

# ADVANCED ENERGY INDUSTRIES INC

## FORM 10-K (Annual Report)

Filed 3/20/2000 For Period Ending 12/31/1999

Address	1625 SHARP POINT DR FT COLLINS, Colorado 80525
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Industry	Electronic Instr. & Controls
Sector	Technology
Fiscal Year	12/31

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# SECURITIES AND EXCHANGE COMMISSION

## WASHINGTON, D.C. 20549

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### FORM 10-K

(MARK ONE)

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

For the fiscal year ended December 31, 1999.

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 (NO FEE REQUIRED).**

For the transition period from \_\_\_\_\_ to \_\_\_\_\_.

*Commission file number: 0-26966*

## ADVANCED ENERGY INDUSTRIES, INC.

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(Exact name of registrant as specified in its charter)

DELAWARE

(State or other jurisdiction of  
incorporation or organization)

84-0846841

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

1625 SHARP POINT DRIVE, FORT COLLINS, CO  
(Address of principal executive offices)

80525  
(Zip Code)

Registrant's telephone number, including area code: (970) 221-4670

**Securities registered pursuant to Section 12(b) of the Act:**

NONE

**Securities registered pursuant to section 12(g) of the Act:**

**COMMON STOCK, \$0.001 PAR VALUE**

(Title of Class)

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 .

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Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (Section 229.405 of this chapter) 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 [ ].

As of February 29, 2000, there were 28,456,816 shares of the Registrant's Common Stock outstanding and the aggregate market value of such stock held by non-affiliates of the Registrant was \$1,174,584,105.

#### **DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the Company's definitive proxy statement for the annual meeting of stockholders to be held on May 10, 2000 are incorporated by reference into Part III of this Form 10-K.

**ADVANCED ENERGY INDUSTRIES, INC.**  
**FORM 10-K**  
**TABLE OF CONTENTS**

PART I		
ITEM 1.	BUSINESS	4
	EXECUTIVE OFFICERS OF THE REGISTRANT	29
ITEM 2.	PROPERTIES	30
ITEM 3.	LEGAL PROCEEDINGS	30
ITEM 4.	SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS	30
PART II		
ITEM 5.	MARKET PRICE FOR REGISTRANT'S COMMON STOCK AND RELATED STOCKHOLDER MATTERS	31
ITEM 6.	SELECTED CONSOLIDATED FINANCIAL DATA	32
ITEM 7.	MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS	33
ITEM 7.A.	QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK	46
ITEM 8.	FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA	47
ITEM 9.	DISAGREEMENTS ON ACCOUNTING AND FINANCIAL DISCLOSURES	68
PART III		
ITEM 10.	DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT	69
ITEM 11.	EXECUTIVE COMPENSATION	69
ITEM 12.	SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT	69
ITEM 13.	CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS	69
PART IV		
ITEM 14.	EXHIBITS, FINANCIAL STATEMENT SCHEDULES AND REPORTS ON FORM 8-K	70

## **PART I**

### **ITEM 1. BUSINESS**

#### **GENERAL**

We design, manufacture and support power conversion and control systems. These systems are important components in industrial manufacturing equipment that modifies surfaces or deposits or etches thin film layers on computer chips, CDs, flat panel displays such as computer screens, DVDs, windows, eyeglasses, solar panels and other products. Our systems refine, modify and control the raw electrical power from a utility and convert it into power that is uniform and predictable. This allows manufacturing equipment to produce and deposit very thin films at an even thickness on a mass scale.

We market and sell our systems primarily to large, original equipment manufacturers of semiconductor, flat panel display, data storage and other industrial thin film manufacturing equipment. We have sold our systems worldwide to more than 100 OEMs and directly to more than 500 end-users. Our principal customers include Applied Materials, Balzers, Eaton, Lam Research, Novellus, Singulus and ULVAC.

We seek to expand our product offerings and customer base. In August 1997 we acquired Tower Electronics, Inc. This acquisition expanded our technology and customer base, and provided us with the capability to design and manufacture power conversion systems for use in modems, non-impact printers, night vision goggles and laser devices. Representative customers of these systems include U.S. Robotics, Videojet Systems International and ITT.

We achieved another step with additional technology and new market penetration in September 1998 when we acquired the assets of Fourth State Technology, Inc. This acquisition provided us with the capability to design and manufacture power-related process control systems used to monitor and analyze data in thin film processes.

In October 1998 we acquired RF Power Products, Inc., which designs, manufactures and markets radio frequency (RF) power conversion and control systems consisting of generators and matching networks. This acquisition expanded our existing product line of RF generators and matching networks. Generators provide radio frequency power and matching networks provide the power flow control to our customers' equipment. We sell these products principally to semiconductor capital equipment manufacturers. We also sell similar systems to capital equipment manufacturers in the flat panel display and thin film disk media industries. We continue to explore applications for these products in other industries.

In October 1999 we further expanded our range of product offerings when we acquired a majority ownership in LITMAS, in which we had previously held a minority interest. LITMAS is a manufacturer of plasma gas abatement systems and high-density plasma

sources for the semiconductor capital equipment industry.

Since inception we have sold over 175,000 power conversion and control systems. Sales to customers in the semiconductor capital equipment industry constituted 49% of our sales in 1998 and 61% in 1999. We sell our systems primarily through direct sales personnel to customers in the United States, Europe and Asia, and through distributors and representatives in Australia, China, Hong Kong, India, Israel, Italy, Mexico, Singapore, Sweden and Turkey. International sales represented 28% of our sales in 1998 and 29% in 1999.

## **DEVELOPMENT OF COMPANY BUSINESS**

We incorporated in Colorado in 1981 and reincorporated in Delaware in 1995. In 1995 we effected the initial public offering of our Common Stock. As used in this Form 10-K, references to "Advanced Energy" refer to Advanced Energy Industries, Inc. and references to "we", "us", or "our" refer to Advanced Energy and its consolidated subsidiaries. Our principal executive offices are located at 1625 Sharp Point Drive, Fort Collins, Colorado 80525, and our telephone number is 970-221-4670.

## **PRODUCTS**

Our switchmode power conversion and control systems have enabled our customers to develop new plasma-based processing applications. In 1982 we introduced our first low-frequency switchmode power conversion and control system specifically designed for use in plasma processes. In 1983 we introduced our first direct current (DC) system designed for use in physical vapor deposition (PVD) applications. This DC system is a compact, cost-effective power solution, which greatly reduces stored energy, a major limitation in PVD systems. In 1989 we introduced tuners used to match the characteristics of the plasma with the RF generators. We carried this theme further in 1995 when we introduced the Pinnacle series of DC systems. In 1990 we introduced the first switchmode RF power conversion and control systems for use in semiconductor etch applications. This product line achieved significant design wins because of its smaller size and its ability to provide more precise control. In 1998 we developed the APEX series of RF systems, which use new technology to further reduce size and extend the frequency and power range of our RF product line. We introduced a family of accessories for the DC product line in 1993. These pulsed DC products provided major improvements in arc prevention and suppression. We are currently extending the power range of our systems to much higher power levels to enable them to supply products for emerging industrial applications. The products in these product families range in price from \$1,500 to \$170,000, with an average price of approximately \$9,200.

The acquisition of the assets of MIK Physics, Inc. in 1997 provided the base technology for our recently introduced Astral products, which are high-power DC systems used in PVD process equipment. As part of this acquisition, several technologists

familiar with ion sources joined us and, together with a technology transfer agreement, provided us with an initial design of ion sources suitable for cleaning, deposition and etching processes at sub-atmospheric pressures. These products are useful in industrial applications and in the data storage area.

The acquisition of Tower in 1997 expanded our product line to include low-power DC power conversion systems for use in telecommunications and other industrial applications. These power conversion systems range in power from 50 watts to 600 watts and have an average selling price of approximately \$500.

The acquisition of RF Power Products in 1998 expanded our product line of RF generators and matching networks. Solid-state generators are presently available for power requirements of up to 5,000 watts and are sold primarily to capital equipment manufacturers in the semiconductor equipment, flat panel display, thin film and analytical equipment markets. Tube-type generators are available at power levels from 10,000 to 30,000 watts and are sold primarily to capital equipment manufacturers in the thin film head manufacturing market. RF matching networks are systems composed primarily of variable inductors and capacitors with application-specific circuits that can be designed to a customer's specific power requirements. Our RF generators and matching networks have average selling prices similar to our DC products.

The acquisition of Fourth State Technology in 1998 enhanced our capability to design and manufacture RF power-related process control systems used to monitor and analyze data in thin film processes. This technology also is enabling us to develop power conversion and control systems that incorporate advanced measurement and control systems.

The acquisition of a majority interest in LITMAS in 1999 expanded our product line to include plasma abatement systems and high-density plasma sources. We market these products to semiconductor capital equipment manufacturers.

The following chart sets forth our principal product lines and related basic information:

	PRODUCT PLATFORM	DESCRIPTION	POWER/CURRENT LEVEL	MAJOR PROCESS APPLICATIONS
DIRECT  CURRENT PRODUCTS	MDX	Power control and conversion system	500W-80kW	PVD o Metal sputtering o Reactive sputtering
	MDX II	Power control and conversion system	15kW-120kW	PVD o Metal sputtering o Reactive sputtering
	Pinnacle(TM)	Power control and conversion system	6kW-120kW	PVD o Metal sputtering o Reactive sputtering
	Pinnacle(TM) Plus	Pulsed power control and conversion system	6kW	PVD o Metal sputtering o Reactive sputtering
	Sparc-le(R)	Arc management accessory	1kW-60kW	For use with MDX systems - permits precise control of reactive sputtering of insulating films
	E-Chuck	Electrostatic chuck power system	<100W	General wafer handling in semiconductor PVD, CVD, and etch applications
HIGH-POWER  PRODUCTS	Astral(TM)	Pulsed DC power system	20kW, 120kW, 200kW	PVD o Reactive sputtering
	Crystal(TM)	Mid-frequency power control and conversion system	180kW	PVD CVD Reactive sputtering Dual magnetron sputtering
LOW AND MID-FREQUENCY  PRODUCTS	PE and PE-II	Low frequency power control and conversion system	1.25kW-30kW	CVD PVD o Reactive sputtering Surface modification
	PD	Mid-frequency power control and conversion system	1.25kW-8kW	CVD PVD o Reactive sputtering Surface modification
	LF	Low frequency power control and conversion system	500W-1kW	Etch PVD
RADIO  FREQUENCY  PRODUCTS	HFV	Power control and conversion system	3kW-8kW	PVD Etch
	RFX	Power control and conversion system	600W	General R&D
	RFG	Power control and conversion system	600W-5.5kW	Etch CVD
	RFXII	Power control and conversion system	600W-5.5kW	Etch CVD
	APEX(TM)	Power control and conversion system	1kW-10kW	Etch CVD
	AZX, VZX, SwitchMatch(TM)	Tuner	100W-5kW	Impedance matching network
	RF	Power control and conversion system	500W-3kW	Etch CVD
	Hercules(TM)	Power control and conversion system	10kW-30kW	PVD
	Atlas(TM)	Power control and conversion system	1.5kW-5kW	Etch



	Mercury(TM)	Tuner	500W-10kW	Impedance matching network
	FTMS(TM)	Tuner	2kW-5kW	Impedance matching network
ION BEAM SOURCES	12cm multi-cell ion beam source	Round ion beam source	1.5kW-2.0kW	Magnetic media DLC deposition Optical ion assist
PRODUCTS	Linear ion beam sources	38cm, 65cm, 94cm	1.0kW-3.0kW	Architectural glass Flat panel displays - pre-cleaning Ion assist deposition
	Inductively coupled plasma source (ICP - 3)	3kW linear ICP	3kW	Enhanced reactive deposition Low energy CVD Low energy cleaning
	Gen-Cal(TM)	RF power measurement	50W-3kW	Generator diagnostic tool
OTHER	RF-EP	RF probe	50W-5kW	End-point detection system
	Z-Scan(TM)	RF probe	50W-5kW	Impedance measurement tool
PRODUCTS	RF-MS	RF metrology system	5W-5kW	Plasma diagnostic tool
	ID	Ion-beam conversion and control system	500W-5kW	Ion-beam deposition Ion implantation Ion-beam etching/milling
	E'Wave(TM)	Bipolar electroplating	400W-8kW	Electroplating copper onto a wafer

## **DIRECT CURRENT PRODUCTS**

**THE MDX SERIES.** We introduced our MDX series of products in 1983. These products are most commonly used as DC power supplies for PVD sputtering where precise control, superior arc prevention and suppression and low stored energy characteristics are required. They are also used as bias supplies for RF sputtering, tool coating and some etching systems. The MDX series consists of six different product lines that provide a range of power levels from 500W to 120kW. Our second generation product, the MDX II, was introduced in 1991 to support higher power levels, to provide wider output range, and to meet strict European regulatory requirements. A model in the MDX series, the MDX-L, was designed for especially high reliability and was introduced in 1992.

**THE PINNACLE(TM) PLATFORM.** The Pinnacle platform, introduced in 1995, is the most recent platform in the DC product line. We developed the Pinnacle primarily for use in DC PVD sputtering processes, and it provides substantial improvements in arc prevention, arc suppression capability, reduced size, higher precision and expanded control capability. The low stored energy of Pinnacle, a basic feature of our DC power conversion equipment, is the lowest ever achieved in a switchmode power supply, and is due to the patented basic circuit topology.

**THE PINNACLE(TM) PLUS PLATFORM.** This platform, introduced in 1999, is a pulsed DC power system designed principally for use in reactive sputtering to produce insulating films. It is capable of producing 6kW of power in short pulses at frequencies up to 350kHz, for virtual elimination of arcing in difficult processes.

**SPARC-LE(R) ACCESSORIES.** Our Sparc-le line of DC accessories, introduced in 1993, is designed both to reduce the number of arcs that occur in plasma-based processes and to reduce the energy delivered if arcs do occur. The Sparc-le accessories are especially effective in applications involving the deposition of insulating materials where the reaction between the plasma and target is likely to produce more severe arc conditions. The Sparc-le accessories are most commonly used with the MDX product lines.

**ELECTROSTATIC CHUCK POWER SYSTEMS.** We designed this system of power conversion units for a specific customer for use in wafer handling systems for the semiconductor fabrication market. The electrostatic chuck is a device that uses electric fields to hold or "chuck" a wafer in a vacuum environment without mechanical holding force. This permits more gentle handling of the wafer and simultaneous heating or cooling of the wafer during processing. When our power system applies voltage to the wafer, electric fields are created which hold the wafer in position. Exact control and careful ramping of the voltage permits the wafer to be picked and placed with precision. The system permits multiple power units to be held in a single chassis for ease of integration into the customer's system.

