law in accordance with this AGREEMENT, with the exception of acts arising from actual fraud or gross and wanton negligence. The power of attorney hereby granted, being coupled with an interest, is irrevocable while any of the OBLIGATIONS remain unpaid. During any continuing EVENT OF DEFAULT, the LENDER, without notice to or consent from any of the BORROWERS, may sue upon or otherwise collect, extend the time of payment of or compromise or settle for cash, credit or otherwise upon any terms, any of the RECEIVABLES or any securities, instruments or insurances applicable thereto or release the obligor thereon. During any continuing EVENT OF DEFAULT, the LENDER is authorized and empowered to accept the return of the goods represented by any of the RECEIVABLES, without notice to or consent by any of the BORROWERS; provided, however in no event
(whether during the continuance of an EVENT OF DEFAULT or otherwise)
shall acceptance of returned goods by the LENDER discharge or in any way affect the liability of any of the BORROWERS under the LOAN DOCUMENTS. The LENDER does not, by anything herein or in any assignment or otherwise, assume any of the obligations of any of the BORROWERS under any contract or agreement assigned to the LENDER, and the LENDER shall not be responsible in any way for the performance by any of the BORROWERS of any of the terms and conditions thereof.

Section 3.7. Guaranty Agreements. Each of the GUARANTORS shall execute and deliver a GUARANTY AGREEMENT which shall guarantee, among other things, the absolute full payment and performance by the BORROWERS of the OBLIGATIONS. Each of the LIMITED GUARANTORS shall execute and deliver a GUARANTY AGREEMENT which shall guarantee, among other things, the absolute full payment and performance by the BORROWERS of the OBLIGATIONS, subject to the limitation as to monetary amount set forth therein.

Section 3.8. Further Assurances. Each of the BORROWERS will, at its expense, promptly execute and deliver all further instruments and documents and take all further action that may be necessary or desirable or that the LENDER may reasonably request from time to time in order: (a) to perfect and protect the security interests to be created hereby; (b) to enable the LENDER to exercise and enforce its rights and remedies hereunder in respect of the COLLATERAL; or (c) otherwise to effect the purposes of this AGREEMENT, including, without limitation: (i) upon such BORROWERS acquisition thereof, delivering to the LENDER each item of CHATTEL PAPER of the BORROWER, (ii) if any RECEIVABLES are evidenced by an INSTRUMENT delivering and pledging to the LENDER such INSTRUMENT duly endorsed and accompanied by executed instruments of transfer or assignment, all in form and substance satisfactory to the LENDER, (iii) executing and filing such financing statements or amendments thereto as may be necessary or desirable or that the LENDER may request in order to perfect and preserve the security interests purported to be created hereby, (iv) upon the acquisition after the date hereof by such BORROWER of any EQUIPMENT covered by a certificate of title or ownership, cause the LENDER to be listed as the lienholder on such certificate of title and within sixty
(60) days of the acquisition thereof deliver evidence of the same to the LENDER, and (v) upon the acquisition after the date hereof of any asset for which an assignment, pledge, mortgage, or other document is required to be filed in order to grant or perfect a lien therein for the benefit of the LENDER, execute and deliver to the LENDER such assignment, pledge, mortgage, or other INSTRUMENT within thirty (30) days of the acquisition thereof. If any of the BORROWERS fails to execute any instrument or document described above within five (5) BUSINESS DAYS of being requested to do so by the LENDER, each of the BORROWERS hereby appoints the LENDER or any officer of the LENDER

as such BORROWERS attorney in fact for purposes of executing such instruments or documents in such BORROWERS name, place and stead, which power of attorney shall be considered as coupled with an interest and irrevocable.

Section 3.9. Fair Labor Standards Act. As further security for the OBLIGATIONS, each of the BORROWERS shall comply in all material respects with the Fair Labor Standards Act of 1938, as amended.

ARTICLE 4
CONDITIONS PRECEDENT

Any obligation of the LENDER to perform any duty imposed upon or assumed by the LENDER in accordance with the terms of the LOAN DOCUMENTS or otherwise with respect to the LOAN or LETTERS OF CREDIT shall be conditioned upon the satisfaction by the BORROWERS of the conditions precedent set forth in this Article 4.

Section 4.1. Conditions to Closing. Each of the following conditions precedent shall be satisfied prior to the date of CLOSING:

Section 4.1.1. Organizational Documents. The delivery to the LENDER by each of the BORROWERS, the GUARANTORS and the LIMITED GUARANTORS of the following documents, each certified as indicated below: (a) a copy of its the Articles of Incorporation or Articles of Organization, as the case may be, as amended and in effect on the date of CLOSING, certified as of a recent date by the Secretary of State of its jurisdiction of formation, a certificate from such Secretary of State dated as of a recent date as to the good standing of and charter documents filed by each of the BORROWERS, the GUARANTORS, and the LIMITED GUARANTORS, as applicable, and certificates of good standing for each jurisdiction in which each of the BORROWERS and each of the GUARANTORS is required by the nature of its business or assets qualify to do business; (b) a certificate of the Secretary or Assistant Secretary of each of the BORROWERS, the GUARANTORS and the LIMITED GUARANTORS, dated as of the date of CLOSING and certifying: (i) that attached thereto is a true and accurate copy of the Bylaws or operating agreement (as the case may be) of each of the BORROWERS, the GUARANTORS and the LIMITED GUARANTORS, as applicable, as amended and in effect at all times from the date on which the resolutions referred to in clause (ii) hereto were adopted and including the date of such certificate; (ii) that attached thereto is a true and complete copy of resolutions duly adopted by the Board of Directors of each of the BORROWERS, the GUARANTORS and the LIMITED GUARANTORS, as applicable, authorizing the execution, delivery and performance of each of the LOAN DOCUMENTS to which such BORROWER, GUARANTOR, or LIMITED GUARANTOR, as applicable, is or is intended to be a party, and that such resolutions have not been modified, rescinded, or amended and are in full force and effect; and (iii) as to the incumbency and specimen signature of each officer of the BORROWERS, the GUARANTORS, or the LIMITED GUARANTORS, as applicable, executing the LOAN DOCUMENTS to which such BORROWER, GUARANTOR, or LIMITED GUARANTOR, as applicable, is intended to be a party.

Section 4.1.2. Opinion Of Counsel. The delivery to the LENDER of an opinion of counsel to the BORROWERS, GUARANTORS, and LIMITED GUARANTORS addressed to the LENDER and dated as of the date of CLOSING, in substantially the same form as Exhibit 4.1.3. attached hereto.

Sectio 4.1.3. Execution Of Loan Documents. The execution and delivery of all of the LOAN DOCUMENTS.

Section 4.1.4. Submissions. The delivery to the LENDER of such certificates, submissions, and supporting documents as have been previously requested by the LENDER

Section 4.1.5. Insurance. The delivery to the LENDER of certificates of insurance evidencing the existence of all insurance required to be maintained by the BORROWERS and the GUARANTORS pursuant to the terms and conditions of the LOAN DOCUMENTS and evidence that such insurance is in full force and effect and that all premiums then due and payable thereon have been paid.

Sectio 4.1.6. Record Searches. The receipt and satisfactory review by the LENDER of such Uniform Commercial Code, tax, pending litigation and judgment searches as have been requested by the LENDER

Section 4.1.7. Absence Of Material Adverse Change. The absence of the occurrence of any material adverse change in the financial conditions or business affairs of any of the BORROWERS, the GUARANTORS, or the LIMITED GUARANTORS.

Section 4.1.8. Payment Of Closing Fees. The payment by the BORROWERS of each of the closing fees agreed in writing to be paid by the BORROWERS to the LENDER, which fees shall be nonrefundable upon payment. Such closing fees paid by the BORROWERS shall not be considered to be a payment of any of the LENDERS EXPENSES, and shall be paid independently of the amount of proceeds of the LOAN ultimately advanced to the BORROWERS.

Section 4.1.9. Payment Of Lenders Closing Costs. The payment by the BORROWERS of all of the reasonable costs, fees and expenses incurred by the LENDER in connection with the negotiation, preparation, execution, and delivery of the LOAN DOCUMENTS, including but not limited to reasonable attorneys fees, the cost of any public record searches, recording costs, and other reasonable and necessary out-of-pocket costs and expenses incurred by the LENDER.

Section4.1.10. Dime Commercial Corp. Facility. On the date of CLOSING: (a) there shall have been paid in cash in full all outstanding principal balances and all accrued but unpaid interest, fees and charges due on the loans outstanding to Dime Commercial Corp.; and (b) the

LENDER shall have received an agreement satisfactory to the LENDER from Dime Commercial Corp. to promptly terminate all liens and security interests against the BORROWERS and to forward to the LENDER all outstanding promissory notes issued by the BORROWERS to Dime Commercial Corp. marked paid in full.

Section 4.2. Conditions Precedent To All Advances and Issuance of Letters of Credit. The obligation of the LENDER to make any advances of the proceeds of the LOAN, including the initial advance, and the obligation of the LENDER to issue any LETTERS OF CREDIT, shall be subject to the satisfaction, concurrently therewith, of each of the following conditions precedent:

Section4.2.1. No Defaults Or Events Of Default. No event shall have occurred on or prior to such date and be continuing on such date, and no condition shall exist on such date, which constitutes a DEFAULT or EVENT OF DEFAULT.

Section4.2.2. Continuing Accuracy Of Representations And Warranties. Each of the representations and warranties made by or on behalf of the BORROWERS, or by the GUARANTORS or by the LIMITED GUARANTORS to the LENDER in the LOAN DOCUMENTS shall be true and correct in all material respects when made and shall be deemed to be repeated as true, accurate and complete as of the date of the BORROWERS request for each advance of proceeds of the LOAN or issuance of a LETTER OF CREDIT, unless otherwise agreed to by the LENDER in writing.

Section4.2.3. Receipt Of Reports. The LENDER shall be in receipt of all reports, financial statements, financial information and financial disclosures required by the LOAN DOCUMENTS, except to the extent that the LENDER has waived the receipt thereof.

Section4.2.4. No Illegalities. It shall not be unlawful for the LENDER to perform any of the agreements or obligations imposed upon the LENDER by any of the LOAN DOCUMENTS or for any of the BORROWERS, the GUARANTORS or the LIMITED GUARANTORS to perform any of their respective agreements or obligations as provided by the LOAN DOCUMENTS.

Section4.2.5. No Material Adverse Event. No MATERIAL ADVERSE EVENT shall have occurred and be then continuing.

Each borrowing request by a BORROWER hereunder or a request for the issuance of a LETTER OF CREDIT shall constitute a representation and warranty by each of the BORROWERS as of the date of such LOAN or the date of issuance of such LETTER OF CREDIT that the conditions contained in this Section 4.2 have been satisfied.

ARTICLE 5
EPRESENTATIONS AND WARRANTIES

To induce the LENDER to extend the CREDIT FACILITY and to enter into this AGREEMENT, each of the BORROWERS makes the representations and warranties set forth in this Article 5. Each of the BORROWERS acknowledges the LENDERS justifiable right to rely upon these representations and warranties.

SectioN 5.1. Accuracy Of Information. All information submitted by or on behalf of any of the BORROWERS, any of the GUARANTORS, or any of the LIMITED GUARANTORS in connection with any of the OBLIGATIONS is true, accurate and complete in all material respects as of the date made and contains no knowingly false, incomplete or misleading statements.

Section5.2. No Litigation. Except as specifically disclosed on Schedule 5.2 attached hereto, there are no material actions, suits, investigations, or proceedings pending or, to the knowledge of any of the BORROWERS, threatened against any of the BORROWERS or the assets of any of the BORROWERS

Section5.3. No Liability Or Adverse Change. None of the BORROWERS has any direct or contingent liability known to any of the BORROWERS and not previously disclosed to the LENDER, nor do any of the BORROWERS know of or have any reason to expect any material adverse change in any BORROWERS assets, liabilities, properties, business, or condition, financial or otherwise.

Section5.4. Title To Collateral. Each of the BORROWERS has good and marketable title to the COLLATERAL. The liens granted by each of the BORROWERS to the LENDER in the COLLATERAL will have the priority required by the LOAN DOCUMENTS.

Section 5.5. Authority; Approvals And Consents.

Section 5.5.1. Authority. Each of the BORROWERS has the legal authority to enter into each of the LOAN DOCUMENTS and to perform, observe and comply with all of such BORROWERS agreements and obligations thereunder, including, without limitation the borrowings contemplated hereby.

Section 5.5.2. Approvals. The execution and delivery by each of the BORROWERS of each of the LOAN DOCUMENTS, the performance by each of the BORROWERS of all of its agreements and obligations under the LOAN DOCUMENTS, and the borrowings contemplated by this AGREEMENT, have been duly authorized by all necessary action on the part of each BORROWER and do not and will not (i) contravene any provision of the organizational documents of any of the BORROWERS; (ii) conflict with, or result in a breach of the terms, conditions or provisions of, or constitute a default under, or result in the creation of any lien upon any of the property of any of the BORROWERS under any

material agreement, trust deed, indenture, mortgage or other instrument to which any of the BORROWERS is a party or by which any of the BORROWERS or any property of any of the BORROWERS is bound or affected (except for liens created for the benefit of the LENDER); (iii) violate or contravene any provision of any LAW, rule or regulation (including, without limitation, Regulations G, T, U or X of the Board of Governors of the Federal Reserve System) or any order, ruling or interpretation thereunder or any decree, order of judgment of any court or governmental or regulatory authority, bureau, agency or official (all as from time to time in effect and applicable to any of the BORROWERS); or (iv) require any waivers, consents or approvals by any of the creditors of any of the BORROWERS.

Section 5.6. Binding Effect Of Documents, Etc. Each of the LOAN DOCUMENTS which each of the BORROWERS has executed and delivered as contemplated and required to be executed and delivered as of the date of CLOSING by this AGREEMENT, has been duly executed and delivered by each BORROWER and is the legal, valid and binding obligation of each BORROWER and is enforceable against each BORROWER in accordance with all stated terms.

Section 5.7. Other Names. None of the BORROWERS has changed its name, been the surviving entity in a merger, or changed the location of its chief executive office within the last twelve (12) years, except as is disclosed on Schedule 5.7 attached hereto. No BORROWER trades under any trade or fictitious names except as set forth on Schedule 5.7.

Sectio 5.8. No Events Of Default. There is not currently existing any action, event, or condition which presently constitutes a DEFAULT or an EVENT OF DEFAULT

Section 5.9. Guaranty Agreements. The GUARANTY AGREEMENTS are the valid and binding obligation of the GUARANTORS and the LIMITED GUARANTORS, as the case may be, and are fully enforceable against the respective GUARANTORS and the LIMITED GUARANTORS in accordance with their terms.

Section 5.10. Taxes. Each of the BORROWERS: (a) has filed all federal, state and local tax returns and other reports which such BORROWER is required by LAW to file prior to the date hereof and which are material to the conduct of the business of such BORROWER; (b) has paid or caused to be paid all taxes, assessments and other governmental charges that are due and payable prior to the date hereof, except as disclosed on Schedule 5.10 attached hereto; and (c) has made adequate provision for the payment of such taxes, assessments or other charges accruing but not yet payable. None of the BORROWERS has any knowledge of any deficiency or additional assessment in connection with any taxes, assessments or charges not provided for on such BORROWERS books of account or reflected in such BORROWERS financial statements.

Section 5.11.

Compliance With Laws. Each of the BORROWERS has complied in all material respects with all applicable LAWS, including, but not limited to, all LAWS with respect to: (a) all restrictions, specifications, or other requirements pertaining to products that it sells or to the services it performs; (b) the conduct of its business; and (c) the use, maintenance, and operation of the real and personal properties owned or leased by it in the conduct of its business.

Section 5.12. Chief Place Of Business. The chief executive office, chief place of business, and the place where each of the BORROWERS keeps its RECORDS concerning the COLLATERAL is set forth on Schedule 5.12 attached hereto.

Section 5.13. Location Of Inventory. The INVENTORY is and shall be kept solely at the BORROWERS locations set forth on Schedule 5.13 attached hereto, and shall not be moved, sold or otherwise disposed of without prior notification to the LENDER, except for sales of INVENTORY to ACCOUNT DEBTORS in the ordinary course of the BORROWERS businesses. None of the INVENTORY is stored with or in the possession of any bailee, warehouseman, or other similar PERSON, except as specifically disclosed on Schedule 5.13 attached hereto.

Section 5.14. No Subsidiaries. None of the BORROWERS has any direct or indirect DOMESTIC SUBSIDIARIES except for the GUARANTORS listed by name in Section 1.53 of this AGREEMENT. None of the BORROWERS has any direct or indirect SUBSIDIARIES which are not DOMESTIC SUBSIDIARIES, except for the SUBSIDIARIES listed on Schedule 5.14 attached hereto.
Section 5.15.

No Labor Agreements. Except as described in Schedule 5.15 hereto, none of the BORROWERS is subject to any collective bargaining agreement or any agreement, contract, decree or order requiring it to recognize, deal with or employ any PERSONS organized as a collective bargaining unit or other form of organized labor

Section 5.16. Eligible Accounts. Each ACCOUNT which any of the BORROWERS contends should be included in the calculation of the BORROWING BASE from time to time will be an ELIGIBLE BILLED COMMERCIAL
ACCOUNT, ELIGIBLE BILLED GOVERNMENT ACCOUNT or an ELIGIBLE UNBILLED GOVERNMENT ACCOUNT, as the case may be. At the time each is listed on or included in (whether singularly or in the aggregate with other eligible accounts) a schedule or report delivered to the LENDER to be included in the calculation of the BORROWING BASE, all of such ELIGIBLE BILLED COMMERCIAL ACCOUNTS, ELIGIBLE BILLED GOVERNMENT ACCOUNTS or ELIGIBLE UNBILLED GOVERNMENT ACCOUNTS, as the case may be, will have been generated in compliance with such BORROWERS normal credit policies as historically in effect (or as modified from time to time on prior written notice of the LENDER), or on such other reasonable terms disclosed in writing to the LENDER in advance of the creation of such ACCOUNTS, and such terms shall be expressly set forth on the face of all invoices.

Section 5.17. Eligible Inventory. Each item of INVENTORY which any of the BORROWERS from time to time contends should be included in the calculation of the BORROWING BASE shall be ELIGIBLE INVENTORY.

Section 5.18. Eligible Additional Collateral Value. Any letter of credit which any of the BORROWERS contend should be included in the calculation of ELIGIBLE ADDITIONAL COLLATERAL VALUE shall have an expiry date which is not less than one year from issuance and shall be considered eligible only if, at the time of determination of eligibility, there shall be no less than thirty (30) days remaining from such date of determination to the expiry date of the letter of credit. Failure to maintain such letter of credit as ELIGIBLE ADDITIONAL COLLATERAL VALUE for at least one year from issuance shall constitute an EVENT OF DEFAULT.

Section 5.19. Approvals. Each of the BORROWERS possesses all franchises, approvals, licenses, contracts, INTELLECTUAL PROPERTY, merchandising agreements, merchandising contracts and governmental approvals, registrations and exemptions necessary for it lawfully to conduct its business and operation as presently conducted and as anticipated to be conducted after CLOSING.

Section 5.20. Financial Statements. The financial statements of each of the BORROWERS which have been delivered to the LENDER prior to the date of this AGREEMENT, fairly present the financial condition of the BORROWERS as of the respective dates thereof and the results and operations of the BORROWERS for the fiscal periods ended on such respective dates, all in accordance with G.A.A.P. None of the BORROWERS has any direct or contingent liability or obligation known to any of the BORROWERS and not disclosed on the financial statements delivered to the LENDER or disclosed on Schedule 5.19 hereto. There has been no adverse change in the financial condition of any of the BORROWERS since the financial statements of the BORROWERS dated December 31, 1999, and none of the BORROWERS knows of or have any reason to expect any material adverse change in the assets, liabilities, properties, business, or condition, financial or otherwise, of any of the BORROWERS.

Section 5.21. Solvency. Each of the BORROWERS will be SOLVENT both before and after CLOSING, after giving full effect to the OBLIGATIONS and all of the BORROWERS respective liabilities.

Section 5.22. Fair Labor Standards Act. Each of the BORROWERS has complied in all material respects with the Fair Labor Standards Act of 1938, as amended.

Section 5.23. Employee Benefit Plans.

Section 5.23.1. Compliance. Each of the BORROWERS and its ERISA AFFILIATES are in compliance in all material respects with all applicable provisions of ERISA and the regulations thereunder and of the CODE with respect to all EMPLOYEE BENEFIT PLANS.

Section 5.23.2. Absence Of Termination Event. No TERMINATION EVENT has occurred or is reasonably expected to occur with respect to any GUARANTEED PENSION PLAN.

Section 5.23.3. Actuarial Value. The actuarial present value (as defined in Section 4001 of ERISA) of all benefit commitments (as defined in Section 4001 of ERISA) under each GUARANTEED PENSION PLAN does not exceed the assets of that plan.

Section 5.23.4. No Withdrawal Liability. None of the BORROWERS nor any of their ERISA AFFILIATES has incurred or reasonably expects to incur any withdrawal liability under ERISA in connection with any MULTIEMPLOYER PLANS.

Section 5.24. Environmental Conditions.

Section 5.24.1. Existence Of Permits. Each of the BORROWERS has obtained all legally required permits, licenses, variances, clearances and all other necessary approvals (collectively, the EPA PERMITS) for use of the FACILITIES and the operation and conduct of its business from all applicable federal, state, and local governmental authorities, utility companies or development-related entities including, but not limited to, any and all appropriate Federal or State environmental protection agencies and other county or city departments, public water works and public utilities in regard to the use of the FACILITIES, the operation and conduct of its business, and the handling, transporting, treating, storage, disposal, discharge, or RELEASE of REGULATED SUBSTANCES, if any, into, on or from the environment (including, but not limited to, any air, water, or soil).

Section 5.24.2. Compliance With Permits. Each issued EPA PERMIT is in full force and effect, has not expired or been suspended, denied or revoked, and is not under challenge by any PERSON. Each of the BORROWERS is in compliance in all material aspects with each issued EPA PERMIT.

Section 5.24.3. No Litigation. None of the BORROWERS nor any of the FACILITIES is subject to any private or governmental litigation, or to the knowledge of any of the BORROWERS, threatened litigation, lien or judicial or administrative notice, order or action involving any of the BORROWERS or any of the FACILITIES relating to REGULATED SUBSTANCES or environmental problems, impairments or liabilities

Section 5.24.4. No Releases. To the best knowledge of each of the BORROWERS, there has been no RELEASE into, on or from any of the FACILITIES and no REGULATED SUBSTANCES are located on or have been treated, stored, processed, disposed of, handled or transported to or from, any of the FACILITIES in violation of any ENVIRONMENTAL LAWS. To the best knowledge of each of the BORROWERS, no

REGULATED SUBSTANCES have been treated, stored, disposed, RELEASED, located, discharged, possessed, managed, processed, or otherwise handled in the operation or conduct of any BORROWERS business in violation of any ENVIRONMENTAL LAWS. Each of the BORROWERS has complied in all material respects with all ENVIRONMENTAL LAWS affecting the FACILITIES and each BORROWERS business.

Section 5.24.5. Transportation. None of the BORROWERS transports, in any manner, any REGULATED SUBSTANCES except in the ordinary course of such BORROWERS business in material compliance with all ENVIRONMENTAL LAWS.

Section 5.24.6. No Violation Notices. No BORROWER has received any notices that any REGULATED SUBSTANCES transported from any FACILITY have been disposed of in violation of any ENVIRONMENTAL LAWS.

Section 5.24.7. No Notice Of Violations. No BORROWER has received written notice of any circumstances which would be likely to result in any obligation under any ENVIRONMENTAL LAW to investigate or remediate any REGULATED SUBSTANCES in, on or under any of the FACILITIES.

ARTICLE 6
FFIRMATIVE COVENANTS

Each of the BORROWERS agrees during the term of this AGREEMENT and while any OBLIGATIONS are outstanding and unpaid to do and perform each of the acts and promises set forth in this Article 6:

Section 6.1. Payment. All OBLIGATIONS shall be paid in full when and as due.

Section 6.2. Insurance. Each of the BORROWERS shall obtain and maintain such insurance coverages as are reasonable, customary and prudent for businesses engaged in activities similar to the business activities of the BORROWERS. Without limitation to the foregoing, each of the BORROWERS shall maintain for all of its assets and properties, whether real, personal, or mixed and including but not limited to the COLLATERAL, fire and extended coverage casualty insurance in amounts satisfactory to the LENDER and sufficient to prevent any co-insurance liability (which amount shall be the full insurable value of the assets and properties insured unless the LENDER in writing agrees to a lesser amount), naming the LENDER as loss payee with respect to the COLLATERAL, with insurance companies and upon policy forms containing standard loss payee and mortgagee clauses which are acceptable to and approved by the LENDER. Each of the BORROWERS shall submit to the LENDER, upon request, duplicate originals of the casualty insurance policies and paid receipts evidencing payment of the premiums due on the same. The casualty insurance policies shall be endorsed so as to make them noncancellable unless thirty (30) days prior notice of cancellation or material alteration is provided to the LENDER. The proceeds of any insured loss shall be applied by the LENDER to the OBLIGATIONS, in such order of application as determined by the LENDER, unless the LENDER in its sole discretion permits the use thereof to repair or replace damaged or destroyed COLLATERAL. The LENDER agrees that the BORROWERS will be permitted to use all or such portion of the loss proceeds as may be necessary for the purposes of repairing, restoring, renovating or replacing the damaged property, provided: (a) no EVENT OF DEFAULT shall exist or occur and be continuing during the course of such repair, restoration, renovation or replacement; (b) the amount of the loss is less than One Hundred Thousand Dollars ($100,000.00); and (c) the schedule for the repair, restoration, renovation or replacement indicates a full and complete repair, restoration, renovation or replacement within a reasonable period after the date of receipt of any such loss proceeds; (d) the applicable insurance carriers shall have waived any rights of subrogation against the BORROWERS in connection with such loss; and
(e) the amount of the insurance proceeds and any separate funds to be contributed by the BORROWERS are sufficient in the reasonable business judgment of the LENDER to accomplish such repair, restoration, replacement or renovation in a reasonably satisfactory manner. The BORROWERS shall also maintain public liability and property damage insurance in such amounts, with insurance companies, and upon policy forms acceptable to and approved by the LENDER, naming the LENDER as additional insured. In addition, the BORROWERS shall maintain workers compensation insurance in such amounts, with insurance companies acceptable to and approved by the LENDER. The BORROWERS shall submit to the LENDER satisfactory evidence of all such insurance.

Section 6.3. Books And Records. Each of the BORROWERS shall notify the LENDER in writing if any of the BORROWERS modifies or changes its method of accounting or enters into, modifies, or terminates any agreement presently existing, or at any time hereafter entered into with any third party accounting firm for the preparation and/or storage of any BORROWERS accounting records.

Section 6.4. Collection Of Accounts; Sale Of Inventory. Each of the BORROWERS shall only collect its RECEIVABLES and sell its INVENTORY in the ordinary course of its business.

Section 6.5. Notice Of Litigation And Proceedings. Each of the BORROWERS shall give prompt notice to the LENDER of any action, suit, citation, violation, direction, notice or proceeding before any court or governmental department, commission, board, bureau, agency or instrumentality, domestic or foreign, affecting any of the BORROWERS, or the assets or properties thereof, which, if determined adversely to any of the BORROWERS: (a) could require any or all of the BORROWERS to pay more than One Hundred Thousand Dollars ($100,000.00) or deliver assets the value of which exceeds that sum (whether or not the claim is considered to be covered by insurance); or (b) could reasonably be expected to have a material adverse effect upon the financial condition or business operations of any of the BORROWERS.
Section 6.6. Payment Of Liabilities To Third Persons. Each of the BORROWERS shall pay when and as due, or within applicable grace periods, all liabilities due to third persons, except when the amount thereof is being contested in good faith by appropriate proceedings and with adequate reserves therefor being set aside

Section 6.7. Change Of Business Location. Each of the BORROWERS shall notify the LENDER thirty (30) days in advance of: (a) any change in the location of its existing offices or place of business; (b) the establishment of any new, or the discontinuation of any existing, place of business; and (c) any change in or addition to the locations at which the COLLATERAL is kept. Prior to moving any COLLATERAL to any location not owned by it (other than deliveries to ACCOUNT DEBTORS of sold or leased items), each of the BORROWERS shall obtain and deliver to the LENDER an agreement, in form and substance acceptable to the LENDER, pursuant to which the owner of such location shall: (a) subordinate any rights which it may have, or thereafter may obtain, in any of the COLLATERAL to the rights and security interests of the LENDER in the COLLATERAL; and (b) allow the LENDER access to the COLLATERAL in order to remove the COLLATERAL from such location. In the event any COLLATERAL is stored with a warehousemen or other bailee, and the COLLATERAL is evidenced by a negotiable document of title, each of the BORROWERS shall immediately deliver the document of title to the LENDER.