## **HIGH-POWER PRODUCTS**

These products are designed for use in heavy industrial processes such as architectural glass and other large area coating applications.

**ASTRAL(TM) PRODUCTS.** The Astral products, made in 20kW, 120kW and 200kW versions, offer a new technology, called "current pulsed dual magnetron sputtering." These units are used for development of coatings for CRT and flat panel displays, automotive applications and new types of glass coatings.

**CRYSTAL(TM).** The Crystal 180kW power conversion unit was developed for use in industrial PVD applications such as architectural glass coating, but is also useful in PECVD (Plasma Enhanced Chemical Vapor Deposition). The latter may be used for deposition of oxygen- and water-vapor-barrier coatings on films used in food packaging. In PVD the unit is typically used as a powering source for a pair of magnetron sputtering sources in the "dual" configuration in a reactive sputtering system.

## **LOW AND MID-FREQUENCY PRODUCTS**

**THE PE AND PD SERIES.** We introduced the PE low frequency power systems in 1982. The PE series systems are air cooled and primarily intended for use in certain PVD, CVD and industrial surface modification applications, including dual cathode sputtering and printed circuit board de-smearing. The PE series systems range in frequency from 25kHz to 100kHz. The PE-II systems are water cooled and produce 10kW at 40kHz. The PD series of mid-frequency power conversion and control systems, introduced in 1990, represented significant technological advancements by applying switchmode techniques to higher frequencies. The water-cooled PD systems are used primarily in semiconductor etch and CVD applications. The PD series range in frequency from 275kHz to 400kHz. Both the PE and PD series systems have cost-effective single-stage power generation, and include systems with pulsed power technology.

**LF GENERATORS.** The LF low-frequency generators were introduced to us as a result of the acquisition of RF Power Products. The LF-5 is a 500W unit and the LF-10 is a 1kW unit. Both of these units are variable-frequency, microprocessor-controlled systems. With a frequency range extending from 50kHz to 460kHz, these generators are a good complement to the PD and PE series.

## **RADIO FREQUENCY PRODUCTS**

**HFV POWER GENERATOR.** The HFV power generator produces 3, 5, or 8kW of power at a variable frequency of about 2MHz for powering inductively coupled plasma (ICP) systems. It is water cooled and ultra compact, providing up to 8kW of power in a 5-1/4 inch rack mount enclosure 20-1/4 inches deep, thereby representing the highest power density in the industry at these frequencies.

**THE RF SERIES.** The RFX system is a 13.56MHz, 600W, air-cooled platform introduced in 1985. This low-power system is used primarily in research and development applications. The RFG and RFXII, introduced in the early 1990s, are water-cooled power conversion and control systems utilizing a hybrid switchmode technology. The RFG and RFXII systems operate at frequencies ranging from 4MHz to 13.56MHz. These systems were the first fully switchmode RF designs. These RF systems are most commonly used in semiconductor processes, including RF sputtering, plasma etching/deposition and reactive ion etching applications.

During 1998 we developed the APEX series of power control and conversion systems, which have the highest power density ever produced at radio frequencies. One APEX unit produces 10kW at 13.56MHz in a 5-1/4 inch rack mount enclosure. Another APEX unit produces 5.5kW in a 5x7.5x15 inch enclosure, and still another produces 3kW in the same enclosure but includes a switchable matching network and a voltage-current (V-I) probe measurement system integrated in the package. The APEX line also includes power conversion systems that produce 1, 2, 4 and 8kW at 27.12MHz.

The RF-5, RF-10, RF-20, and RF-30 units generate power between 500W and 3kW. These units are available at 13.56 and 27.12MHz. These units are being replaced in new applications with either the Atlas or APEX power systems.

**THE ATLAS(TM) SERIES.** We introduced the Atlas power systems in 1998. These systems currently range in power from 1.5kW to 5kW at nominal frequencies of 13.56 and 27.12MHz. These units complement our new APEX series. For a number of applications, the ability to sweep the frequency about the nominal center frequency provides significant advantages to the customer. Now the customer can choose to have either the compact package of the fixed-frequency APEX or, where required, the frequency agility of the Atlas systems.

**THE HERCULES(TM) SERIES.** We introduced the new Hercules series in 1998. These power generation systems range in power from 10kW to 30kW at 13.56 and 27.12MHz. These units employ a solid state front end with tube technology for the high-power output stage.

**THE AZX SERIES.** The AZX series tuners are RF matching networks designed as accessories to match the complex electrical characteristics of a plasma to the requirements of our RF series of power conversion and control systems. AZX tuners, introduced in 1989, are also sold separately for incorporation into other vendors' power conversion and control systems. The AZX tuners typically operate at a 13.56MHz frequency range. The VZX series tuners, introduced in 1998, are digital automatic impedance matching networks which utilize a predictive algorithm to provide tuning speeds up to three times faster than the older AZX series. SwitchMatch(TM) networks, also introduced by us in 1998, are selectable fixed matching units, which we offer both as part of APEX systems and as standalone products.

**THE MATCHING NETWORK SERIES.** The mechanical matching networks are available in power handling capabilities up to 30kW. These matching networks are extremely compact, utilizing two ceramic envelope vacuum variable capacitors. The modular construction of the matching networks allows rapid customization without the delays usually encountered in custom design. Since most applications require custom refinements for optimum performance, this feature has benefited us greatly in achieving numerous design wins. In 1998, we introduced the FTMS (Frequency Transformation Matching System), which is a solid state matching network with no moving parts. We use this system in conjunction with our Atlas generators. The FTMS is available in power levels up to 5kW.

## **ION BEAM SOURCES**

**PLASMA SOURCES.** We introduced our ion sources and inductively coupled plasma (ICP) sources products in 1998. Several versions of the ion sources product include a 12cm round source for the magnetic media and optical markets as well as linear sources up to one meter long for applications in the flat panel display and architectural glass markets. The ICP product rounds out the family of products, allowing us access to reactive deposition and cleaning applications where low energy is critical to prevent substrate damage. Both products feature high reliability, low maintenance designs, and are well suited for the demanding environments in today's production facilities.

## **OTHER PRODUCTS**

**THE RF-EP END-POINT DETECTION SYSTEM.** The RF-EP reduces length of time to end-point on CVD and etch chambers in comparison to optical detection. This system uses one of three signals (voltage, current or phase) to precisely and accurately detect end-point. The RF-EP also greatly reduces the level of greenhouse emissions by consuming less process gas.

**THE Z-SCAN(TM) VOLTAGE-CURRENT (V-I) PROBE.** This unit, first delivered in 1998, replaces the RFZ impedance probe introduced in 1993. Z-Scan measures the RF properties of a plasma process and provides condensed information through its Z-Ware software. The sensing technology incorporated in Z-Scan probe allows accurate, real-time measurement of power, voltage, current and impedance levels at both fundamental and harmonic frequencies, under actual powered process conditions. Such measurements not only help our customers design their process systems, but are also used as sensitive detectors of process conditions, including etch endpoint.

**THE RF-MS DIAGNOSTIC SYSTEM.** The RF-MS simultaneously performs endpoint and excursion detection for multiple CVD chambers. Additionally, the system's software monitors the long-term transients in the process tool performance such as wet clean and transition in the film stress. The RF-MS has demonstrated significant cost savings through improved wafer yields, reduced particle contamination and higher throughput.

**THE ID SERIES.** The ID power conversion and control systems, introduced in 1981, were the first products we designed. These systems were specifically designed to power broad-beam ion sources. ID series systems are composed of a coordinated set of multiple special purpose power supplies that are used for ion-beam deposition and sputtering, implantation, etching and milling.

**THE E'WAVE(TM).** The E'Wave is designed for the semiconductor industry for electroplating copper onto a wafer. The power supply can produce up to four channels of multi-step, bipolar, square waveforms. Each channel can produce 400W continuous and up to 2kW peak, for a total supply output of 1.6kW continuous and 8kW peak.

## **MARKETS AND CUSTOMERS**

### **MARKETS**

Most of our sales historically have been to customers in the semiconductor capital equipment industry. Sales to customers in this industry represented 49% of our sales 1998 and 61% in 1999. Our power conversion and control systems are also used in the flat panel display, data storage and other industrial markets. Following is a discussion of the major markets for our systems:

**SEMICONDUCTOR CAPITAL EQUIPMENT MANUFACTURING MARKET.** We sell our products primarily to semiconductor capital equipment manufacturers for incorporation into equipment used to make integrated circuits. Our products are currently used in a variety of applications including deposition, etch, ion implantation, photo-resist strip and megasonic cleaning. The precise control over plasma-based processes that use our power conversion and control systems enables the production of integrated circuits with reduced feature sizes and increased speed and performance. We anticipate that the semiconductor capital equipment industry will continue to be a substantial part of our business for the foreseeable future.

**DATA STORAGE MANUFACTURING EQUIPMENT MARKETS.** We also sell systems to data storage equipment manufacturers and to data storage device manufacturers for use in producing a variety of products, including CDs, computer hard disks, including both media and thin film heads, CD-ROMs and DVDs. These products use a PVD process to produce optical and magnetic thin film layers, as well as a protective wear layer. In this market the trend towards higher recording densities is driving the demand for increasingly dense, thinner and more precise films. The use of equipment incorporating magnetic media to store analog and digital data continues to expand with the growth of the laptop, desktop and workstation computer markets and the consumer electronics audio and video markets.

**FLAT PANEL DISPLAY MANUFACTURING EQUIPMENT MARKET.** We also sell our systems to manufacturers of flat panel displays and flat panel projection devices, which have

fabrication processes similar to those employed in manufacturing integrated circuits. Flat panel technology produces bright, sharp, large, color-rich images on flat screens for products ranging from hand-held computer games to laptop and desktop computer monitors to large-screen televisions. There are three major types of flat panel displays, including liquid crystal displays, field emitter displays and gas plasma displays. There are two types of flat panel projection devices, including liquid crystal projection and digital micro-mirror displays. We sell our products to all five of these markets.

EMERGING MARKETS. We also sell our products to OEMs and producers of end products in a variety of industrial markets. Thin film optical coatings are used in the manufacture of many industrial products including solar panels, architectural glass, eyeglasses, lenses, barcode readers and front surface mirrors. Thin films of diamond-like coatings and other materials are currently applied to products in plasma-based processes to strengthen and harden surfaces on such diverse products as tools, razor blades, automotive parts and hip joint replacements. Other thin film processes that use our products also enable a variety of industrial packaging applications, such as decorative wrapping and food packaging. The advanced thin film production processes allow precise control of various optical and physical properties, including color, transparency and electrical and thermal conductivity. The improved adhesion and high film quality resulting from plasma-based processing make it the preferred method of applying the thin films. Many of these thin film industrial applications require power levels substantially greater than those used in our other markets.

We sell low-wattage power supplies to OEMs in the telecommunications, non-impact printing and laser markets through Tower. For example, Tower provides products to the largest manufacturer of non-impact printers used for printing date codes and lot information on beverage cans.

### APPLICATIONS

We have sold our products for use in connection with the following processes and applications:

SEMICONDUCTOR -----	DATA STORAGE -----	FLAT PANEL DISPLAY -----	EMERGING -----
Chemical vapor deposition (CVD) (metal and dielectric)	CD-ROMs	Active matrix LCDs	Automobile coatings
Etch	CDs	Digital micro-mirror	Chemical, physical and materials research
	DVDs	Field emission displays	Circuit board etch-back and de-smear
High density plasma CVD	Hard disk carbon wear coatings	Large flat panel displays	Consumer product coatings
Ion implantation	Hard disk magnetic media	LCD projection	Diamond-like coatings
Magnet field controls	Magneto-optic CDs	Liquid crystal displays	Food package coatings
	Recordable CDs	Medical applications	Glass coatings
Megasonic cleaning	Thin film heads	Plasma displays	Non-impact printing
Photo-resist stripping			Optical coatings
Physical vapor deposition (PVD)			
Plasma-enhanced CVD			Photovoltaics
			Superconductors
			Telecommunications

## CUSTOMERS

We have sold our systems worldwide to more than 100 OEMs and directly to more than 500 end-users. Since inception we have sold more than 175,000 power conversion and control systems. Our ten largest customers accounted for 67% of our total sales in 1997, 62% in 1998 and 68% in 1999. We expect that sales of our products to these ten customers will continue to account for a high percentage of our sales in the foreseeable future. Representative customers include:

Alcatel Comptech	Mattson Technologies
Applied Materials	Motorola
Balzers	Novellus
CVC Products	Optical Coating Laboratory
Eaton	PlasmaTherm
First Light Technology	Singulus
Fujitsu	Sony
Hewlett-Packard	Sputtered Films
IBM	Texas Instruments
Intevac	3Com
Komag	ULVAC
Lam Research	Verteq
Materials Research Division of Tokyo Electron, Ltd.	Videojet International

## MARKETING, SALES AND SERVICE

We sell our systems primarily through direct sales personnel to customers in the United States, Europe and Asia. Our sales personnel are located at our headquarters in Fort Collins, Colorado, and in regional sales offices in Voorhees, New Jersey; Austin, Texas; Milpitas, California; and Concord, Massachusetts. To serve customers in Asia and Europe, we have offices in Tokyo, Japan; Filderstadt, Germany; Bicester, England; Bundang, South Korea; and Taipei, Taiwan. These offices have primary responsibility for sales in their respective markets. We also have distributors and representatives in Australia, China, Hong Kong, India, Israel, Italy, Mexico, Singapore, Sweden and Turkey. Tower, which is located in Fridley, Minnesota, sells through direct sales personnel and manufacturers' representatives.

Sales outside the United States represented approximately 23% of our total sales during 1997, 28% in 1998 and 29% in 1999. We expect sales outside the United States to continue to represent a significant portion of future sales. Although we have not experienced any significant difficulties involving international sales, such sales are subject to certain risks, including exposure to currency fluctuations, the imposition of governmental controls, political and economic instability, trade restrictions, changes in tariffs and taxes and longer payment cycles typically associated with international sales. Our future performance will depend, in part, upon our ability to compete successfully in Japan, one of the largest markets for semiconductor fabrication equipment and flat panel display equipment, and a major market for data storage and other industrial equipment utilizing our systems. The Japanese market has historically been difficult for non-



Japanese companies to penetrate. Although we and a number of our significant non-Japanese customers have established operations in Japan, there can be no assurance that we or our customers will be able to maintain or improve our competitive positions in Japan.

We believe that customer service and technical support are important competitive factors and are essential to building and maintaining close, long-term relationships with our customers. We maintain customer service offices in Fort Collins, Colorado; Austin, Texas; Voorhees, New Jersey; Milpitas, California; Tokyo, Japan; Filderstadt, Germany; Bundang, South Korea; and Taipei, Taiwan. Tower maintains a customer service office in Fridley, Minnesota.

We offer warranty coverage for our systems for periods ranging from 12 to 24 months after shipment against defects in design, materials and workmanship.

## **MANUFACTURING**

We conduct the majority of our manufacturing at facilities in Fort Collins, Colorado, and Voorhees, New Jersey. We also conduct manufacturing for one customer in Austin, Texas. Tower conducts manufacturing at its facility in Fridley, Minnesota. We generally manufacture different systems at each facility. Our manufacturing activities consist of the assembly and testing of components and subassemblies, which are then integrated into our final products. Once final testing of all electrical and electro-mechanical subassemblies is completed, the final product is subjected to a series of reliability enhancing operations prior to shipment to customers. We purchase a wide range of electronic, mechanical and electrical components, some of which are designed to our specifications. We outsource some of our subassembly work.

We rely on sole and limited source suppliers for certain parts and subassemblies. This reliance creates a potential inability to obtain an adequate supply of required components, and reduced control over pricing and timing of delivery of components. An inability to obtain adequate supplies would require us to seek alternative sources of supply or might require us to redesign our systems to accommodate different components or subassemblies. We could be prevented from the timely shipping of our systems to our customers if we were forced to seek alternative sources of supply, manufacture such components or subassemblies internally, or redesign our systems.

## **INTELLECTUAL PROPERTY**

We have a policy of seeking patents on inventions governing new products or technologies as part of our ongoing research, development, and manufacturing activities. We currently hold twenty-five United States patents and four foreign patents covering various aspects of our products, and have over forty patent applications pending in the

United States, Europe and Japan. We believe the duration of our patents generally exceeds the life cycles of the technologies disclosed and claimed therein. No assurance can be given that our patents will be sufficiently broad to protect our technology, or that any existing or future patents will not be challenged, invalidated or circumvented, or that the rights granted thereunder will provide meaningful competitive advantages to us. Any of such events could have a material adverse effect on our business, financial condition and results of operations.

Although we have not been notified that any of our products have infringed any patents or proprietary rights of others, there can be no assurance that such infringements do not exist or will not occur in the future. Litigation may be necessary in the future to enforce patents issued to us, to protect trade secrets or know-how owned by us, to defend us against claimed infringement of the rights of others or to determine the scope and validity of the proprietary rights of others. Any such litigation could result in substantial cost and diversion of effort by us, which could have a material adverse effect on our business, financial condition and results of operations. Moreover, adverse determinations in such litigation could result in our loss of proprietary rights, subject us to significant liabilities to third parties, require us to seek licenses from third parties, or prevent us from manufacturing or selling our products. Such determinations could have a material adverse effect on our business, financial condition and results of operations.

## **COMPETITION**

The markets we serve are highly competitive and characterized by ongoing technological development and changing customer requirements. Significant competitive factors in our markets include product performance, price, quality and reliability and level of customer service and support. We believe that we currently compete effectively with respect to these factors, although there can be no assurance that we will be able to compete effectively in the future.

The markets in which we compete have seen an increase in global competition, especially from Japanese- and European-based equipment vendors. We have several foreign and domestic competitors for each of our product lines. Some of these competitors are larger and have greater resources than we have. Our ability to continue to compete successfully in these markets depends on our ability to make timely introductions of system enhancements and new products. Our primary competitors are ENI, a subsidiary of Astec (BSR) plc, Applied Science and Technology (ASTeX), Huettinger, Shindigen, Kyosan, Comdel and Daihen. Our competitors are expected to continue to improve the design and performance of their systems and to introduce new systems with competitive performance characteristics. We believe we will be required to maintain a high level of investment in research and development and sales and marketing in order to remain competitive.

## **OPERATING SEGMENT**

We operate and manage our business of supplying power conversion and control systems as one segment.

## **RESEARCH AND DEVELOPMENT**

The market for power conversion and control systems and related accessories is characterized by ongoing technological changes. We believe that continued and timely development of new products and enhancements to existing systems to support OEM requirements is necessary for us to maintain a competitive position in the markets we serve. Accordingly, we devote a significant portion of our personnel and financial resources to research and development projects and seek to maintain close relationships with our customers and other industry leaders to remain responsive to their product requirements.

Research and development expenses were \$19.3 million in 1997, \$23.8 million in 1998 and \$26.5 million in 1999. Such expenses represented 11.0% of our total sales in 1997, 19.1% in 1998 and 14.4% in 1999. We believe that continued research and development investment and ongoing development of new products are essential to the expansion of our markets, and expect to continue to make significant investments in research and development activities.

## **NUMBER OF EMPLOYEES**

At December 31, 1999, we had a total of 1,090 employees, of whom 922 are full-time continuous employees. There is no union representation of our employees, and we have never experienced a work stoppage. We utilize temporary employees as a means to provide additional staff while reviewing the performance of the temporary employee. We consider our employee relations to be good.

## **EFFECTS OF ENVIRONMENTAL LAWS**

We are subject to federal, state and local environmental laws and regulations. We are in compliance with all such laws and regulations.

## **CAUTIONARY STATEMENTS - RISK FACTORS**

This Form 10-K contains, in addition to historical information, 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. For example,

statements relating to our beliefs, expectations and plans are forward-looking statements, as are statements that certain actions, conditions or circumstances will continue. Forward-looking statements involve risks and uncertainties. As a result, our actual results may differ materially from the results discussed in the forward-looking statements. Factors that could cause or contribute to such differences or prove any forward-looking statements, by hindsight, to be overly optimistic or unachievable, include, but are not limited to the risks described in this section. We do not have any obligation to update publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

**OUR QUARTERLY OPERATING RESULTS ARE SUBJECT TO SIGNIFICANT FLUCTUATIONS, WHICH COULD NEGATIVELY IMPACT OUR FINANCIAL CONDITION, RESULTS OF OPERATIONS AND STOCK PRICE.**

Our quarterly operating results have fluctuated significantly and we expect them to continue to experience significant fluctuations. Downward fluctuations in our quarterly results have historically resulted in decreases in the price of our common stock. Quarterly operating results are affected by a variety of factors, many of which are beyond our control. These factors include:

- o changes or slowdowns in economic conditions in the semiconductor and semiconductor capital equipment industries and other industries in which our customers operate;
- o the timing and nature of orders placed by major customers;
- o customer cancellations of previously placed orders and shipment delays;
- o pricing competition from our competitors;
- o component shortages resulting in manufacturing delays;
- o changes in customers' inventory management practices;
- o the introduction of new products by us or our competitors; and
- o costs incurred by responding to specific feature requests by customers.

In addition, companies in the semiconductor capital equipment industry and other electronics companies experience pressure to reduce costs. Our customers exert pressure on us to reduce prices, shorten delivery times and extend payment terms. These pressures could lead to significant changes in our operating results from quarter to quarter.

In the past, we have incurred charges and costs related to events such as acquisitions, restructuring and storm damages. The occurrence of similar events in the future could adversely affect our operating results in the applicable quarter.

Our operating results in one or more future quarters may fall below the expectations of analysts and investors. In those circumstances, the trading price of our common stock would likely decrease and, as a result, any trading price of the convertible notes may decrease.

**THE SEMICONDUCTOR AND SEMICONDUCTOR CAPITAL EQUIPMENT INDUSTRIES ARE HIGHLY VOLATILE AND OUR OPERATING RESULTS ARE AFFECTED TO A LARGE EXTENT BY EVENTS IN THOSE INDUSTRIES.**

The semiconductor industry historically has been highly volatile and has experienced periods of oversupply resulting in significantly reduced demand for semiconductor fabrication equipment, which includes our systems. During downturns, some of our customers have drastically reduced their orders to us and have implemented substantial cost reduction programs. Sales to customers in the semiconductor capital equipment industry accounted for 59% of our total sales in 1997, 49% in 1998 and 61% in 1999. We expect that we will continue to depend significantly on the semiconductor and semiconductor capital equipment industries for the foreseeable future.

A rapid decrease in demand for our products can occur with limited advance notice because we supply subsystems to equipment manufacturers and make a substantial proportion of our shipments on a just-in-time basis. This decrease in demand can adversely impact our business and financial results disproportionately because of its unanticipated nature.

**A SIGNIFICANT PORTION OF OUR SALES ARE CONCENTRATED AMONG A FEW CUSTOMERS.**

Our four largest customers accounted for 51% of our total sales in 1997, 47% in 1998 and 53% in 1999. Our largest customer accounted for 31% of our total sales in 1997, 23% in 1998 and 32% in 1999. The loss of any of these customers or a material reduction in any of their purchase orders would have a material adverse effect on our business, financial condition and results of operations.

**THE MARKETS IN WHICH WE OPERATE ARE HIGHLY COMPETITIVE.**

We face substantial competition, primarily from established companies, some of which have greater financial, marketing and technical resources than we do. Our primary competitors are ENI, a subsidiary of Astec (BSR) plc, Applied Science and Technology (ASTeX), Huettinger, Shindingen, Kyosan, Comdel and Daihen. We expect that our competitors will continue to develop new products in direct competition with ours, improve the design and performance of their systems and introduce new systems with enhanced performance characteristics.

To remain competitive, we need to continue to improve and expand our systems and system offerings. In addition, we need to maintain a high level of investment in research and development and expand our sales and marketing efforts, particularly outside of the

United States. We may not be able to make the technological advances and investments necessary to remain competitive.

New products developed by competitors or more efficient production of their products could increase pressure on the pricing of our systems. In addition, electronics companies, including companies in the semiconductor capital equipment industry, have been facing pressure to reduce costs. Either of these factors may require us to make significant price reductions to avoid losing orders. Further, our current and prospective customers consistently exert pressure on us to lower prices, shorten delivery times and improve the capability of our systems. Failure to respond adequately to such pressures could result in a loss of customers or orders.

#### **WE MAY NOT BE ABLE TO INTEGRATE OUR ACQUISITIONS.**

We have experienced significant growth through acquisitions and continue to actively pursue acquisition opportunities. Our acquisitions to date generally have been in markets in which we have limited experience. We may not be able to compete successfully in these markets or might not be able to operate the acquired businesses efficiently. Our business and results of operations could be adversely affected if integrating these acquisitions results in substantial costs, delays or other operational or financial problems.

Future acquisitions could place additional strain on our operations and management. Our ability to manage future acquisitions will depend on our success in:

- o evaluating new markets and investments;
- o monitoring operations;
- o controlling costs;
- o integrating acquired operations and personnel;
- o maintaining effective quality controls; and
- o expanding our internal management, technical and accounting systems.

Also, in connection with future acquisitions we may issue equity securities, which could be dilutive, incur debt, recognize substantial one-time expenses or create goodwill or other intangible assets that could result in significant amortization expense.

#### **WE ARE GROWING AND MAY BE UNABLE TO MANAGE OUR GROWTH EFFECTIVELY.**

We have been experiencing a period of growth and expansion. This growth and expansion is placing significant demands on our management and our operating systems. We need to continue to improve and expand our management, operations and financial systems, procedures and controls, including accounting and other internal management

systems, quality control, delivery and service capabilities.

In order to manage our growth, we may also need to spend significant amounts of cash to:

- o fund increases in expenses;
- o acquire additional facilities and equipment;
- o take advantage of unanticipated opportunities, such as major strategic alliances or other special marketing opportunities, acquisitions of complementary businesses or assets, or the development of new products; or
- o otherwise respond to unanticipated developments or competitive pressures.

If we do not have enough cash on hand, cash generated from our operations or cash available under our credit facility to meet these cash requirements, we will need to seek alternative sources of financing to carry out our growth and operating strategies. We may not be able to raise needed cash on terms acceptable to us, or at all. Financings may be on terms that are dilutive or potentially dilutive. If alternative sources of financing are required but are insufficient or unavailable, we will be required to modify our growth and operating plans to the extent of available funding.

#### **SHORTAGES OF COMPONENTS NECESSARY FOR OUR PRODUCT ASSEMBLY CAN DELAY OUR SHIPMENTS.**

Manufacturing our power conversion and control systems requires numerous electronic components. Dramatic growth in the electronics industry has significantly increased demand for these components. This demand has resulted in periodic shortages and allocations of needed components, and we expect to experience additional shortages and allocations from time to time. Shortages and allocations could cause shipping delays for our systems, adversely affecting our results of operations. Shipping delays also could damage our relationships with current and prospective customers.

#### **OUR DEPENDENCE ON SOLE AND LIMITED SOURCE SUPPLIERS COULD AFFECT OUR ABILITY TO MANUFACTURE PRODUCTS AND SYSTEMS.**

We rely on sole and limited source suppliers for some of our components and subassemblies that are critical to the manufacturing of our systems. This reliance involves several risks, including the following:

- o the potential inability to obtain an adequate supply of required components;

- o reduced control over pricing and timing of delivery of components; and

- o the potential inability of our suppliers to develop technologically advanced products to support our growth and development of new systems.

We believe that in time we could obtain and qualify alternative sources for most sole and limited source parts or could manufacture the parts ourselves. Seeking alternative sources or commencing internal manufacture of the parts could require us to redesign our systems, resulting in increased costs and likely shipping delays. We may be unable to manufacture the parts internally or redesign our systems, which could result in further costs and shipping delays. These increased costs would decrease our profit margins if we could not pass the costs to our customers. Further, shipping delays could damage our relationships with current and potential customers and have a material adverse effect on our business and results of operations.

**WE ARE HIGHLY DEPENDENT ON OUR INTELLECTUAL PROPERTY BUT MAY NOT BE ABLE TO PROTECT IT ADEQUATELY.**

Our success depends in part on our proprietary technology. We attempt to protect our intellectual property rights through patents and non-disclosure agreements. However, we might not be able to protect our technology, and competitors might be able to develop similar technology independently. In addition, the laws of certain foreign countries might not afford our intellectual property the same protection as do the laws of the United States. For example, our intellectual property is not protected by patents in several countries in which we do business, and we have limited patent protection in certain other countries. The costs of applying for patents in foreign countries and translating the applications into foreign languages require us to select carefully the inventions for which we apply for patent protection and the countries in which we seek such protection. Generally, we have concentrated our efforts to obtain international patents in the United Kingdom, Germany, France, Italy and Japan because there are other manufacturers and developers of power conversion and control systems in those countries, as well as customers for those systems. Our inability or failure to obtain adequate patent protection in a particular country could have a material adverse effect on our ability to compete effectively in that country.

Our patents also might not be sufficiently broad to protect our technology, and any existing or future patents might be challenged, invalidated or circumvented. Additionally, our rights under our patents may not provide meaningful competitive advantages.