Section 6.8. Payment Of Taxes. Each of the BORROWERS shall pay or cause to be paid when and as due all taxes, assessments and charges or levies imposed upon it or on any of its property or which it is required to withhold and pay over to the taxing authority or which it must pay on its income, except where contested in good faith, by appropriate proceedings and at its own cost and expense; provided, however, that the BORROWERS shall not be deemed to be contesting in good faith by appropriate proceedings unless: (a) such proceedings operate to prevent the taxing authority from attempting to collect the taxes, assessments or charges; (b) the COLLATERAL is not subject to sale, forfeiture or loss during such proceedings; (c) such BORROWERS contest does not subject the LENDER to any claim by the taxing authority or any other person; (d) such BORROWER establishes appropriate reserves, satisfactory to the LENDER in its sole discretion, for the payment of all taxes, assessments, charges, levies, legal fees, court costs and other expenses for which such BORROWER would be liable if unsuccessful in the contest; (e) such BORROWER prosecutes the contest continuously to its final conclusion; and (f) at the conclusion of the proceedings, such BORROWER promptly pays all amounts determined to be payable, including but not limited to all taxes, assessments, charges, levies, legal fees and court costs.

Section 6.9. Inspections Of Records. Each of the BORROWERS shall permit representatives of the LENDER access to each BORROWERS places of business, at intervals and at such times as determined by the LENDER, to inspect the COLLATERAL and to review and make extracts from or photocopies of the books and records of each of the BORROWERS. Each of the BORROWERS agrees to pay to the LENDER the examination fee set forth in Section 2.9 hereof and shall reimburse the LENDER for any other reasonable out-of-pocket expenses incurred by the LENDER in connection with such examinations, audits, inspections, extractions and verifications.expenses incurred by the LENDER in connection with such examinations, audits, inspections, extractions and verifications.

Section 6.10. Notice Of Events Affecting Collateral; Compromise Of Receivables; Returned Or Repossessed Goods. Each of the BORROWERS shall promptly report to the LENDER: (a) any reclamation, return or repossession of goods; (b) all claims or disputes asserted by any ACCOUNT DEBTOR or other obligor involving in excess of One Hundred Thousand Dollars ($100,000.00); provided, however, the BORROWER shall report all claims or disputes asserted by any ACCOUNT DEBTOR affecting COLLATERAL included in the BORROWING BASE; and (c) all matters materially affecting the value, enforceability or collectibility of any of the COLLATERAL. Without the LENDERS consent, none of the BORROWERS shall compromise or adjust any of the RECEIVABLES which have been included by any of the BORROWERS in the determination of the BORROWING BASE, extend the time for payment thereof, or grant any additional discounts, allowances or credits thereon; provided, however, that any of the BORROWERS may grant, in the ordinary course of business, to any party obligated on any of the RECEIVABLES, any rebate, refund, or adjustment to which such party may be lawfully entitled, and may accept, in connection therewith, the return of goods, sale, or lease of which shall have given rise to such RECEIVABLES. If any goods, the sale of which has resulted in RECEIVABLES included in determining the BORROWING BASE, are returned by the ACCOUNT DEBTOR for credit or repossessed by any of the BORROWERS, the BORROWERS shall receive and hold such goods as trustee for the LENDER and as additional security for the payment of the OBLIGATIONS, and make disposition thereof as required by the LENDER.

Section 6.11. Documentation Of Collateral. Each of the BORROWERS agrees that upon the request of the LENDER, each of the BORROWERS will provide the LENDER with: (a) written statements or schedules identifying and describing the COLLATERAL, and all additions, substitutions, and replacements thereof, in such detail as the LENDER may require; (b) copies of ACCOUNT DEBTORS invoices or billing statements; (c) evidence of shipment or delivery of goods or merchandise to or performance of services for ACCOUNT DEBTORS; and (d) such other schedules and information as the LENDER reasonably may require. The items to be provided under this Section shall be in form satisfactory to the LENDER and are to be executed and delivered to the LENDER from time to time solely for the LENDERS convenience in maintaining RECORDS of the COLLATERAL. The failure of any of the BORROWERS to give any of such items to the LENDER shall not affect, terminate, modify or otherwise limit the LENDERS security interests in the COLLATERAL. The LENDER shall have the right, at any time and from time to time, to verify the eligibility of the BORROWERS RECEIVABLES, including, in connection with its quarterly field examinations of the BORROWERS books and records or at any time during any continuing DEFAULT or EVENT OF DEFAULT, obtaining verification of the RECEIVABLES directly from ACCOUNT DEBTORS.

Section 6.12. Reporting Requirements. The BORROWERS shall submit the following items to the LENDER:

Section 6.12.1. Inventory Reports. On or before the 20th day of each calendar month, reports of INVENTORY on such reporting forms as are required by the LENDER from time to time, certified to be accurate and correct by the chief financial officer of each of the BORROWERS, which reports shall be compiled in a manner acceptable to the LENDER.

Section 6.12.2. Receivables And Accounts Payable Reports. On or before the 20th day of each calendar month: (i) a RECEIVABLES report and aging; and (ii) an accounts payable report and aging, both in form reasonably acceptable to the LENDER and containing such information as the LENDER may specify from time to time. Such reports shall be accompanied by such reports, copies of sales journals, remittance reports, and other documentation as the LENDER may reasonably request from time to time.

Section 6.12.3. Government Contracts Report. On or before the 20th day of each calendar month, a status report with respect to all GOVERNMENT CONTRACTS of the BORROWERS, in form and substance satisfactory to the LENDER.

Section 6.12.4. Borrowing Base Report. Once each calendar week, or more frequently if requested by the LENDER, a collateral and loan report in such form and context as may be specified by the LENDER from time to time.

Sectio 6.12.5. Quarterly Financial Statements. As soon as available and in any event within forty-five (45) calendar days after the end of each of the first three QUARTERS of each FISCAL YEAR, the BORROWERS shall submit to the LENDER a consolidated and consolidating balance sheet of the BORROWERS and their SUBSIDIARIES as of the end of such quarter, a consolidated and consolidating statement of income and retained earnings of the BORROWERS and their SUBSIDIARIES for the period commencing at the end of the previous FISCAL YEAR and ending with the end of such quarter, and a consolidated statement of cash flow of the BORROWERS and their SUBSIDIARIES for the portion of the FISCAL YEAR ended with the last day of such quarter, all in reasonable detail and stating in comparative form the respective consolidated and consolidating figures for the corresponding date and period in the prior FISCAL YEAR and all prepared in accordance with G.A.A.P. and certified by the chief financial officer of each of the BORROWERS (subject to year-end adjustments).

Section 6.12.6. Annual Financial Statements. As soon as available and in any event within ninety (90) calendar days after the end of each FISCAL YEAR of each of the BORROWERS, the BORROWERS shall submit to the LENDER a consolidated and consolidating balance sheet of the BORROWERS and their SUBSIDIARIES as of the end of such FISCAL YEAR and a consolidated and consolidating statement of income and retained earnings of the BORROWERS and their SUBSIDIARIES for such FISCAL YEAR, and a consolidated statement of cash flow of the BORROWERS and their SUBSIDIARIES for such FISCAL YEAR, all in reasonable detail and stating in comparative form the respective consolidated and consolidating figures for the corresponding date and period in the prior FISCAL YEAR and all prepared in accordance with G.A.A.P. and, as to the consolidated financial statements described above, accompanied by an audited opinion thereon acceptable to the LENDER by independent accountants selected by the BORROWERS and acceptable to the LENDER.

Section 6.12.7. Annual Business Plan and Financial Projections. As soon as available and in any event within ninety (90) calendar days after the beginning of each FISCAL YEAR of the BORROWERS beginning with the 2000 FISCAL YEAR, the BORROWERS shall submit to the LENDER a business plan of the BORROWERS and their SUBSIDIARIES for the ensuing FISCAL YEAR, such plan to be prepared in accordance with G.A.A.P. and to include a capital budget, projected income statement, statement of cash flows and balance sheet, and a report containing managements discussion and analysis of such projections, accompanied by a certificate from the chief financial officer of each of the BORROWERS to the effect that, to the best of such officers knowledge, such projections are good faith estimates of the financial condition and operations of the BORROWERS and their SUBSIDIARIES for such FISCAL YEAR

Section 6.12.8. SEC And Other Filings. Within five (5) days after the sending, filing, or receipt thereof, copies of: (a) all financial statements, reports, notices and proxy statements that each of the BORROWERS sends to its shareholders; and (b) all regular, periodic and special reports, registration statements and prospectuses that each of the BORROWERS renders to or files with the Securities And Exchange Commission, the National Association of Securities Dealers, Inc. or any national securities exchange, including without limitation each of the Forms 10-K and 10-Q filed by each of the BORROWERS with the Securities And Exchange Commission.

Section 6.12.9. Management Letters. Promptly upon receipt thereof, each of the BORROWERS shall submit to the LENDER copies of any reports submitted to any of the BORROWERS or any SUBSIDIARY by independent certified public accountants in connection with the examination of the financial statements of the BORROWERS or any SUBSIDIARY made by such accountants.

Section 6.12.10. Certificates Of No Default. Within thirty (30) calendar days after the end of each of the QUARTERS of each FISCAL YEAR of each of the BORROWERS, each of the BORROWERS shall submit to the LENDER certificates of the chief financial officers of each of the BORROWERS certifying that: (i) there exists no DEFAULT or EVENT OF DEFAULT, or if a DEFAULT or an EVENT OF DEFAULT exists, specifying the nature thereof, the period of existence thereof and what action such BORROWER proposes to take with respect thereto; (ii) no material adverse change in the condition, financial or otherwise, business, property or results of operations of such BORROWER has occurred since the previous certificate was sent to the LENDER by such BORROWER or, if any such change has occurred, specifying the nature thereof and what action such BORROWER has taken or proposes to take with respect thereto; (iii) all insurance premiums then due have been paid; (iv) all taxes then due have been paid or, for those taxes which have not been paid, a statement of the taxes not paid and a description of such BORROWERS rationale therefor; (v) no litigation, investigation or proceedings, or injunction, writ or restraining order is pending or threatened or, if any such litigation, investigation, proceeding, injunction, writ or order is pending, describing the nature thereof; and (vi) stating whether or not the GUARANTORS and the BORROWERS are in compliance with the covenants in this AGREEMENT, including a calculation of the financial covenants in the schedule attached to such officers certificates in form satisfactory to the LENDER.

Section 6.12.11. Reports To Other Creditors. Promptly after the furnishing thereof, each of the BORROWERS shall submit to the LENDER copies of any statement or report furnished to any other PERSON pursuant to the terms of any indenture, loan, or credit or similar agreement and not otherwise required to be furnished to the LENDER pursuant to any other provisions of this AGREEMENT.

Section 6.12.12. Management Changes. Each of the BORROWERS shall notify the LENDER immediately of any changes in the personnel holding the positions of either President or Chief Financial Officer of any of the BORROWERS

Section 6.12.13. General Information. In addition to the items set forth in subsections 6.12.1 through 6.12.12 above, each of the BORROWERS agrees to submit to the LENDER, or cause to be submitted to the LENDER (a) such other information respecting the condition or operations, financial or otherwise, of each of the BORROWERS as the LENDER may reasonably request from time to time and (b) such financial

statements and other information respecting the condition or operations, financial or otherwise, of each of the GUARANTORS and the LIMITED GUARANTORS as may be required pursuant to the LOAN DOCUMENTS

Section 6.13. Employee Benefit Plans And Guaranteed Pension Plans. Each of the BORROWERS will, and will cause each of its ERISA AFFILIATES to: (a) comply with all requirements imposed by ERISA and the CODE, applicable from time to time to any of its GUARANTEED PENSION PLANS or EMPLOYEE BENEFIT PLANS; (b) make full payment when due of all amounts which, under the provisions of EMPLOYEE BENEFIT PLANS or under applicable LAW, are required to be paid as contributions thereto; (c) not permit to exist any material accumulated funding deficiency, whether or not waived; (d) file on a timely basis all reports, notices and other filings required by any governmental agency with respect to any of its EMPLOYEE BENEFITS PLANS; (e) make any payments to MULTIEMPLOYER PLANS required to be made under any agreement relating to such MULTIEMPLOYER PLANS, or under any LAW pertaining thereto; (f) not amend or otherwise alter any GUARANTEED PENSION PLAN if the effect would be to cause the actuarial present value of all benefit commitments under any GUARANTEED PENSION PLAN to be less than the current value of the assets of such GUARANTEED PENSION PLAN allocable to such benefit commitments; (g) furnish to all participants, beneficiaries and employees under any of the EMPLOYEE BENEFIT PLANS, within the periods prescribed by LAW, all reports, notices and other information to which they are entitled under applicable LAW; and (h) take no action which would cause any of the EMPLOYEE BENEFIT PLANS to fail to meet any qualification requirement imposed by the CODE. As used in this Section, the term accumulated funding deficiency has the meaning specified in Section 302 of ERISA and Section 412 of the CODE, and the terms actuarial present value, benefit commitments and current value have the meaning specified in Section 4001 of ERISA.

Section 6.14. Maintenance Of Fixed Assets. Each of the BORROWERS shall maintain and preserve all of its fixed assets in a state of good and efficient working order, normal wear and tear excepted.

Section 6.15. Consignments. Each of the BORROWERS shall advise the LENDER of all PERSONS to whom it has consigned or assigned INVENTORY for sale or distribution, and the location of the INVENTORY subject to any such consignment or assignment arrangement. Each of the BORROWERS shall: (a) duly and properly file financing statements in all applicable places of public record with respect to each of such consignments or assignments, which filings shall comply with Section 9-114 of the 1972 version of the Uniform Commercial Code, as amended from time to time, and with all other requirements necessary for such BORROWER to protect its interests therein under applicable LAWS; (b) supply the LENDER with prior evidence of such filing and with a financing statement, judgment and tax lien search in the name of the consignee or assignee in all applicable places of public record; and
(c) provide written notification to any holder of any security interests in the inventory of the consignee or assignee who has filed a financing statement before such BORROWER files its financing statement, which notice shall state that such BORROWER expects to deliver goods or assignments, shall describe the goods by item or type and which notification shall be received by any such holder within five (5) years before the consignee receives possession of the goods and at five (5) year intervals thereafter.

Section 6.16. Foreign Receivables. As to any RECEIVABLE from an ACCOUNT DEBTOR not domiciled in the United States of America or which otherwise arises in connection with INVENTORY for export sales or export accounts receivable and contract rights, the BORROWERS shall execute all documents and instruments and shall take all steps or actions as may be required by the LENDER to ensure that such RECEIVABLE is covered by export credit insurance insuring comprehensive (commercial and political) risks as the LENDER may deem necessary or advisable, or if approved by the LENDER, fully secured by a perfected assignment of proceeds of an irrevocable confirmed letter of credit issued by a United States bank fully acceptable to the LENDER in form and substance.

Section 6.17. Federal Assignment Of Claims Act. Each of the BORROWERS shall notify the LENDER if any RECEIVABLE arises out of a contract with the United States of America, or any department, agency or instrumentality thereof, and shall execute all documents or instruments and shall take all steps or actions as may be required by the LENDER so that all monies due or to become due under such contract are assigned to the LENDER and notice given thereof to the United States in accordance with the requirements of the Federal Assignment of Claims Act, as amended.

Section 6.18. Compliance With Laws. Each of the BORROWERS shall comply in all material respects with all applicable LAWS, including, but not limited to, all LAWS with respect to: (a) all restrictions, specifications, or other requirements pertaining to products that it sells or to the services it performs; (b) the conduct of its business;
(c) the use, maintenance, and operation of the real and personal properties owned or leased by it in the conduct of its business; and
(d) the obtaining and maintenance of all necessary licenses, franchises, permits and governmental approvals, registrations and exemptions necessary to engage in its business. Without limiting the generality of the preceding Section, each of the BORROWERS shall: (i) comply in all material respects with, and ensure such compliance by all tenants and subtenants, if any, with, all applicable ENVIRONMENTAL LAWS and obtain and comply in all material respects with and maintain, and ensure that all tenants and subtenants obtain and comply with and maintain, any and all licenses, approvals, notifications, registrations or permits required by applicable ENVIRONMENTAL LAWS;
(ii) conduct and complete all investigations, studies, sampling and testing, and all remedial, removal and other actions required under ENVIRONMENTAL LAWS, and promptly comply with all lawful orders and directives of any governmental authority regarding ENVIRONMENTAL LAWS; and (iii) defend, indemnify and hold harmless the LENDER, and its employees, agents, officers and directors, from and against any claims, demands, penalties, fines, liabilities, settlements, damages, costs and expenses of whatever kind or nature known or unknown, contingent or otherwise, arising out of, or in any way relating to the violation of, noncompliance with or liability under any ENVIRONMENTAL LAWS applicable to the operations of each of the BORROWERS, or any orders, requirements or demands of governmental authorities related thereto, including, without limitation, reasonable attorneys and consultants fees, investigation and laboratory fees, response costs, court costs and litigation expenses, except to the extent that any of the foregoing directly result from the gross negligence or willful misconduct of the party seeking indemnification therefor. Each of the BORROWERS agrees to promptly notify the LENDER of any RELEASE of a REGULATED SUBSTANCE on, to or from any FACILITY in violation of any ENVIRONMENTAL LAWS or of any notice received by such BORROWER that such BORROWER or any FACILITY is not in compliance with any ENVIRONMENTAL LAWS.

Section 6.19. Formation of Subsidiaries. The BORROWERS shall deliver, or cause to be delivered to the LENDER, the following (but without implying the LENDERS consent to the formation of same unless specifically granted) :

Section 6.19.1. Domestic Subsidiaries. Each DOMESTIC SUBSIDIARY, promptly upon its acquisition or creation, shall execute and deliver to the LENDER: (a) a guaranty agreement in form and substance satisfactory to the LENDER pursuant to which such SUBSIDIARY shall guarantee, among other things, the absolute full payment and performance by the BORROWERS of the OBLIGATIONS; (b) a complete copy of such SUBSIDIARYS charter, or other organizational document filed of public record, with all amendments thereto, certified by the Secretary of State of the jurisdiction of formation; (c) a copy of such SUBSIDIARYs bylaws, operating agreement, or partnership agreement, as applicable, with all amendments thereto; (d) a certificate of good standing dated as of a recent date from the jurisdiction of formation and each jurisdiction in which such SUBSIDIARY is required by the nature of its business or assets to qualify to do business; (e) a certificate of corporate resolutions, partnership or limited liability company certificate, as applicable, and incumbency from the duly authorized and appropriate representative of such SUBSIDIARY in form and substance satisfactory to the LENDER; and (f) an opinion of counsel satisfactory to the LENDER opining as to such matters in connection with such SUBSIDIARY as may be reasonably requested by the LENDER. The repayment and performance of the OBLIGATIONS and of the obligations of the SUBSIDIARY to the LENDER shall be secured by (i) the pledge of one hundred percent (100%) of the issued and outstanding CAPITAL STOCK of the SUBSIDIARY, pursuant to the terms and conditions of a pledge agreement, stock powers and financing statements, all in form and substance acceptable to the LENDER and (ii) a first priority perfected lien and security interest in all real and personal property (both tangible and intangible), whether now existing or hereafter arising, of such SUBSIDIARY, pursuant to security agreements in form and substance satisfactory to the LENDER, subject only to PERMITTED LIENS.

Section 6.19.2. Foreign Subsidiaries. Each direct SUBSIDIARY of the BORROWERS or of any DOMESTIC SUBSIDIARY that is not a DOMESTIC
SUBSIDIARY (FIRST TIER FOREIGN SUBSIDIARY), promptly upon its acquisition or creation, shall execute and deliver to the LENDER: (a) a complete copy of such FIRST TIER FOREIGN SUBSIDIARYS charter, or other organizational document filed of public record, with all amendments thereto, certified by the Secretary of State of the jurisdiction of formation; (b) a copy of such FIRST TIER FOREIGN SUBSIDIARYs bylaws, operating agreement, or partnership agreement, as applicable, with all amendments thereto; (c) if such jurisdiction generally issues such a certification, a certificate of good standing dated as of a recent date from the jurisdiction of formation and each jurisdiction in which such FIRST TIER FOREIGN SUBSIDIARY is required by the nature of its business or assets to qualify to do business; and
(d) an opinion of counsel satisfactory to the LENDER opining as to such matters in connection with such FIRST TIER FOREIGN SUBSIDIARY as may be reasonably requested by the LENDER. The repayment and performance of the OBLIGATIONS and of the obligations of the BORROWER OR DOMESTIC SUBSIDIARY to the LENDER shall be secured by the pledge of sixty-five percent (65%) of the issued and outstanding CAPITAL STOCK of the FIRST TIER FOREIGN SUBSIDIARY, pursuant to the terms and conditions of a pledge agreement, stock powers, financing statements, registration and acknowledgment of pledge by issuer, all in form and substance acceptable to the LENDER. The BORROWERS, DOMESTIC SUBSIDIARY and FIRST TIER FOREIGN SUBSIDIARY shall execute all documents necessary to effectuate the Pledge.

Section 6.20. Year 2000. Each of the BORROWERS has initiated a review and assessment of all areas within its and each of its SUBSIDIARIES businesses and operations that could be adversely affected by the YEAR 2000 PROBLEM (that is, the risk that computer hardware and software used by any of the BORROWERS or any SUBSIDIARIES may be unable to operate, recognize, effectively process and perform properly date-sensitive functions involving certain dates prior to and any date after December 31, 1999 (including recognizing and performing properly date-sensitive functions in leap years)). All computer applications that are material to the businesses and operations of the BORROWERS and SUBSIDIARIES are YEAR 2000 COMPLIANT. Each of the BORROWERS and the SUBSIDIARIES has made inquiry of each of its key suppliers, vendors and customers as to whether such persons are YEAR 2000 COMPLIANT in all material respects. Key suppliers, vendors, and customers refers to those suppliers, vendors and customers of each of the BORROWERS and the SUBSIDIARIES, the business failure of which could result in a material adverse change in the financial condition or business operations of any of the BORROWERS and/or the SUBSIDIARIES, or harm or deterioration to the COLLATERAL. In addition, the BORROWERS will promptly notify the LENDER in the event that any of the BORROWERS discovers or determines that any computer hardware or software (including that of its suppliers, vendors and customers) that is material to any BORROWERS or any SUBSIDIARYS financial condition or business operations is not YEAR 2000 COMPLIANT.

Section 6.21. Minimum EBITDA. The EBITDA of the BORROWERS and their respective consolidated SUBSIDIARIES on a consolidated basis, measured at the end of each QUARTER for the trailing four-QUARTER period ending on the date of determination shall be: (a) as at the QUARTER ending December 31, 1999, not less than Four Million Two Hundred Thousand Dollars ($4,200,000.00) and (b) as at the end of each QUARTER thereafter, not less than Four Million Five Hundred Thousand Dollars ($4,500,000.00).

Section 6.22. Minimum Tangible Net Worth Plus Subordinated Debt. As of the end of each QUARTER set forth below, the sum of TANGIBLE NET WORTH plus SUBORDINATED DEBT of the BORROWERS and their respective consolidated SUBSIDIARIES on a consolidated basis shall be not less than the respective amount set forth for such QUARTER (each such amount, calculated as set forth in clauses (a), (b), and (c) below, a Minimum TNW Requirement):

(a) for the QUARTER ending December 31, 1999: $8,800,000.00;

(b) for each of the QUARTERS ending March 31, 2000, June 30, 2000, and September 30, 2000: $9,500,000.00;

(c) for the QUARTERS ending December 31, 2000, March 31, 2001, June 30, 2001, and September 30, 2001: $9,500,000.00 plus 50% of NET PROFIT AFTER TAX of the BORROWERS for the FISCAL YEAR ending December 31, 2000;

(d) for the QUARTERS ending December 31, 2001, March 31, 2002, June 30, 2002, and September 30, 2002: the Minimum TNW Requirement calculated in accordance with the immediately preceding clause (c), plus 50% of NET PROFIT AFTER TAX of the BORROWERS for the FISCAL YEAR ending December 31, 2001;

(e) for the QUARTER ending December 31, 2002: the Minimum TNW Requirement calculated in accordance with the immediately preceding clause (d), plus 50% of NET PROFIT AFTER TAX of the BORROWERS for the FISCAL YEAR ending December 31, 2002.

Section 6.23. Minimum Working Capital. The BORROWERS and their respective consolidated SUBSIDIARIES on a consolidated basis shall maintain at all times WORKING CAPITAL of not less than One Million Dollars ($1,000,000.00).

Section 6.24. Ratio of Total Liabilities to Tangible Net Worth Plus Subordinated Debt. The BORROWERS and their respective consolidated SUBSIDIARIES on a consolidated basis shall maintain as of the end of each QUARTER a ratio of (a) TOTAL LIABILITIES to (b) TANGIBLE NET WORTH plus SUBORDINATED DEBT of not greater than 4.50 to 1.00

Section 6.25. Notice of Existence of Default. Each of the BORROWERS shall promptly advise the LENDER of the existence of any condition or event of which it has knowledge, which is or which will be with notice and/or the passage of time a DEFAULT or an EVENT OF DEFAULT.

ARTICLE 7
NEGATIVE COVENANTS

Each of the BORROWERS covenants while any OBLIGATIONS are outstanding and unpaid not to do or to permit to be done or to occur any of the acts or occurrences set forth in this Article 7 without the prior written authorization of the LENDER.

Section 7.1. No Change Of Name, Merger, Etc. None of the BORROWERS shall change its name or enter into any merger, consolidation, reorganization or recapitalization.

Section 7.2. No Sale Or Transfer Of Assets. None of the BORROWERS shall sell, transfer, lease or otherwise dispose of all or any part of the COLLATERAL, or all or any part of any of its other assets, except that (a) INVENTORY may be sold to ACCOUNT DEBTORS in the ordinary course of a BORROWERS business and (b) provided no DEFAULT or EVENT OF DEFAULT has occurred, INVENTORY not qualifying as ELIGIBLE INVENTORY or included in the BORROWING BASE in an amount not to exceed One Hundred Thousand Dollars ($100,000.00), in the aggregate, may be sold to PERSONS other than ACCOUNT DEBTORS.

Section 7.3. No Encumbrance Of Assets. None of the BORROWERS shall mortgage, pledge, grant or permit to exist a security interest in or lien upon any of its assets of any kind, now owned or hereafter acquired, except for PERMITTED LIENS.

Sectio 7.4. No Indebtedness. None of the BORROWERS shall incur, create, assume, or permit to exist any INDEBTEDNESS except: (a) the OBLIGATIONS; (b) INDEBTEDNESS secured by PERMITTED LIENS; (c) the GSE POWER SYSTEMS AB NOTE; (d) INDEBTEDNESS existing on the date of CLOSING and described on Schedule 7.4 attached hereto; (e) intercompany INDEBTEDNESS among the BORROWERS and the GUARANTORS; (f) indebtedness in favor of the seller thereof securing PERMITTED ACQUISITIONS in an amount not to exceed One Million Dollars ($1,000,000.00) in the aggregate, provided the same is unsecured and subordinated to the OBLIGATIONS in writing pursuant to a written subordination agreement satisfactory to the LENDER in form and substance.

Section 7.5. Restricted Payments. None of the BORROWERS shall make any RESTRICTED PAYMENTS, except that provided no DEFAULT or EVENT OF DEFAULT shall have occurred or shall occur after giving effect to such RESTRICTED PAYMENT and provided the total amount of such RESTRICTED PAYMENTS in any given FISCAL YEAR do not exceed fifty percent (50%) of its NET PROFIT AFTER TAX for such FISCAL YEAR: (a) With respect to the GSE POWER SYSTEMS AB NOTE, GSE SYSTEMS may (i) make regularly scheduled payments of interest in accordance with the stated terms of such note, or (ii) permit GSE Power Systems AB to offset dividends due GSE SYSTEMS to repay regularly scheduled payments of interest in accordance with the stated terms of such note or payments of principal in accordance with the stated terms of such note, when and as any of the same become due (but without giving effect to any acceleration or any amendment which would have the effect of increasing such payments) under such note; (b) GSE SYSTEMS may pay dividends to its shareholders; (c) the other BORROWERS may pay cash dividends to GSE SYSTEMS; and (d) a BORROWER may make payments to other BORROWERS.

Section 7.6. Transactions With Affiliates. None of the BORROWERS shall make any contract for the purchase of any items from any AFFILIATE or the performance of any services (including employment services) by any AFFILIATE, unless such contract is on terms which fairly represent generally available terms to be obtained in transactions of a similar nature with independent third PERSONS.

Section 7.7. Loans, Investments And Sale-Leaseback. None of the BORROWERS shall make any (i) advance, loan (except for loans to BORROWERS or GUARANTORS provided such loans are evidenced by a note which is pledged to the LENDER), investment (including, without limitation any advance or loan to, or investment in, a SUBSIDIARY that is not a DOMESTIC SUBSIDIARY), except as set forth on Schedule 7.7 hereto; (ii) material acquisition of assets other than a PERMITTED ACQUISITION; or (iii) enter into any sale-leaseback

transactions.

Section 7.8. No Acquisition Of Equity In Or Assets Of Third Persons. None of the BORROWERS shall acquire any equity interests in, or all or substantially all of the assets of, any PERSON except for PERMITTED ACQUISITIONS. None of the BORROWERS shall form or acquire any SUBSIDIARIES, without LENDERS prior written consent.

Section 7.9. No Assignment. None of the BORROWERS shall assign or attempt to assign its rights under this AGREEMENT.