We do not believe that any of our products are infringing any patents or proprietary rights of others, although infringements may exist or might occur in the future. Litigation may be necessary to enforce patents issued to us, to protect our trade secrets or know-how, to defend ourselves against claimed infringement of the rights of others or to determine the scope and validity of the proprietary rights of others. Litigation could result in substantial cost and diversion of our efforts. Moreover, an adverse determination in



any litigation could cause us to lose proprietary rights, subject us to significant liabilities to third parties, require us to seek licenses or alternative technologies from third parties or prevent us from manufacturing or selling our products. Any of these events could have a material adverse effect on our business, financial condition and results of operations.

**WE MUST CONSTANTLY DEVELOP AND SELL NEW SYSTEMS IN ORDER TO KEEP UP WITH RAPID TECHNOLOGICAL CHANGES.**

The markets for our systems and the markets in which our customers compete are characterized by ongoing technological developments and changing customer requirements. We must continue to improve existing systems and to develop new systems that keep pace with technological advances and meet the needs of our customers in order to succeed. We might not be able to continue to improve our systems or develop new systems. The systems we do develop might not be cost-effective or introduced in a timely manner. Developing and introducing new systems may involve significant and uncertain costs. Our business, financial condition and results of operations, as well as our customer relationships, could be adversely affected if we fail to develop or introduce improved systems and new systems in a timely manner.

**WE MUST ACHIEVE DESIGN WINS TO RETAIN OUR EXISTING CUSTOMERS AND TO OBTAIN NEW CUSTOMERS.**

The constantly changing nature of semiconductor fabrication technology causes equipment manufacturers to continually design new systems. We often must work with these manufacturers early in their design cycles to modify our equipment to meet the requirements of the new systems. Manufacturers typically choose one or two vendors to provide the power conversion equipment for use with the early system shipments. Selection as one of these vendors is called a design win. It is critical that we achieve these design wins in order to retain existing customers and to obtain new customers.

We typically must customize our systems for particular customers to use in their equipment to achieve design wins. This customization increases our research and development expenses and can strain our engineering and management resources. These investments do not always result in design wins.

Once a manufacturer chooses a power conversion and control system for use in a particular product, it is likely to retain that system for the life of that product. Our sales and growth could experience material and prolonged adverse effects if we fail to achieve design wins. In addition, design wins do not always result in substantial sales or profits.

We believe that equipment manufacturers often select their suppliers based on factors such as long-term relationships. Accordingly, we may have difficulty achieving design wins from equipment manufacturers who are not currently customers. In addition, we must compete for design wins for new systems and products of our existing customers, including those with whom we have had long-term relationships.

**OUR EFFORTS TO BE RESPONSIVE TO CUSTOMERS MAY LEAD TO INCURRING COSTS THAT ARE NOT READILY RECOVERABLE.**

We may incur manufacturing overhead and other costs, many of which are fixed, to meet anticipated customer demand. Accordingly, operating results could be adversely affected if orders or revenues in a particular period or for a particular system do not meet expectations.

We often require long lead times for development of our systems during which times we must expend substantial funds and management effort. We may incur significant development and other expenses as we develop our systems without realizing corresponding revenue in the same period, or at all.

**OUR SUCCESS DEPENDS UPON OUR ABILITY TO ATTRACT AND RETAIN KEY PERSONNEL.**

Our success depends upon the continued efforts of our senior management team and our technical, marketing and sales personnel. These employees may voluntarily terminate their employment with us at any time. Our success also depends on our ability to attract and retain additional highly qualified management, technical, marketing and sales personnel. The process of hiring employees with the combination of skills and attributes required to carry out our strategy can be extremely competitive and time-consuming. We may not be able to successfully retain existing personnel or identify, hire and integrate new personnel. If we lose the services of key personnel for any reason, including retirement, or are unable to attract additional qualified personnel, our business, financial condition and results of operations could be materially and adversely affected.

**WE CONDUCT MANUFACTURING AT ONLY A FEW SITES.**

We conduct the majority of our manufacturing at our facilities in Fort Collins, Colorado and in Voorhees, New Jersey. We also conduct manufacturing for one customer in Austin, Texas. Our Tower Electronics subsidiary conducts manufacturing only at its facility in Fridley, Minnesota. Each facility generally manufactures different systems. In July 1997 a severe rainstorm in Fort Collins caused substantial damage to our Fort Collins facilities and to some equipment and inventory. The damage caused us to stop manufacturing at that facility temporarily and prevented us from resuming full production there until mid-September 1997. Our insurance policies did not cover all of the costs that we incurred in connection with the rainstorm. Future natural or other uncontrollable occurrences at any of our primary manufacturing facilities that negatively impact our manufacturing processes may not be fully covered by insurance and could have a material adverse effect on our operations and results of operations.

**WE HAVE LIMITED EXPERIENCE IN MAINTAINING MULTIPLE MANUFACTURING FACILITIES.**

The acquisitions of Tower Electronics in 1997 and RF Power Products in 1998

provided us with manufacturing facilities located outside of our facilities in Fort Collins, Colorado. Accordingly, we have limited experience in maintaining multiple manufacturing locations. Substantial costs and delays could result if we fail to effectively manage and integrate our geographically separate facilities.

**WE MIGHT NOT BE ABLE TO COMPETE SUCCESSFULLY IN INTERNATIONAL MARKETS OR TO MEET THE SERVICE AND SUPPORT NEEDS OF OUR INTERNATIONAL CUSTOMERS.**

Our customers increasingly require service and support on a worldwide basis as the markets in which we compete become increasingly global. We maintain sales and service offices in Germany, Japan, South Korea, the United Kingdom and Taiwan.

Sales to customers outside the United States accounted for 23% of our total sales in 1997, 28% in 1998 and 29% in 1999, and we expect international sales to continue to represent a significant portion of our future sales. International sales are subject to various risks, including:

- o currency fluctuations;
- o governmental controls;
- o political and economic instability;
- o barriers to entry;
- o trade restrictions;
- o changes in tariffs and taxes; and
- o longer payment cycles.

In particular, the Japanese market has historically been difficult for non-Japanese companies, including us, to penetrate.

Providing support services for our systems on a worldwide basis also is subject to various risks, including:

- o our ability to hire qualified support personnel;
- o maintenance of our standard level of support; and
- o differences in local customs and practices.

Our international activities are also subject to the difficulties of managing overseas distributors and representatives and managing foreign subsidiary operations.

We cannot assure you that we will be successful in addressing any of these risks.

**FLUCTUATIONS IN THE CURRENCY EXCHANGE RATE BETWEEN THE U.S. DOLLAR AND FOREIGN CURRENCIES COULD ADVERSELY AFFECT OUR OPERATING RESULTS.**

A portion of our sales is subject to currency exchange risks as a result of our international operations. We have experienced fluctuations in foreign currency exchange rates, particularly against the Japanese yen. We entered into various forward foreign exchange contracts as a hedge against currency fluctuations in the yen. We have not employed hedging techniques with respect to any other currencies. Our current or any future hedging techniques might not protect us adequately against substantial currency fluctuations.

**WE MUST MAINTAIN MINIMUM LEVELS OF CUSTOMIZED INVENTORY TO SUPPORT CERTAIN CUSTOMER DELIVERY REQUIREMENTS.**

We must keep a relatively large number and variety of customized systems in our inventory to meet client delivery requirements because a substantial proportion of our business involves the just-in-time shipment of systems. Our inventory may become obsolete as we develop new systems and as our customers develop new systems. Inventory obsolescence could have a material adverse effect on our financial condition and results of operations.

**WE ARE SUBJECT TO NUMEROUS GOVERNMENTAL REGULATIONS.**

We are subject to federal, state, local and foreign regulations, including environmental regulations and regulations relating to the design and operation of our power conversion and control systems. We must ensure that our systems meet certain safety and emissions standards, many of which vary across the states and countries in which our systems are used. For example, the European Union has published directives specifically relating to power supplies. We must comply with these directives in order to ship our systems into countries that are members of the European Union. In the past, we have invested significant resources to redesign our systems to comply with these directives. We believe we are in compliance with current applicable regulations, directives and standards and have obtained all necessary permits, approvals and authorizations to conduct our business. However, compliance with future regulations, directives and standards could require us to modify or redesign certain systems, make capital expenditures or incur substantial costs. If we do not comply with current or future regulations, directives and standards:

- o we could be subject to fines;
- o our production could be suspended; or

- o we could be prohibited from offering particular systems in specified markets.

#### **WE MAY INVEST IN START-UP COMPANIES AND COULD LOSE OUR ENTIRE INVESTMENT.**

We have a majority interest in a start-up company and may invest in other start-up companies that develop products and technologies that we believe may provide us with future benefits. These investments may not provide us with any benefit, and we may not achieve any economic return on any of these investments. Our investments in these start-up companies are subject to all of the risks inherent in investing in companies that are not established. We could lose all or any part of our investments in these companies.

#### **WE LEASE OUR FORT COLLINS, COLORADO FACILITIES AND A CONDOMINIUM FROM ENTITIES IN WHICH TWO INDIVIDUALS WHO ARE INSIDERS AND MAJOR STOCKHOLDERS HAVE FINANCIAL INTERESTS.**

We lease our executive offices and manufacturing facilities in Fort Collins, Colorado from Prospect Park East Partnership and from Sharp Point Properties, LLC. Douglas S. Schatz, our Chairman and Chief Executive Officer, holds a 26.7% interest in each of the leasing entities. G. Brent Backman, a member of our board of directors, holds a 6.6% interest in each of the leasing entities. Aggregate rental payments under such leases for 1999 totaled approximately \$1.7 million. We also lease a condominium in Breckenridge, Colorado to provide rewards and incentives to our customers, suppliers and employees. We lease the condominium from AEI Properties, a partnership in which Mr. Schatz holds a 60% interest and Mr. Backman holds a 40% interest. Aggregate rental payments under the condominium lease for 1999 totaled approximately \$36,000. As of December 31, 1999 Mr. Schatz owned approximately 38.43% of our common stock, and Mr. Backman owned approximately 4.12% of our common stock.

#### **THE MARKET PRICE OF OUR STOCK HAS BEEN AND WILL LIKELY CONTINUE TO BE HIGHLY VOLATILE.**

The stock market generally and the market for technology stocks in particular have experienced significant price and volume fluctuations, which often have been unrelated or disproportionate to the operating performance of such companies. From our IPO in November 1995 through March 13, 2000, the closing prices of our common stock on the Nasdaq National Market have ranged from \$3.50 to \$73.25. The market for our common stock likely will continue to be subject to similar fluctuations. Many factors could cause the trading price of our common stock to fluctuate substantially, including the following:

- o future announcements concerning our business, our customers or our competitors;
- o variations in our operating results;
- o announcements of technological innovations;

- o the introduction of new products or changes in product pricing policies by us, our competitors or our customers;
- o changes in earnings estimates by securities analysts or announcements of operating results that are not aligned with the expectations of analysts and investors;
- o the economic and competitive conditions in the industries in which our customers operate; and
- o general stock market trends.

**OUR EXECUTIVE OFFICERS AND DIRECTORS OWN A MAJORITY OF OUR OUTSTANDING COMMON STOCK, WHICH COULD ENABLE THEM TO CONTROL OUR BUSINESS AND AFFAIRS.**

Our executive officers and directors owned approximately 44.66% of our common stock outstanding as of December 31, 1999. Douglas S. Schatz, our Chairman and Chief Executive Officer, owned approximately 38.43% of our common stock outstanding as of December 31, 1999. These stockholdings give our executive officers and directors collectively, and Mr. Schatz individually, significant voting power. Depending on the number of shares that abstain or otherwise are not voted, our executive officers collectively, and Mr. Schatz individually, may be able to elect all of the members of our board of directors and to control our business affairs for the foreseeable future.

**ANTI-TAKEOVER PROVISIONS LIMIT THE ABILITY OF A PERSON OR ENTITY TO ACQUIRE CONTROL OF US.**

Our certificate of incorporation and bylaws include provisions which:

- o allow the board of directors to issue preferred stock with rights senior to those of the common stock without any vote or other action by the holders of the common stock;
- o limit the right of our stockholders to call a special meeting of stockholders; and
- o impose procedural and other requirements that could make it difficult for stockholders to effect certain corporate actions.

In addition, we are subject to the anti-takeover provisions of the Delaware General Corporation Law. Any of these provisions could delay or prevent a person or entity from acquiring control of us. The effect of these provisions may be to limit the price that investors are willing to pay in the future for our securities. These provisions might also discourage potential acquisition proposals or could diminish the opportunities for our stockholders to participate in a tender offer, even if the acquisition proposal or tender offer is at a price above the then current market price for our common stock.

## EXECUTIVE OFFICERS OF THE COMPANY

Our executive officers and their ages as of February 29, 2000 are as follows:

NAME ----	AGE ----	POSITION -----
Douglas S. Schatz	54	Chief Executive Officer and Chairman of the Board
Hollis L. Caswell, Ph.D.	68	President, Chief Operating Officer and Director
Richard P. Beck	66	Senior Vice President, Chief Financial Officer and Director
Richard A. Scholl	61	Senior Vice President and Chief Technology Officer
James F. Gentilcore	47	President, Advanced Energy Voorhees, Inc.

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DOUGLAS S. SCHATZ is a co-founder and has been our Chief Executive Officer and Chairman of the Board since our incorporation in 1981. From our incorporation to July 1997, Mr. Schatz also served as our President. Mr. Schatz also co-founded Energy Research Associates, Inc., a designer of custom power supplies, and served as its Vice President of Engineering from 1977 through 1980. Prior to co-founding Energy Research Associates, Mr. Schatz held various engineering and management positions at Applied Materials.

HOLLIS L. CASWELL, PH.D. joined our board of directors in February 1997 and became our Chief Operating Officer in June 1997. He also became our President in July 1999. From 1990 to 1994 Dr. Caswell was Chairman of the Board and Chief Executive officer of HYPRES, Inc., a manufacturer of superconducting electronics. Prior to that time, Dr. Caswell served as Senior Vice President of Unisys Corporation, an information technology company, and President of its Computer Systems Group.

RICHARD P. BECK joined us in March 1992 as Vice President and Chief Financial Officer and became Senior Vice President in April 1998. He joined our board of directors in September 1995. From 1987 to 1992 Mr. Beck served as Executive Vice President and Chief Financial Officer of Cimage Corporation, a computer software company. Mr. Beck is a director of Applied Films Corporation, a publicly held manufacturer of flat panel display equipment.