Section 7.10. No Alteration Of Structure Or Operations. None of the BORROWERS shall amend or change materially its capital structure or its line or scope of business, nor shall it engage in business ventures other than those in which it is presently engaged, except for compatible lines of business.

Section 7.11. Unpermitted Uses Of Loan Proceeds. None of the BORROWERS shall use any part of the proceeds of the LOAN hereunder for any purpose which constitutes a violation of, or is inconsistent with, regulations of the Board of Governors of the Federal Reserve System, including without limitation, the purchase or carrying of (or refinancing of indebtedness originally incurred to purchase or carry) margin securities.

Section 7.12. Long Term Contracts. None of the BORROWERS shall enter into any non-competition contract having a term in excess of thirteen
(13) months or requiring the payment of any monies by any of the BORROWERS on a date occurring more than thirteen (13) months after the date of such contract with any AFFILIATE if such non-competition contract would materially adversely affect the BORROWERS ability to perform the OBLIGATIONS.

Section 7.13. Changes In Fiscal Year. None of the BORROWERS shall change its FISCAL YEAR.

Section 7.14. Limitation On Issuance Of Certain Equity Interests. None of the BORROWERS shall issue or sell any equity interest in such BORROWER that, by its terms or by the terms of any security into which it is convertible or exchangeable, is, or upon the happening of an event or passage of time would be: (a) convertible or exchangeable into a liability of such BORROWER; or (b) required to be redeemed or repurchased, including at the option of the holder, in whole or in part, or has, or upon the happening of an event or passage of time would have, a redemption or similar payment due.

ARTICLE 8
EVENTS OF DEFAULT

The occurrence of any of the following events shall constitute an
EVENT OF DEFAULT.

Section 8.1. Failure To Pay. The failure by any or all of the BORROWERS to pay any of the OBLIGATIONS when and as due.

Section 8.2. Representation Or Warranty. The failure of any representation or warranty made by any or all of the BORROWERS, any of the GUARANTORS, or any of the LIMITED GUARANTORS to be true in any material respect, as of the date made.

Section 8.3. Default Under Negative Covenants. The failure by any of the BORROWERS to perform, or a violation of, any of the negative covenants set forth in Article 7 of this AGREEMENT.

Section 8.4. Default Under Certain Covenants. The failure by any of the BORROWERS to perform or a violation of any of the covenants set forth in Article 3, or Sections 5.18, 6.12, 6.21, 6.22, 6.23, 6.24, or 6.25 of this AGREEMENT, or the failure by any of the BORROWERS to provide to the LENDER any notice of the existence of certain conditions or events required pursuant to the terms of this AGREEMENT

Section 8.5. Default Under Any Other Covenant. Any failure by any of the BORROWERS to comply with or a violation of any of the covenants or agreements of any of the BORROWERS under this AGREEMENT not specifically addressed in any other section or provision of this Article 8, if such breach or failure continues for a period of thirty
(30) days after notice thereof from the LENDER to the BORROWER; provided, that if with respect to any such event or circumstance another provision of this AGREEMENT or another LOAN DOCUMENT specifically provides a cure period different from that set forth in this Section 8.5, such other, specifically provided cure period shall be the sole cure period applicable.

Section 8.6. Default Under Loan Documents. A breach of or default by any or all of the BORROWERS under the terms, covenants, and conditions set forth in any other LOAN DOCUMENT which is not cured within any applicable cure period.

Section 8.7. Invalidity of any Loan Document; Failure of Lien. Any LOAN DOCUMENT or material provision thereof shall cease to be in full force and effect in accordance with its terms, or any of the BORROWERS, the LIMITED GUARANTORS, the GUARANTORS or any other SUBSIDIARY shall, or shall purport to, terminate, revoke, repudiate, declare voidable or void or otherwise contest the validity or enforceability of any LOAN DOCUMENT or material provision thereof or any of the OBLIGATIONS. Any lien or security interest created or

purported to be created by any LOAN DOCUMENT shall fail to be a valid, enforceable and perfected lien or security interest in favor of the LENDER securing the OBLIGATIONS.

Section 8.8. Cross-Default. A breach of or default under the terms, covenants, or conditions of any agreement, loan, guaranty, or other transaction of any or all of the BORROWERS, or any of the GUARANTORS with the LENDER or with any other lender, after expiration of any applicable notice and cure rights.

Section 8.9. Judgments. Any of the BORROWERS, any of the GUARANTORS, or any of the LIMITED GUARANTORS shall suffer final judgments for the payment of money aggregating in excess of One Hundred Thousand Dollars ($100,000.00) and shall not discharge the same within a period of thirty (30) days unless, pending further proceedings, execution has not been commenced or if commenced has been effectively stayed.

Section 8.10. Levy By Judgment Creditor. A judgment creditor of any of the BORROWERS shall obtain possession of any of the COLLATERAL by any means, including but not limited to levy, distraint, replevin or self-help, and none of the BORROWERS shall remedy same within thirty
(30) days thereof; or a writ of garnishment is served on the LENDER relating to any of the accounts of any of the BORROWERS maintained by the LENDER.

Section 8.11. Failure To Pay Liabilities. Any of the BORROWERS shall fail to pay any of its debts, in any material amount, due any third PERSON and such failure shall continue beyond any applicable grace period, unless the applicable BORROWER holds a good faith defense to payment and has set aside reasonable reserves for the payment thereof.

Section 8.12. Involuntary Insolvency Proceedings. The institution of involuntary INSOLVENCY PROCEEDINGS against any of the BORROWERS and the failure of any such INSOLVENCY PROCEEDINGS to be dismissed before the earliest to occur of: (a) the date which is ninety (90) days after the institution of such INSOLVENCY PROCEEDINGS; (b) the entry of any order for relief in the INSOLVENCY PROCEEDING or any order adjudicating any or all of the BORROWERS insolvent; or (c) the impairment (as to validity, priority or otherwise) of any security interest or lien of the LENDER in any of the COLLATERAL.

Section 8.13. Voluntary Insolvency Proceedings. The commencement by any of the BORROWERS of INSOLVENCY PROCEEDINGS.

Section 8.14. Insolvency Proceedings Pertaining To Guarantors, other Subsidiaries or Limited Guarantors. The occurrence of any of the events listed in Sections 8.12 and 8.13 above to any GUARANTOR, or any other SUBSIDIARY, or any LIMITED GUARANTOR.

Section 8.15. Material Adverse Event. The occurrence of a MATERIAL ADVERSE EVENT.

Section 8.16. Default By Guarantors. A breach of or default by any of the GUARANTORS or LIMITED GUARANTORS under the terms, covenants, and conditions set forth in any GUARANTY AGREEMENT any other LOAN DOCUMENT to which it is a party. The failure by any of the GUARANTORS or LIMITED GUARANTORS to satisfy any obligation imposed upon it in the GUARANTY AGREEMENTS.

Section 8.17. Attempt To Terminate Guaranties. The receipt by the LENDER of notice from a GUARANTOR that the GUARANTOR is attempting to terminate or limit any portion of its obligations under a GUARANTY AGREEMENT. The receipt by the LENDER of notice from a LIMITED GUARANTOR that the LIMITED GUARANTOR is attempting to terminate or limit any portion of its obligations under a GUARANTY AGREEMENT other than in accordance with the terms thereof.

Section 8.18. ERISA. If any TERMINATION EVENT shall occur and as of the date thereof or any subsequent date, the sum of the various liabilities of any of the BORROWERS and its ERISA AFFILIATES (such liabilities to include, without limitation, any liability to the Pension Benefit Guaranty Corporation (or any successor thereto) or to any other party under Sections 4062, 4063, or 4064 of ERISA or any other provision of LAW and to be calculated after giving effect to the tax consequences thereof) resulting from or otherwise associated with such event exceeds One Hundred Thousand Dollars ($100,000.00); or any of the BORROWERS or any of its ERISA AFFILIATES as an employer under any MULTIEMPLOYER PLAN shall have made a complete or partial withdrawal from such MULTIEMPLOYER PLANS and the plan sponsors of such MULTIEMPLOYER PLANS shall have notified such withdrawing employer that such employer has incurred a withdrawal liability requiring a payment in an amount exceeding One Hundred Thousand Dollars ($100,000.00).

Section 8.19. Transfer Of Equity Interests. The transfer of any equity interests in any of the BORROWERS (other than GSE SYSTEMS) or any of the GUARANTORS from the ownership existing as of CLOSING and disclosed on the Perfection Certificates delivered by the BORROWERS and the GUARANTORS to the LENDER as of CLOSING, the dissolution of any of the BORROWERS or any of the GUARANTORS, the pledge of any equity interests of any of the BORROWERS (other than GSE SYSTEMS) or any of the GUARANTORS except to the LENDER, or the issuance of additional equity interests in any of the BORROWERS (other than GSE SYSTEMS) or any of the GUARANTORS which issuance has the effect of diluting the existing interests of the existing equity holders in any of such BORROWERS or GUARANTORS.

Section 8.20. Change in Control. Any PERSON or group of PERSONS (within the meaning of Section 13(d) of the Securities Exchange Act of 1934, as amended) other than GP Strategies Corporation or ManTech International Corporation shall obtain ownership or control in one or more series of transactions of more than twenty percent (20%) of the common stock or twenty percent (20%) of the voting power of GSE

SYSTEMS entitled to vote in the election of members of the board of directors of GSE SYSTEMS. Any PERSON or group of PERSONS (within the meaning of Section 13(d) of the Securities Exchange Act of 1934, as amended) shall obtain ownership or control in one or more series of transactions of more than thirty percent (30%) of the common stock or thirty percent (30%) of the voting power of GSE SYSTEMS entitled to vote in the election of members of the board of directors of GSE SYSTEMS. For purposes of this Section 8.20, a PERSON shall be deemed to have ownership of all shares that any such PERSON has the right to acquire without condition, other than passage of time, whether such right is exercisable immediately or only after the passage of time.

Section 8.21. Indictment Of Borrowers, Guarantors or Limited Guarantors. The indictment of any of the BORROWERS, any of the GUARANTORS, or any of the LIMITED GUARANTORS for a felony under any federal, state or other LAW.

Section 8.22. Injunction. The issuance of any injunction against any of the BORROWERS which enjoins or restrains any of the BORROWERS from continuing to conduct any material part of any BORROWERS business affairs.

Section 8.23. Payment On Subordinated Debt. The payment by any of the BORROWERS on the account of any SUBORDINATED DEBT which payment is not specifically permitted by the LENDER under the terms of this AGREEMENT or any written subordination agreements existing for the benefit of the LENDER.

ARTICLE 9
RIGHTS AND REMEDIES ON THE OCCURRENCE OF AN EVENT OF DEFAULT

Section 9.1. Lenders Specific Rights And Remedies. In addition to all other rights and remedies provided by LAW and the LOAN DOCUMENTS, upon the occurrence of any EVENT OF DEFAULT, the LENDER may: (a) accelerate and call immediately due and payable all or any part of the OBLIGATIONS; (b) seek specific performance or injunctive relief to enforce performance of the undertakings, duties, and agreements provided in the LOAN DOCUMENTS, whether or not a remedy at law exists or is adequate; (c) exercise any rights of a secured creditor under the Uniform Commercial Code, as adopted and amended in New York, including the right to take possession of the COLLATERAL without the use of judicial process or hearing of any kind and the right to require any or all of the BORROWERS to assemble the COLLATERAL at such place as the LENDER may specify; and (d) reduce the BILLED COMMERCIAL ACCOUNTS BORROWING BASE, BILLED GOVERNMENT ACCOUNTS BORROWING BASE, UNBILLED GOVERNMENT ACCOUNTS BORROWING BASE, INVENTORY BORROWING BASE, ADDITIONAL COLLATERAL BORROWING BASE, or DOLLAR CAP.

Section 9.2. Automatic Acceleration. Upon the occurrence of an EVENT OF DEFAULT as described in Sections 8.12 or 8.13 of this AGREEMENT, the OBLIGATIONS shall be automatically accelerated and due and payable without any notice, demand or action of any type on the part of the LENDER.

Section 9.3. Sale Of Collateral. In addition to any other remedy provided herein, upon the occurrence of an EVENT OF DEFAULT, the LENDER, in a commercially reasonable fashion, may sell at public or private sale or otherwise realize upon, the whole or, from time to time, any part of all COLLATERAL which is personal property, or any interest which any of the BORROWERS may have therein. Pending any such action, the LENDER may collect and liquidate the COLLATERAL. After deducting from the proceeds of sale or other disposition of such COLLATERAL all expenses, including all expenses for legal services, the LENDER shall apply such proceeds toward the satisfaction of the OBLIGATIONS. Any remainder of the proceeds after satisfaction in full of the OBLIGATIONS shall be distributed as required by applicable LAW. Notice of any sale or other disposition (other than sales or other dispositions of COLLATERAL which is perishable or threatens to decline speedily in value or is of a type customarily sold on a recognized market) shall be given to the BORROWERS not less than ten (10) calendar days before the time of any intended public sale or of the time after which any intended private sale or other disposition of the COLLATERAL is to be made, which each of the BORROWERS hereby agrees shall be commercially reasonable notice of such sale or other disposition. The BORROWERS shall assemble, or shall cause to be assembled, at the BORROWERS own expense, the COLLATERAL at such place or places as the LENDER shall designate. At any such sale or other disposition, the LENDER may, to the extent permissible under applicable law, purchase the whole or any part of the COLLATERAL, free from any right of redemption on the part of any of the BORROWERS, which right is hereby waived and released to the extent lawfully permitted. Without limiting the generality of any of the rights and remedies conferred upon the LENDER under this Section, the LENDER may, to the full extent permitted by applicable law: (a) enter upon the premises of any of the BORROWERS, exclude therefrom any of the BORROWERS or any PERSON connected therewith, and take immediate possession of the COLLATERAL, either personally or by means of a receiver appointed by a court of competent jurisdiction; (b) at the LENDERS option, use, operate, manage, and control the COLLATERAL in any lawful manner; (c) collect and receive all income, revenue, earnings, issues, and profits therefrom; and (d) maintain, alter or remove the COLLATERAL as the LENDER may determine in the LENDERS discretion.

Section 9.4. Letters Of Credit. Upon the request of the LENDER, at any time after the occurrence of an EVENT OF DEFAULT, the BORROWERS shall immediately deposit in a cash collateral account at the LENDER, over which the LENDER has sole access, an amount equal to the aggregate then undrawn and unexpired amount of all LETTERS OF CREDIT. Amounts held in such cash collateral account shall be applied by the LENDER to the payment of drafts drawn under LETTERS OF CREDIT, and the unused portion thereof after all LETTERS OF CREDIT shall have expired or been fully drawn upon shall be applied to repay the other OBLIGATIONS. After all LETTERS OF CREDIT shall have expired or have been fully drawn upon and all other OBLIGATIONS shall have been paid in full, the balance, if any, in such cash collateral account shall be returned to the BORROWERS. In the event the BORROWERS fail to deposit into the cash collateral account an amount equal to the then undrawn and unexpired amount of all LETTERS OF CREDIT, the LENDER shall be authorized to deposit into such cash collateral account proceeds from the liquidation of the COLLATERAL until the balance in such account equals the aggregate then

undrawn and unexpired amount of all LETTERS OF CREDIT.

Section 9.5. Remedies Cumulative. The rights and remedies provided in this AGREEMENT and in the other LOAN DOCUMENTS or otherwise under applicable LAWS shall be cumulative and the exercise of any particular right or remedy shall not preclude the exercise of any other rights or remedies in addition to, or as an alternative of, such right or remedy.

ARTICLE 10
ENERAL CONDITIONS AND TERMS

Section 10.1. Obligations Are Unconditional. The payment and performance of the OBLIGATIONS shall be the absolute and unconditional joint and several duty and obligation of each of the BORROWERS, and shall be independent of any defense or any rights of set-off, recoupment or counterclaim which any of the BORROWERS might otherwise have against the LENDER. The BORROWERS shall pay the payments of the principal and interest to be made upon the OBLIGATIONS, free of any deductions and without abatement, diminution or set-off other than those herein expressly provided. Until such time as the OBLIGATIONS have been fully paid and performed, none of the BORROWERS shall: (a) suspend or discontinue any payments required by the LOAN DOCUMENTS; and (b) fail to perform and observe all of each BORROWERS covenants and agreements set forth in the LOAN DOCUMENTS.

Section 10.2. Indemnity. Each of the BORROWERS agrees to defend, indemnify and hold harmless the LENDER and the entities affiliated with the LENDER and all of the LENDERS and its affiliated entities employees, agents, officers and directors, from and against any losses, penalties, fines, liabilities, settlements, damages, costs and expenses, suffered in connection with any claim, investigation, litigation or other proceeding (whether or not the LENDER or an affiliated entity is a party thereto) and the prosecution and defense thereof, arising out of or in any way connected with any LOAN DOCUMENT, including without limitation reasonable attorneys and consultants fees, except to the extent that any of the foregoing directly result from the gross negligence or willful misconduct of the party seeking indemnification therefor. Notwithstanding any termination of this AGREEMENT or payment and performance of the OBLIGATIONS, the indemnities provided for herein shall continue in full force and effect and shall protect all of the above-described PERSONS against events arising after such termination, payment or performance as well as before.

Section 10.3. Lender Expenses. All LENDER EXPENSES shall be paid by the BORROWERS, whether incurred prior to or after CLOSING, such that the subject transactions shall at all times be cost free to the LENDER.

Section 10.4. Authorization To Obtain Financial Information. Each of the BORROWERS hereby irrevocably authorizes its accounting firm to provide the LENDER from time to time with such information as may be requested by the LENDER, and hereby authorizes the LENDER to contact directly such accounting firm in order to obtain such information.

Section 10.5. Incorporation; Construction Of Inconsistent Provisions. The terms and conditions of the LOAN DOCUMENTS are incorporated by reference and made a part hereof, as if fully set forth herein. In the event of any inconsistency between this AGREEMENT and any other LOAN DOCUMENT, such inconsistency shall be construed, interpreted, and resolved so as to benefit the LENDER, independent of whether this AGREEMENT or another LOAN DOCUMENT controls, and the LENDERS election of which interpretation or construction is for the LENDERS benefit shall govern.

Section 10.6. Waivers. The LENDER at any time or from time to time may waive all or any rights under this AGREEMENT or any other LOAN DOCUMENT, but any waiver or indulgence by the LENDER at any time or from time to time shall not constitute a future waiver of performance or exact performance by any of the BORROWERS.

Section 10.7. Continuing Obligation Of Borrowers. The terms, conditions, and covenants set forth herein and in the LOAN DOCUMENTS shall survive CLOSING and shall constitute a continuing obligation of each of the BORROWERS during the course of the transactions contemplated herein. The security interests, liens and other security provided by this AGREEMENT shall remain in effect so long as any OBLIGATION, whether direct or contingent, is outstanding, unpaid or unsatisfied.

Section 10.8. Choice Of Law. The laws of the State of New York (excluding, however, conflict of law principles) shall govern and be applied to determine all issues relating to this AGREEMENT and the rights and obligations of the parties hereto, including the validity, construction, interpretation, and enforceability of this AGREEMENT and its various provisions and the consequences and legal effect of all transactions and events which resulted in the execution of this AGREEMENT or which occurred or were to occur as a direct or indirect result of this AGREEMENT having been executed.

Section 10.9. Submission To Jurisdiction; Venue; Actions Against Lender. For purposes of any action, in law or in equity, which is based directly or indirectly on this AGREEMENT, any other LOAN DOCUMENT or any matter related to this AGREEMENT or any other LOAN DOCUMENT, including any action for recognition or enforcement of any of the LENDERS rights under the LOAN DOCUMENTS or any judgment obtained by the LENDER in respect thereof, each of the BORROWERS hereby:

Section 10.9.1. Jurisdiction. Irrevocably submits to the non-exclusive general jurisdiction of the courts of the State of New York and the State of Maryland and, if a basis for federal jurisdiction exists at any time, the courts of the United States of America for the Southern District of New York and for the District of Maryland.

Section 10.9.2. Venue. Agrees that venue shall be proper in any circuit court in the State of New York or in the State of Maryland, as selected by the LENDER, and, if a basis for federal jurisdiction exists, the courts of the United States of America for the Southern District of New York or for the District of Maryland (as selected by the LENDER).

Section 10.9.3. Waiver Of Objections To Venue. Waives any right to object to the maintenance of any suit in any of the courts specified in Section 10.9.2 above on the basis of improper venue or convenience of forum. Each of the BORROWERS further agrees that it shall not institute any suit or other action against the LENDER, in law or in equity, which is based directly or indirectly on this AGREEMENT, any other LOAN DOCUMENT or any matter related to this AGREEMENT or any other LOAN DOCUMENT, in any court other than a court specified in
Section 10.9.2 above; provided, that in any instance in which there is then pending a suit instituted by the LENDER against any of the BORROWERS in a court other than a court specified in Section 10.9.2 above, the BORROWERS may file in such suit any counterclaim which they have against the LENDER. Each of the BORROWERS agrees that any suit brought by it against the LENDER not in accordance with this paragraph should be forthwith dismissed or transferred to a court specified in
Section 10.9.2 above.

Section 10.10. Notices. Any notice required or permitted by or in connection with this AGREEMENT shall be in writing and shall be made by facsimile (confirmed on the date the facsimile is sent by one of the other methods of giving notice provided for in this Section) or by hand delivery, by Federal Express, or other similar overnight delivery service, or by certified mail, unrestricted delivery, return receipt requested, postage prepaid, addressed to the LENDER or the BORROWERS at the appropriate address set forth below or to such other address as may be hereafter specified by written notice by the LENDER or the BORROWERS. Notice shall be considered given as of the date of the facsimile or the hand delivery, one (1) calendar day after delivery to Federal Express or similar overnight delivery service, or three (3) calendar days after the date of mailing, independent of the date of actual delivery or whether delivery is ever in fact made, as the case may be, provided the giver of notice can establish the fact that notice was given as provided herein. If notice is tendered pursuant to the provisions of this Section and is refused by the intended recipient thereof, the notice, nevertheless, shall be considered to have been given and shall be effective as of the date herein provided.

If to the LENDER:

NATIONAL BANK OF CANADA
125 West 55th Street
New York, New York 10019

And

c/o NATIONAL BANK OF CANADA
401 E. Pratt Street, Suite 631
Baltimore, Maryland 21202
Attn: Robert A. Incorvati, Vice President
Facsimile: (410) 837-8359

If to the BORROWERS:

GSE SYSTEMS, INC.
GSE PROCESS SOLUTIONS, INC.
GSE POWER SYSTEMS, INC.
9189 Red Branch Road
Columbia, Maryland 21045
Attn: Jeffery G. Hough, Sr.Vice President
Facsimile: (410) 772-3599

With A Courtesy Copy To:

GOLDEN & NELSON, PLLC
8285 Highglade Court
Millersville, Maryland 21108
Attn.: Hedy L. Nelson, Esquire
Facsimile No.: (410) 729-2246

The failure of the LENDER to send the above courtesy copy shall not impair the effectiveness of notice given to the BORROWERS in the manner provided herein.

Section 10.11. Participations. The LENDER reserves the right to assign all or any portion of its interests in any of the OBLIGATIONS or the LOAN DOCUMENTS or to participate with other lending institutions any of the OBLIGATIONS and the LOAN DOCUMENTS on such terms and at such times as the LENDER may determine from time to time, all without any consent thereto or notice thereof to the

BORROWERS. Each of the BORROWERS hereby grants to each participating lending institution, to the full extent of the OBLIGATIONS, the right to set off deposit accounts maintained by the BORROWERS with such institution, and each of the BORROWERS agrees to pay the LENDER EXPENSES of any such participating lending institution which arise or are incurred as a result of the occurrence of an EVENT OF DEFAULT.

Section 10.12. Miscellaneous Provisions. The parties agree that: (a) this AGREEMENT shall be effective as of the date first above written, independent of the date of execution or delivery hereof; (b) this AGREEMENT shall be binding upon the parties and their successors and assigns, contains the final and entire agreement and understanding of the parties, and may neither be amended or altered except by a writing signed by the parties; (c) time is strictly of the essence of this AGREEMENT; (d) as used herein, the singular includes the plural and the plural includes the singular, the use of any gender applies to all genders; (e) the captions contained herein are for purposes of convenience only and are not a part of this AGREEMENT; (f) a carbon, photographic, photocopy or other reproduction of a security agreement or financing statement shall be sufficient as a financing statement;
(g) this AGREEMENT may be delivered by facsimile, and a facsimile of any partys signature to this AGREEMENT shall be deemed an original signature for all purposes; and (h) this AGREEMENT may be executed in several counterparts, each of which shall be an original, but all of which, when taken together, shall constitute one and the same document. Section 10.13. Waiver Of Trial By Jury. Each party to this AGREEMENT agrees that any suit, action, or proceeding, whether claim or counterclaim, brought or instituted by any party hereto or any successor or assign of any party on or with respect to this AGREEMENT or any other LOAN DOCUMENT or which in any way relates, directly or indirectly, to the OBLIGATIONS or any event, transaction, or occurrence arising out of or in any way connected with any of the OBLIGATIONS, or the dealings of the parties with respect thereto, shall be tried only by a court and not by a jury. EACH PARTY HEREBY EXPRESSLY WAIVES ANY RIGHT TO A TRIAL BY JURY IN ANY SUCH SUIT, ACTION, OR PROCEEDING. [Signatures begin on next page]

IN WITNESS WHEREOF, the LENDER and the BORROWERS have duly executed this AGREEMENT under seal as of the date first above written.

WITNESS/ATTEST: THE BORROWERS:

GSE SYSTEMS, INC.

By: (SEAL)
Jeffery G. Hough,
Senior Vice President

GSE PROCESS SOLUTIONS, INC.

By: (SEAL)
Jeffery G. Hough,
Senior Vice President

GSE POWER SYSTEMS, INC.

By: (SEAL)
Jeffery G. Hough,
Senior Vice President

THE LENDER:

NATIONAL BANK OF CANADA

By: (SEAL)
Robert A. Incorvati,
Vice President

By: (SEAL)
Michael E. Williams,

Vice President/Manager

Exhibit 10.3

Baltimore, Maryland
$10,000,000.00 March 23, 2000

REVOLVING LOAN PROMISSORY NOTE

FOR VALUE RECEIVED, the undersigned GSE SYSTEMS, INC., a Delaware corporation, GSE PROCESS SOLUTIONS, INC., a Delaware corporation, and GSE POWER SYSTEMS, INC., a Delaware corporation (collectively, BORROWERS), jointly and severally, promise to pay to the order of NATIONAL BANK OF CANADA, a Canadian chartered bank (LENDER), at its New York branch, 125 West 55th Street, New York, New York 10019, or at such other places as the holder of this Promissory Note may from time to time designate, the principal sum of Ten Million Dollars ($10,000,000.00), or so much as has been advanced to the BORROWERS as the proceeds of the LOAN, as such term is defined and described in the Loan And Security Agreement of even date herewith (as the same may be amended, modified, extended, renewed, restated, supplemented or replaced from time to time AGREEMENT between the LENDER and the BORROWERS, together with interest on the unpaid principal balance from time to time outstanding at the rate or rates specified in the AGREEMENT until paid in full and any and all other sums which may be owing to the holder of this Promissory Note by the BORROWERS pursuant to this Promissory Note, on or before the TERMINATION DATE, as such term is defined in the AGREEMENT, or such earlier date as is required by the AGREEMENT. This Promissory Note is the NOTE, as such term is defined in the AGREEMENT. The following terms shall apply to this Promissory Note.

1. Interest Rates, Calculation Of Interest, And Terms Of Repayment. The BORROWERS, jointly and severally, promise to pay principal and all interest which accrues on the unpaid balance of this Promissory Note from the date of this Promissory Note until such time as the obligations evidenced hereunder have been paid in full, at the times and in accordance with the covenants, procedures and requirements set forth in the AGREEMENT. Interest shall accrue, be payable, and shall be calculated as set forth in the AGREEMENT. The BORROWERS, jointly and severally, further promise to pay all default interest, late payment charges, fees and other expenses, costs and payment obligations as are required by the AGREEMENT to be made by any of the BORROWERS to or for the account of the LENDER.

2. Application Of Payments. Except as expressly provided to the contrary in the AGREEMENT, all payments made hereunder shall be applied first to late payment charges or other sums owed to the holder, next to accrued interest, and then to principal, or in such other order or proportion as the holder, in the holders sole discretion, may elect from time to time.

3. Prepayment. The BORROWERS rights to prepay this Promissory Note shall be governed by the terms and conditions of the AGREEMENT.

4. Rights Upon Occurrence of an Event of Default. Upon the occurrence of an EVENT OF DEFAULT, as such term is defined in the AGREEMENT, the holder of this Promissory Note shall have the following rights in addition to all other rights and remedies as are authorized by the AGREEMENT or otherwise available to the holder under applicable laws:

4.1. Acceleration. The holder of this Promissory Note, in the holders sole discretion and without notice or demand, may accelerate and declare due and immediately owing the entire unpaid principal balance plus accrued interest and all other sums payable to the holder in accordance with the terms of any of the LOAN DOCUMENTS, as such term is defined in the AGREEMENT.

4.2. Default Interest Rate. The holder of this Promissory Note, in the holders sole discretion and without notice or demand, may raise the rate of interest accruing on the unpaid principal balance by two (2) percentage points above the rate of interest otherwise applicable, independent of whether the holder elects to accelerate the unpaid principal balance as a result of such default, unless prior to the imposition of the default rate of interest, the BORROWERS cure such event to the satisfaction of the holder hereof. Any individual waiver of the holders right to impose the default rate of interest shall not be considered a waiver of this Section or any future right of the holder to impose the default rate of interest pursuant to this Section.

4.3. Confession Of Judgment. Each of the BORROWERS authorizes any attorney admitted to practice before any court of record in the United States to appear on its behalf in any court in one or more proceedings, or before any clerk thereof or prothonotary, or other court official, and to confess judgment against the BORROWERS in favor of the holder of this Promissory Note in the full amount due on this Promissory Note (including principal, accrued interest and any and all charges, fees and costs) plus attorneys fees, equal to fifteen percent (15%) of the amount then due, plus court costs, all without prior notice or opportunity of the BORROWERS for prior hearing. Each of the BORROWERS agrees and consents that venue and jurisdiction shall be proper in the Circuit Court of any County of the State of Maryland or of Baltimore City, Maryland, or of the State of New York, or in the United States District Court for the District of Maryland or the United States District Court for the Southern District of New York. Each of the BORROWERS waives the benefit of any and every statute, ordinance, or rule of court which may be lawfully waived conferring upon it any right or privilege of exemption, homestead rights, stay of execution, or supplementary proceedings, or other relief from the enforcement or immediate enforcement of a judgment or related proceedings on a judgment, but without waiving any right the BORROWER may have to file a motion to open, modify or vacate a judgment by confession in accordance with Rule 2-611(c) of the Maryland Rules or the equivalent statute under New York law. The authority and power to appear for and enter judgment against any or all of the BORROWERS, jointly and severally, shall not be exhausted by one or more exercises thereof, or by any imperfect exercise thereof, and shall not be extinguished by any judgment entered pursuant thereto; such authority and power may be exercised on one or more occasions from time to time, in the same or different jurisdictions, as often as the holder shall deem necessary, convenient, or proper.

5. Interest Rate After Judgment. If judgment is entered against any or all of the BORROWERS on this Promissory Note, the amount of the judgment entered (which may include principal, interest, fees, and costs) shall bear interest at the higher of the maximum interest rate imposed

upon judgments by applicable law or the above described default interest rate, to be determined on the date of the entry of the judgment.

6. Expenses Of Collection And Attorneys Fees. Should this Promissory Note be referred to an attorney for collection, whether or not judgment has been confessed or suit has been filed, the BORROWERS, jointly and severally, shall pay all of the holders reasonable costs, fees and expenses, including reasonable attorneys fees, resulting from such referral.

7. Waiver of Defenses. In the event any one or more holders of this Promissory Note transfer this Promissory Note for value, each of the BORROWERS agrees that all subsequent holders of this Promissory Note who take for value and without actual knowledge of a claim or defense of any of the BORROWERS against a prior holder shall not be subject to any claims or defenses which any of the BORROWERS may have against a prior holder, all of which are waived as to the subsequent holder, and that all such subsequent holders shall have all rights of a holder in due course with respect to the BORROWERS even though the subsequent holder may not qualify, under applicable law, absent this section, as a holder in due course. The BORROWERS shall retain all rights and claims which the BORROWERS may have against prior holders despite any such transfers and the waiver of defenses provided in this section as to subsequent holders. Notwithstanding the foregoing, nothing herein shall represent the waiver by any of the BORROWERS of any defense based upon any payment hereof made to any former holder hereof prior to the BORROWERS having been notified of the transfer of this Promissory Note to any subsequent holder.

8. Waiver Of Protest. Each of the BORROWERS, and all parties to this Promissory Note, whether maker, indorser, or guarantor, waive presentment, notice of dishonor and protest.

9. Extensions Of Maturity. All parties to this Promissory Note, whether maker, indorser, or guarantor, agree that the maturity of this Promissory Note, or any payment due hereunder, may be extended at any time or from time to time without releasing, discharging, or affecting the liability of such party.

10. Manner and Method of Payment. All payments called for in this Promissory Note shall be made in lawful money of the United States of America. If made by check, draft, or other payment instrument, such check, draft, or other payment instrument shall represent immediately available funds. In the holdes discretion, any payment made by a check, draft, or other payment instrument shall not be considered to have been made until such time as the funds represented thereby have been collected by the holder. Should any payment date fall on a non-banking day, the BORROWERS shall make the payment on the next succeeding banking day

11. Maximum Rate Of Interest. Any provision contained in any of the LOAN DOCUMENTS to the contrary notwithstanding, the holder of this Promissory Note shall not be entitled to receive or collect, nor shall the BORROWERS be obligated to pay, interest hereunder in excess of the maximum rate of interest permitted by the laws of any state determined to be applicable thereto or the laws of the United States of America applicable to loans in such applicable state or states, and if any provisions of this Promissory Note or of any of the other LOAN DOCUMENTS shall ever be construed or held to permit or require the charging, collection or payment of any amount of interest in excess of that permitted by such laws applicable thereto, the provisions of this paragraph shall control and shall override any contrary or inconsistent provision. The intention of the parties is to at all times conform strictly with all applicable usury laws, and other applicable laws regulating the rates of interest which may be lawfully charged upon the credit facility evidenced by this Promissory Note. The interest to be paid in accordance with the terms of this Promissory Note shall be held subject to reduction to the amount allowed under any usury or other laws as now or hereafter construed by the courts having jurisdiction, and any sums of money paid in excess of the interest rate allowed by law shall be applied in reduction of the principal amounts owing under this Promissory Note.

12. Notices. Any notice or demand required or permitted by or in connection with this Promissory Note shall be given in the manner specified in the AGREEMENT for the giving of notices under the AGREEMENT. Notwithstanding anything to the contrary, all notices and demands for payment from the holder actually received in writing by the BORROWERS shall be considered to be effective upon the receipt thereof by the BORROWERS regardless of the procedure or method utilized to accomplish delivery thereof to the BORROWERS.

13. Assignability. This Promissory Note may be assigned by the LENDER or any holder at any time or from time to time without notice to or consent from the BORROWERS.

14. Binding Nature. This Promissory Note shall inure to the benefit of and be enforceable by the LENDER and the LENDERS successors and assigns and any other person to whom the LENDER or any holder may grant an interest in the BORROWERS obligations hereunder, and shall be binding and enforceable against any or all of the BORROWERS and the BORROWERS respective successors and assigns.

15. Invalidity Of Any Part. If any provision or part of any provision of this Promissory Note shall for any reason be held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions of this Promissory Note and this Promissory Note shall be construed as if such invalid, illegal or unenforceable provision or part thereof had never been contained herein, but only to the extent of its invalidity, illegality, or unenforceability.

16. Choice Of Law. The laws of the State of New York (excluding, however, conflict of law principles) shall govern and be applied to determine all issues relating to this Promissory Note and the rights and obligations of the parties hereto, including the validity, construction, interpretation, and enforceability of this Promissory Note and its various provisions and the consequences and legal effect of all transactions and events which resulted in the issuance of this Promissory Note or which occurred or were to occur as a direct or indirect result of this Promissory Note having been executed.

17. Consent To Jurisdiction; Agreement As To Venue. Each of the BORROWERS irrevocably consents to the non-exclusive jurisdiction of the courts of the State of New York and the State of Maryland and of the United States District Courts for the Southern District of New York and the District of Maryland, if a basis for federal jurisdiction exists. Each of the BORROWERS agrees that venue shall be proper in any circuit court of the State of New York or the State of Maryland selected by the LENDER or in the United States District Court for the Southern District of New York or the District of Maryland (as selected by the LENDER if a basis for federal jurisdiction exists and waives any right to object to the maintenance of a suit in any of the state or federal courts of the State of New York or the State of Maryland on the basis of improper venue or of inconvenience of forum.

18. Unconditional Obligations. The BORROWERS obligations under this Promissory Note shall be the joint and several, absolute and unconditional duty and obligation of each of the BORROWERS and shall be independent of any rights of set-off, recoupment or counterclaim which any of the BORROWERS might otherwise have against the holder of this Promissory Note. The BORROWERS, jointly and severally, shall pay absolutely the payments of principal, interest, fees and expenses required hereunder, free of any deductions and without abatement, diminution or set-off.

19. Seal and Effective Date. This Promissory Note is an instrument executed under seal and is to be considered effective and enforceable as of the date set forth on the first page hereof, independent of the date of actual execution and delivery

20. Tense; Gender; Defined Terms; Section Headings. As used herein, the singular includes the plural and the plural includes the singular. A reference to any gender also applies to any other gender. Defined terms are entirely capitalized throughout. The section headings are for convenience only and are not part of this Promissory Note.

21. Actions Against Lender. Any action brought by any of the BORROWERS against the LENDER which is based, directly or indirectly, on this Promissory Note or any matter in or related to this Promissory Note, including but not limited to the making of the loan evidenced hereby or the administration or collection thereof, shall be brought only in the courts of the State of New York or, if the LENDER has instituted action against any or all of the BORROWERS in such courts, the courts of the State of Maryland. The BORROWERS agree that any forum other than the State of New York or the State of Maryland is an inconvenient forum and that a suit brought by the BORROWERS against the LENDER in a court of any state other than the State of New York or the State of Maryland should be forthwith dismissed or transferred to a court located in the State of New York or, if the LENDER has instituted action against the BORROWERS in such state, the State of Maryland, by that Court.

22. Waiver Of Jury Trial. Each of the BORROWERS (by execution of this Promissory Note) and the LENDER (by acceptance of this Promissory Note) agree that any suit, action, or proceeding, whether claim or counterclaim, brought or instituted by or against any or all of the BORROWERS or the LENDER, or any successor or assign any or all of the BORROWERS or the LENDER, on or with respect to this Promissory Note or any of the other LOAN DOCUMENTS, or which in any way relates, directly or indirectly, to the obligations of the BORROWERS to the LENDER under this Promissory Note or any of the other LOAN DOCUMENTS, or the dealings of the parties with respect thereto, shall be tried only by a court and not by a jury. THE BORROWERS AND THE LENDER HEREBY EXPRESSLY WAIVE ANY RIGHT TO A TRIAL BY JURY IN ANY SUCH SUIT, ACTION, OR PROCEEDING. IN WITNESS WHEREOF, each of the BORROWERS has duly executed this Promissory Note under seal as of the date first above written.

WITNESS/ATTEST: GSE SYSTEMS, INC.

_____ By: _____(SEAL)
Jeffery G. Hough,
Senior Vice President

GSE PROCESS SOLUTIONS, INC.

_____ By: _____(SEAL)
Jeffery G. Hough,
Senior Vice President

GSE POWER SYSTEMS, INC.

_____ By:
_____(SEAL)
Jeffery G. Hough,
enior Vice President

ACKNOWLEDGMENTS

STATE OF MARYLAND, CITY/COUNTY OF BALTIMORE, TO WIT:

I HEREBY CERTIFY that on this _____ day of March, 2000, before me, the undersigned Notary Public of the State of Maryland, personally appeared Jeffrey G. Hough, and acknowledged himself to be the Senior Vice President of GSE SYSTEMS, INC., a Delaware corporation, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of GSE SYSTEMS, INC., by himself as Senior Vice President.

IN WITNESS MY Hand and Notarial Seal.

_____(SEAL)
NOTARY PUBLIC

My Commission Expires:

STATE OFMARYLAND, CITY/COUNTY OF BALTIMORE, TO WIT:

I HEREBY CERTIFY that on this _____ day of March, 2000, before me, the undersigned Notary Public of the State of Maryland, personally appeared Jeffery G. Hough, and acknowledged himself to be the Senior Vice President of GSE PROCESS SOLUTIONS, INC., a Delaware corporation, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of GSE PROCESS SOLUTIONS, INC. by himself as Senior Vice President.

IN WITNESS MY Hand and Notarial Seal.

_____(SEAL)
NOTARY PUBLIC

My Commission Expires:

ACKNOWLEDGMENT

STATE OF MARYLAND, CITY/COUNTY OF BALTIMORE, TO WIT:

I HEREBY CERTIFY that on this _____ day of March, 2000, before me, the undersigned Notary Public of the State of Maryland, personally appeared Jeffrey G. Hough, and acknowledged himself to be the Senior Vice President of GSE POWER SYSTEMS, INC., a Delaware corporation, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of GSE POWER SYSTEMS, INC., by himself as Senior Vice President.

IN WITNESS MY Hand and Notarial Seal.

_____(SEAL)
NOTARY PUBLIC

My Commission Expires:

Exhibit 10.4
LIMITED GUARANTY AGREEMENT

THIS LIMITED GUARANTY AGREEMENT (GUARANTY) is given as of March 23, 2000, by MANTECH INTERNATIONAL CORPORATION, a New Jersey corporation (GUARANTOR), for the benefit of NATIONAL BANK OF CANADA, a Canadian chartered bank (LENDER), with respect to the obligations of GSE SYSTEMS, INC., a Delaware corporation, GSE PROCESS SOLUTIONS, INC., a Delaware corporation, and GSE POWER SYSTEMS, INC., a Delaware corporation (individually, a BORROWER and collectively, the BORROWERS), to the LENDER.

RECITALS

The BORROWERS have requested certain credit accommodations from the LENDER as set forth in the Loan and Security Agreement of even date herewith by and between the BORROWERS and the LENDER (as the same may be amended, modified, extended, renewed, restated, supplemented or replaced from time to time LOAN AGREEMENT). The LENDER has agreed to provide the requested credit accommodations to the BORROWERS, but only if, inter alia, the GUARANTOR provides to the LENDER the guaranties of payment and performance set forth in this GUARANTY. The GUARANTOR is willing to provide this GUARANTY to the LENDER in order to induce the LENDER to provide the requested credit accommodations to the BORROWERS.

All capitalized terms used in this GUARANTY without definition shall have the respective meanings given such terms in the LOAN AGREEMENT.

NOW, THEREFORE, in consideration of these premises and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the GUARANTOR hereby agrees to provide to the LENDER the following guaranties and indemnifications.
Section 1. Guaranty. The GUARANTOR guarantees: (a) the payment of any and all sums now or hereafter due and owing to the LENDER by the BORROWERS (or any of them) arising out of, related to, as a result of, or in connection with the LOAN, the LETTERS OF CREDIT, the CREDIT FACILITY, or any other existing or future indebtedness, liability, or obligation of every kind, nature, type, and variety owed by the BORROWERS (or any of them) to the LENDER from time to time, arising out of, related to, as a result of, or in connection with the LOAN AGREEMENT, or any of the transactions contemplated by the LOAN DOCUMENTS (as defined below), including all renewals, refinancings, extensions, substitutions, amendments, and modifications thereof, no matter when or how created, arising, evidenced, or acquired, and whether or not presently contemplated or anticipated, whether joint or several, including, but not limited to, all amounts of principal, interest, charges, reimbursements, advancements, escrows, and fees;
(b) that all sums now or hereafter due and owing by the BORROWERS (or any of them) to the LENDER arising out of, related to, as a result of, or in connection with the LOAN, the LETTERS OF CREDIT, the CREDIT FACILITY, the LOAN AGREEMENT, or any of the transactions contemplated by the LOAN DOCUMENTS, shall be paid when and as due, whether by reason of installment, maturity, acceleration or otherwise, time being of the essence; and (c) the timely, complete, continuous, and strict performance and observance by the BORROWERS of each of the terms, covenants, agreements and conditions contained in any and all existing or future documents, instruments, agreements, and writings of every kind, nature, type, and variety which evidence, reflect, embody, give rise to or secure any and all existing and future indebtedness, liabilities, and obligations of any kind of the BORROWERS (or any of them) to the LENDER arising out of, related to, as a result of, or in connection with the LOAN, the LETTERS OF CREDIT, the CREDIT FACILITY, the LOAN AGREEMENT, or any of the transactions contemplated thereby (together with the LOAN AGREEMENT, collectively, LOAN DOCUMENTS). As used in this GUARANTY, the term OBLIGATIONS shall refer to the obligations of payment, performance, and indemnification which the GUARANTOR has undertaken and assumed pursuant to this GUARANTY, both as described in this Section and in other Sections of this GUARANTY

Section 2. Maximum Amount of Guaranty. The monetary liability of the GUARANTOR with respect to the OBLIGATIONS hereunder shall be limited to the sum of One Million Eight Hundred Thousand Dollars ($1,800,000.00) (GUARANTY MONETARY AMOUNT); provided that the proceeds of the liquidation of any of the collateral securing the obligations of the BORROWERS (or any of them) to the LENDER and any payments made by any of the BORROWERS or any other guarantor, and any other payments obtained from any other source, shall not be applied to, or be considered a discharge of, the OBLIGATIONS until all amounts, other than those which have been guaranteed, have been paid in full. Notwithstanding the immediately preceding sentence, the GUARANTY MONETARY AMOUNT and the limitation set forth in this Section on the monetary liability of the GUARANTOR with respect to the OBLIGATIONS shall not include nor be deemed a limit upon the LENDERS right pursuant to any other Section of this GUARANTY (including, without limitation, Section 19 hereof) to recover from the GUARANTOR costs and expenses, including reasonable attorneys fees, in enforcing or realizing upon this GUARANTY. The GUARANTY MONETARY AMOUNT may be reduced at each fiscal year-end date (beginning with the BORROWERS fiscal year ending December 31, 1999) upon the determination by the LENDER, in each instance, that the BORROWERS have achieved and satisfied the following conditions precedent: (a) no EVENT OF DEFAULT (as defined below and as defined in the LOAN AGREEMENT) shall have occurred hereunder or under the LOAN AGREEMENT during the fiscal year of the BORROWERS ending on such fiscal year-end date; (b) no DEFAULT (as defined in the LOAN AGREEMENT) shall have occurred and be continuing on such fiscal year end date; (c) no default (defined for purposes of this clause (c) to mean any event, occurrence or omission which, with the giving of notice, the passage of time, or both, would constitute an EVENT OF DEFAULT) under this GUARANTY shall have occurred and be continuing on such fiscal year-end date; (d) EBITDA (as defined in the LOAN AGREEMENT) of the BORROWERS and their consolidated subsidiaries for the fiscal year of the BORROWERS ending on such fiscal year-end date, and reported to the LENDER by the BORROWERS in their audited annual financial statements for such fiscal year, shall have been equal to at least Five Million Five Hundred Thousand Dollars ($5,500,000.00); and (e) NET PROFIT AFTER TAX (as defined in the LOAN AGREEMENT) of the BORROWERS and their consolidated subsidiaries for the fiscal year of the BORROWERS ending on such fiscal year-end date, and reported to the LENDER by the BORROWERS in their audited annual financial statements for such fiscal year, shall have been equal to at least One Million Three Hundred Thousand Dollars ($1,300,000.00). On the first fiscal year-end date as of which all of the foregoing conditions precedent are achieved and satisfied, the GUARANTY MONETARY AMOUNT under this GUARANTY shall be

the sum of Nine Hundred Thousand Dollars ($900,000.00). On the second fiscal year-end date as of which all of the foregoing conditions precedent are achieved and satisfied, this GUARANTY shall be released. As used in this Section 2, the term fiscal year shall mean the FISCAL YEAR of the BORROWERS as defined in the LOAN AGREEMENT.

Section 3. Letter of Credit. (a) The GUARANTOR has agreed to deliver to the LENDER an irrevocable standby letter of credit having an original undrawn face amount of Nine Hundred Thousand Dollars ($900,000.00) naming the LENDER as beneficiary, issued by Mellon Bank, First Union National Bank or another bank acceptable to the LENDER, on terms and provisions acceptable to the LENDER and having an expiration date not less than one (1) year from the date of issuance (ManTech L/C). The ManTech L/C will serve as part of the BORROWING BASE for the LOAN to the BORROWERS.

(b) Effective upon the due delivery to the LENDER of the original fully executed, issued and effective ManTech L/C satisfying all of the conditions set forth above, and so long as the ManTech L/C shall be effective, the provisions of Section 2 of this GUARANTY shall be deemed amended to the effect that the GUARANTY MONETARY AMOUNT set forth in Section 2 shall be reduced by an amount equal to the original undrawn face amount of the ManTech L/C. Upon expiration of the ManTech L/C, the amendments to the GUARANTY MONETARY AMOUNT set forth in this clause (b) shall immediately and without further notice be void and of no further force and effect and the provisions of Section 2 shall be as stated in Section 2.

Section 4. Nature Of Guaranty. This GUARANTY: (a) is (i) irrevocable,
(ii) absolute and unconditional, (iii) direct, immediate, and primary, and (iv) one of payment and not just collection; and (b) makes the GUARANTOR a surety to the LENDER with respect to the OBLIGATIONS and the equivalent of a co-obligor with the BORROWERS. Without limiting the foregoing, it is specifically understood that any modification, limitation or discharge of any of the liabilities or obligations of the BORROWERS (or any of them), any other guarantor or any other obligor under any of the LOAN DOCUMENTS, arising out of, or by virtue of, any bankruptcy, arrangement, reorganization or similar proceeding for relief of debtors under federal or state law initiated by or against the BORROWERS (or any of them), any other guarantor or any obligor under any of the LOAN DOCUMENTS shall not modify, limit, lessen, reduce, impair, discharge, or otherwise affect the liability of the GUARANTOR hereunder in any manner whatsoever, and this GUARANTY shall remain and continue in full force and effect.

Section 5. Accuracy Of Representations. The GUARANTOR guaranties that all representations and warranties made by the GUARANTOR to the LENDER prior to or after the date of this GUARANTY are and will continue to be true, correct, accurate, and complete and not knowingly misleading, and, subject to the limitations set forth in Section 2 hereof, the GUARANTOR agrees to indemnify and hold the LENDER harmless from any loss, cost, or expense which the LENDER may suffer, sustain or incur as a result of any representation or statement of the BORROWERS (or any of them) or of the GUARANTOR being materially false, incorrect, inaccurate, incomplete, or knowingly misleading.

Section 6. Representations And Warranties Of Guarantor. To induce the LENDER to accept this GUARANTY for the purposes for which it is given, the GUARANTOR represents and warrants to the LENDER as follows:

(a) The GUARANTOR is a corporation duly organized, validly existing and in good standing under the laws of the state of its incorporation. The GUARANTOR has the lawful power to own its properties and to engage in the businesses it conducts, and is duly qualified and in good standing as a foreign corporation in the jurisdictions wherein the nature of the business transacted by it or property owned by it makes such qualification necessary and the failure to so qualify would have a material adverse effect on the ability of the GUARANTOR to perform its OBLIGATIONS hereunder.

(b) Any financial statements submitted by the GUARANTOR to the LENDER, including any schedules and notes pertaining thereto, have been prepared in accordance with G.A.A.P. (as defined below), and fully and fairly present the financial condition of the GUARANTOR at the dates thereof and the results of operations for the periods covered thereby, and there has been no material adverse change in the financial condition or businesses of the GUARANTOR from the dates thereof to the date hereof, other than as disclosed to the LENDER. All information submitted by or on behalf of the GUARANTOR in connection with any of the OBLIGATIONS is true, accurate and complete in all material respects as of the date made and contains no knowingly false, incomplete or misleading statements.

(c) There are no material actions, suits, investigations, or proceedings pending, or to the knowledge of the GUARANTOR, threatened against the GUARANTOR or the assets of the GUARANTOR, except as specifically disclosed on Schedule 5(c) attached hereto. The GUARANTOR has no material direct or contingent liability known to the GUARANTOR and not previously disclosed to the LENDER, nor does the GUARANTOR know of or have any reason to expect any material adverse change in the GUARANTORS assets, liabilities, properties, business, or condition, financial or otherwise.

(d) The GUARANTOR is not in default with respect to any of its existing indebtedness, and the making and performance of this GUARANTY will not (immediately, with the passage of time, the giving of notices, or both), (i) violate the charter or by-laws of the GUARANTOR, (ii) violate any laws, (iii) result in a default under any material contract, agreement, or instrument to which the GUARANTOR is a party or by which the GUARANTOR or its property is bound, or (iv) result in the creation or imposition of any security interest in, or lien or encumbrance upon, any of the assets of the GUARANTOR. No approval, consent, order, authorization or license by, or giving notice to, or taking any other action with respect to, any governmental or regulatory authority or agency is required for the execution and delivery by the GUARANTOR of this GUARANTY or for the performance by the GUARANTOR of any of the agreements and obligations hereunder.

(e) The GUARANTOR has the power and legal authority to enter into and perform this GUARANTY, to incur the OBLIGATIONS, and to perform, observe and comply with all of the GUARANTORS agreements and obligations hereunder. The GUARANTOR has taken all

corporate action necessary to authorize the execution, delivery, and performance of this GUARANTY.

(f) This GUARANTY, when delivered, will be valid, binding, and enforceable in accordance with its terms.

(g) The incurring or satisfaction of the OBLIGATIONS has not left and will not leave the GUARANTOR insolvent, with an unreasonably small capital, or unable to pay existing or future debts as they mature

Section 7. Reporting Requirements. The GUARANTOR shall submit the following items to the LENDER:

(a) As soon as available and in any event within forty-five (45) calendar days after the end of each of the first three fiscal quarters of each fiscal year of the GUARANTOR, the GUARANTOR shall submit to the LENDER a statement of income and retained earnings of the GUARANTOR for the period commencing at the end of the previous fiscal year and ending with the end of such quarter and a statement of cash flow for the GUARANTOR for the portion of the fiscal year ended with the last day of such quarter, and a balance sheet of the GUARANTOR as of the end of such fiscal quarter, all in reasonable detail and stating in comparative form the respective figures for the corresponding date and period in the previous fiscal year and all prepared in accordance with G.A.A.P., and certified by an officer of the GUARANTOR familiar with the financial operations of the GUARANTOR (subject to year-end adjustments).

(b) As soon as available and in any event within one hundred twenty
(120) calendar days after the end of each fiscal year of the GUARANTOR, the GUARANTOR shall submit to the LENDER annual audited and unqualified consolidated financial statements, which shall be accompanied by management letters (if issued) and certified by a nationally recognized independent certified public accountant.

(c) All financial statements shall be in reasonable detail, including all supporting schedules and comments necessary to verify or confirm entries in the financial statements. All financial statements shall be prepared in accordance with G.A.A.P. As used in this GUARANTY, the term G.A.A.P. means, with respect to any date of determination, generally accepted accounting principles as used by the Financial Accounting Standards Board and/or the American Institute of Certificate Public Accountants, consistently applied and maintained throughout the periods indicated. The costs of supplying the financial statements shall be paid by the GUARANTOR.

Section 8. Lender Need Not Pursue Other Rights. The LENDER shall be under no obligation to pursue any of the LENDERS rights and remedies against any BORROWER or any of the collateral of any BORROWER securing the obligations of the BORROWERS (or any of them) to the LENDER or against any other guarantor or any collateral of any other guarantor before pursuing the LENDERS rights and remedies against the GUARANTOR.

Section 9. Certain Rights Of Lender. The GUARANTOR hereby assents to any and all terms and agreements between the LENDER and the BORROWERS (or any of them) or between the LENDER and any other guarantor, and all amendments and modifications thereof, whether presently existing or hereafter made and whether oral or in writing. The LENDER may, without compromising, impairing, diminishing, or in any way releasing the GUARANTOR from the OBLIGATIONS and without notifying or obtaining the prior approval of the GUARANTOR, at any time or from time to time:
(a) waive or excuse a default by the BORROWERS (or any of them) or any other guarantor, or delay in the exercise by the LENDER of any or all of the LENDERS rights or remedies with respect to such default or defaults; (b) grant extensions of time for payment or performance by the BORROWERS or any other guarantor; (c) release, substitute, exchange, surrender, or add collateral of any BORROWER or of any other guarantor, or waive, release, or subordinate, in whole or in part, any lien or security interest held by the LENDER on any real or personal property securing payment or performance, in whole or in part, of the obligations of the BORROWERS (or any of them) to the LENDER or of any other guarantor; (d) release the BORROWERS (or any of them) or any other guarantor; (e) apply payments made by the BORROWERS or by any other guarantor to any sums owed by the BORROWERS to the LENDER, in any order or manner, or to any specific account or accounts, as the LENDER may elect; and (f) modify, change, renew, extend, or amend in any respect the LENDERS agreement with the BORROWERS (or any of them) or any other guarantor, or any document, instrument, or writing embodying or reflecting the same, including without limitation modifications which increase the amount of the obligations of the BORROWERS under the LOAN DOCUMENTS or extend the maturity of the obligations of the BORROWERS under the LOAN DOCUMENTS.

Section 10. Waivers By Guarantor. The GUARANTOR waives: (a) any and all notices whatsoever with respect to this GUARANTY or with respect to any of the obligations of the BORROWERS (or any of them) to the LENDER, including, but not limited to, notice of (i) the LENDERS acceptance hereof or the LENDERS intention to act, or the LENDERS action, in reliance hereon, (ii) the present existence or future incurring of any of the obligations of the BORROWERS (or any of them) to the LENDER or any terms or amounts thereof or any change therein,
(iii) any default by the BORROWERS (or any of them) or any surety, pledgor, grantor of security, guarantor or any person who has guarantied or secured in whole or in part the obligations of the BORROWERS (or any of them) to the LENDER, and (iv) the obtaining or release of any guaranty or surety agreement, pledge, assignment, or other security for any of the obligations of the BORROWERS (or any of them) to the LENDER; (b) presentment and demand for payment of any sum due from the BORROWERS (or any of them) or any other guarantor and protest of nonpayment; (c) demand for performance by the BORROWERS (or any of them) or any other guarantor; and (d) any and all defenses based on suretyship or impairment of collateral.