RICHARD A. SCHOLL joined us in 1988 as Vice President, Engineering. Mr. Scholl became our Chief Technology Officer in September 1995. Prior to joining us, Mr. Scholl was General Manager, Vacuum Products Division at Varian Associates, Inc., a manufacturer of high-technology systems and components.

JAMES F. GENTILCORE joined us in March 1996 as Vice President of Sales and Marketing. He became Senior Vice President of Sales and Marketing in April 1998 and President of Advanced Energy Voorhees, Inc. in October 1999. From 1990 to 1996 he served with MKS Instruments and held the position of Vice President, Marketing.

## **ITEM 2. PROPERTIES**

Our headquarters and main manufacturing facility are located in Fort Collins, Colorado, in approximately 172,000 square feet of leased space. Additional manufacturing and office facilities are located in Voorhees, New Jersey, in approximately 78,000 square feet of leased space; Austin, Texas, in approximately 20,000 square feet of leased space; and Fridley, Minnesota, in approximately 21,000 square feet of leased space. To serve the needs of our customers, we also maintain regional offices in Milpitas, California; Concord, Massachusetts; Tokyo, Japan; Filderstadt, Germany; Bicester, England; Bundang, South Korea; and Taipei, Taiwan.

## **ITEM 3. LEGAL PROCEEDINGS**

We are not aware of any material legal proceedings that are expected to have a material effect on our business, assets or property.

## **ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS**

Not applicable.



## PART II

### ITEM 5. MARKET PRICE FOR REGISTRANT'S COMMON STOCK AND RELATED STOCKHOLDER MATTERS

Advanced Energy's common stock was approved for quotation on the Nasdaq National Market under the symbol AEIS, beginning November 17, 1995. At February 29, 2000, the number of common stockholders of record was 906.

Below is a table showing the range of high and low bid quotations for the common stock as quoted (without retail markup or markdown and without commissions) on the Nasdaq National Market; they do not necessarily represent actual transactions:

	High Bid -----	Low Bid -----
1998 Fiscal Year		
First Quarter	18 13/16	10
Second Quarter	16 7/16	11
Third Quarter	13	6
Fourth Quarter	25 3/4	5 5/8
1999 Fiscal Year		
First Quarter	30 1/2	17 7/8
Second Quarter	40 3/4	23 1/2
Third Quarter	45	30
Fourth Quarter	49 7/8	30 3/8

Advanced Energy has not declared or paid any cash dividends on its capital stock since it terminated its election to be treated as an S corporation for tax purposes, effective January 1, 1994. Advanced Energy currently intends to retain all future earnings to finance its business. Accordingly, Advanced Energy does not anticipate paying cash or other dividends on its common stock in the foreseeable future. Furthermore, Advanced Energy's revolving credit facility prohibits the declaration or payment of any cash dividends on its common stock.

We issued 12,791 shares of common stock to Curtis Camus, an employee, as of October 1, 1999. Mr. Camus was a founder of LITMAS, a privately held ion source company in which we now hold a majority interest. The shares were issued to Mr. Camus as partial consideration for his shares of LITMAS and were valued at \$385,000. We did not use any underwriters in connection with the sale of shares to Mr. Camus. We did not register the sale with the Securities and Exchange Commission, as we relied on the exemption from registration provided by Rule 506 under the Securities Act of 1933.

## ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA

The following selected consolidated financial data is qualified by reference to, and should be read with, our 1999 Consolidated Financial Statements, related notes and management's discussion included in this Form 10-K. The selected consolidated statement of operations data and the consolidated balance sheet data as of and for the years ended December 31, 1999 and 1998 were derived from consolidated financial statements audited by Arthur Andersen LLP, independent accountants, whose related audit report is included in this Form 10-K. The selected consolidated statement of operations data for the year ended December 31, 1997 was derived from consolidated financial statements audited in part by Arthur Andersen LLP and in part by KPMG LLP, whose audit reports are included in this Form 10-K, and pertain to RF Power Products' fiscal year ended November 30, 1997. As such, our statement of operations data for fiscal 1997 includes the statement of operations for RF Power Products' fiscal year ended November 30, 1997. The selected consolidated statements of operations data for the years ended December 31, 1996 and 1995, and the related consolidated balance sheet data as of December 31, 1997, 1996 and 1995 were derived from audited consolidated financial statements not included in this Form 10-K.

	YEARS ENDED DECEMBER 31,				
	1999	1998	1997	1996	1995
	(IN THOUSANDS, EXCEPT PER SHARE DATA)				
STATEMENT OF OPERATIONS DATA:					
Sales .....	\$ 183,958	\$ 124,698	\$ 175,758	\$ 129,931	\$ 121,075
Gross profit .....	81,857	36,713	66,956	47,246	56,072
Total operating expenses .....	56,516	49,488	47,242	36,876	31,733
Income (loss) from operations .....	25,341	(12,775)	19,714	10,370	24,339
Net income (loss) .....	\$ 16,838	\$ (9,517)	\$ 12,056	\$ 6,371	\$ 14,798
	=====	=====	=====	=====	=====
Diluted earnings (loss) per share .....	\$ 0.59	\$ (0.36)	\$ 0.46	\$ 0.25	\$ 0.63
Diluted weighted-average common shares outstanding .....	28,389	26,572	26,302	25,738	23,310
	DECEMBER 31,				
	1999	1998	1997	1996	1995
	(IN THOUSANDS)				
BALANCE SHEET DATA:					
Cash and marketable securities .....	\$ 205,792	\$ 28,134	\$ 32,215	\$ 11,778	\$ 14,022
Working capital .....	251,869	62,059	74,342	41,638	38,861
Total assets .....	312,385	101,035	130,064	68,078	68,234
Total debt .....	137,305	537	6,518	3,741	3,458
Stockholders' equity .....	148,347	89,133	97,527	54,927	48,057

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

The following discussion contains, in addition to historical information, 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. For example, statements relating to our beliefs, expectations and plans are forward-looking statements, as are statements that certain actions, conditions or circumstances will continue. Forward-looking statements involve risks and uncertainties. As a result, our actual results may differ materially from the results discussed in the forward-looking statements. Factors that could cause or contribute to such differences or prove any forward-looking statements, by hindsight, to be overly optimistic or unachievable, include, but are not limited to the following:

- o the significant fluctuations in our quarterly operating results;
- o the volatility of the semiconductor and semiconductor capital equipment industries;
- o timing and success of integration of recent and potential future acquisitions; and
- o supply constraints and technological changes.

For a discussion of these and other factors that may impact our realization of our forward-looking statements, see Part I "Cautionary Statements - Risk Factors."

### OVERVIEW

We design, manufacture and support power conversion and control systems. These systems are important components of industrial manufacturing equipment that modifies surfaces or deposits or etches thin film layers on computer chips, CDs, flat panel displays such as computer screens, DVDs, windows, eyeglasses and other products. We market and sell our systems primarily to large global OEMs of semiconductor, data storage and flat panel display manufacturing equipment and for manufacturers of other products in emerging markets. A substantial proportion of our sales are made on a just-in-time basis in which the shipment of systems occurs within a few days or hours after an order is received. We recognize revenues upon shipment of our systems and there is no requirement for acceptance when a product is shipped.

The semiconductor capital equipment industry accounted for approximately 59% of our sales in 1997, 49% in 1998 and 61% in 1999. We have been successful in achieving a number of design wins each year, which have resulted in our obtaining new customers and solidifying relationships with our existing customers. We believe our ability to

continue to achieve design wins with existing and potential customers will be critical to our future success.

We continue to seek to expand our product offerings and customer base through internal development and acquisitions.

In May 1997 we acquired the assets of MIK Physics, Inc. This acquisition provided the base technology for our Astral products, which are high power direct current (DC) systems used in PVD equipment.

In August 1997 we acquired Tower Electronics. This acquisition expanded our technology and customer base, and provided us with the capability to design and manufacture power conversion systems for use in modems, non-impact printers, telephone switches and laser devices.

In October 1997 we completed an underwritten public offering of 1,000,000 shares of our common stock at a price of \$31 per share, for aggregate net proceeds of approximately \$28.7 million. In that same month we also completed formation of our wholly owned sales and service subsidiary in South Korea.

We took another step towards achieving further market penetration in September 1998 when we acquired the assets of Fourth State Technology. This acquisition enhanced our capability to design and manufacture RF power-related process control systems used to monitor and analyze data in thin film etch processes.

In October 1998 we acquired RF Power Products, which designs, manufactures and supports RF power conversion and control systems, consisting of generators and matching networks. We believe our ability to offer an expanded line of RF systems to our existing customer base has strengthened those relationships. We sell these products principally to semiconductor capital equipment manufacturers. We also sell similar systems to capital equipment manufacturers in the flat panel display and thin film data storage industries, and are exploring applications for these products in other industries. In April 1999 we changed the name of RF Power Products to Advanced Energy Voorhees, Inc. and conduct business under that name.

In October 1999 we acquired a majority interest in LITMAS, a company that designs and manufactures plasma gas abatement systems and high-density plasma sources. We believe that LITMAS' current and future products will expand our product offerings to our existing and potential customers in the semiconductor capital equipment industry.

In November 1999 we completed two underwritten public offerings, one for \$135 million of convertible subordinated notes, and one for 1,000,000 shares of our common stock at a price of \$39 per share. These offerings provided aggregate net proceeds of approximately \$167.1 million.

In December 1999 we completed formation of our wholly owned sales and service subsidiary in Taiwan.

## RESULTS OF OPERATIONS

The following table summarizes certain data as a percentage of sales extracted from our statement of operations:

	YEARS ENDED DECEMBER 31,		
	1999	1998	1997
Sales .....	100.0%	100.0%	100.0%
Cost of sales .....	55.5	70.6	61.9
Gross margin .....	44.5	29.4	38.1
Operating expenses:			
Research and development .....	14.4	19.1	11.0
Sales and marketing .....	9.2	10.9	6.6
General and administrative .....	7.1	7.5	6.0
Restructuring charge .....	--	0.8	--
Merger costs .....	--	2.2	--
Storm (recoveries) damages .....	--	(0.9)	1.5
Purchased in-process research and development	--	--	1.8
Total operating expenses .....	30.7	39.6	26.9
Income (loss) from operations .....	13.8	(10.2)	11.2
Other income (expense) .....	0.9	0.2	(0.1)
Net income (loss) before income taxes and minority interest .....	14.7	(10.0)	11.1
Provision (benefit) for income taxes .....	5.5	(2.4)	4.2
Minority interest in net income .....	0.0	--	--
Net income (loss) .....	9.2%	(7.6)%	6.9%
	=====	=====	=====

## SALES

We sell power conversion and control systems and plasma gas abatement systems primarily to the semiconductor capital equipment, data storage and emerging markets in the United States, to the flat panel display and data storage markets in Japan, and to data storage and emerging markets in Europe. We also sell spare parts and repair services worldwide through our customer service and technical support organization.

Sales were \$175.8 million, \$124.7 million and \$184.0 million in 1997, 1998 and 1999, respectively, representing a decrease of 29% from 1997 to 1998 and an increase of 48% from 1998 to 1999. Our sales decrease from 1997 to 1998 resulted from decreased unit sales of our systems, while the increase from 1998 to 1999 was due to increased unit sales.

We started the year 1997 with strong sales growth to semiconductor capital equipment customers, which followed the 1996 downturn in that industry that had resulted from excess production capacity of semiconductor manufacturers and sharply decreased memory device prices. Toward the end of 1997, after a relatively strong recovery, the semiconductor capital equipment industry, affected primarily by the Asian financial crisis, began a sudden and severe downturn, which continued through 1998. This caused a

41% decrease in our sales to this industry in 1998 when compared to 1997, and resulted in lower sales to the United States and the Asia Pacific region. Sales to the data storage industry decreased 27%, although sales to our largest customer in that industry grew significantly from 1997 to 1998, resulting in higher sales to Europe. Sales to emerging markets were slightly higher, but would have been lower if not for the full-year effect of sales by Tower in 1998. Our experience has shown that our sales to semiconductor capital equipment customers has been dependent on the volatility of that industry, as a result of sudden changes in semiconductor supply and demand, and rapid technological advances in both semiconductor devices and wafer fabrication processes.

A substantial portion of our sales growth from 1998 to 1999 was due to higher system sales to four of our largest customers, three of whom are primarily semiconductor capital equipment OEMs, and one of whom is a data storage OEM. Our sales in 1999 reflected the recovery in the semiconductor capital equipment industry from the severe downturn of 1998, and resulted from capacity expansion and increased investment in advanced technology by the semiconductor industry. This recovery and expansion resulted in record sales for us in 1999. It also resulted in record sales for us to the semiconductor capital equipment industry specifically. Our sales to the semiconductor capital equipment industry in 1999 increased 86% over sales to that industry in 1998, and resulted in higher sales within the United States. Sales to the data storage industry increased 32% from 1998 to 1999, and resulted in higher sales to Europe. Sales to the flat panel display industry increased 75% from 1998 to 1999, and resulted in higher sales to the Asia Pacific region, particularly to Japan. Sales to emerging industries decreased 15%, primarily due to decreased sales by our Tower subsidiary.

The following tables summarize annual net sales, and percentages of net sales, by customer type for us for each of the three years in the period ended December 31, 1999:

	YEARS ENDED DECEMBER 31,		
	1999	1998	1997
	(IN THOUSANDS)		
Semiconductor capital equipment .....	\$ 112,504	\$ 60,573	\$ 102,723
Data storage .....	22,801	17,300	23,583
Flat panel display .....	10,193	5,832	11,438
Emerging .....	28,563	33,593	30,748
Customer service technical support ....	9,897	7,400	7,266
	\$ 183,958	\$ 124,698	\$ 175,758
	=====	=====	=====

	YEARS ENDED DECEMBER 31,		
	1999	1998	1997
Semiconductor capital equipment .....	61.2%	48.6%	58.5%
Data storage .....	12.4	13.9	13.4
Flat panel display .....	5.5	4.7	6.5
Emerging .....	15.5	26.9	17.5
Customer service technical support ....	5.4	5.9	4.1
	100.0%	100.0%	100.0%
	=====	=====	=====

The following tables summarize annual net sales, and percentages of net sales, by geographic region for us for each of the three years in the period ended December 31, 1999:

YEARS ENDED DECEMBER 31,			
	1999	1998	1997
	(IN THOUSANDS)		
United States and Canada .....	\$ 130,762	\$ 89,452	\$ 134,955
Europe .....	31,228	25,357	23,092
Asia Pacific .....	21,470	9,478	17,110
Rest of world .....	498	411	601
	\$ 183,958	\$ 124,698	\$ 175,758
	=====	=====	=====

YEARS ENDED DECEMBER 31,			
	1999	1998	1997
United States and Canada .....	71.1%	71.7%	76.9%
Europe .....	17.0	20.3	13.1
Asia Pacific .....	11.7	7.7	9.7
Rest of world .....	0.2	0.3	0.3
	100.0%	100.0%	100.0%
	=====	=====	=====

### GROSS MARGIN

Our gross margins were 38.1%, 29.4% and 44.5% for 1997, 1998 and 1999, respectively. The decrease in gross margin from 1997 to 1998 was primarily due to unfavorable absorption of manufacturing overhead as a result of significant capacity expansion in 1997 and the reduced level of sales in 1998. The improvement in gross margin from 1998 to 1999 was primarily a result of our efforts to reduce material costs, improve overhead cost controls and a more favorable absorption of manufacturing costs from the higher sales base.