Section 11. Unenforceability Of Obligations Of Borrowers. This GUARANTY shall be valid, binding, and enforceable even if the obligations of the BORROWERS to the LENDER which are guarantied hereby are now or hereafter become invalid or unenforceable for any reason.

Section 12. No Conditions Precedent. This GUARANTY shall be effective and enforceable immediately upon its execution. The GUARANTOR acknowledges that no unsatisfied conditions precedent to the effectiveness and enforceability of this GUARANTY exist as of the date of its execution and that the effectiveness and enforceability of this GUARANTY is not in any way conditioned or contingent upon any event, occurrence, or happening, or upon any condition existing or coming into existence either before or after the execution of this GUARANTY.

Section 13. No Duty To Disclose. The LENDER shall have no present or future duty or obligation to discover or to disclose to the GUARANTOR any information, financial or otherwise, concerning any BORROWER, any other guarantor, or any collateral securing either the obligations of any BORROWER to the LENDER or of any other person who may have guarantied in whole or in part the obligations of the BORROWERS to the LENDER. The GUARANTOR waives any right to claim or assert any such duty or obligation on the part of the LENDER. The GUARANTOR agrees to obtain all information which the GUARANTOR considers either appropriate or relevant to this GUARANTY from sources other than the LENDER and to become and remain at all times current and continuously apprised of all information concerning the BORROWERS, other guarantors, and any collateral which is material and relevant to the obligations of the GUARANTOR under this GUARANTY.

Section 14. Existing Or Future Guaranties. The execution of this GUARANTY shall not discharge, terminate or in any way impair or adversely affect the validity or enforceability of any other guaranty given by the GUARANTOR to the LENDER. The execution and delivery by the GUARANTOR of any future guaranty for the benefit of the LENDER shall not discharge, terminate, or in any way impair or adversely affect the validity or enforceability of this GUARANTY. All guaranties provided by the GUARANTOR to the LENDER are intended to be cumulative and shall remain in full force and effect unless and until discharged and terminated in accordance with any expressly stated termination provisions set forth therein.

Section 15. Cumulative Liability. The liability of the GUARANTOR under this GUARANTY shall be cumulative to, and not in lieu of, the GUARANTORS liability under any other LOAN DOCUMENT or in any capacity other than as GUARANTOR hereunder

Section 16. Obligations Are Unconditional. The payment and performance of the OBLIGATIONS shall be the absolute and unconditional duty and obligation of the GUARANTOR, and shall be independent of any defense or any rights of setoff, recoupment or counterclaim which the GUARANTOR might otherwise have against the LENDER, and the GUARANTOR shall pay and perform these OBLIGATIONS, free of any deductions and without abatement, diminution or setoff. Until such time as the OBLIGATIONS have been fully paid and performed, the GUARANTOR: (a) shall not suspend or discontinue any payments provided for herein; (b) shall perform and observe all of the covenants and agreements contained in this GUARANTY; and (c) shall not terminate or attempt to terminate this GUARANTY for any reason. No delay by the LENDER in making demand on the GUARANTOR for satisfaction of the OBLIGATIONS shall prejudice or in any way impair the LENDERS ability to enforce this GUARANTY.

Section 17. Defenses Against Borrowers. The GUARANTOR waives any right to assert against the LENDER any defense (whether legal or equitable), claim, counterclaim, or right of setoff or recoupment which the GUARANTOR may now or hereafter have against the BORROWERS (or any of them) or any other guarantor.

Section 18. Events Authorizing Acceleration Of The Obligations. The occurrence of any of the following (each an EVENT OF DEFAULT) shall entitle the LENDER, without notice or demand, to accelerate and call due the OBLIGATIONS, even if the LENDER has not accelerated and called due the sums owed to the LENDER by the BORROWERS: (a) the commencement by any of the BORROWERS or the GUARANTOR of a voluntary case or proceeding under any federal or state bankruptcy, insolvency or similar law; (b) the commencement of an involuntary case or proceeding against any of the BORROWERS or the GUARANTOR under any federal or state bankruptcy, insolvency, or similar law, and either (i) such case or proceeding is not dismissed within ninety (90) calendar days after commencement, or (ii) an order for relief is entered in such case; (c) the appointment of a receiver, assignee, custodian, trustee or similar official under any federal or state insolvency or creditors rights law for any property of any BORROWER or the GUARANTOR; (d) the GUARANTOR shall suffer final judgments for the payment of money aggregating in excess of Two Hundred Fifty Thousand Dollars ($250,000) and shall not discharge the same within a period of thirty (30) days unless, pending further proceedings, execution has not been commenced or if commenced has been effectively stayed; (e) the occurrence of any EVENT OF DEFAULT as such term is defined in the LOAN AGREEMENT; (f) a failure of the GUARANTOR to perform any covenant or agreement contained in this GUARANTY or in any other agreement between the GUARANTOR and the LENDER; (g) any representation or warranty made in this GUARANTY or in any report or financial statement furnished in connection with this GUARANTY, shall prove to have been false or misleading when made; (h) the LENDER in the good faith reasonable exercise of the LENDERS discretion determines that a material adverse change has occurred in the financial condition of the GUARANTOR; (i) the liquidation or dissolution of any of the BORROWERS or of the GUARANTOR; or (j) a failure of the GUARANTOR to satisfy any of the obligations of the GUARANTOR to the LENDER with respect to any loan or extension of credit by the LENDER to the GUARANTOR or under any other guaranty given by the GUARANTOR to the LENDER.

Section 19. Expenses Of Collection And Attorneys Fees. Should this GUARANTY be referred to an attorney for collection, the GUARANTOR shall pay all of the holders reasonable costs, fees and expenses resulting from such referral, including reasonable attorneys fees, which the holder may incur, even though suit has not been filed.

Section 20. Interest Rate After Judgment. If judgment is e ntered against the GUARANTOR on this GUARANTY, the amount of the judgment entered (which, unless applicable law specifically provides to the contrary, and subject to the limitations set forth in Section 2 hereof, includes all principal, prejudgment interest, late charges, prepayment charges if any are provided for, collection expenses, attorneys fees, and court costs) shall bear interest at the highest rate after default authorized by the LOAN DOCUMENTS as of the date of entry of the judgment to the extent permitted by applicable law. In the event any statute or rule of court specifies the rate of interest which a judgment on this GUARANTY may bear or the amount on which such interest rate may apply and such rate or amount is less than that called for in the preceding sentence absent a restriction under applicable law, the GUARANTOR agrees to pay to the order of the LENDER an amount as will equal the interest

computed at the highest rate after default provided for in the LOAN DOCUMENTS which would be due on the judgment amount (which, for this purpose, but subject to the limitations set forth in Section 2 hereof, shall be considered to include all principal, prejudgment interest, late charges, prepayment charges if any are provided for, collection expense fees, attorneys fees, and court costs) less the interest due on the amount of the judgment which bears judgment interest.

Section 21. Enforcement During Bankruptcy. Enforcement of this GUARANTY shall not be stayed or in any way delayed as a result of the filing of a petition under the United States Bankruptcy Code, as amended, by or against any or all of the BORROWERS. Should the LENDER be required to obtain an order of the United States Bankruptcy Court to begin enforcement of this GUARANTY after the filing of a petition under the United States Bankruptcy Code, as amended, by or against any or all of the BORROWERS, the GUARANTOR hereby consents to this relief and agrees to file or cause to be filed all appropriate pleadings to evidence and effectuate such consent and to enable the LENDER to obtain the relief requested.

Section 22. Remedies Cumulative. All of the LENDERS rights and remedies shall be cumulative and any failure of the LENDER to exercise any right hereunder shall not be construed as a waiver of the right to exercise the same or any other right at any time, and from time to time, thereafter.

Section 23. Continuing Guaranty. This GUARANTY is a continuing guaranty of all existing and future obligations of the BORROWERS (or any of them) to the LENDER arising out of, related to, as a result of, or in connection with the LOAN, the LETTERS OF CREDIT, the CREDIT FACILITY, the LOAN AGREEMENT, or any of the transactions contemplated by the LOAN DOCUMENTS. Except as provided in Section 2 hereof, this GUARANTY may not be terminated by the GUARANTOR until after the termination of the LOAN DOCUMENTS, in accordance with the provisions thereof, and the payment (which payment shall not be subject to challenge or contest) in full of all of the OBLIGATIONS and all of the BORROWERS obligations and liabilities to the LENDER under the LOAN DOCUMENTS.

Section 24. Reinstatement. If at any time any payment, or portion thereof, made by, or for the account of, any BORROWER or the GUARANTOR on account of any of the obligations and liabilities under any of the LOAN DOCUMENTS is set aside by any court or trustee having jurisdiction as a voidable preference, or fraudulent conveyance or must otherwise be restored or returned by the LENDER to a BORROWER or any other person or entity under any insolvency, bankruptcy or other federal and/or state laws or as a result of any dissolution, liquidation or reorganization of any BORROWER or any other person or entity, or for any other reason, the GUARANTOR hereby agrees that this GUARANTY shall continue and remain in full force and effect or be reinstated, as the case may be, all as though such payment(s) had not been made.

Section 25. Rights Of Subrogation, Etc. In the event the GUARANTOR pays any sum to or for the benefit of the LENDER pursuant to this GUARANTY, the GUARANTOR may not enforce any right of contribution, indemnification, exoneration, reimbursement, subrogation or other right or remedy against any BORROWER, any other guarantor, or any collateral, whether real, personal, or mixed, securing the obligations of any BORROWER to the LENDER or the obligations of any other guarantor to the LENDER until such time as the LENDER has been paid in full and has no further claim against any of the BORROWERS, any other guarantor, or any collateral. The GUARANTOR waives and releases any claim which the GUARANTOR hereafter may have against the LENDER if some action of the LENDER, whether intentional or negligent, impairs, destroys, or in any way adversely affects any right of contribution, indemnification, exoneration, reimbursement, subrogation, or the like which the GUARANTOR may have upon the payment of any sum to or for the benefit of the LENDER pursuant to this GUARANTY.

Section 26. Subordination Of Certain Indebtedness. If the GUARANTOR advances any sums to any BORROWER or its successors or assigns, or if any BORROWER or its successors or assigns shall hereafter become indebted to the GUARANTOR, such sums and indebtedness shall be subordinate in all respects to the amounts then or thereafter due and owing to the LENDER by such BORROWER.

Section 27. Renewals, Etc. This GUARANTY shall apply to all sums now or hereafter owed by any of the BORROWERS to the LENDER and to all extensions, modifications, amendments, renewals, substitutions, and refinancings thereof.

Section 28. Choice Of Law. The laws of the State of New York (excluding, however, conflict of law principles) shall govern and be applied to determine all issues relating to this GUARANTY and the rights and obligations of the parties hereto, including the validity, construction, interpretation, and enforceability of this GUARANTY and its various provisions and the consequences and legal effect of all transactions and events which resulted in the issuance of this GUARANTY or which occurred or were to occur as a direct or indirect result of this GUARANTY having been executed.

Section 29. Consent To Jurisdiction; Agreement As To Venue. The GUARANTOR irrevocably consents to the non-exclusive jurisdiction of the courts of the State of Maryland and the State of New York and of the United States District Court for the District of Maryland and for the Southern District of New York, if a basis for federal jurisdiction exists. The GUARANTOR agrees that venue shall be proper in any circuit court of the State of Maryland or the State of New York selected by the LENDER or in the United States District Court for the District of Maryland or for the Southern District of New York if a basis for federal jurisdiction exists and waives any right to object to the maintenance of a suit in any of the state or federal courts of the State of Maryland or the State of New York on the basis of improper venue or of inconvenience of forum.

Section 30. Proofs Of Sums Due On Guaranty. In any action or proceeding brought by the LENDER to collect the sums owed on this GUARANTY, a certificate signed by an officer of the LENDER setting forth the unpaid balances of principal, and any accrued interest, default interest, attorneys fees, and late charges owed with respect hereto shall be presumed correct and shall be admissible in evidence for the purpose

of establishing the truth of what it asserts. If the GUARANTOR wishes to contest the accuracy of the figure set forth in any such certificate, the GUARANTOR shall have the burden of proving that the certificate is inaccurate or incorrect.

Section 31. Actions Against Lender. Any action brought by the GUARANTOR against the LENDER which is based, directly or indirectly, on this GUARANTY or any matter in or related to this GUARANTY, including but not limited to the obligations of the BORROWERS to the LENDER, the administration, collection, or enforcement thereof, shall be brought only in the courts of the State of New York or, if LENDER has instituted action against the GUARANTOR in such court, the State of Maryland. The GUARANTOR agrees that any forum other than the State of Maryland or the State of New York is an inconvenient forum and that a suit brought by the GUARANTOR against the LENDER in a court of any state other than the State of New York or the State of Maryland should be forthwith dismissed or transferred to a court located in the State of New York or, if the LENDER has instituted action against the GUARANTOR in such state, the State of Maryland, by that court.

Section 32. Invalidity Of Any Part. If any provision or part of any provision of this GUARANTY shall for any reason be held invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provisions or the remaining part of any effective provisions of this GUARANTY, and this GUARANTY shall be construed as if such invalid, illegal, or unenforceable provision or part thereof had never been contained herein, but only to the extent of its invalidity, illegality, or unenforceability.

Section 33. Amendment Or Waiver. This GUARANTY may be amended only by a writing duly executed by the GUARANTOR and the LENDER. No waiver by the LENDER of any of the provisions of this GUARANTY or any of the rights or remedies of the LENDER with respect hereto shall be considered effective or enforceable unless in writing.

Section 34. Notices. Any notice required or permitted by or in connection with this GUARANTY shall be in writing and shall be made by facsimile (confirmed on the date the facsimile is sent by one of the other methods of giving notice provided for in this Section) or by hand delivery, by Federal Express, or other similar overnight delivery service, or by certified mail, unrestricted delivery, return receipt requested, postage prepaid, addressed to the LENDER or the GUARANTOR at the appropriate address set forth below or to such other address as may be hereafter specified by written notice by the LENDER or the GUARANTOR. Notice shall be considered given as of the date of the facsimile or the hand delivery, one (1) calendar day after delivery to Federal Express or similar overnight delivery service, or three (3) calendar days after the date of mailing, independent of the date of actual delivery or whether delivery is ever in fact made, as the case may be, provided the giver of notice can establish the fact that notice was given as provided herein. If notice is tendered pursuant to the provisions of this Section and is refused by the intended recipient thereof, the notice, nevertheless, shall be considered to have been given and shall be effective as of the date herein provided. If to the LENDER:

NATIONAL BANK OF CANADA
125 West 55th Street
New York, New York 10019

And
c/o NATIONAL BANK OF CANADA

401 E. Pratt Street, Suite 631
Baltimore, Maryland 21202

Attn: Robert A. Incorvati, Vice President Facsimile: (410) 837-8359

If to the GUARANTOR:

MANTECH INTERNATIONAL CORPORATION
12015 Lee Jackson Highway, 8th Floor
Fairfax, Virginia 22033

Attn.: Tracy A. Wilson, Assistant Secretary Fax No.: (703) 218-8296

With A Courtesy Copy To:

GOLDEN & NELSON, PLLC
8285 Highglade Court
Millersville, Maryland 21108

Attn.: Hedy L. Nelson, Esquire Facsimile No.: (410) 729-2246

The failure of the LENDER to send the above courtesy copy shall not impair the effectiveness of notice given to the GUARANTOR in the manner provided herein.

Section 35. Binding Nature. This GUARANTY shall inure to the benefit of and be enforceable by the LENDER and the LENDERS successors

and assigns and any other person to whom the LENDER may grant an interest in the obligations of the BORROWERS to the LENDER, and shall be binding upon and enforceable against the GUARANTOR and the GUARANTORS successors, and assigns.

Section 36. Assignability. This GUARANTY or an interest therein may be assigned by the LENDER, or by any other holder, at any time or from time to time, without any prior notice to or consent from the GUARANTOR.

Section 37. Final Agreement. This GUARANTY contains the final and entire agreement between the LENDER and the GUARANTOR with respect to the guaranty by the GUARANTOR of the BORROWERS obligations to the LENDER. There are no separate oral or written understandings between the LENDER and the GUARANTOR with respect thereto.

Section 38. Tense, Gender, Defined Terms, Captions. As used herein, the plural includes the singular, and the singular includes the plural. The use of any gender applies to any other gender. All defined terms are completely capitalized throughout this GUARANTY. All captions are for the purpose of convenience only.

Section 39. Seal And Effective Date. This GUARANTY is an instrument executed under seal and is to be considered effective and enforceable as of the date set forth on the first page hereof, independent of the date of actual execution.

Section 40. Waiver Of Trial By Jury. The GUARANTOR and the LENDER, by their execution and acceptance, respectively, of this GUARANTY, agree that any suit, action, or proceeding, whether claim or counterclaim, brought or instituted by either party hereto or any successor or assign of any party on or with respect to this GUARANTY or which in any way relates, directly or indirectly, to this GUARANTY or any event, transaction, or occurrence arising out of or in any way connected with this GUARANTY, or the dealings of the parties with respect thereto, shall be tried only by a court and not by a jury.
EACH PARTY HEREBY EXPRESSLY WAIVES ANY RIGHT TO A TRIAL BY JURY IN ANY SUCH SUIT, ACTION, OR PROCEEDING.

[Signatures Begin On Next Page] IN WITNESS WHEREOF, the GUARANTOR has executed this GUARANTY with the specific intention of creating a document under seal.

ATTEST/WITNESS: GUARANTOR:
MANTECH INTERNATIONAL CORPORATION

_____ By: (SEAL)
Name:
Title:

ACKNOWLEDGMENT

COMMONWEALTH OF VIRGINIA, CITY/COUNTY OF _____, TO WIT:

I HEREBY CERTIFY that on this _____ day of March, 2000, before me, the undersigned Notary Public of the Commonwealth of Virginia, personally appeared _____, and acknowledged himself/herself to be the _____ of MANTECH INTERNATIONAL CORPORATION, a New Jersey corporation , and that he/she, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of MANTECH INTERNATIONAL CORPORATION, by himself/herself as _____.

IN WITNESS MY Hand and Notarial Seal.

_____(SEAL)
NOTARY PUBLIC
My Commission Expires:

Exhibit 10.5

LIMITED GUARANTY AGREEMENT

THIS LIMITED GUARANTY AGREEMENT (GUARANTY) is given as of March _____, 2000, by GP STRATEGIES CORPORATION, a Delaware corporation (GUARANTOR), for the benefit of NATIONAL BANK OF CANADA, a Canadian chartered bank (LENDER), with respect to the obligations of GSE SYSTEMS, INC., a Delaware corporation, GSE PROCESS SOLUTIONS, INC., a Delaware corporation, and GSE POWER SYSTEMS, INC., a Delaware corporation (individually, a BORROWER and collectively, the BORROWERS), to the LENDER.

RECITALS

The BORROWERS have requested certain credit accommodations from the LENDER as set forth in the Loan and Security Agreement of even date herewith by and between the BORROWERS and the LENDER (as the same may be amended, modified, extended, renewed, restated, supplemented or replaced from time to time LOAN AGREEMENT). The LENDER has agreed to provide the requested credit accommodations to the BORROWERS, but only if, inter alia, the GUARANTOR provides to the LENDER the guaranties of payment and performance set forth in this GUARANTY. The GUARANTOR is willing to provide this GUARANTY to the LENDER in order to induce the LENDER to provide the requested credit accommodations to the BORROWERS.

All capitalized terms used in this GUARANTY without definition shall have the respective meanings given such terms in the LOAN AGREEMENT.

NOW, THEREFORE, in consideration of these premises and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the GUARANTOR hereby agrees to provide to the LENDER the following guaranties and indemnifications.

Section 1. Guaranty. The GUARANTOR guarantees: (a) the payment of any and all sums now or hereafter due and owing to the LENDER by the BORROWERS (or any of them) arising out of, related to, as a result of, or in connection with the LOAN, the LETTERS OF CREDIT, the CREDIT FACILITY, or any other existing or future indebtedness, liability, or obligation of every kind, nature, type, and variety owed by the BORROWERS (or any of them) to the LENDER from time to time, arising out of, related to, as a result of, or in connection with the LOAN AGREEMENT, or any of the transactions contemplated by the LOAN DOCUMENTS (as defined below), including all renewals, refinancings, extensions, substitutions, amendments, and modifications thereof, no matter when or how created, arising, evidenced, or acquired, and whether or not presently contemplated or anticipated, whether joint or several, including, but not limited to, all amounts of principal, interest, charges, reimbursements, advancements, escrows, and fees;
(b) that all sums now or hereafter due and owing by the BORROWERS (or any of them) to the LENDER arising out of, related to, as a result of, or in connection with the LOAN, the LETTERS OF CREDIT, the CREDIT FACILITY, the LOAN AGREEMENT, or any of the transactions contemplated by the LOAN DOCUMENTS, shall be paid when and as due, whether by reason of installment, maturity, acceleration or otherwise, time being of the essence; and (c) the timely, complete, continuous, and strict performance and observance by the BORROWERS of each of the terms, covenants, agreements and conditions contained in any and all existing or future documents, instruments, agreements, and writings of every kind, nature, type, and variety which evidence, reflect, embody, give rise to or secure any and all existing and future indebtedness, liabilities, and obligations of any kind of the BORROWERS (or any of them) to the LENDER arising out of, related to, as a result of, or in connection with the LOAN, the LETTERS OF CREDIT, the CREDIT FACILITY, the LOAN AGREEMENT, or any of the transactions contemplated thereby (together with the LOAN AGREEMENT, collectively, LOAN DOCUMENTS). As used in this GUARANTY, the term OBLIGATIONS shall refer to the obligations of payment, performance, and indemnification which the GUARANTOR has undertaken and assumed pursuant to this GUARANTY, both as described in this Section and in other Sections of this GUARANTY.

Section 2. Maximum Amount of Guaranty. The monetary liability of the GUARANTOR with respect to the OBLIGATIONS hereunder shall be limited to the sum of One Million Eight Hundred Thousand Dollars ($1,800,000.00) (GUARANTY MONETARY AMOUNT); provided that the proceeds of the liquidation of any of the collateral securing the obligations of the BORROWERS (or any of them) to the LENDER and any payments made by any of the BORROWERS or any other guarantor, and any other payments obtained from any other source, shall not be applied to, or be considered a discharge of, the OBLIGATIONS until all amounts, other than those which have been guaranteed, have been paid in full. Notwithstanding the immediately preceding sentence, the GUARANTY MONETARY AMOUNT and the limitation set forth in this Section on the monetary liability of the GUARANTOR with respect to the OBLIGATIONS shall not include nor be deemed a limit upon the LENDERS right pursuant to any other Section of this GUARANTY (including, without limitation, Section 18 hereof) to recover from the GUARANTOR costs and expenses, including reasonable attorneys fees, in enforcing or realizing upon this GUARANTY. The GUARANTY MONETARY AMOUNT may be reduced at each fiscal year-end date (beginning with the BORROWERS fiscal year ending December 31, 1999) upon the determination by the LENDER, in each instance, that the BORROWERS have achieved and satisfied the following conditions precedent: (a) no EVENT OF DEFAULT (as defined below and as defined in the LOAN AGREEMENT) shall have occurred hereunder or under the LOAN AGREEMENT during the fiscal year of the BORROWERS ending on such fiscal year-end date; (b) no DEFAULT (as defined in the LOAN AGREEMENT) shall have occurred and be continuing on such fiscal year end date; (c) no default (defined for purposes of this clause (c) to mean any event, occurrence or omission which, with the giving of notice, the passage of time, or both, would constitute an EVENT OF DEFAULT) under this GUARANTY shall have occurred and be continuing on such fiscal year-end date; (d) EBITDA (as defined in the LOAN AGREEMENT) of the BORROWERS and their consolidated subsidiaries for the fiscal year of the BORROWERS ending on such fiscal year-end date, and reported to the LENDER by the BORROWERS in their audited annual financial statements for such fiscal year, shall have been equal to at least Five Million Five Hundred Thousand Dollars ($5,500,000.00); and (e) NET PROFIT AFTER TAX (as defined in the LOAN AGREEMENT) of the BORROWERS and their consolidated subsidiaries for the fiscal year of the BORROWERS ending on such fiscal year-end date, and reported to the LENDER by the BORROWERS in their audited annual financial statements for such fiscal year,

shall have been equal to at least One Million Three Hundred Thousand Dollars ($1,300,000.00). On the first fiscal year-end date as of which all of the foregoing conditions precedent are achieved and satisfied, the GUARANTY MONETARY AMOUNT under this GUARANTY shall be the sum of Nine Hundred Thousand Dollars ($900,000.00). On the second fiscal year-end date as of which all of the foregoing conditions precedent are achieved and satisfied, this GUARANTY shall be released. As used in this Section 2, the term fiscal year shall mean the FISCAL YEAR of the BORROWERS as defined in the LOAN AGREEMENT.

Section 3. Nature Of Guaranty. This GUARANTY: (a) is (i) irrevocable,
(ii) absolute and unconditional, (iii) direct, immediate, and primary, and (iv) one of payment and not just collection; and (b) makes the GUARANTOR a surety to the LENDER with respect to the OBLIGATIONS and the equivalent of a co-obligor with the BORROWERS. Without limiting the foregoing, it is specifically understood that any modification, limitation or discharge of any of the liabilities or obligations of the BORROWERS (or any of them), any other guarantor or any other obligor under any of the LOAN DOCUMENTS, arising out of, or by virtue of, any bankruptcy, arrangement, reorganization or similar proceeding for relief of debtors under federal or state law initiated by or against the BORROWERS (or any of them), any other guarantor or any obligor under any of the LOAN DOCUMENTS shall not modify, limit, lessen, reduce, impair, discharge, or otherwise affect the liability of the GUARANTOR hereunder in any manner whatsoever, and this GUARANTY shall remain and continue in full force and effect.

Section 4. Accuracy Of Representations. The GUARANTOR guaranties that all representations and warranties made by the GUARANTOR to the LENDER prior to or after the date of this GUARANTY are and will continue to be true, correct, accurate, and complete and not knowingly misleading, and, subject to the limitations set forth in Section 2 hereof, the GUARANTOR agrees to indemnify and hold the LENDER harmless from any loss, cost, or expense which the LENDER may suffer, sustain or incur as a result of any representation or statement of the BORROWERS (or any of them) or of the GUARANTOR being materially false, incorrect, inaccurate, incomplete, or knowingly misleading.

Section 5. Representations And Warranties Of Guarantor. To induce the LENDER to accept this GUARANTY for the purposes for which it is given, the GUARANTOR represents and warrants to the LENDER as follows:

(a) The GUARANTOR is a corporation duly organized, validly existing and in good standing under the laws of the state of its incorporation. The GUARANTOR has the lawful power to own its properties and to engage in the businesses it conducts, and is duly qualified and in good standing as a foreign corporation in the jurisdictions wherein the nature of the business transacted by it or property owned by it makes such qualification necessary and the failure to so qualify would have a material adverse effect on the ability of the GUARANTOR to perform its OBLIGATIONS hereunder.

(b) Any financial statements submitted by the GUARANTOR to the LENDER, including any schedules and notes pertaining thereto, have been prepared in accordance with G.A.A.P. (as defined below), and fully and fairly present the financial condition of the GUARANTOR at the dates thereof and the results of operations for the periods covered thereby, and there has been no material adverse change in the financial condition or businesses of the GUARANTOR from the dates thereof to the date hereof, other than as disclosed to the LENDER or in any other public document or press releases. All information submitted by or on behalf of the GUARANTOR in connection with any of the OBLIGATIONS is true, accurate and complete in all material respects as of the date made and contains no knowingly false, incomplete or misleading statements.

(c) There are no material actions, suits, investigations, or proceedings pending, or to the knowledge of the GUARANTOR, threatened against the GUARANTOR or the assets of the GUARANTOR, except as specifically disclosed on Schedule 5(c) attached hereto. The GUARANTOR has no material direct or contingent liability known to the GUARANTOR and not previously disclosed to the LENDER except (i) as disclosed in the financial statements and (ii) for liabilities and obligations (A) incurred in the ordinary course of business and consistent with past practices and (B) the restructuring charges and write-offs in the third and fourth quarters of 1999 disclosed in the press releases attached hereto or in any other public documents, nor does the GUARANTOR know of or have any reason to expect any other material adverse change in the GUARANTORS assets, liabilities, properties, business, or condition, financial or otherwise.

(d) The GUARANTOR is not in default with respect to any of its existing indebtedness, except as specifically disclosed on Schedule 5(d) attached hereto, and the making and performance of this GUARANTY will not (immediately, with the passage of time, the giving of notices, or both), (i) violate the charter or by-laws of the GUARANTOR, (ii) violate any laws, (iii) result in a default under material any contract, agreement, or instrument to which the GUARANTOR is a party or by which the GUARANTOR or its property is bound, or (iv) result in the creation or imposition of any security interest in, or lien or encumbrance upon, any of the assets of the GUARANTOR. No approval, consent, order, authorization or license by, or giving notice to, or taking any other action with respect to, any governmental or regulatory authority or agency is required for the execution and delivery by the GUARANTOR of this GUARANTY or for the performance by the GUARANTOR of any of the agreements and obligations hereunder.