During the first quarter of 1997 we relocated and expanded the Voorhees, New Jersey facility. In the fourth quarter of 1997 we expanded into a new manufacturing facility in Fort Collins, Colorado. In the second quarter of 1998 we relocated part of our previously existing Fort Collins manufacturing operations to a new facility in Austin, Texas. We intended the three new facilities to serve existing and anticipated growth in the semiconductor capital equipment industry. The expansion to the new location in Austin was to provide service specifically to our largest customer, a semiconductor capital equipment manufacturer, whose primary manufacturing facilities are in Austin.

In the fourth quarter of 1997 the semiconductor capital equipment industry entered a sudden and severe downturn which continued through the end of 1998. The downturn in this industry, with the resulting underutilization of capacity, significantly impacted our financial results for 1998. The combination of the expansion and lower sales resulted in an over-capacity situation for us, leading to unfavorable absorption of manufacturing overhead and a substantially reduced margin. This underutilization of manufacturing capacity continued to negatively impact gross margins, until sales to the semiconductor capital equipment market began to recover in 1999.

Historically, price competition has not had a material effect on margins. However, competitive pressures may produce a decline in average selling prices for certain products. Any decline in average selling prices not offset by reduced costs could result in a decline in our gross margins.

We provide warranty coverage for our systems ranging from 12 to 24 months, and estimate the anticipated costs of repairing our systems under such warranties based on the historical average costs of the repairs. To date, we have not experienced significant warranty costs in excess of our recorded reserves.

## **RESEARCH AND DEVELOPMENT**

We invest in research and development to research new technologies, develop new products and improve existing product designs. Our research and development expenses were \$19.3 million, \$23.8 million and \$26.5 million for 1997, 1998 and 1999, respectively, representing an increase of 23% from 1997 to 1998 and 11% from 1998 to 1999. As a percentage of sales, research and development expenses increased from 11.0% in 1997 to 19.1% in 1998 because of the lower sales base, but decreased to 14.4% in 1999 because of the higher sales base. The increase in expenses from 1997 to 1999 is primarily due to increases in payroll, materials and supplies, and higher infrastructure costs for new product development.

In connection with the acquisition of Tower in August 1997, we recorded a one-time charge of \$3.1 million in 1997 for the portion of the purchase price attributable to in-process research and development. This one-time charge is not included in the \$19.3 million reported for research and development expense in 1997.

We believe continued research and development investment for development of new systems is critical to our ability to serve new and existing markets. Since our inception, research and development costs generally have been internally funded and all have been expensed as incurred.

## **SALES AND MARKETING EXPENSES**

Our sales and marketing expenses support domestic and international sales and marketing activities which include personnel, trade shows, advertising, and other marketing activities. Sales and marketing expenses were \$11.6 million, \$13.5 million and \$16.9 million for 1997, 1998 and 1999, respectively. This represented a 16% increase from 1997 to 1998 and 25% from 1998 to 1999. The increases are attributable to higher payroll costs incurred as we continue to increase our sales management and product management capabilities. Additionally, we increased spending in 1998 to develop worldwide applications engineering capabilities. As a percentage of sales, these expenses increased from 6.6% in 1997 to 10.9% in 1998 because of the lower sales base but decreased to 9.2% in 1999 because of the higher sales base.

## **GENERAL AND ADMINISTRATIVE EXPENSES**

Our general and administrative expenses support our worldwide financial, administrative, information systems and human resources functions. General and administrative expenses were \$10.5 million, \$9.5 million and \$13.1 million for 1997,



1998 and 1999, respectively. The decrease in expenses from 1997 to 1998 is primarily due to cost control measures implemented in 1998, and the increase from 1998 to 1999 is primarily due to higher spending for payroll and purchased services. As a percentage of sales, general and administrative expenses were 6.0%, 7.5% and 7.1% for 1997, 1998 and 1999, respectively. The increase from 1997 to 1998 was due to the lower sales base, while the decrease from 1998 to 1999 was due to the higher sales base.

We continue to implement our management system software, including the replacement of existing systems in our domestic and foreign locations. We expect that charges related to training and implementation of the new software will continue through 2000.

### **ONE-TIME CHARGES AND CREDITS**

We took one-time net charges totaling \$5.8 million in 1997. Included was a net charge of \$2.7 million for storm damage to our headquarters and main manufacturing facilities that resulted from heavy rains in the Fort Collins area in July 1997. We settled with our insurance carrier in 1998, which resulted in a \$1.1 million recovery we recorded in the fourth quarter of 1998.

As discussed above in "Research and Development," the acquisition of Tower resulted in a charge of \$3.1 million in 1997 for purchased in-process research and development, which is nondeductible for income tax purposes.

In addition to the settlement for storm damage, we took one-time charges totaling \$3.7 million in 1998. In August 1998 we announced a restructuring plan to respond to the downturn in the semiconductor capital equipment market. The plan included a reduction of workforce of 128 people, the closure of one facility in our Fort Collins, Colorado campus, and the abandonment of plans to construct a new manufacturing facility in Fort Collins. We achieved other reductions in workforce at the Voorhees facility throughout 1998. We took a one-time charge of \$1.0 million for the restructuring in the third quarter of 1998.

On October 8, 1998, Advanced Energy acquired RF Power Products, in a pooling of interests that involved the exchange of four million shares of Advanced Energy common stock for the publicly held common stock of RF Power Products. As part of the business combination, we incurred \$2.7 million of expense recorded in the fourth quarter of 1998. We incurred additional operating expenses during 1999 relating to consolidating and integrating operations of this business combination.

### **OTHER INCOME (EXPENSE)**

Other income (expense) consists primarily of interest income and expense, foreign exchange gains and losses and other miscellaneous income and expense items. Interest income was approximately \$0.6 million, \$1.1 million and \$2.1 million for the years 1997,

1998 and 1999, respectively. In 1997 and 1998, interest income was earned primarily from earnings on investments made from the proceeds of our initial public offering in 1995 and our underwritten public offering in 1997. In 1999 interest income was earned primarily from the proceeds of our offering of convertible subordinated debt and common stock offering of November 1999.

Interest expense consists principally of accruals of interest on our convertible subordinated notes, on borrowings under our bank credit and capital lease facilities and a state government loan. Interest expense was approximately \$0.5 million, \$0.2 million and \$1.2 million for the years 1997, 1998 and 1999, respectively. The increase of interest expense from 1998 to 1999 was primarily due to interest on the convertible subordinated notes.

Our foreign subsidiaries' sales are primarily denominated in currencies other than the U.S. dollar. We recorded net foreign currency gains of \$0.1 million, \$0.4 million and \$1.5 million for 1997, 1998 and 1999, respectively. The increase from 1998 to 1999 was primarily due to strengthening of the exchange rate of the Japanese yen to the U.S. dollar. Beginning in 1997, we entered into various forward foreign exchange contracts as a hedge against currency fluctuations in the Japanese yen. We will continue to evaluate various policies to minimize the effect of foreign currency fluctuations.

Eleven European countries have adopted a Single European Currency (the "euro") as of January 1, 1999 with a transition period continuing through January 1, 2002. As of January 1, 1999, these eleven of the fifteen member countries of the European Union (the "participating countries") established fixed conversion rates between their existing sovereign currencies and the euro. For three years after the introduction of the euro, the participating countries can perform financial transactions in either the euro or their original local currencies. This will result in a fixed exchange rate among the participating countries, whereas the euro (and the participating countries' currencies in tandem) will continue to float freely against the U.S. dollar and other currencies of non-participating countries. Although we do not expect the introduction of the euro currency to have a significant impact on our revenues or results of operations, we are unable to determine what effects, if any, the currency change in Europe will have on competition and competitive pricing in the affected regions.

#### **PROVISION (BENEFIT) FOR INCOME TAXES**

The income tax provision for 1997 was \$7.5 million and represented an effective tax rate of 38.2%. The income tax benefit of \$2.9 million for 1998 represented an effective rate of 23.4%. The income tax provision of \$10.2 million in 1999 represented an effective rate of 37.6%. The lower rate of the tax benefit in 1998 was due to nondeductible costs associated with Advanced Energy's acquisition of RF Power Products, and foreign operating losses with no benefit recorded. Changes in our relative earnings and the earnings of our foreign subsidiaries affect our consolidated effective tax rate. We adjust our income taxes periodically based upon the anticipated tax status of all foreign and

domestic entities.

## QUARTERLY RESULTS OF OPERATIONS

The following tables present unaudited quarterly results in dollars and as a percentage of sales for each of the eight quarters in the period ended December 31, 1999. We believe that all necessary adjustments have been included in the amounts stated below to present fairly such quarterly information. The operating results for any quarter are not necessarily indicative of results for any subsequent period.

	QUARTERS ENDED							
	MAR. 31, 1998	JUNE 30, 1998	SEPT. 30, 1998	DEC. 31, 1998	MAR. 31, 1999	JUNE 30, 1999	SEPT. 30, 1999	DEC. 31, 1999
	(IN THOUSANDS, EXCEPT PER SHARE DATA)							
Sales .....	\$ 43,869	\$ 31,981	\$ 26,292	\$ 22,556	\$ 32,728	\$ 41,515	\$ 51,142	\$ 58,573
Cost of sales .....	30,263	23,466	18,317	15,939	19,630	23,222	28,598	30,651
Gross profit .....	13,606	8,515	7,975	6,617	13,098	18,293	22,544	27,922
Operating expenses:								
Research and development .....	5,835	6,394	5,722	5,898	5,852	6,758	6,935	6,972
Sales and marketing .....	3,564	3,512	3,255	3,200	3,305	3,979	4,187	5,464
General and administrative .....	2,859	2,768	2,353	1,503	2,870	3,088	3,715	3,391
Restructuring charge .....	--	--	1,000	--	--	--	--	--
Merger costs .....	--	--	--	2,742	--	--	--	--
Storm recoveries .....	--	--	--	(1,117)	--	--	--	--
Total operating expenses .....	12,258	12,674	12,330	12,226	12,027	13,825	14,837	15,827
Income (loss) from operations .....	1,348	(4,159)	(4,355)	(5,609)	1,071	4,468	7,707	12,095
Other income (expense) .....	98	129	(214)	345	(39)	56	1,131	595
Net income (loss) before income taxes and minority interest .....	1,446	(4,030)	(4,569)	(5,264)	1,032	4,524	8,838	12,690
Provision (benefit) for income taxes .....	552	(885)	(1,089)	(1,478)	498	1,754	3,303	4,622
Minority interest in net income .....	--	--	--	--	--	--	--	69
Net income (loss) .....	\$ 894	\$ (3,145)	\$ (3,480)	\$ (3,786)	\$ 534	\$ 2,770	\$ 5,535	\$ 7,999
Diluted earnings (loss) per share ....	\$ 0.03	\$ (0.12)	\$ (0.13)	\$ (0.14)	\$ 0.02	\$ 0.10	\$ 0.20	\$ 0.28
Diluted weighted-average common shares outstanding .....	27,170	26,531	26,585	26,681	28,027	28,169	28,318	29,043

	QUARTERS ENDED							
	MAR. 31, 1998	JUNE 30, 1998	SEPT. 30, 1998	DEC. 31, 1998	MAR. 31, 1999	JUNE 30, 1999	SEPT. 30, 1999	DEC. 31, 1999
PERCENTAGE OF SALES:								
Sales .....	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of sales .....	69.0	73.4	69.7	70.7	60.0	55.9	55.9	52.3
Gross margin .....	31.0	26.6	30.3	29.3	40.0	44.1	44.1	47.7
Operating expenses:								
Research and development .....	13.3	19.9	21.8	26.1	17.9	16.3	13.5	12.0
Sales and marketing .....	8.1	11.0	12.4	14.2	10.1	9.6	8.2	9.3
General and administrative .....	6.5	8.7	8.9	6.7	8.7	7.4	7.3	5.8
Restructuring charge .....	--	--	3.8	--	--	--	--	--
Merger costs .....	--	--	--	12.2	--	--	--	--
Storm recoveries .....	--	--	--	(5.0)	--	--	--	--
Total operating expenses .....	27.9	39.6	46.9	54.2	36.7	33.3	29.0	27.1
Income (loss) from operations .....	3.1	(13.0)	(16.6)	(24.9)	3.3	10.8	15.1	20.6
Other income (expense) .....	0.2	0.4	(0.8)	1.6	(0.1)	0.1	2.2	1.1
Net income (loss) before income taxes and minority interest .....	3.3	(12.6)	(17.4)	(23.3)	3.2	10.9	17.3	21.7
Provision (benefit) for income taxes ...	1.3	(2.8)	(4.2)	(6.5)	1.6	4.2	6.5	7.9
Minority interest in net income .....	--	--	--	--	--	--	--	0.1
Net income (loss) .....	2.0%	(9.8)%	(13.2)%	(16.8)%	1.6%	6.7%	10.8%	13.7%

We have experienced and expect to continue to experience significant fluctuations in our quarterly operating results. Our expense levels are based, in part, on expectations of future revenues. If revenue levels in a particular quarter do not meet expectations,

operating results may be adversely affected. A variety of factors have an influence on the level of our revenues in a particular quarter. These factors include:

- o general economic conditions;
- o specific economic conditions in the industries we serve;
- o timing and receipt of orders from major customers;
- o customer cancellations or delays of shipments;
- o specific feature requests by customers;
- o production delays or manufacturing inefficiencies;
- o exchange rate fluctuations;
- o management decisions to commence or discontinue product lines;
- o our ability to design, introduce and manufacture new products on a cost effective and timely basis;
- o the introduction of new products by us or our competitors;
- o the timing of research and development expenditures; and
- o expenses related to acquisitions, strategic alliances, and the further development of marketing and service capabilities.