(e) The GUARANTOR has the power and legal authority to enter into and perform this GUARANTY, to incur the OBLIGATIONS, and to perform, observe and comply with all of the GUARANTORS agreements and obligations hereunder. The GUARANTOR has taken all corporate action necessary to authorize the execution, delivery, and performance of this GUARANTY.

(f) This GUARANTY, when delivered, will be valid, binding, and enforceable in accordance with its terms.

(g) The incurring or satisfaction of the OBLIGATIONS has not left and will not leave the GUARANTOR insolvent, with an unreasonably small capital, or unable to pay existing or future debts as they mature.

Section 6. Reporting Requirements. The GUARANTOR shall submit the following items to the LENDER:

(a) As soon as available and in any event within fifty (50) calendar days after the end of each of the first three fiscal quarters of each fiscal year of the GUARANTOR, the GUARANTOR shall submit to the LENDER its quarterly report on Form 10-Q, certified by an officer of the GUARANTOR familiar with the financial operations of the GUARANTOR (subject to year-end adjustments).

(b) As soon as available and in any event within one hundred thirty
(130) calendar days after the end of each fiscal year of the GUARANTOR, the GUARANTOR shall submit to the LENDER its annual report on Form 10-K.

(c) All financial statements shall be in reasonable detail, including all supporting schedules and comments necessary to verify or confirm entries in the financial statements. All financial statements shall be prepared in accordance with G.A.A.P. As used in this GUARANTY, the term G.A.A.P means, with respect to any date of determination, generally accepted accounting principles as used by the Financial Accounting Standards Board and/or the American Institute of Certificate Public Accountants, consistently applied and maintained throughout the periods indicated. The costs of supplying the financial statements shall be paid by the GUARANTOR.

Section 7. Lender Need Not Pursue Other Rights. The LENDER shall be under no obligation to pursue any of the LENDERS rights and remedies against any BORROWER or any of the collateral of any BORROWER securing the obligations of the BORROWERS (or any of them) to the LENDER or against any other guarantor or any collateral of any other guarantor before pursuing the LENDERS rights and remedies against the GUARANTOR.

Section 8. Certain Rights Of Lender. The GUARANTOR hereby assents to any and all terms and agreements between the LENDER and the BORROWERS (or any of them) or between the LENDER and any other guarantor, and all amendments and modifications thereof, whether presently existing or hereafter made and whether oral or in writing. The LENDER may, without compromising, impairing, diminishing, or in any way releasing the GUARANTOR from the OBLIGATIONS and without notifying or obtaining the prior approval of the GUARANTOR, at any time or from time to time:
(a) waive or excuse a default by the BORROWERS (or any of them) or any other guarantor, or delay in the exercise by the LENDER of any or all of the LENDERS rights or remedies with respect to such default or defaults; (b) grant extensions of time for payment or performance by the BORROWERS or any other guarantor; (c) release, substitute, exchange, surrender, or add collateral of any BORROWER or of any other guarantor, or waive, release, or subordinate, in whole or in part, any lien or security interest held by the LENDER on any real or personal property securing payment or performance, in whole or in part, of the obligations of the BORROWERS (or any of them) to the LENDER or of any other guarantor; (d) release the BORROWERS (or any of them) or any other guarantor; (e) apply payments made by the BORROWERS or by any other guarantor to any sums owed by the BORROWERS to the LENDER, in any order or manner, or to any specific account or accounts, as the LENDER may elect; and (f) modify, change, renew, extend, or amend in any respect the LENDERS agreement with the BORROWERS (or any of them) or any other guarantor, or any document, instrument, or writing embodying or reflecting the same, including without limitation modifications which increase the amount of the obligations of the BORROWERS under the LOAN DOCUMENTS or extend the maturity of the obligations of the BORROWERS under the LOAN DOCUMENTS.

Section 9. Waivers By Guarantor. The GUARANTOR waives: (a) any and all notices whatsoever with respect to this GUARANTY or with respect to any of the obligations of the BORROWERS (or any of them) to the LENDER, including, but not limited to, notice of (i) the LENDERS acceptance hereof or the LENDERS intention to act, or the LENDERS action, in reliance hereon, (ii) the present existence or future incurring of any of the obligations of the BORROWERS (or any of them) to the LENDER or any terms or amounts thereof or any change therein,
(iii) any default by the BORROWERS (or any of them) or any surety, pledgor, grantor of security, guarantor or any person who has guarantied or secured in whole or in part the obligations of the BORROWERS (or any of them) to the LENDER, and (iv) the obtaining or release of any guaranty or surety agreement, pledge, assignment, or other security for any of the obligations of the BORROWERS (or any of them) to the LENDER; (b) presentment and demand for payment of any sum due from the BORROWERS (or any of them) or any other guarantor and protest of nonpayment; (c) demand for performance by the BORROWERS (or any of them) or any other guarantor; and (d) any and all defenses based on suretyship or impairment of collateral.

Section 10. Unenforceability Of Obligations Of Borrowers. This GUARANTY shall be valid, binding, and enforceable even if the obligations of the BORROWERS to the LENDER which are guarantied hereby are now or hereafter become invalid or unenforceable for any reason.

Section 11. No Conditions Precedent. This GUARANTY shall be effective and enforceable immediately upon its execution. The GUARANTOR acknowledges that no unsatisfied conditions precedent to the effectiveness and enforceability of this GUARANTY exist as of the date of its execution and that the effectiveness and enforceability of this GUARANTY is not in any way conditioned or contingent upon any event, occurrence, or happening, or upon any condition existing or coming into existence either before or after the execution of this GUARANTY.

Section 12. No Duty To Disclose. The LENDER shall have no present or future duty or obligation to discover or to disclose to the GUARANTOR any information, financial or otherwise, concerning any BORROWER, any other guarantor, or any collateral securing either the obligations of any BORROWER to the LENDER or of any other person who may have guarantied in whole or in part the obligations of the BORROWERS to the LENDER. The GUARANTOR waives any right to claim or assert any such duty or obligation on the part of the LENDER. The GUARANTOR agrees to obtain all information which the GUARANTOR considers either appropriate or relevant to this GUARANTY from sources other than the LENDER and to become and remain at all times current and continuously apprised of all information concerning the BORROWERS, other guarantors, and any collateral which is material and relevant to the obligations of the GUARANTOR under this GUARANTY.

Section 13. Existing Or Future Guaranties. The execution of this GUARANTY shall not discharge, terminate or in any way impair or adversely affect the validity or enforceability of any other guaranty given by the GUARANTOR to the LENDER. The execution and delivery by the GUARANTOR of any future guaranty for the benefit of the LENDER shall not discharge, terminate, or in any way impair or adversely affect the validity or enforceability of this GUARANTY. All guaranties provided by the GUARANTOR to the LENDER are intended to be cumulative and shall remain in full force and effect unless and until discharged and terminated in accordance with any expressly stated termination provisions set forth therein.

Section 14. Cumulative Liability. The liability of the GUARANTOR under this GUARANTY shall be cumulative to, and not in lieu of, the GUARANTORS liability under any other LOAN DOCUMENT or in any capacity other than as GUARANTOR hereunder.

Section 15. Obligations Are Unconditional. The payment and performance of the OBLIGATIONS shall be the absolute and unconditional duty and obligation of the GUARANTOR, and shall be independent of any defense or any rights of setoff, recoupment or counterclaim which the GUARANTOR might otherwise have against the LENDER, and the GUARANTOR shall pay and perform these OBLIGATIONS, free of any deductions and without abatement, diminution or setoff. Until such time as the OBLIGATIONS have been fully paid and performed, the GUARANTOR: (a) shall not suspend or discontinue any payments provided for herein; (b) shall perform and observe all of the covenants and agreements contained in this GUARANTY; and (c) shall not terminate or attempt to terminate this GUARANTY for any reason. No delay by the LENDER in making demand on the GUARANTOR for satisfaction of the OBLIGATIONS shall prejudice or in any way impair the LENDERS ability to enforce this GUARANTY.

Section 16. Defenses Against Borrowers. The GUARANTOR waives any right to assert against the LENDER any defense (whether legal or equitable), claim, counterclaim, or right of setoff or recoupment which the GUARANTOR may now or hereafter have against the BORROWERS (or any of them) or any other guarantor.

Section 17. Events Authorizing Acceleration Of The Obligations. The occurrence of any of the following (each an EVENT OF DEFAULT) shall entitle the LENDER, without notice or demand, to accelerate and call due the OBLIGATIONS, even if the LENDER has not accelerated and called due the sums owed to the LENDER by the BORROWERS: (a) the commencement by any of the BORROWERS or the GUARANTOR of a voluntary case or proceeding under any federal or state bankruptcy, insolvency or similar law; (b) the commencement of an involuntary case or proceeding against any of the BORROWERS or the GUARANTOR under any federal or state bankruptcy, insolvency, or similar law, and either (i) such case or proceeding is not dismissed within ninety (90) calendar days after commencement, or (ii) an order for relief is entered in such case; (c) the appointment of a receiver, assignee, custodian, trustee or similar official under any federal or state insolvency or creditors rights law for any property of any BORROWER or the GUARANTOR; (d) the GUARANTOR shall suffer final judgments for the payment of money aggregating in excess of Two Hundred Fifty Thousand Dollars ($250,000) and shall not discharge the same within a period of thirty (30) days unless, pending further proceedings, execution has not been commenced or if commenced has been effectively stayed; (e) the occurrence of any EVENT OF DEFAULT as such term is defined in the LOAN AGREEMENT; (f) a failure of the GUARANTOR to perform any covenant or agreement contained in this GUARANTY or in any other agreement between the GUARANTOR and the LENDER; (g) any representation or warranty made in this GUARANTY or in any report or financial statement furnished in connection with this GUARANTY, shall prove to have been false or misleading when made; (h) the LENDER in the good faith reasonable exercise of the LENDERS discretion determines that a material adverse change has occurred in the financial condition of the GUARANTOR; (i) the liquidation or dissolution of any of the BORROWERS or of the GUARANTOR; or (j) a failure of the GUARANTOR to satisfy any of the obligations of the GUARANTOR to the LENDER with respect to any loan or extension of credit by the LENDER to the GUARANTOR or under any other guaranty given by the GUARANTOR to the LENDER.

Section 18. Expenses Of Collection And Attorneys Fees. Should this GUARANTY be referred to an attorney for collection, the GUARANTOR shall pay all of the holders reasonable costs, fees and expenses resulting from such referral, including reasonable attorneys fees, which the holder may incur, even though suit has not been filed.

Section 19. Interest Rate After Judgment. If judgment is entered against the GUARANTOR on this GUARANTY, the amount of the judgment entered (which, unless applicable law specifically provides to the contrary, and subject to the limitations set forth in Section 2 hereof, includes all principal, prejudgment interest, late charges, prepayment charges if any are provided for, collection expenses, attorneys fees, and court costs) shall bear interest at the highest rate after default authorized by the LOAN DOCUMENTS as of the date of entry of the judgment to the extent permitted by applicable law. In the event any statute or rule of court specifies the rate of interest which a judgment on this GUARANTY may bear or the amount on which such interest rate may apply and such rate or amount is less than that called for in the preceding sentence absent a restriction under applicable law, the GUARANTOR agrees to pay to the order of the LENDER an amount as will equal the interest computed at the highest rate after default provided for in the LOAN DOCUMENTS which would be due on the judgment amount (which, for this purpose, but subject to the limitations set forth in Section 2 hereof, shall be considered to include all principal, prejudgment interest, late charges, prepayment charges if any are provided for, collection expense fees, attorneys fees, and court costs) less the interest due on the amount of the judgment which bears judgment interest.

Section 20. Enforcement During Bankruptcy. Enforcement of this GUARANTY shall not be stayed or in any way delayed as a result of the filing of a petition under the United States Bankruptcy Code, as amended, by or against any or all of the BORROWERS. Should the LENDER be required to obtain an order of the United States Bankruptcy Court to begin enforcement of this GUARANTY after the filing of a petition under the United States Bankruptcy Code, as amended, by or against any or all of the BORROWERS, the GUARANTOR hereby consents to this relief and agrees to file or cause to be filed all appropriate pleadings to evidence and effectuate such consent and to enable the LENDER to obtain the relief requested.

Section 21. Remedies Cumulative. All of the LENDERS rights and remedies shall be cumulative and any failure of the LENDER to exercise any right hereunder shall not be construed as a waiver of the right to exercise the same or any other right at any time, and from time to time, thereafter.

Section 22. Continuing Guaranty. This GUARANTY is a continuing guaranty of all existing and future obligations of the BORROWERS (or any of them) to the LENDER arising out of, related to, as a result of, or in connection with the LOAN, the LETTERS OF CREDIT, the CREDIT FACILITY, the LOAN AGREEMENT, or any of the transactions contemplated by the LOAN DOCUMENTS. Except as provided in Section 2 hereof, this GUARANTY may not be terminated by the GUARANTOR until after the termination of the LOAN DOCUMENTS, in accordance with the provisions thereof, and the payment (which payment shall not be subject to challenge or contest) in full of all of the OBLIGATIONS and all of the BORROWERS obligations and liabilities to the LENDER under the LOAN DOCUMENTS.

Section 23. Reinstatement. If at any time any payment, or portion thereof, made by, or for the account of, any BORROWER or the GUARANTOR on account of any of the obligations and liabilities under any of the LOAN DOCUMENTS is set aside by any court or trustee having jurisdiction as a voidable preference, or fraudulent conveyance or must otherwise be restored or returned by the LENDER to a BORROWER or any other person or entity under any insolvency, bankruptcy or other federal and/or state laws or as a result of any dissolution, liquidation or reorganization of any BORROWER or any other person or entity, or for any other reason, the GUARANTOR hereby agrees that this GUARANTY shall continue and remain in full force and effect or be reinstated, as the case may be, all as though such payment(s) had not been made.
Section 24. Rights Of Subrogation, Etc. In the event the GUARANTOR pays any sum to or for the benefit of the LENDER pursuant to this GUARANTY, the GUARANTOR may not enforce any right of contribution, indemnification, exoneration, reimbursement, subrogation or other right or remedy against any BORROWER, any other guarantor, or any collateral, whether real, personal, or mixed, securing the obligations of any BORROWER to the LENDER or the obligations of any other guarantor to the LENDER until such time as the LENDER has been paid in full and has no further claim against any of the BORROWERS, any other guarantor, or any collateral. The GUARANTOR waives and releases any claim which the GUARANTOR hereafter may have against the LENDER if some action of the LENDER, whether intentional or negligent, impairs, destroys, or in any way adversely affects any right of contribution, indemnification, exoneration, reimbursement, subrogation, or the like which the GUARANTOR may have upon the payment of any sum to or for the benefit of the LENDER pursuant to this GUARANTY.

Section 25. Subordination Of Certain Indebtedness. If the GUARANTOR advances any sums to any BORROWER or its successors or assigns, or if any BORROWER or its successors or assigns shall hereafter become indebted to the GUARANTOR, such sums and indebtedness shall be subordinate in all respects to the amounts then or thereafter due and owing to the LENDER by such BORROWER.

Section 26. Renewals, Etc. This GUARANTY shall apply to all sums now or hereafter owed by any of the BORROWERS to the LENDER and to all extensions, modifications, amendments, renewals, substitutions, and refinancings thereof.

Section 27. Choice Of Law. The laws of the State of New York (excluding, however, conflict of law principles) shall govern and be applied to determine all issues relating to this GUARANTY and the rights and obligations of the parties hereto, including the validity, construction, interpretation, and enforceability of this GUARANTY and its various provisions and the consequences and legal effect of all transactions and events which resulted in the issuance of this GUARANTY or which occurred or were to occur as a direct or indirect result of this GUARANTY having been executed.

Section 28. Consent To Jurisdiction; Agreement As To Venue. The GUARANTOR irrevocably consents to the non-exclusive jurisdiction of the courts of the State of Maryland and the State of New York and of the United States District Court for the District of Maryland and for the Southern District of New York, if a basis for federal jurisdiction exists. The GUARANTOR agrees that venue shall be proper in any circuit court of the State of Maryland or the State of New York selected by the LENDER or in the United States District Court for the District of Maryland or for the Southern District of New York if a basis for federal jurisdiction exists and waives any right to object to the maintenance of a suit in any of the state or federal courts of the State of Maryland or the State of New York on the basis of improper venue or of inconvenience of forum.

Section 29. Proofs Of Sums Due On Guaranty. In any action or proceeding brought by the LENDER to collect the sums owed on this GUARANTY, a certificate signed by an officer of the LENDER setting forth the unpaid balances of principal, and any accrued interest, default interest, attorneys fees, and late charges owed with respect hereto shall be presumed correct and shall be admissible in evidence for the purpose of establishing the truth of what it asserts. If the GUARANTOR wishes to contest the accuracy of the figure set forth in any such certificate, the GUARANTOR shall have the burden of proving that the certificate is inaccurate or incorrect.

Section 30. Actions Against Lender. Any action brought by the GUARANTOR against the LENDER which is based, directly or indirectly, on this GUARANTY or any matter in or related to this GUARANTY, including but not limited to the obligations of the BORROWERS to the LENDER, the administration, collection, or enforcement thereof, shall be brought only in the courts of the State of New York or, if LENDER has instituted action against the GUARANTOR in such court, the State of Maryland. The GUARANTOR agrees that any forum other than the State of Maryland or the State of New York is an inconvenient forum and that a suit brought by the GUARANTOR against the LENDER in a court of any state other than the State of New York or the State of Maryland should be forthwith dismissed or transferred to a court located in the State of New York or, if the LENDER has instituted action against the GUARANTOR in such state, the State of Maryland, by that court.

Section 31. Invalidity Of Any Part. If any provision or part of any provision of this GUARANTY shall for any reason be held invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provisions or the remaining part of any

effective provisions of this GUARANTY, and this GUARANTY shall be construed as if such invalid, illegal, or unenforceable provision or part thereof had never been contained herein, but only to the extent of its invalidity, illegality, or unenforceability.

Section 32. Amendment Or Waiver. This GUARANTY may be amended only by a writing duly executed by the GUARANTOR and the LENDER. No waiver by the LENDER of any of the provisions of this GUARANTY or any of the rights or remedies of the LENDER with respect hereto shall be considered effective or enforceable unless in writing.

Section 33. Notices. Any notice required or permitted by or in connection with this GUARANTY shall be in writing and shall be made by facsimile (confirmed on the date the facsimile is sent by one of the other methods of giving notice provided for in this Section) or by hand delivery, by Federal Express, or other similar overnight delivery service, or by certified mail, unrestricted delivery, return receipt requested, postage prepaid, addressed to the LENDER or the GUARANTOR at the appropriate address set forth below or to such other address as may be hereafter specified by written notice by the LENDER or the GUARANTOR. Notice shall be considered given as of the date of the facsimile or the hand delivery, one (1) calendar day after delivery to Federal Express or similar overnight delivery service, or three (3) calendar days after the date of mailing, independent of the date of actual delivery or whether delivery is ever in fact made, as the case may be, provided the giver of notice can establish the fact that notice was given as provided herein. If notice is tendered pursuant to the provisions of this Section and is refused by the intended recipient thereof, the notice, nevertheless, shall be considered to have been given and shall be effective as of the date herein provided.

If to the LENDER:
NATIONAL BANK OF CANADA
125 West 55th Street
New York, New York 10019

And

c/o NATIONAL BANK OF CANADA
401 E. Pratt Street, Suite 631
Baltimore, Maryland 21202

Attn: Robert A. Incorvati, Vice President Facsimile: (410) 837-8359

If to the GUARANTOR:

GP STRATEGIES CORPORATION 9 West 57th Street New York, New York 10019 Attn.: Andrea D. Kantor, Vice President and Corporate Counsel Fax No.:
(212) 230-9545

Section 34. Binding Nature. This GUARANTY shall inure to the benefit of and be enforceable by the LENDER and the LENDER successors and assigns and any other person to whom the LENDER may grant an interest in the obligations of the BORROWERS to the LENDER, and shall be binding upon and enforceable against the GUARANTOR and the GUARANTORS successors, and assigns.

Section 35. Assignability. This GUARANTY or an interest therein may be assigned by the LENDER, or by any other holder, at any time or from time to time, without any prior notice to or consent from the GUARANTOR.

Section 36. Final Agreement. This GUARANTY contains the final and entire agreement between the LENDER and the GUARANTOR with respect to the guaranty by the GUARANTOR of the BORROWERS obligations to the LENDER. There are no separate oral or written understandings between the LENDER and the GUARANTOR with respect thereto.

Section 37. Tense, Gender, Defined Terms, Captions. As used herein, the plural includes the singular, and the singular includes the plural. The use of any gender applies to any other gender. All defined terms are completely capitalized throughout this GUARANTY. All captions are for the purpose of convenience only.

Section 38. Seal And Effective Date. This GUARANTY is an instrument executed under seal and is to be considered effective and enforceable as of the date set forth on the first page hereof, independent of the date of actual execution.

Section 39. Waiver Of Trial By Jury. The GUARANTOR and the LENDER, by their execution and acceptance, respectively, of this GUARANTY, agree that any suit, action, or proceeding, whether claim or counterclaim, brought or instituted by either party hereto or any successor or assign of any party on or with respect to this GUARANTY or which in any way relates, directly or indirectly, to this GUARANTY or any event, transaction, or occurrence arising out of or in any way connected with this GUARANTY, or the dealings of the parties with respect thereto, shall be tried only by a court and not by a jury.
EACH PARTY HEREBY EXPRESSLY WAIVES ANY RIGHT TO A TRIAL BY JURY IN ANY SUCH SUIT, ACTION, OR PROCEEDING.

[Signatures Begin On Next Page] IN WITNESS WHEREOF, the GUARANTOR has executed this GUARANTY with the specific intention of creating a document under seal.

ATTEST/WITNESS: GUARANTOR:

GP STRATEGIES CORPORATION

_____ By: (SEAL)
Name:
Title:

ACKNOWLEDGMENT

STATE OF _____, CITY/COUNTY OF _____, TO WIT: I HEREBY CERTIFY that on this _____ day of March, 2000, before me, the undersigned Notary Public of the aforesaid jurisdiction, personally appeared _____, and acknowledged himself/herself to be the _____ of GP STRATEGIES CORPORATION, a Delaware corporation, and that he/she, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of GP STRATEGIES CORPORATION, by himself/herself as _____.

IN WITNESS MY Hand and Notarial Seal.

_____(SEAL)
NOTARY PUBLIC

My Commission Expires:

Exhibit 10.6

SUBSCRIPTION AND SHAREHOLDERS AGREEMENT

by and among

AVANTIUM B.V.
(to be renamed AVANTIUM INTERNATIONAL B.V.)

(as the Company)

B.V. LICHT EN KRACHT MAATSCHAPPIJ
(as the Chemical Shareholder)

SMITHKLINE BEECHAM PLC
S.R. ONE, LIMITED
(as the Pharmaceutical Shareholders)

GSE SYSTEMS, INC.
(as the Informatics Shareholder)

DELFT UNIVERSITY OF TECHNOLOGY
UNIVERSITY OF TWENTE
EINDHOVEN UNIVERSITY OF TECHNOLOGY
(as the University Shareholders)

THE GENERICS GROUP LIMITED
ALPINVEST HOLDING NV
(as the Financial Shareholders)

Dated as of February 24, 2000

CARON & STEVENS/BAKER & McKENZIE
Leidseplein 29
1017 PS Amsterdam
The Netherlands

The shares in the share capital of Avantium B.V. (to be renamed Avantium International B.V.) to be offered and purchased pursuant to this Agreement are to be offered, sold, transferred or delivered in or from the Netherlands as part of their initial distribution only to individuals or legal entities who or which trade or invest in securities in the conduct of business or a profession - such as banks, brokers, dealers, institutional investors and multinationals with a treasury department - in accordance with Article 2 of the Netherlands Exemption Regulation to the Act on the Supervision on Securities Transactions 1995 ("Vrijstellingsregeling Wet toezicht effectenverkeer 1995").
("Vrijstellingsregeling Wet toezicht effectenverkeer 1995").

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THIS SUBSCRIPTION AND SHAREHOLDERS AGREEMENT (the Agreement) is made and entered into on this 24th day of February, 2000, by and among:

1. AVANTIUM B.V. (the Company), a private company with limited liability, with its registered address at Carel van Bylandtlaan 30, 2596 HR The Hague, The Netherlands (to be renamed AVANTIUM INTERNATIONAL B.V.)

2. B.V. LICHT EN KRACHT MAATSCHAPPIJ "Shel"), a private company with limited liability, with its registered address at Carel van Bylandtlaan 30, 2596 HR The Hague, The Netherlands;

3. SMITHKLINE BEECHAM PLC ("SmithKline"), a public company with its registered address at New Horizons Court, Brentford, Middlesex TW8 9EP, United Kingdom;

4. S.R. ONE, LIMITED ("SRO"), a private company with limited liability, with its registered address at Four Tower Bridge, 200 Barr Harbor Drive, Suite 250, West Conshohocken, PA 19428, United States of America;

5. GSE SYSTEMS, INC. ("GSE"), a Delaware public company, with its registered address at 9189 Red Branch Road, Columbia, Maryland 21045, United States of America;

6. DELFT UNIVERSITY OF TECHNOLOGY ("Delft"), a university, with its registered address at Julianalaan 134, 2628 BL Delft, The Netherlands

7. UNIVERSITY OF TWENTE ("Twente"), a university, with its registered address at Drienerlaan 5, 7522 NB Enschede, The Netherlands;

8. EINDHOVEN UNIVERSITY OF TECHNOLOGY ("Eindhoven"), a university, with its registered address at Den Dolech 2, HG 1.03, 5612 AZ Eindhoven, The Netherlands;

9. THE GENERICS GROUP LIMITED ("Generics"), a private company with limited liability, with its registered address at Harston Mill, Harston, Cambridge CB2 5NH, United Kingdom; and

10. ALPINVEST HOLDING NV ("Alpinvest"), a public company with limited liability, with its registered address at Gooimeer 3, 1411 DC Naarden-Vesting, The Netherlands;

each of the parties to this Agreement a "Party" and collectively the Parties; Party 2 the "Chemical Shareholder";
Parties 3 and 4 collectively the "Pharmaceutical Shareholders"; Party 5 the "Informatics Shareholder";
Parties 2 through 5 collectively the "Industry Shareholders"; Parties 6 through 8 collectively the "University Shareholders"; Parties 9 and 10 collectively the "Financial Shareholders"; and Parties 2 through 10 collectively the "Shareholders";

WHEREAS:

A. The Company is incorporated by Shell (the "Incorporator") on January 28, 2000, in order to develop high-speed experimentation and simulation technologies, also referred to as HSE & S, for application in new product and process development in the pharmaceutical, petrochemical and fine chemical, bio technology and polymers industries (the "Business").

B. The Company has or will have, as soon as possible after the Completion Date, incorporated as its operating company Avantium Technologies B.V., a directly wholly-owned subsidiary

C. The Shareholders have agreed to subscribe for shares in the Company on the terms and conditions of this Agreement so that the Business can be established.

D. The Company has delivered to the Shareholders a business plan (the Business Plan), a copy of which is attached hereto as Schedule 1.

E. Each of the Shareholders has conducted and to its satisfaction finalized its own independent due diligence investigation as to the viability of the Business Plan.

F. A due diligence investigation as to the viability of the Business Plan, including but not limited to the Intellectual Property Rights (as hereinafter defined) and Tangibles (as hereinafter defined), has been completed and the results of the due diligence exercise are satisfactory to the Shareholders in their sole and absolute discretion.

G. A copy of the Business Plan has been submitted to the Securities Supervision Board (Stichting Toezicht Effectenverke) of the Netherlands pursuant to article 2 of the Exemption Regulation to the Act on the Supervision of the Securities Trade Act 1995

(Vrijstellingsregeling Wet Toezicht Effectenverkeer 1995)

H. The Parties hereto wish to have their mutual relations and their respective rights and obligations in respect of their investment and their resulting shareholdings in the Company to be governed by the provisions of this Agreement and the articles of association of the Company.

DECLARED TO HAVE AGREED AS FOLLOWS
Article 1. Definitions and Interpretation

1.1In this Agreement and all of its schedules (hereinafter individually referred to as a ("Schedule") and exhibits (hereinafter individually referred to as an (Exhibit), the following capitalized words shall have the meaning referred to in the provisions indicated below:

1.2The recitals, the exhibits and the schedules to this Agreement form an integral part of this Agreement and any reference to this Agreement includes such recitals, exhibits and schedules. In this Agreement, reference to a recital, article, exhibit or schedule is a reference to a recital, article of, or exhibit or schedule to this Agreement, unless the context requires otherwise.

1.3In this Agreement, unless the context indicates otherwise, references to the singular shall include references to the plural and vice versa and references to any pronoun shall include the corresponding masculine, female or neuter, and references to persons shall include bodies and corporate and unincorporated associations of persons.