We make a substantial portion of our shipments on a just-in-time basis in which shipment of systems occurs within a few days or hours after we receive an order. Our backlog is not meaningful because of the importance of just-in-time shipments. We are dependent on obtaining orders for shipment in a particular quarter to achieve our revenue objectives for that quarter. Accordingly, it is difficult for us to predict accurately the timing and level of sales in a particular quarter. Due to our just-in-time program, we anticipate quarterly fluctuations in sales to continue to occur.

Our quarterly operating results in 1998 and 1999 reflect the changing demand for our products during this period, principally from manufacturers of semiconductor capital equipment and data storage equipment and emerging markets, and our ability to adjust our manufacturing capacity to meet this demand. Demand from the semiconductor capital equipment companies entered a sudden and severe downturn at the end of 1997, which continued throughout 1998, but which recovered slowly throughout 1999. Sales to the data storage industry declined from the first quarter of 1998 to the second quarter of 1998, then increased in the third quarter of 1998 but dropped significantly in the fourth quarter of 1998. Data storage sales then increased throughout 1999, except for a slight decrease in the second quarter. Sales to the flat panel display industry decreased from the

first quarter of 1998 to the second quarter of 1998, and decreased again from the second quarter of 1998 to the third quarter of 1998, then increased in each of the next five quarters. Sales to emerging markets were lower in the second half of 1998 when compared to the first half of 1998, were lower again in the first half of 1999, then increased in the second half of 1999.

Our gross margin fluctuated significantly on a quarterly basis in 1998 and 1999, primarily reflecting utilization of manufacturing capacity. The decrease in gross margin from 31.0% to 26.6% from the first quarter of 1998 to the second quarter of 1998 was due to decreased utilization of capacity resulting from the decrease in sales to the semiconductor capital equipment industry. Gross margin improved to 30.3% in the third quarter of 1998 even though there was a decrease in sales to the semiconductor capital equipment industry and decreased utilization of capacity. The improvement was due to our efforts to lower material costs through supplier contract negotiations while improving material quality and material handling efficiency, as well as from cost improvements realized from the restructuring. Gross margin declined to 29.3% in the fourth quarter of 1998, due primarily to another decrease in sales to the semiconductor capital equipment industry that resulted in decreased utilization of capacity, although material costs improved due to efforts continued from the previous quarter. Gross margin then improved to 40.0% in the first quarter of 1999, to 44.1% in the second and third quarters of 1999 and to 47.7% in the fourth quarter of 1999. These increases were due to increased utilization of capacity from the recovery in the semiconductor capital equipment industry and from our increased efforts to lower material costs.

Due to the downturn in the semiconductor capital equipment industry in 1998, we held operating expenses, excluding one-time charges and credits, relatively flat during the first half of 1998 in anticipation of an early recovery. Operating expenses were \$12.3 million and \$12.7 million in the first and second quarters of 1998, respectively. With the extent and duration of the downturn still uncertain, in the second half of 1998 we reduced operating expenses, excluding one-time charges and credits, while maintaining a minimum level of resources necessary to address an upturn in the semiconductor capital equipment industry that began to occur during 1999. Operating expenses in the third and fourth quarters of 1998 were \$12.3 million and \$12.2 million, respectively, and would have been \$11.3 million and \$10.6 million, respectively, if not for one-time charges and credits. Operating expenses were \$12.0 million, \$13.8 million, \$14.8 million and \$15.8 million during the first, second, third and fourth quarters of 1999, respectively, but declined as a percentage of sales throughout 1999 as the sales base increased each quarter. As a percentage of sales, operating expenses have declined during periods of rapid sales growth, when sales increased at a rate faster than our ability to add personnel and facilities to support the growth. Operating expenses as a percentage of sales have increased during periods of flat or decreased sales, when our infrastructure is retained to support anticipated future growth.

Other income (expense) consists primarily of interest income and expense and foreign currency gain and loss. Interest income and expense were relatively stable throughout

the periods presented, until the fourth quarter of 1999, when the interest income and expense from the proceeds of the convertible subordinated notes and the interest from the proceeds of the common stock sale began. During 1998 we recorded a net foreign exchange gain of \$0.4 million, earned primarily in the fourth quarter of that year. During 1999 we recorded a net foreign exchange gain of \$1.5 million, which occurred mostly in the second half of the year. We continue to utilize forward foreign exchange contracts in Japan to mitigate the effects of foreign currency fluctuations.

Our effective rate for income tax provision (benefit) fluctuated significantly throughout 1998, varying from 22.0% to 38.2%. The fluctuations were due to certain nondeductible expenses including merger costs and losses in foreign subsidiaries for which no tax benefit was recorded. Our effective income tax rate became more stable in 1999, varying from 36.4% to 48.3%. We have implemented certain business strategies which we believe will favorably impact our effective income tax rate in future periods.

## **LIQUIDITY AND CAPITAL RESOURCES**

Since our inception, we have financed our operations, acquired equipment and met our working capital requirements through borrowings under our revolving line of credit, long-term loans secured by property and equipment, cash flow from operations, proceeds from underwritten public offerings of our common stock and proceeds from convertible subordinated debt.

Operating activities provided cash of \$8.7 million in 1998, primarily as a result of depreciation, amortization and decreases in accounts receivable and inventories, offset by net loss, decreases in income taxes payable, accounts payable and payroll. Operating activities provided cash of \$10.1 million in 1999, primarily as a result of net income, depreciation, amortization, increases in accounts payable and increased accruals for payroll, employee benefits and income taxes, offset by increases in accounts receivable and inventories. We expect future receivable and inventory balances to fluctuate with net sales. We provide just-in-time deliveries to certain of our customers and may be required to maintain higher levels of inventory to satisfy our customers' delivery requirements. Any increase in our inventory levels will require the use of cash to finance the inventory.

Investing activities in 1998 used cash of \$3.7 million and included the purchase of property and equipment of \$5.3 million, the acquisition of the assets of Fourth State Technology for \$2.5 million and the initial investment in LITMAS of \$1.0 million, offset by a net decrease in marketable securities of \$5.1 million. Investing activities in 1999 used cash of \$175.9 million and included a net increase in marketable securities of \$168.9 million, the purchase of property and equipment of \$6.8 million and an additional investment in LITMAS of \$0.2 million.

Financing activities used cash of \$5.1 million in 1998 and consisted primarily of changes in notes payable and capital lease obligations. Financing activities provided cash

of \$173.3 million in 1999, and consisted primarily of net proceeds from convertible subordinated debt of \$130.5 million, net proceeds from the sale of common stock of \$36.6 million, proceeds from the exercise of employee stock options and sale of common stock through our employee stock purchase plan of \$4.5 million, and other items of \$1.7 million.

We plan to spend approximately \$8.5 million in 2000 for the acquisition of equipment, leasehold improvements and furnishings, with depreciation expense projected to be \$5.7 million.

As of December 31, 1999, we had working capital of \$251.9 million. Our principal sources of liquidity consisted of \$19.4 million of cash and cash equivalents, \$186.4 million of marketable securities, and a credit facility consisting of a \$30.0 million revolving line of credit which replaced our prior line of credit, with options to convert up to \$10.0 million to a three-year term loan. Advances under the revolving line of credit bear interest at either the prime rate (8.75% at February 29, 2000) minus 1.25% or the LIBOR 360-day rate (6.76375% at February 29, 2000) plus 150 basis points, at our option. All advances under this revolving line of credit will be due and payable in December 2000. As of December 31, 1999 there was an advance outstanding of \$2.0 million to our Japanese subsidiary, Advanced Energy Japan K.K. Additionally, we guarantee a \$2,500,000 bank term loan through March 31, 2000, entered into by a non-public entity that serves as a supplier to us.

We believe that our cash and cash equivalents, cash flow from operations and available borrowings, will be sufficient to meet our working capital needs through at least the end of 2000. After that time, we may require additional equity or debt financing to address our working capital, capital equipment or expansion needs. In addition, any significant acquisitions we make may require additional equity or debt financings to fund the purchase price, if paid in cash. There can be no assurance that additional funding will be available when required or that it will be available on terms acceptable to us.

## **YEAR 2000 PROGRAM**

We did not experience any significant malfunctions or errors in our operating or business systems when the date changed from 1999 to 2000. Based on operations since January 1, 2000, we do not expect any significant impact to our ongoing business as a result of the "Year 2000 issue." However, it is possible that the full impact of the date change, which was of concern due to computer programs that use two digits instead of four digits to define years, has not been fully recognized. For example, it is possible that Year 2000 or similar issues may occur with billing, payroll, or financial closings at the end of a month, quarter or year. We have not experienced any such problems to date and we believe that any such problems are likely to be minor and correctable. In addition, we could still be negatively impacted if the Year 2000 or similar issues adversely affect our

customers or suppliers. We currently are not aware of any significant Year 2000 or similar problems that have arisen for our customers and suppliers.

The foregoing beliefs and expectations are forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. These are based in large part on certain statements and representations made by persons other than us, any of which statements or representations ultimately could prove to be inaccurate.

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

### **INTEREST RATE RISK**

Our exposure to market risk for changes in interest rates relates primarily to our investment portfolio and long-term debt obligations. We generally place our investments with high credit quality issuers and by policy are averse to principal loss and seek to protect and preserve our invested funds by limiting default risk, market risk and reinvestment risk. As of December 31, 1999, our investments consisted of commercial paper, municipal bonds and notes and mutual funds.

Our interest expense is sensitive to changes in the general level of U.S. interest rates with respect to our bank facility of which \$2.0 million was outstanding as of December 31, 1999. Our other debt, including our convertible subordinated notes, is fixed rate in nature and mitigates the impact of fluctuations in interest rates. The fair value of our debt approximates the carrying amount at December 31, 1999. We believe the potential effects of near-term changes in interest rates on our debt is not material.

### **FOREIGN CURRENCY EXCHANGE RATE RISK**

We transact business in various foreign countries. Our primary foreign currency cash flows are generated in countries in Asia and Europe. We have entered into various forward foreign exchange contracts as a hedge against currency fluctuations in the Japanese yen. We will continue to evaluate various methods to minimize the effects of currency fluctuations. At December 31, 1999, we held foreign forward exchange contracts with nominal amounts of \$4,500,000 and market settlement amounts of \$4,498,000 for an unrealized gain position of \$2,000.

### **OTHER RISK**

We have invested in a start-up company and may in the future make additional investments in start-up companies that develop products which we believe may provide future benefits. The current start-up investment and any future start-up investments will be subject to all of the risks inherent in investing in companies that are not established.



ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

	PAGE
	----
Report of Arthur Andersen LLP, Independent Public Accountants.....	48
Report of KPMG LLP, Independent Public Accountants.....	49
Consolidated Balance Sheets as of December 31, 1999 and 1998.....	50
Consolidated Statement of Operations for the Years Ended December 31, 1999, 1998 and 1997.....	52
Consolidated Statement of Stockholders' Equity for the Years Ended December 31, 1999, 1998 and 1997....	53
Consolidated Statement of Cash Flows for the Years Ended December 31, 1999, 1998 and 1997.....	54
Notes to Consolidated Financial Statements.....	55
Schedule II - Valuation and Qualifying Accounts.....	68

## **REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS**

To the Board of Directors and Shareholders of Advanced Energy Industries, Inc.:

We have audited the accompanying consolidated balance sheets of Advanced Energy Industries, Inc. (a Delaware corporation) and subsidiaries as of December 31, 1999 and 1998, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 1999. These consolidated financial statements and the schedule referred to below are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements and schedule based on our audits. The consolidated financial statements give retroactive effect to the merger of the Company and RF Power Products, Inc., which has been accounted for as a pooling of interests as described in Note 3 to the consolidated financial statements. We did not audit the consolidated statements of operations and cash flows for the year ended November 30, 1997 (the previous year-end of RF Power Products, Inc. - see Note

3), which statements reflect total revenues of 19% of the related consolidated totals for the year ended December 31, 1997. These statements were audited by other auditors whose report has been furnished to us, and our opinion, insofar as it relates to amounts included for RF Power Products, Inc., is based solely upon the report of the other auditors.

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

In our opinion, based on our audits and the report of the other auditors, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Advanced Energy Industries, 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 generally accepted accounting principles.

Our audits were made for the purpose of forming an opinion on the basic financial statements taken as a whole. The schedule attached to the consolidated financial statements is presented for purposes of complying with the Securities and Exchange Commission's rules and is not part of the basic financial statements. This schedule has been subjected to the auditing procedures applied in our audits of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

**ARTHUR ANDERSEN LLP**

Denver, Colorado  
February 8, 2000.

## **INDEPENDENT AUDITORS' REPORT**

The Board of Directors and Shareholders  
RF Power Products, Inc.:

We have audited the consolidated statement of income, shareholders' equity, and cash flows of RF Power Products, Inc. and subsidiary for the year ended November 30, 1997 (not separately presented herein). In connection with our audit of these consolidated financial statements, we also have audited the related consolidated financial statement schedule (not separately presented herein). These consolidated financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements and financial statement schedule based on our audit.