1.4In this Agreement a reference to a particular agreement, enactment, regulation or other document shall be construed as a reference to such agreement, enactment, regulation or document as it may from time to time be binding, enforceable or in force, as such agreement, enactment, regulation or document may be novated, assigned, re-enacted (with or without modification), restated, consolidated, amended or supplemented from time to time hereafter.

1.5In this Agreement a reference to a company or other legal entity shall be construed so as to include any legal entity or entities into which such company may during the continuance of this Agreement be merged by means of a statutory merger or into which it may be split up or demerged.

1.6In this Agreement headings are inserted for convenience only and shall not affect the construction of this Agreement.

Article 2. Company' Articles of Association, Shares and Corporate Governance

2.1Upon Completion, the Incorporator shall have incorporated the Company as a private limited liability company ("besloten vennootschap met beperkte aansprakelijkheid" under the laws of the Netherlands. The Company' articles of association (as may be amended from time to time, the "Articles") are substantially in the form as attached hereto, as Exhibit 1.

2.2The Company's share capital shall be divided into two types of shares (collectively the ("Shares"): (i) common shares (the "Common Shares"), each such share having a nominal value of EUR 1 (one Euro); and (ii) preferred shares (the "Preferred Shares"), each such share having a nominal value of EUR 1 (one Euro).

2.3 The Company shall have a board (the "Board"), consisting of
(i) a board of managing directors ("statutair bestuur") of the Company (the "Board of Managing Directors") and (ii) a supervisory board (the "Supervisory Board").

2.4 In addition to the Articles, the members of the Supervisory Board shall each serve for a period of 2 (two) years. Each director may be reappointed.

2.5 In addition to the Articles, the Board shall appoint the members to the scientific advisory board. Furthermore, any and all transactions to be entered into between the Company and any of its Shareholders require the prior written approval of the Board

2.6 In addition to the Articles, Shareholders who do not have an employee directly nominated as a member of the Supervisory Board have observation rights to the Supervisory Board. 2.7 Each group of Shareholders is required to nominate one supervisory director ("commissaris") of the Company. All Shareholders shall vote their shares to ensure that the nominees so nominated by the different groups of Shareholders shall be appointed accordingly.

Article 3. Issue and Subscription

3.1The Incorporator agrees to procure that the Company issues to each Shareholder appearing in column 1 of Schedule 2 the number of Preferred Shares and Common Shares as set forth against that Shareholders name in respectively columns 3(i) and 4(i) of Schedule 2 in

consideration for the payment by such Shareholder of the amount in cash ("Cash"), and/or intellectual property rights ("Intellectual Property Rights") and/or tangibles in kind ("Tangibles") as set forth against its name in respectively columns 5(i), 5(ii) and 5(iv) of Schedule 2 and at such time as set forth against its name in respectively columns 5(i), 5(ii) and 5(iv) of Schedule 2, provided, however, that such issue occurs within two (2) months after the date of this Agreement. To that effect, the Incorporator shall at the date hereof execute a shareholders' resolution, substantially in the form as set forth in Schedule 3, authorizing the Board of Managing Directors to issue such shares. Furthermore, Schedule 3 sets forth such number of shares against such share issue price to be issued to such potential shareholders which the Board is empowered to issue shares to, such issue referred to in Schedule 2 as the "Second Closing".

3.2Each of the Shareholders hereby agree to subscribe to the same, all subject to the terms and conditions of this Agreement.

3.3Each of the Shareholders subscribing to Preferred Shares pays for a Preferred Share a par value of EUR 1 (one Euro) and a surplus ("agio") of EUR 9.2167 (nine Euros and twenty-one point sixty-seven eurocents).

3.4Each of the Shareholders agrees to procure that prior to the issue, it shall have made the payment of Cash payable by such Shareholder to the Company as contribution to the shares to be issued to such Shareholder on each of the dates as set forth against its name in respectively columns 5(i) and 5(iv) of Schedule 2 into account number 54.31.72.201 with ABN AMRO Bank in the name of "Stichting Derdengelden Notariaat Caron & Stevens"
(SWIFT-code ABN-ANL 2A).

3.5The shares will be issued to each of the Shareholders pursuant to a notarial deed ("Notarial Deed") in the form as attached hereto as Exhibit

2, which will be executed by one of the civil law notaries of Caron & Stevens / Baker & McKenzie in Amsterdam, The Netherlands.

3.6Each of the Shareholders may for internal purposes hold its Shares through an affiliate, whereby such Shareholder controls such affiliate and whereby "control" means the right or power to direct or cause the direction of the management and/or policies of such affiliate whether through the ownership of securities with the right to vote, under or pursuant to any contract or voting arrangement, or under or pursuant to any statute or sovereign power, or otherwise, provided however that the obligations under this Agreement shall remain vested in such Shareholder.

Article 4. Conditions Precedent

4.1The obligations of each of the Parties under this Agreement are conditional upon the following conditions precedent ("opschortende voorwaarden") ("Conditions"):

(a) Parties having reached agreement on the Documentation (as hereinafter defined in Article 5.3);

(b) all consents and approvals of the Shareholders, the Company, all government authorities and all third parties that are required under the laws of the Netherlands in connection with the transactions as contemplated by this Agreement being obtained and in full force and effect at the Completion Date (as hereinafter defined);

(c) the European Commission having been notified and approval or sufficient comfort obtained; and

(d) the payments of Cash pursuant to Article 3.4 having been made.

4.2Unless specifically waived by the Shareholders, if any of the Conditions shall not be fulfilled on or before the Completion Date (as hereinafter defined), this Agreement shall terminate and cease to have any effect (unless such date is extended by mutual written agreement between the Parties), except that the termination of this Agreement does not affect accrued rights and obligations of the Parties at the date of termination including those obligations of confidentiality.

Article 5. Completion

5.1Subject to the provisions of Article 4, completion ("Completion") shall take place on February 24, 2000 or at such later date as Parties have agreed upon (the "Completion Date") at the offices of Caron & Stevens / Baker & McKenzie, Leidseplein 29, 1017 PS Amsterdam, The Netherlands or at such other place as shall be mutually agreed between the Parties.

5.2At Completion, all of the following actions shall be effected:

(a) the Parties shall execute and deliver the Documentation as hereinafter defined I in Article 5.3;

(b) the Incorporator shall appoint each of (i) Dr. Ian Maxwell and (ii) Mr. Richard John Artley as a managing director ("statutair bestuurder") of the Company, and shall accept the resignation of Mr. Maarten Geuze, Mr. Piet Hein Dieters and Mr. Jan van der Eijk as directors of the Company;

(c) the Company shall provide a duly executed shareholders' resolution, substantially in the form of Schedule 3, authorizing the Board of Managing Directors to issue the shares, as further set forth in Article 3.1;

(d) the Company and each of the Shareholders shall appear before the civil law notary to execute the Notarial Deed;

(e) the Shareholders shall appoint each of (i) Mr. Maarten Geuze, as the nominee of the Chemical Shareholder, (ii) Mrs. Elaine V. Jones, as the nominee of the Pharmaceutical Shareholders, (iii) Mr. Brian K. Southern, as the nominee of the Informatics Shareholder, (iv) Prof. dr. ir. David N. Reinhoudt, as the nominee of the University Shareholders, (v) Mr. Stan Vermeulen, as the nominee of the Financial Shareholders, and (vi) a nominee of the Board of Managing Directors, as a supervisory director (commissari) of the Company;

(f) the Shareholders shall instruct Stichting Derdengelden Notariaat Caron & Stevens to transfer the amounts of Cash by telephone transfer to the Companys bank account number 66.83.93.858 with ING Bank in Amsterdam;

(g) the Company shall provide evidence of life insurance cover having been obtained in favor of the Company and on terms reasonably satisfactory to the Parties, on the life and possible permanent disability of Dr Ian Maxwell in the amount of EUR 500,000 (five hundred thousand Euros);

(h) the Parties shall do all such further acts and execute all such further documents as shall be appropriate to fully effect the transactions contemplated in this Agreement.

5.3At Completion, all of the following documents shall be executed and/or delivered, or in the case of the employment agreement agreed upon (collectively, the Documentation):

(a) this Agreement;

(b) the Company's business principles, substantially in the form as attached hereto as Exhibit 3 (Business Principles);

(c) the technology transfer agreements (Technology Transfer Agreements) between the Company and respectively Shell International Chemicals B.V., SmithKline and GSE, substantially in the form as attached hereto as respectively Exhibit 4, Exhibit 5 and Exhibit 6;

(d) the letter of intent between the Company, Shell International Chemicals B.V. and Dr. I.E. Maxwell, substantially in the form as attached hereto as Exhibit 7A;

(e) the employment agreement between the Company and Dr. I.E. Maxwell, substantially in the form as attached hereto as Exhibit 7B; and

(f) the secondment agreement between the Company and Generics substantially in the form as attached hereto as Exhibit 8.

Article 6. Decision Procedure within One Group of Shareholders

Where each of the different groups of shareholders is required to nominate or appoint a nominee or reach a decision, such nomination or decision needs to be approved by the shareholders representing at least 51 % (fifty one percent) of the voting rights within each such group of shareholders, unless such group of shareholders has adopted an alternative procedure, provided, however, that the general rule as stated above shall prevail in the event the alternative procedure does not properly result in a nomination or decision.

Article 7. Stock Option Plan

7.1As soon as possible after Completion, the Shareholders will ensure that the Company adopts a stock option plan for the Companys management, employees and/or advisors (Stock Option Plan), substantially in the form as attached hereto as Schedule 4, equal to an amount of 20% (twenty percent) of such number of common shares as is equal to the sum of the numbers of all issued and outstanding Preferred Shares and Common Shares at September 30, 2000. The Stock Option Plan shall be administered by the Board. Upon a refinancing round and upon the recommendation of the Board, the general meeting of shareholders of the Company (GMS) shall take into consideration increasing the number of stock options.

7.2The Shareholders will ensure that under the Stock Option Plan, any shares to be issued in connection with the exercise of any option granted under the Stock Option Plan shall be held in trust by a Stichting Administratiekantoor (the Foundatio) which for that purpose will be incorporated, and that the Foundation, for each of the shares it holds, will issue a depository receipt certificaat van aandeel) to the holder of the option so exercised, through which depository receipt the relevant individual will hold economic ownership of the relevant share without being a shareholder of the Company (and without having a right to vote).

Article 8. Transfer of Shares

8.1The Shareholders acknowledge and agree that a Shareholder may transfer, sell, assign, exchange or otherwise dispose of all or any portion

of its shares or any interest therein (each a ("Transfer")only upon and subject to the terms and conditions set forth in the Articles and this Article 8. Any attempted Transfer that does not comply with the terms and conditions of this Article 8 and the Articles shall be null and void (nietig). The Shareholders shall cause the Company to comply with the requirements of this Article 8 and not to register any Transfer of shares unless the provisions of this Article 8 have been fully complied with, provided, however, that the pledge of shares in connection with a loan document entered into by a Shareholder shall not be considered a Transfer. Notwithstanding, in the event that any such pledge results in a forfeiture, such lender shall be bound by the terms of this Article 8.

8.2The Shareholders agree that in the event a Shareholder wishes to Transfer some or all of its shares to a transferee who is an affiliate (as defined in article 2:24(b) Netherlands Civil Code) of the transferor, the other Shareholders shall waive their pre-emptive rights set forth in the Articles in respect of such Transfer, provided, however, that:

(a) the transferor shall procure that the shares so transferred will be re-transferred to the transferor immediately upon such transferee (i) ceasing to be an affiliate of the transferor and/or (ii) being declared bankrupt or suspending all payments; and(b) the provisions of Article 8.3 are complied with.

The term affiliate with respect to Shell means: N.V. Koninklijke Nederlandsche Petroleum Maatschappij, a Netherlands company, the Shell Transport and Trading Company plc, an English company and any company (Parent Company as defined hereinafter), which is at the time in question directly or indirectly affiliated with these two companies or either of them, whereby for the purpose of this definition:(a) a particular company is directly affiliated with a company or companies if the latter holds/hold shares carrying 50% (fifty percent) or more of the votes exercisable at a general meeting (or its equivalent) of the particular company; and

(b) a particular company is indirectly affiliated with a company or companies (the Parent Company or Companie") if a series of companies can be specified, beginning with the Parent Company or Companies and ending with a particular company, so related that each company of the series except the Parent Company or Companies is directly affiliated with one or more companies earlier in the series.8.3To effect a Transfer, a transferee of the shares shall execute and deliver to the non-transferring Shareholders and the Company a deed of adherence, substantially in the form as attached hereto as Schedule 5 (Deed of Adherenc) by which the transferee agrees to become a party to and be bound by the terms and conditions of this Agreement, as if such transferee is substituted for the transferring Shareholder as to the shares transferred, and the transferor Shareholder shall discharge all its obligations with respect to those shares arising prior to the date of the Transfer. Upon the execution and delivery of such instrument and such discharge, the transferee shall, subject to any applicable legal requirements, become a Shareholder in the place of the transferor as to the shares transferred and shall have all the rights, powers, duties and obligations as to the shares transferred by the transferor under this Agreement. The transferor shall then cease to be a Shareholder as to those shares and shall have no further rights, powers, duties and obligations under this Agreement in regard to them; provided, however, that the transferor shall remain liable under all of its confidentiality undertakings to the Company and the other Parties under this Agreement as if the transferor had continued to own the shares being transferred with respect to all matters arising prior to the date of the Transfer.

9.1In the event of any liquidation, dissolution or winding-up of the Company, either voluntary or involuntary, the holders of the Preferred Shares, if any, shall rank on a parity with each other and be entitled to receive, prior and in preference to any distribution of any of the assets of the Company, whether such assets are capital surplus or earnings, to the holders of Common Shares, the amount paid for the subscription of the Preferred Shares plus any declared but unpaid dividends plus 8% (eight percent) interest compounded annually on such shares up to the date fixed for distribution (as adjusted for any stock dividends, combinations, recapitalizations or splits and the like) (collectively, the Preferred Proceeds).

9.2In the event the assets and funds that pursuant to this article should be distributed to the holders of the Preferred Shares shall be insufficient to fully pay the Preferred Proceeds, then such assets and funds shall be distributed ratably among the holders of the Preferred Shares in proportion to the full preferential amount each such holder is otherwise entitled to receive.

9.3Any surpluses in assets and funds available for distribution to the Company's shareholders after distribution of the Preferred Proceeds to the holders of the Preferred Shares, if any, shall be distributed among the holders of Common Shares pro rata based on the number of Common Shares held by each holder.

9.4The Parties hereby agree that in case of a merger, consolidation, reorganization or sale of all or substantially all of the Company's assets, all proceeds of such merger, consolidation, reorganization or sale of all or substantially all of the Company's assets will be distributed as if such proceeds were generated from a liquidation of the Company in which case the provisions of this Article 9 apply mutatis mutandis to such proceeds.

Article 10. Conversion Right10.1Preferred Shares may be converted, at any time, into Common Shares at a conversion rate of 1:1.

10.2Before any holder of Preferred Shares shall be entitled to convert the same into Common Shares, the holder shall give written notice to the Company that the holder elects to convert the same. The Company shall, as soon as practicable thereafter, issue to such holder of Preferred Shares a notice in writing for the number of Common Shares to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made immediately prior to the close of business on the date of such surrender of the Preferred Shares to be converted.

Article 11. Weighted Average Anti-Dilution Adjustment11.1In the event of an issue of new shares each of the Shareholders shall have such pre-emptive rights as contained in the Articles.

11.2The Shareholders agree not to make use of their right to limit or suspend the pre-emptive rights of any Shareholder in the event of an issue of new shares.

11.3In the event of any issue of additional Shares (Common or Preferred) in the capital of the Company after Completion for a price per Share less than EUR 10.2167 (ten Euros and twenty-one point sixty-seven eurocents), then the Company shall be obliged to issue to the holder of the Preferred Shares such number of Preferred Shares for a contribution equal to the nominal value of the Preferred Shares per Share as is necessary to achieve a situation in which the price per Share paid for the aggregate number of Shares (including the newly issued Shares) by the holder of the Preferred Shares is equal to the price per Share additionally issued multiplied by a fraction, the numerator of which shall be the number of Shares outstanding after the issuance of additional Shares (excluding the Shares issued pursuant to this Article 11.3) plus the number of Shares the Preferred Shares would purchase if the investment of such holder of the Preferred Shares would have been made for a price per Share equal to the price per Share of the Shares additionally issued to the new shareholder and the denominator shall be the number of Shares outstanding before the issuance of additional Shares and the number of Shares additionally issued to the new shareholder (and excluding the Shares issued pursuant to this Article 11.3). Attached hereto as Schedule 8 is a numerical example of the weighted average anti-dilution adjustment. Each of the Parties hereby irrevocably agrees to such issue of Preferred Shares and to co-operate in all actions and resolutions required for the issuance as contemplated by this Article 11.3.

11.4 The beneficiaries of this Article 11 are those parties having joined this Agreement prior to May 1, 2000. Article 12. Registration Right.

12.At the request of 51% (fifty-one percent) of the Shares, such request to be made with the support of the Board and an internationally recognized underwriter, and for an anticipated offering price to the public exceeding EUR 100,000,000 (one hundred million Euros), the Company will apply for all or part of the Shares (the Registration Shares) to be listed on an internationally recognized stock exchange or internationally recognized automated stock quotation system in the European Union or the United States of America (the IP). Prior to the IPO, all Preferred Shares shall be converted into Common Shares. At the IPO, this Agreement shall no longer remain in effect, but the Stock Option Plan (as attached hereto as Schedule 4) remains valid.

12.2If, at any time, the Company proposes to register any shares in the Company for public sale for its own account or for the account of any shareholder, the Company shall give the Shareholders notice of such proposed registration statement. Upon the written request of the Shareholders delivered to the Company within 30 business days after the receipt of the notice from the Company, which request shall state the number of shares (the (Incidental Shares) that the Shareholders wish to sell or distribute publicly under the registration statement proposed to be filed by the Company, the Company shall use its best efforts to register such Incidental Shares, and to cause such registration to become and remain effective for as long as the Company keeps such registration effective as to such other shares. The Shareholders shall be entitled to deliver a request to register the Incidental Shares to the Company with respect to every proposed registration of shares by the Company. The Company's managing underwriter shall have the right to limit, in whole or in part, the total number of the Incidental Shares to be registered, so long as such limitation is applied on a pro rata basis with respect to all other shares proposed or requested to be registered by other Shareholders.

12.3The Company shall pay all of the expenses in connection with the registration of the Registration Shares or Incidental Shares, including the costs of reorganization of the Company if required, preparing, printing and filing a registration statement in compliance with any applicable securities laws, qualifying the offering under such securities laws pursuant to which the offering is required to be qualified, accounting and auditing expenses and reasonable fees and expenses of counsel to each Investor provided, however, that the Company shall not be required to pay underwriting discounts and commissions applicable to the Registration Shares and the Incidental Shares.

12.4The Company shall provide each Shareholder with customary indemnification in connection with any sale by such Shareholder of shares in a public offering pursuant to this Article 12.

Article 13. Drag-along Right

13.1At the request of the holders of at least 51 % (fifty one percent) of the voting rights in the Company and until an IPO has been effected, each of the Shareholders shall be obliged to sell and transfer all of their shareholding(s) in the Company for such price per share, and on such other terms as are customary, as may be agreed between the Shareholders and any reasonable bona fide third party, who is prepared to buy all of the shares available for sale.

13.2In the event of such a request, the Shareholders shall irrevocably appoint a person (the Negotiator) who will be authorized to negotiate the conditions of sale with the third party. Subject to the conditions of the preceding subparagraph 13.1, the Negotiator will be deemed authorized by all Shareholders to negotiate all conditions with the prospective buyer and conclude the contract with such third party on behalf of all Shareholders.

Article 14. Tag-along Right

In the event a Shareholder wishes to sell any of its shares in the Company to a bona fide third party, such Shareholder shall be obliged to give the other Shareholders at least 30 days prior written notice of his intention to sell. In such an event the other Shareholder(s) shall have the right (but not the obligation) to demand from the selling Shareholder(s) within 15 days of receipt of such notice that the relevant selling Shareholder also sells the shares held by the other Shareholder(s) at the same price per share and on such other terms as are agreed between that selling Shareholder and the third party. This clause becomes null and void at an IPO or after
5 (five) years after Completion.

Article 15. Redemption Right

15.1 In the event that the Company has not conducted an IPO (or been purchased) 5 (five) years after Completion, any holder of Preferred Shares participating in this round of financing shall, at its option, have its shares redeemed by the Company, for the greater of (i) the original purchase price (subject to price adjustment) plus 8% (eight percent) interest compounded annually plus any accrued and unpaid dividends whether or not declared, or
(ii) the fair market value of the shares on an as if converted into Common Shares basis plus any accrued and unpaid dividends. Such amounts may be paid in 4 (four) equal quarterly payments, to the extent permitted under Netherlands law.

15.2 For a period of 3 (three) years commencing on the fifth anniversary of the Completion Date, no redemption right may be exercised to the extent such exercise of redemption right would result in the Company having less than 35% (thirty-five percent) of its balance sheet value as at the close of the previous tax year.

Article 16. Limitation on Shareholding

Notwithstanding anything provided for in this Agreement and/or the Articles, the Shareholders agree that neither any of the Shareholders nor any of the group of Shareholders (the Chemical Shareholder, the Pharmaceutical Shareholders, the Informatics Shareholder, the University Shareholders or the Financial Shareholders) shall be allowed to have a direct or indirect interest in the Company of more than 40% (forty percent) of the voting rights and that the Industry Shareholders shall not be allowed to have a direct or indirect interest in the Company of more than 49% (forty-nine percent).

Article 17. Dividends

The Parties agree that the Company shall not make any distributions to the Shareholders from profits or reserves until the net profits after tax exceed the total capital expenditures and research and development needs at the minimum level, as contained in the high growth financial plan in the Business Plan, for a period of 5 (five) years after the date of this Agreement and if and when such distributions are approved by the Supervisory Board.

Article 18. Reportin

The Board of Managing Directors shall:

(a) keep books of account and therein make true and complete entries of all its dealings and transactions of and in relation to the Business (such books of account and all other records and documents relating to the business affairs of the Company shall be open to inspection by each of the Shareholders during normal business hours and on 2 (two) working days prior notice;

(b) provide each member of the Board within 15 (fifteen) days from the end of each calendar month with management accounts for such month in a form acceptable to the Shareholders (such accounts to include a balance sheet, a profit and loss account of the prior month and an estimate for the coming month);

(c) provide each Shareholder within 30 (thirty) days from the end of each quarter with a management report;

(d) provide each Shareholder as soon as the same are available (and in any event within 3 (three) months after the end of each financing year) with the audited annual accounts of the Company for that financial year, each such audited accounts to be accompanied by an unqualified declaration (verklarin) of the external auditor as meant in article 2:393(5) of the Netherlands Civil Code, or in the case of any future subsidiaries established outside the Netherlands, a comparable unqualified declaration of an external auditor in the respective jurisdictions where any such subsidiary is established;

(e) each year prepare an annual business plan and budget no later than 75 (seventy five) days prior to the beginning of each financial year;

(f) keep each Shareholder fully informed as to all its financial and business affairs and in particular shall provide each Shareholder with full details of any actual or prospective material change in such affairs as soon as such details are available; and

(g) provide each Shareholder within 2 (two) weeks of receipt with copies of all reports and documents drawn up or designated by the auditor, including in any case the management letter.

Article 19. Representations and Warranties

Each of the Parties hereto represents and warrants to the other Parties that:

(a) each Party is a company, and in the case of each of the University Shareholders it is a university under the laws of the Netherlands, duly organized and validly existing under the laws of its incorporation, and has all requisite corporate power and authority to own its property and to

conduct its business in the manner presently conducted;

(b) each Party has full power and authority (corporate or otherwise) to enter into, execute, deliver and carry out the terms of this Agreement and to incur the obligations provided for herein, all of which have been duly authorized by all proper and necessary corporate action and are not in violation of its articles of association or governing documents;

(c) except as specifically set forth in this Agreement, no consent, authorization or approval of, filing with, notice to, or exemption by, any person or any governmental instrumentality is required to authorize or is required in connection with the execution, delivery and performance of this Agreement, or is required as a condition to the validity or enforceability of this Agreement;

(d) this Agreement is its legal and binding obligation, enforceable in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization or other similar laws affecting the enforcement of creditors rights generally or by general principles of equity;

(e) the execution, delivery and carrying out by each Party of the terms of this Agreement will not constitute a default under, conflict with, or require any consent under (other than consents which have been obtained), any mortgage, indenture, contract, agreement, judgment, decree or order to which it is a party or by which it or its assets is bound, which defaults, conflicts and consents, if not obtained, would have a material adverse effect on the rights or obligations of any of the Parties under this Agreement, or the ability of it to perform its obligations hereunder; and

(f) there is no litigation pending or, to the best of its knowledge, threatened to which any Party is a party and which affects the rights and obligations of the Parties under this Agreement.

Article 20. Confidentiality

Each of the Parties agrees to keep secret and confidential and not to use, disclose or divulge to any third party or to enable or cause any person to become aware of (except for the purpose of the Companys business) any confidential information relating to the Company including but not limited to intellectual property (whether owned or licensed by the Company), lists of customers, reports, notes, memoranda and all other documentary records pertaining to the Company, or its business affairs, finances, suppliers, customers or contractual or other arrangements but excluding any information which is in the public domain (otherwise than through the wrongful disclosure of any party, and any of their successors and predecessors) or which they are required to disclose by law or by the rules of any regulatory body to which the relevant party is subject.

Article 21. Companys Auditors The Shareholders agree to exercise their voting right in such a manner as is necessary to ensure that one of the (presently five) leading internationally recognized audit firms shall be and continue to be appointed as auditors of the Company. Article 22. Shareholders and Customer Treatment

Attached hereto as Schedule 6 are the in principle terms of business, pursuant to which the individual Shareholders may place R&D orders with the Company. Furthermore, attached hereto as Schedule 7 are the in principle terms of sale and purchase, on which individual Shareholders may purchase equipment and software from the Company.

Article 23. Notices

Any notices given in connection with this Agreement must be in writing and may be given by fax and registered mail to the following addresses or, in respect of any of such addresses, to such other address as the recipient may notify to the other Parties for such purpose:

the Company: Avantium B.V.
(to be renamed Avantium International B.V.)
Attn: Dr. Ian E. Maxwell

Siriusdreef 17-27,
2132 WT Hoofddorp
The Netherlands
Tel: +31 23 568 9213
Fax: +31 23 568 9111

Shell: B.V. Licht en Kracht Maatschappij
C/o Maarten Geuze

Badhuisweg 3
1031 CM Amsterdam
The Netherlands

Tel: +31 20 630 3883
Fax: +31 20

SmithKline: SmithKline Beecham Pharmaceuticals
Attn. Peter L. Thurlby

New Frontiers Science Park (North)
Third Avenue
Harlow
Essex CM19 5AW
United Kingdom
Tel: +44 1279 622393

Fax: +44 1279 622749

SRO: S.R. One, Ltd.
Attn. Elaine V. Jones, Ph.D
200 Barr Harbor Drive, Suite 250
Four Tower Bridge
West Conshohocken,
PA 19428-2977
United States of America
Tel: +1 610 567 1019
Fax: +1 610 567 1039

GSE: GSE Systems, Inc.

Attn. Mr. Brian K. Southern
9189 Red Branch Road
Columbia
Maryland 21045
United States of America
Tel: +1 410 772 3588
Fax: +1 410 772 3599

Delft: Delft University of Technology
Attn. J. Krul L.L.M.
Postbus 5
2600 AA Delft
The Netherlands

Tel: +31 15 278 2964
Fax: +31 15 278 7749

Twente: University of Twente

Attn. Prof. D.N. Reinhoudt
Drienerlaan 5
7522 NB Enschede
The Netherlands
Tel: +31 53 489 2714
Fax: +31 53 489 2575

Eindhoven: Technische Universiteit Eindhoven Holding B.V.
Attn: Drs. B.P. Hiddinga
Den Dolech 2
HG 0.02
Postbus 513
5600 MB Eindhoven
The Netherlands
Tel: +31 40 247 4949 Fax: +31 40 246 7097

enerics: The Generics Group Limited

Attn. Chris Coggill
Harston Mill
Harston
Cambridge CB2 5NH
United Kingdom
Tel: +44 122 387 5200

Fax: +44 122 387 7201

Alpinvest: Alpinvest Holding NV

Attn. J.J. de Swart
Gooimeer 3
Postbus 5973
1410 AB Naarden-Vesting
The Netherlands
Tel: +31 35 695 2600
Fax: +31 35 694 7425

Article 24. Expenses

24.1 The Parties agree that each shall bear its own costs and expenses with respect to the transactions contemplated by this Agreement, provided, however, that if Completion has been effected, the Company shall pay within 30 (thirty) days after the Completion Date the reasonable out-of-pocket costs of: (i) patent research carried out by Generics; (ii) market research carried out by PricewaterhouseCoopers; (iii) in kind contribution research carried out by PricewaterhouseCoopers and Generics; (iv) incorporation of the Company carried out by the Incorporator; and
(v) start-up expenditures of the Company financed by the Incorporator as of January 1, 2000, as incurred by the Incorporator up to and including the Completion Date. The Company shall also bear the fees and expenses of its advisors, Caron & Stevens / Baker & McKenzie and KPMG Corporate Finance N.V.

24.2 The Company shall reimburse the directors of the Supervisory Board for reasonable travel expenses (not including first-class travel).

Article 25. Governing Law and Jurisdiction 25.1This Agreement shall be governed by and construed in accordance with the laws of the Netherlands.

25.2The competent courts of Amsterdam, The Netherlands, shall have exclusive jurisdiction over any dispute arising out of or in connection with this Agreement.

Article 26. Counterparts

This Agreement may be executed in two or more counterparts (whether original or facsimile counterparts), each of which upon due execution shall be deemed an original and part of the same document.

Article 27. General Provisions

27.1This Agreement and its annexes set out the entire agreement and understanding between the Parties with respect to the subject matter of this Agreement and supersedes all prior discussions, agreements, including, but not limited to, the agreements on the term sheet and understandings of every and any nature between the Parties.

27.2Amendments to this Agreement must be made in writing in order to be effective and be signed by all Parties to this Agreement.

27.3In the event of any discrepancies or contradictions between this Agreement and the Articles, this Agreement shall prevail to the extent permitted under the laws of the Netherlands.

27.4Should any provision of this Agreement be or become partly or entirely invalid, this shall not affect the validity of any of the remaining provisions.

IN WITNESS WHEREOF, this Agreement has been signed and executed by the Parties hereto in Amsterdam, The Netherlands on February 24, 2000.

Avantium B.V.
(to be renamed Avantium International B.V.)
By: [ ]

_____	_____
B.V. Licht en Kracht Maatschappij	B.V. Licht en Kracht Maatschappij
By: [ ]	By: [ ]

SmithKline Beecham Plc.
By: [ ]

S.R. One, Limited
By: Mrs. Elaine V. Jones

GSE Systems, Inc.
By: Mr. Brian K. Southern

Delft University of Technology
By: [ ]

University of Twente
By: [ ]

Eindhoven University of Technology
By: [ ]

The Generics Group Limited
By: [ ]

Alpinvest Holding NV
By: [ ]

Exhibit 10.7

GSE SYSTEMS, INC.
AVANTIUM B. V.
SOFTWARE LICENSE
AND INTELLECTUAL PROPERTY AGREEMENT

This Software License and Intellectual Property Agreement (Agreement) together with all Exhibits, sets forth all terms and conditions by and between, Avantium B.V. (Avantium) a Dutch company, and GSE Systems, Inc., (GSE) a corporation organized under the laws of Delaware in the U.S., (parties), is for the licensing of GSE's proprietary software, new developments and versions thereof (including the object and source codes thereof), which may be developed by GSE during the term of this Agreement, intellectual property and the underlying intellectual property rights (GSE Products), listed and described in Exhibit A hereto, to Avantium for its internal use and for research and development (R&D) on the GSE Products by Avantium and the creation of new, derivative products (New Software Products) and the use and exploitation thereof by Avantium .

WHEREAS, GSE desires to own an equity interest in Avantium; and,

WHEREAS, Avantium desires to be granted a license with regard to the GSE Products for its own use and to use for R&D so that the GSE Products become the basis for New Software Products; and

WHEREAS, GSE will license the GSE Products in Exhibit A to Avantium in exchange for which Avantium shall convey an equity interest in Avantium to GSE; and,

WHEREAS, any and all New Software Products derived from or arising out of Avantiu's R&D on the GSE Products shall be the joint intellectual property of Avantium and GSE, and GSE will have rights to market, distribute and sell the New Software Products for which GSE shall pay Avantium royalties at a rate(s) to be determined; and,

WHEREAS, Avantium desires to have GSE provide certain resources for use in the development and creation of New Software Products for the benefit of Avantium and GSE.

NOW THEREFORE, in consideration of the mutual covenants and promises set forth herein and other good and valuable consideration, the receipt of which is hereby acknowledged, the parties agree as follows and enter into this Agreement on the day and year entered below.

1. License and Consideration

1.1 GSE License to Avantium. GSE hereby grants to Avantium and its subsidiaries and Avantium hereby accepts from GSE the following: (i) a non-transferable, exclusive, irrevocable and perpetual license in accordance with, and subject to, all of the provisions of this Agreement throughout the term of this Agreement to use the source code of the GSE Products; (ii) a non-transferable, non-exclusive, irrevocable and perpetual license in accordance with, and subject to, all of the provisions of this Agreement throughout the term of this Agreement to use the

object code of the GSE Products; for the research and development (R&D) of a HSE&S informatics system and the development of New Software Products;

Promptly after the Effective date GSE shall transfer and disclose to Avantium: the object code(s), the source codes and all other relevant information, data and documentation of the GSE Products. Neither Avantium, nor any shareholder, shall have the right to sell, license or distribute either the GSE Products or the New Software Products, unless this Agreement provides otherwise.

In the event any Avantium shareholders desire to license any of the GSE Products or New Software Products, the terms of such licensing shall be separately agreed between such shareholder and GSE or Avantium.

2. Remedies in case of Breach, bankruptcy or Liquidation 2.1 This agreement, the license and rights granted hereunder, shall be irrevocable and perpetual following the Effective Date hereof, subject to the provisions of this Agreement.

2.2 In the event of a material breach of this Agreement by a party, which breach has not been cured to the satisfaction of the non-breaching party within a period of sixty (60) days after the breaching party has been requested by written notice to do so, the non breaching party can only invoke the following remedies (A or B):

A. the non-breaching party can seek injunctive relief to force the breaching party to cease and desist its breach immediately; or

B. (i) Avantium shall only have the right to use the object codes of the GSE Products in order to exploit the developed New Software Products at its own discretion against the payment of one time (lump sum) fee of US$ 965,000.= to GSE;

(ii) Avantium shall return immediately the source codes of the GSE Products to GSE and delete or destroy all copies thereof;
(iii) GSE and Avantium will grant each other the irrevocable, perpetual and royalty free right to exploit the New Software Products (together with the related object- and sources codes) at their own discretion; (iv) GSE shall assign and transfer immediately all its preferred and common shares in Avantium to Avantium; (v) Avantium shall pay to GSE the difference between the value of these shares at the moment these shares were conveyed to GSE and the fair market value of the shares at the moment of the aforementioned assignment and transfer, which fair market value will be determined in accordance with the Subscription and Shareholders Agreement, provided and when sufficient capital is available; (vi) all payments due and owing either party shall be made immediately; (vii) for a period of one year, but no longer than one year, after termination of this Agreement, unless GSE waives such time, Avantium shall offer to GSE any improved new, updated, upgraded, revised, reformatted, modified, similar or renamed version of the New Software Products, pursuant to Section 10.3.; which remedies (i through vii) can only be invoked together, and not separately or individually.

2.3 In the event: - an order is made or resolution is passed for the winding-up of GSE, or a provisional liquidator is appointed in respect of GSE, or an administration order is made in respect of GSE, a receiver (which expression shall include an administrative receiver) is appointed in respect of GSE or all or any of its assets, and is not discharged within a period of 30 days or any voluntary arrangement is proposed in respect of GSE; or, - GSE ceases to exist or to carry on (i) the business for which it was created or incorporated or (ii) the business which is essential for the purpose of this Agreement; Avantium can only invoke the following remedies, which remedies only can be invoked together, and not separately or individually: (i) all the provisions of the Agreement shall terminate immediately, with exception of the granted non-transferable, exclusive, perpetual, irrevocable and perpetual license to Avantium as set forth in
Section 1.1; (ii) Avantium shall be granted an exclusive, perpetual, irrevocable, royalty free license and right to use and to exploit the developed New Software Products at its own discretion; (iii) all payments due and owing either party shall be made immediately.

2.4 In the event: - an order is made or resolution is passed for the winding-up of Avantium, or a provisional liquidator is appointed in respect of Avantium, or an administration order is made in respect of Avantium, a receiver (which expression shall include an administrative receiver) is appointed in respect of Avantium, all or any of its assets, and is not discharged within a period of 30 days or any voluntary arrangement is proposed in respect of Avantium; or, - Avantium ceases to exist or to carry on (i) the business for which it was created or incorporated or (ii) the business which is essential for the purpose of this Agreement; - GSE can only invoke the following remedies, which remedies only can be invoked together, and not separately or individually: (i) all the provisions of the Agreement shall terminate immediately; (ii) GSE shall be granted an exclusive, perpetual, irrevocable, royalty free license and right to use and to exploit the developed New Software Products at its own discretion; (iii) all payments due and owing either party shall be made immediately.

2.5 The above remedies are the sole remedies of parties and each party hereby waives all its rights to terminate this Agreement, including its right to terminate under statutory law, article 6:
265 Burgerlijk Wetboek (Dutch Civil Code) and its right to invoke the obligation to undo and its right to compensation for damage, other than explicitly set forth in this Agreement.

3. Ownership of New Software Products and Intellectual Property.

3.1 New Software Products. The following are definitions of the various forms of New Software Products:

3.1.1 HSE&S Modules (HSE Module), The newly developed modules specifically developed for the purpose of Avantium that are a derivative of or extension of GSE Products including the object and source code and all relevant information, data and documentation, and compensated for as described in the Section 10.1.

3.1.2 HSE&S New Software Products (HSE Product), The newly developed products specifically developed by Avantium and GSE for the purpose of Avantium, including the object and source code and all relevant information, data and documentation, and compensated for as described in the Section 10.1.

3.2 Underlying Intellectual Property Rights. Without prejudice to Sections 3.5 and 3.6, all of the underlying intellectual property rights (such as copyrights, patent rights and trademark rights) contained in or with respect to the New Software Products shall be co-owned by and be proprietary to Avantium and GSE together, and Avantium and GSE shall be acknowledged as the owners of such Intellectual Property rights. GSE shall have the right to seek patent, copyright, trademark protection or related notices or applications anywhere in the world in respect to its co-ownership of the New Software Products and underlying intellectual property rights in the joint names of Avantium and GSE. Both parties shall cooperate fully and completely and do whatever acts are necessary to aid Avantium and GSE in obtaining full and complete protection for said proprietary, intellectual property rights in any country or jurisdiction in the world that Avantium and GSE mutually select.

3.3 Avantium and GSE agree that both parties will provide the necessary assistance in obtaining the necessary intellectual property rights referred to in Section 3.2. GSE shall be solely responsible for the filing and the costs of filing, application, registration and maintenance of the intellectual property rights.

3.4 Product Displays and Notices. Neither party shall be responsible or liable to the other party for damages, payment or otherwise, if the New Software Products become embedded in or co-mingled with an operating system resulting in a loss of the display identifying information about the other party and its contribution to the New Software Products. Neither party will remove any copyright, patent right, trademark right and/or confidentiality notices from, or assert any claim of ownership to, the New Software Products.

3.5 The ownership of any information, data and software, further developments and versions thereof (including the underlying intellectual property rights) which have been solely developed by Avantium and which do not contain any confidential information received from GSE under this Agreement remain and shall be exclusively vested in Avantium.

3.6 The ownership of the GSE Products, any information, data and software, further developments and versions thereof (including the underlying intellectual property rights) which have been solely developed by GSE and which do not contain any confidential information received from Avantium under this Agreement remain and shall be exclusively vested in GSE.

4. Relationship of Parties.

4.1 The parties are signatories to a Subscription and Shareholders' Agreement dated February 24, 2000, which specifies the respective rights and obligations in regard thereto. In respect of this Agreement, GSE and Avantium will each act and take affirmative steps to market and promote each other's products in accordance with their standard business practices. Neither party shall misrepresent or make any negative statements about the other, its products or services and each party shall indemnify the other with respect to such misrepresentation or negative statement. Neither party is responsible to any end user for the quality or services of the other.

4.2 Except as expressly set forth herein, no right, title or interest in or license to, any patents, trade secrets, copyrights, other intellectual property rights or rights to the GSE Products or New Software Products is granted or conveyed to the other party pursuant to this Agreement.

5. Names and Trademarks.

Nothing in this Agreement grants to either party the right to use or display the trademarks, trade names, logos or service marks of the other party, except as provided herein. Avantium agrees to submit to GSE for written approval, and GSE agrees to submit to Avantium for written approval, any marketing materials which may use or display any trademark, trade name, logo or service mark of Avantium and GSE respectively. Each party at its sole discretion may accept or reject the other party's use of such marketing materials. In accordance with this Agreement, each party may make general reference to the fact the parties hereto have entered into a cooperative development and business alliance of which GSE is a member as a shareholder in Avantium.

6. Confidentiality.

6.1 Each party acknowledges that it may receive information regarding the GSE Products, Avantium products and New Software Products from the other party that the providing party regards as confidential and proprietary. To the extent that such confidential information had been disclosed by the providing party to the receiving party in writing marked Confidential, or orally or visually disclosed and summarized in writing and delivered by the providing party to the receiving party within thirty (30) days of such disclosure, such information shall be Confidential for the purpose of this Article.

6.2 Other than as expressly contemplated herein, neither party shall disclose, provide or otherwise make available to any third party (including a prospective client) any confidential information of the other party except to the extent necessary to exploit its rights granted under this Agreement and provided such third party has agreed to confidentiality obligations no less stringent than those assumed by the receiving party hereunder. Each party agrees that it will protect the confidential information of the other through the exercise of at least reasonable care, and in no event less protection and care than is customarily used in safeguarding its own confidential or proprietary information of a similar nature.

6.3 In no event shall either party use any confidential information of the other party except to the extent necessary to effect the provisions and

purposes, as expressly contemplated under the terms of this Agreement.

6.4 The foregoing shall not prohibit or limit a party's use of information, including but not limited to ideas, concepts, know how, techniques and methodologies, which (a) are or become part of the public domain through no breach of the confidentiality provisions of this Agreement; (b) are rightfully obtained by the receiving party from a third party without restriction; (c) are already and rightfully known to or independently developed by the receiving party.

7. Limited Warranty.

7.1 GSE represents and warrants that it is the rightful owner of the GSE Products and that it is allowed to grant the rights herein to Avantium.

7.2 In accordance with its standard license provisions, GSE will provide a twelve (12) month warranty on the GSE Products. With regard to GSE Products and New Software Products, GSE makes no further warranty, either express or implied, including but not limited to implied warranties of merchantability or fitness for a particular purpose, and all other warranties are hereby disclaimed. Notwithstanding anything contained in this Agreement, GSE makes no representation, warranty, or guaranty that Avantium's use of the GSE Products or New Software Products will be uninterrupted or error free.

7.3 Avantium provides no warranty, either express or implied, including but not limited to implied warranties of merchantability or fitness for a particular purpose towards GSE with regard to any New Software Product, and all other warranties are hereby disclaimed. Notwithstanding anything contained in this Agreement, Avantium makes no representation, warranty, or guaranty that GSEs use of the New Software Products will be uninterrupted or error free.

8. Limitation of Liability

8.1 Except as otherwise provided in Section 9, GSE's liability, if any, to Avantium for claimed loss or damage, whether based on contract, tort, strict liability or any other legal theory, shall be strictly limited to the payments made by Avantium under this Agreement.

8.2 Avantium's liability, if any, to GSE for claimed loss or damage, whether based on contract, tort, strict liability or any other legal theory, shall be strictly limited to the payments made by GSE under this Agreement.

8.3 The warranties and commitments expressly set forth in this agreement are in lieu of all other obligations or liabilities on the part of each party for damages or other relief, including, without limitation, special, indirect, incidental, or consequential damages that in any way arise from or are in connection with the use and/or performance of the GSE Products or New Software Products.

9. Intellectual Property Indemnification

9.1 GSE will indemnify Avantium against any loss or liability awarded by final judgment of a court of competent jurisdiction based on a suit that the GSE Products infringe or misappropriate any patent, copyright, trademark, trade secret, or other proprietary right. Avantium shall promptly notify GSE in writing of any such suit or threatened suit. Avantium shall provide GSE all information and reasonable assistance for the defense of the same. GSE shall have no liability for any such claim of infringement or misappropriation to the extent that it is based on the use of services and/ or software not specifically supplied by GSE, which have been used in combination with a GSE Product or New Software Products. GSE shall have absolute discretion with respect to the defense and settlement of any such suit, legal proceeding, or claim.

9.2 In the event a third party claims that a New Software Product infringes or misappropriates any patent, copyright, trademark, trade secret, or other proprietary right, each party will promptly notify the other party in writing of any such claim. Each party will provide the other party all information and reasonable assistance for the defense of the same. Parties will decide in mutual agreement, how such claim will be dealt with. Each party will bear 50% of all the (legal) costs and (attorney) fees as well as the awarded claims. Avantium shall have no liability for any such costs, fees and claims of infringement to the extent that it is based on the use of services and/ or software added, used or supplied by GSE, which have been used in combination with a New Software Product.

9.3 If a GSE Product becomes, or if in GSE's sole judgment appear might become subject to a third party infringement claim, GSE in its sole discretion may: i) procure at no cost to Avantium from the third party the right to allow Avantium to continue to use the GSE Product ; ii) modify or replace at GSE's own costs that portion of the GSE Product which is alleged to be infringing. In the event the foregoing options are not reasonably practical, GSE, in its sole judgment, may terminate the license for such GSE Product and return to Avantium the license valuation for such GSE Products on the Effective Date of this Agreement, pro rated over a 5 (five) year period from such date.

9.4 If a New Software Product becomes, or if in both parties judgment appear might become subject to a third party infringement claim, both parties shall: i) procure from the third party the right to allow Avantium and GSE to continue the use, distribution and sale of that New Software Product; ii) modify or replace that portion of that New Software Product which is alleged to be infringing; or iii) in the event that the foregoing options are not reasonably practical, cease and desist the use, distribution and sale of that New Software Product.

9.5 The foregoing states the entire liability of each party with respect to the infringement of any copyrights, patents, trademarks, trade secrets, or other proprietary rights pertaining to the GSE Products and any New Software Products.

10. Development costs and Exclusive Distributor of New Software Products.

10.1 All costs, expenditures (including costs of third parties involved) with regard to the development of a New Software Product by Avantium will be borne by both parties equally. Each party shall appoint a person(s) responsible for determining the project development, including release date, of any proposed New Software Product.

10.2 A New Software Product will be deemed to be developed once a full product acceptance has been made by both GSE and Avantium. During the first two years after the development of a New Software Product both parties will decide in mutual agreement whether the New Software Product will be brought on the market. It is expressly understood by both parties that each party has a veto right with regard to the decision to bring a New Software Product on the market during those first two years. After the expiration of those two years GSE may decide at its own discretion whether such New Software Product will be brought on the market, provided however that GSE accepts the exclusive distribution license agreement offered by Avantium, as set forth in Section 10.3. If GSE refuses such exclusive distribution agreement, Avantium can decide at its own discretion to bring such New Software Product on the market whether or not by appointing a third party or parties as its distributor(s), with GSE being entitled to the same royalty as defined in Section 10.3.

10.3 Avantium hereby grants to GSE the first right of refusal to be appointed as the sole and exclusive distributor of each such New Software Product and all upgraded, revised, reformatted, modified, similar or renamed version and improvement of each such New Software Product for which distribution license GSE shall pay to Avantium a royalty of ten per cent (10%) of the revenues realized by GSE as a result of the distribution of the New Software Product, which royalty shall increase if the revenues exceed a certain amount, to be decided by both parties with regard to each distribution license. Furthermore in such distribution license agreement standard provisions mutually agreeable to GSE and Avantium will be inserted.

10.4 Avantium Shareholders will be entitled to acquire licenses of the HSE Module and HSE Products as developed under this Agreement at a preferred status for a term; the duration and cost of which shall be determined at the time by mutual agreement of the Avantium Board and GSE, but not longer than one year after completion of each New Software Product.

11. Marketing and Sales.

11.1 Avantium shall advise GSE of potential users of the New Software Product(s) so that GSE may consider its marketing and sales activities accordingly.

11.2 Avantium shall furnish information kits for marketing purposes which shall include GSE overviews, organization and contact information, New Software Product(s) description and positioning information and suggested lead qualification questions. All of the information shall be subject to GSE's approval and Avantium shall not distribute any information kits without GSE's prior written approval. All costs, expenditure (including costs of third parties involved) with regard to the information kits will be borne by both parties equally.

11.3 The parties agree to inform appropriate personnel in each company about this Agreement and provide mutually agreed upon training to personnel needing same to ensure that such personnel are knowledgeable about the GSE Products and New Software Products and informed of all improvements, changes, upgrades and changes to the GSE Products and New Software Products. The parties shall inform such personnel that they are subject to the confidentiality provisions set forth in Section 6 hereof.

12. General Provisions.

12.1 The parties agree that in the event of a breach of the provisions of the Sections on: Names and Trademarks; Confidentiality and Non-solicitation, money damages alone may not be an adequate remedy; in such event, the aggrieved party may, in addition to such other equitable and legal relief which may be available, seek the entry of injunctive relief by a court of competent jurisdiction.

12.2 To the extent that GSE Products and New Software Products are subject to the U.S. Export Administration Regulations, Avantium will comply with such regulations. To assist Avantium in such compliance, GSE shall promptly advise Avantium in writing the Export Control Classification Number (ECCN) of all GSE Products and New Products.

12.3 For the term of this Agreement and for one (1) year after its termination, neither party will, without the other's prior written consent, knowingly employ or independently contract for Agreement related services of any employee from either party

12.4 This Agreement shall be governed by and construed in accordance with the laws of The Netherlands without giving effect to any conflict of laws principles. The competent courts of Amsterdam, the Netherlands shall have exclusive jurisdiction over any dispute arising out of or in connection with this Agreement. .

12.5 This Agreement constitutes the entire agreement between the parties with respect to the matters set forth herein and shall supersede all prior endorsements, representations and understanding pertaining thereto.

12.6 This Agreement may not be modified, except in writing signed by both parties. If any of the provisions of this Agreement are held invalid, such provisions shall be deemed severed and the remaining provisions shall remain in full force and effect.

12.7 This Agreement may not be assigned or transferred, nor may rights or obligations be delegated, without the prior written Agreement of the parties. Notwithstanding the foregoing, this Agreement shall be binding upon and inure to the benefit of the parties to this Agreement, as well as their respective successors and assigns.

12.8 Failure of any party to enforce in any one of more instances, any of the terms or conditions of this Agreement shall not be construed as a waiver of the future performance of any such terms or conditions .
12.9 This Agreement shall come into force on the date on which the Subscription and Shareholders Agreement comes into full force, all conditions precedent having been met (the Effective Date).

12.10 Any notices given in connection with this Agreement must be in writing and may be given by fax and registered mail to the following addresses or, in respect of any of such addresses, to such other address as the recipient may notify to the other Party for such purpose:

the Company: Avantium B.V.
Attn: Dr. I.E. Maxwell
Siriusdreef 17-27
2132 WT Hoofddorp
The Netherlands
Tel: +31 23 568 9213
Fax: +31 23 568 9111

GSE:
GSE Systems, Inc.
Attn: Brian K. Southern
9189 Red Branch Road,
Columbia
Maryland 21045
USA
Tel: +1 410 772 3588
.....Fax: +1 410 772 3599

IN WITNESS WHEREOF, the parties agree to and accept the terms herein and have caused this Agreement to be signed by their authorized representatives as of the Effective Date.

GSE SYSTEMS, INC.	AVANTIUM B. V.
Brian K. Southern Name (typed or printed)	Dr. Ian Maxwell Name (typed or printed)
_____ Signature	_____ Signature
Senior Vice President Title	CEO Title
February 24, 2000 Date	February 24, 2000 Date
9189 Red Branch Road Columbia, Maryland 21045 USA Address	Siriusdreef 17-27 2132 WT Hoofddorp The Netherlands Address

EXHIBIT A

GSE PRODUCTS

A. BatchCAD Version 7.0 or later
B. BatchWizard Version 1.0 or later
C. VPbatch Version 1.3 or later
D. SimSuite Pro Version 3.0 or later
E. TotalVision Version 1.1 or later

Exhibit 16.1

March 30, 2000

Securities and Exchange Commission
450 Fifth Street, N.W.
Washington, D.C. 20549

Commissioners:

We have read the statements made by GSE Systems, Inc., which we understand will be filed with the Commission, pursuant to Item 9 of Form 10-K, as part of the Company's Annual Report on Form 10-K to be filed on March 30, 2000. We agree with the statements concerning our Firm in such Form 10-K.

Very truly yours,

PricewaterhouseCoopers LLP
McLean, Virginia

Exhibit 21.1

SUBSIDIARIES OF REGISTRANT AT DECEMBER 31, 1999

The companies listed below are directly or indirectly owned 100% by GSE Systems, Inc. and are included in its consolidated financial statements.

o GS Information Systems FSC, Ltd., GSE Systems International Ltd., MSHI, Inc., GSE Power Systems AB, GSE Process Solutions, Inc., and GSE Erudite Software, Inc. are wholly owned subsidiaries of GSE Systems, Inc.

o GP International Engineering & Simulation, Inc. and GSE Services Company L.L.C. are wholly owned subsidiaries of GSE Power Systems, Inc. which is a wholly owned subsidiary of MSHI, Inc.

o GSE Systems UK, Ltd. and GSE Process Solutions B.V. are wholly owned subsidiaries of GSE Process Solutions, Inc.

o GSE Process Solutions Belgium N.V. and GSE Process Solutions Singapore (Pte) Limited are wholly owned subsidiaries of GSE Process Solutions B.V.

o J.L. Ryan, Inc., acquired by GSE Power Systems, Inc. in December 1997, has been merged with and into GSE Power Systems, Inc. as of February 1998, with GSE Power Systems, Inc. as of February 1998, with GSE Power Systems, Inc. being the surviving corporation.

Name	Place of Incorporation or Organization
GS Information Systems FSC, Ltd.	Barbados
GSE Systems International Ltd.	State of Delaware
MSHI, Inc.	State of Virginia
GSE Power Systems AB	Sweden
GSE Process Solutions, Inc.	State of Delaware
GSE Erudite Software, Inc.	State of Delaware
GP International Engineering & Simulation, Inc.	State of Delaware
GSE Services Company L.L.C.	State of Delaware
GSE Power Systems, Inc.	State of Delaware
GSE Systems UK, Ltd.	United Kingdom
GSE Process Solutions B.V.	Netherlands
GSE Process Solutions Belgiuim N.V.	Belgium
GSE Process Solutions Singapore (Pte) Limited	Singapore

Exhibit 23.1

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference in the Registration Statement of GSE Systems, Inc. on Form S-8 (No. 333-08805) of our report dated February 29, 2000, except for Note 19, as to which date is March 23, 2000, relating to the financial statements of GSE Systems, Inc., which are included in this Annual Report on Form 10-K for the year ended December 31, 1999.

/s/ PricewaterhouseCoopers LLP
PricewaterhouseCoopers LLP

McLean,Virginia
March 30, 2000

..... Exhibit 24.1

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS that the undersigned Officers and Directors of GSE Systems, Inc., a Delaware corporation, hereby constitute and appoint Christopher M. Carnavos and Jeffery G. Hough, and each of them, the true and lawful agents and attorneys-in-fact of the undersigned with full power and authority in said agents and attorneys-in-fact, and in any one or both of them, to sign for the undersigned and in their respective names as Officers and Directors of the Corporation, the Annual Report of Form 10-K of the Corporation to be filed with the Securities and Exchange Commission, Washington, D.C., under the Securities Exchange Act of 1934, as amended, and any amendment or amendments to such Annual Report, hereby ratifying and confirming all acts taken by such agents and attorneys-in-fact, or any one or more of them, as herein authorized.

Dated: March 30, 2000

Name	.....	*Title*
/S/ JEROME I. FELDMAN *Jerome I. Feldman*		*Chairman of the Board*
/S/ SCOTT N. GREENBERG *Scott N. Greenberg*		*Director*
/S/ JOHN A. MOORE, JR. *John A. Moore, Jr.*		*Director*
/S/ GEORGE J. PEDERSEN *George J. Pedersen*		*Director*

ARTICLE 5

CIK: 0000944480

NAME: GSE SYSTEMS, INC.

MULTIPLIER: 1,000

CURRENCY: U.S. Dollars

PERIOD TYPE	12 Mos
FISCAL YEAR END	DEC 31 1999
PERIOD START	JAN 01 1999
PERIOD END	DEC 31 1999
EXCHANGE RATE	1
CASH	2,695
SECURITIES	0
RECEIVABLES	17,390
ALLOWANCES	(509)
INVENTORY	3,255
CURRENT ASSETS	25,919
PP&E	11,581
DEPRECIATION	(8,487)
TOTAL ASSETS	43,027
CURRENT LIABILITIES	16,774
BONDS	0
PREFERRED MANDATORY	0
PREFERRED	0
COMMON	50
OTHER SE	17,120
TOTAL LIABILITY AND EQUITY	43,027
SALES	66,699
TOTAL REVENUES	66,699
CGS	41,629
TOTAL COSTS	41,629
OTHER EXPENSES	24,326
LOSS PROVISION	0
INTEREST EXPENSE	(450)
INCOME PRETAX	334
INCOME TAX	(233)
INCOME CONTINUING	101
DISCONTINUED	0
EXTRAORDINARY	0
CHANGES	0
NET INCOME	101
EPS BASIC	.02
EPS DILUTED	.02