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

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the results of operations of RF Power Products, Inc. and subsidiary and their cash flows for the year ended November 30, 1997 in conformity with generally accepted accounting principles. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

**KPMG LLP**

Philadelphia, Pennsylvania  
January 16, 1998

**ADVANCED ENERGY INDUSTRIES, INC. AND SUBSIDIARIES**

**CONSOLIDATED BALANCE SHEETS**  
(IN THOUSANDS)

		DECEMBER 31,	
		1999	1998
		-----	-----
ASSETS			
CURRENT ASSETS:			
Cash and cash equivalents .....		\$ 19,352	\$ 12,295
Marketable securities - trading .....		186,440	15,839
Accounts receivable --			
Trade (less allowances for doubtful accounts of approximately			
\$537 and \$582 at December 31, 1999 and 1998, respectively) .....		41,524	14,841
Related parties .....		32	221
Other .....		1,787	542
Income tax receivable .....		1,224	3,576
Inventories .....		25,474	21,412
Other current assets .....		1,708	797
Deferred income tax assets, net .....		3,080	4,112
		-----	-----
Total current assets .....		280,621	73,635
		-----	-----
PROPERTY AND EQUIPMENT, at cost, net of accumulated			
depreciation of \$17,990 and \$14,316 at December 31,			
1999 and 1998, respectively .....		16,675	15,320
		-----	-----
OTHER ASSETS:			
Deposits and other .....		533	1,007
Goodwill and intangibles, net of accumulated amortization of \$2,905 and \$1,505 at			
December 31, 1999 and 1998, respectively .....		7,949	8,586
Demonstration and customer service equipment, net of			
accumulated depreciation of \$2,235 and \$1,743 at December 31,			
1999 and 1998, respectively .....		2,197	2,487
Deferred debt issuance costs, net .....		4,410	--
		-----	-----
		15,089	12,080
		-----	-----
Total assets .....		\$312,385	\$101,035
		=====	=====

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

**ADVANCED ENERGY INDUSTRIES, INC. AND SUBSIDIARIES**

**CONSOLIDATED BALANCE SHEETS**  
(IN THOUSANDS)

	DECEMBER 31,	
	1999	1998
<hr/>		
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Accounts payable trade .....	\$ 14,481	\$ 5,675
Accrued payroll and employee benefits .....	7,341	2,983
Other accrued expenses .....	2,207	2,074
Customer deposits .....	804	66
Accrued income taxes payable .....	886	567
Capital lease obligations, current portion .....	89	111
Notes payable, current portion .....	2,058	100
Accrued interest payable on convertible subordinated notes .....	886	--
	<hr/>	<hr/>
Total current liabilities .....	28,752	11,576
	<hr/>	<hr/>
LONG-TERM LIABILITIES:		
Capital lease obligations, net of current portion .....	42	110
Notes payable, net of current portion .....	116	216
Convertible subordinated notes payable .....	135,000	--
	<hr/>	<hr/>
	135,158	326
	<hr/>	<hr/>
Total liabilities .....	163,910	11,902
	<hr/>	<hr/>
COMMITMENTS AND CONTINGENCIES (Note 13)		
MINORITY INTEREST .....	128	--
	<hr/>	<hr/>
STOCKHOLDERS' EQUITY:		
Preferred stock, \$0.001 par value, 1,000 shares authorized, none issued and outstanding .....	--	--
Common stock, \$0.001 par value, 40,000 and 30,000 shares authorized, respectively; 28,250 and 26,725 shares issued and outstanding, respectively ....	28	27
Additional paid-in capital .....	103,232	60,381
Retained earnings .....	45,977	29,139
Accumulated other comprehensive loss .....	(890)	(414)
	<hr/>	<hr/>
Total stockholders' equity .....	148,347	89,133
	<hr/>	<hr/>
Total liabilities and stockholders' equity .....	\$ 312,385	\$ 101,035
	=====	=====

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

**ADVANCED ENERGY INDUSTRIES, INC. AND SUBSIDIARIES**

**CONSOLIDATED STATEMENT OF OPERATIONS**  
(IN THOUSANDS, EXCEPT PER SHARE AMOUNTS)

	YEARS ENDED DECEMBER 31,		
	1999	1998	1997
SALES .....	\$ 183,958	\$ 124,698	\$ 175,758
COST OF SALES .....	102,101	87,985	108,802
Gross profit .....	81,857	36,713	66,956
OPERATING EXPENSES:			
Research and development .....	26,517	23,849	19,336
Sales and marketing .....	16,935	13,531	11,646
General and administrative .....	13,064	9,483	10,480
Restructuring charge .....	--	1,000	--
Merger costs .....	--	2,742	--
Storm (recoveries) damages .....	--	(1,117)	2,700
Purchased in-process research and development .....	--	--	3,080
Total operating expenses .....	56,516	49,488	47,242
INCOME (LOSS) FROM OPERATIONS .....	25,341	(12,775)	19,714
OTHER INCOME (EXPENSE):			
Interest income .....	2,119	1,111	573
Interest expense .....	(1,206)	(191)	(481)
Foreign currency gain .....	1,504	369	97
Other, net .....	(674)	(931)	(380)
	1,743	358	(191)
Net income (loss) before income taxes and minority interest ..	27,084	(12,417)	19,523
PROVISION (BENEFIT) FOR INCOME TAXES .....	10,177	(2,900)	7,467
MINORITY INTEREST IN NET INCOME .....	69	--	--
NET INCOME (LOSS) .....	\$ 16,838	\$ (9,517)	\$ 12,056
BASIC EARNINGS (LOSS) PER SHARE .....	\$ 0.62	\$ (0.36)	\$ 0.47
DILUTED EARNINGS (LOSS) PER SHARE .....	\$ 0.59	\$ (0.36)	\$ 0.46
BASIC WEIGHTED-AVERAGE COMMON SHARES OUTSTANDING .....	27,161	26,572	25,523
DILUTED WEIGHTED-AVERAGE COMMON SHARES OUTSTANDING .....	28,389	26,572	26,302

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

**ADVANCED ENERGY INDUSTRIES, INC. AND SUBSIDIARIES**

**CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY  
(IN THOUSANDS)**

**FOR THE YEARS ENDED DECEMBER 31, 1999, 1998 AND 1997**

	COMMON STOCK		ADDITIONAL	RETAINED	STOCKHOLDERS'	DEFERRED	ACCUMULATED OTHER COMPREHENSIVE	TOTAL
	SHARES	AMOUNT	PAID-IN CAPITAL					
	-----	-----	-----	EARNINGS	NOTES RECEIVABLE	COMPENSATION	(LOSS) INCOME	STOCKHOLDERS' EQUITY
	-----	-----	-----	-----	-----	-----	-----	-----
BALANCES, December 31, 1996 .....	25,253	\$25	\$ 29,564	\$ 27,082	\$(1,161)	\$(82)	\$( 500)	\$ 54,928
Exercise of stock options for cash ...	135	--	268	--	--	--	--	268
Exercise of stock options in exchange for stockholders' notes receivable .....	90	--	470	--	(470)	--	--	--
Proceeds from stockholders' notes receivable .....	--	--	--	--	1,564	--	--	1,564
Sale of common stock through employee stock purchase plan .....	8	--	102	--	--	--	--	102
Amortization of deferred compensation .....	--	--	--	--	--	48	--	48
Sale of common stock through public offering, net of approximately \$2,276 of expenses .....	1,000	1	28,723	--	--	--	--	28,724
Tax benefit related to shares acquired by employees under stock compensation plans ...	--	--	29	--	--	--	--	29
Comprehensive income:								
Equity adjustment from foreign currency translation .....	--	--	--	--	--	--	(192)	--
Net income .....	--	--	--	12,056	--	--	--	--
Total comprehensive income .....	--	--	--	--	--	--	--	11,864
	-----	-----	-----	-----	-----	-----	-----	-----
BALANCES, December 31, 1997 .....	26,486	26	59,156	39,138	(67)	(34)	(692)	97,527
Exercise of stock options for cash ...	219	1	727	--	--	--	--	728
Proceeds from stockholders' notes receivable .....	--	--	--	--	67	--	--	67
Sale of common stock through employee stock purchase plan .....	20	--	133	--	--	--	--	133
Amortization of deferred compensation .....	--	--	--	--	--	34	--	34
Tax benefit related to shares acquired by employees under stock compensation plans ...	--	--	365	--	--	--	--	365
Adjustment to conform year-end of merged entity .....	--	--	--	(482)	--	--	--	(482)
Comprehensive loss:								
Equity adjustment from foreign currency translation .....	--	--	--	--	--	--	278	--
Net loss .....	--	--	--	(9,517)	--	--	--	--
Total comprehensive loss .....	--	--	--	--	--	--	--	(9,239)
	-----	-----	-----	-----	-----	-----	-----	-----
BALANCES, December 31, 1998 .....	26,725	27	60,381	29,139	--	--	(414)	89,133
Exercise of stock options for cash ...	490	--	4,148	--	--	--	--	4,148
Sale of common stock through employee stock purchase plan .....	22	--	345	--	--	--	--	345
Issuance of common stock for acquisition of LITMAS .....	13	--	385	--	--	--	--	385
Tax benefit related to shares acquired by employees under stock compensation plans ...	--	--	1,422	--	--	--	--	1,422
Sale of common stock through public offering, net of approximately \$2,448 of expenses .....	1,000	1	36,551	--	--	--	--	36,552
Equity adjustment from foreign currency translation .....	--	--	--	--	--	--	(476)	--
Net income .....	--	--	--	16,838	--	--	--	--
Total comprehensive loss .....	--	--	--	--	--	--	--	16,362
	-----	-----	-----	-----	-----	-----	-----	-----
BALANCES, December 31, 1999 .....	28,250	\$28	\$103,232	\$ 45,977	\$ --	\$ --	\$( 890)	\$ 148,347
	=====	===	=====	=====	=====	=====	=====	=====

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

**ADVANCED ENERGY INDUSTRIES, INC. AND SUBSIDIARIES**

**CONSOLIDATED STATEMENT OF CASH FLOWS**  
(IN THOUSANDS)

	YEARS ENDED DECEMBER 31,		
	1999	1998	1997
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>			
Net income (loss) .....	\$ 16,838	\$ (9,517)	\$ 12,056
Adjustment for conforming year-end of merged entity .....	--	(482)	--
Adjustments to reconcile net income (loss) to net cash provided by operating activities -			
Depreciation and amortization .....	7,683	6,544	4,838
Amortization of deferred debt issuance costs .....	81	--	--
Minority interest .....	69	--	--
Provision for deferred income taxes .....	1,032	(792)	(1,657)
Amortization of deferred compensation .....	--	34	48
Purchased in-process research and development .....	--	--	3,080
(Gain) loss on disposal of property and equipment .....	(15)	102	1,046
Earnings from marketable securities, net .....	(1,724)	(765)	(174)
Writedown of LITMAS investment .....	322	600	--
Changes in operating assets and liabilities -			
Accounts receivable-trade, net .....	(26,523)	19,343	(12,067)
Related parties and other receivables .....	(1,306)	1,473	(502)
Inventories .....	(4,062)	9,795	(11,513)
Other current assets .....	(911)	1,764	(1,138)
Deposits and other .....	291	(37)	777
Demonstration and customer service equipment .....	(426)	(1,016)	(641)
Accounts payable trade .....	8,547	(9,436)	10,402
Accrued payroll and employee benefits .....	4,358	(2,555)	2,613
Customer deposits and other accrued expenses .....	1,757	(591)	699
Income taxes payable/receivable, net .....	4,093	(5,743)	1,040
Net cash provided by operating activities .....	10,104	8,721	8,907
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>			
Purchase of marketable securities .....	(170,805)	(1,000)	(20,000)
Sale of marketable securities .....	1,928	6,100	--
Purchase of property and equipment, net .....	(6,841)	(5,292)	(7,494)
Purchase of LITMAS, net of cash acquired .....	(175)	(1,000)	--
Acquisition of assets of Fourth State Technology, Inc. ....	--	(2,500)	--
Acquisition of Tower Electronics, Inc., net of cash acquired ..	--	--	(12,995)
Net cash used in investing activities .....	(175,893)	(3,692)	(40,489)
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>			
Proceeds from notes payable .....	3,304	2,201	15,828
Repayment of notes payable and capital lease obligations .....	(1,536)	(8,182)	(14,449)
Proceeds from convertible debt, net .....	130,509	--	--
Sale of common stock, net of expenses .....	36,552	--	28,724
Sale of common stock through employee stock purchase plan .....	345	133	102
Proceeds from exercise of stock options and warrants .....	4,148	728	268
Proceeds from stockholders' notes receivable .....	--	67	1,564
Net cash provided by (used in) financing activities .....	173,322	(5,053)	32,037
EFFECT OF CURRENCY TRANSLATION ON CASH .....	(476)	278	(192)
INCREASE IN CASH AND CASH EQUIVALENTS .....	7,057	254	263
CASH AND CASH EQUIVALENTS, beginning of period .....	12,295	12,041	11,778
CASH AND CASH EQUIVALENTS, end of period .....	\$ 19,352	\$ 12,295	\$ 12,041
	=====	=====	=====
<b>SUPPLEMENTAL DISCLOSURE OF NON-CASH INVESTING AND FINANCING ACTIVITIES:</b>			
Tax benefit related to shares acquired by employees under stock option plans .....	\$ 1,422	\$ 365	\$ 29
	=====	=====	=====
Note payable assumed in Tower acquisition .....	\$ --	\$ --	\$ 1,389
	=====	=====	=====
Exercise of stock options in exchange for stockholders' notes receivable .....	\$ --	\$ --	\$ 470
	=====	=====	=====
<b>SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION:</b>			
Cash paid for interest .....	\$ 232	\$ 283	\$ 456
	=====	=====	=====
Cash paid for income taxes, net .....	\$ 4,654	\$ 2,327	\$ 7,918
	=====	=====	=====



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

## ADVANCED ENERGY INDUSTRIES, INC. AND SUBSIDIARIES

### NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

#### (1) COMPANY OPERATIONS

Advanced Energy Industries, Inc. (the "Company") was incorporated in Colorado in 1981 and reincorporated in Delaware in 1995. The Company is primarily engaged in the development and production of power conversion and control systems, which are used by manufacturers of semiconductors and in industrial thin film manufacturing processes. The Company owns 100% of each of the following subsidiaries: Advanced Energy Japan K.K. ("AE-Japan"), Advanced Energy Industries GmbH ("AE-Germany"), Advanced Energy Industries U.K. Limited ("AE-UK"), Advanced Energy Industries Korea, Inc. ("AE-Korea") and Advanced Energy Taiwan, Ltd. ("AE-Taiwan"). The Company also owns 100% of Advanced Energy Voorhees, Inc. ("AEV"), formerly RF Power Products, Inc. ("RFPP") and Tower Electronics, Inc. ("Tower"), and 56.5% of LITMAS. AEV is a New Jersey-based designer and manufacturer of radio frequency power systems, matching networks and peripheral products primarily used by original equipment providers in the semiconductor capital equipment, commercial coating, flat panel display and analytical instrumentation markets. Tower is a Minnesota-based designer and manufacturer of custom, high-performance switchmode power supplies used principally in the telecommunications, medical and non-impact printing industries. LITMAS is a start-up company that designs and manufactures plasma gas abatement systems and high-density plasma sources.

The Company continues to be subject to certain risks similar to other companies in its industry. These risks include significant fluctuations of quarterly operating results, the volatility of the semiconductor and semiconductor capital equipment industries, customer concentration within the markets the Company serves, manufacturing facilities risks, recent and potential future acquisitions, management of growth, supply constraints and dependencies, dependence on design wins, barriers to obtaining new customers, the high level of customized designs, rapid technological changes, competition, international sales risks, the Asian financial markets, intellectual property rights, governmental regulations, and the volatility of the market price of the Company's common stock. A significant change in any of these risk factors could have a material impact on the Company's business.

#### (2) SIGNIFICANT ACCOUNTING POLICIES

**BASIS OF PRESENTATION** -- The consolidated financial statements include the accounts of the Company and its subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation.

**CASH AND CASH EQUIVALENTS** -- For cash flow purposes, the Company considers all cash and highly liquid investments with an original maturity of 90 days or less to be cash and cash equivalents.

**INVENTORIES** -- Inventories include costs of materials, direct labor and manufacturing overhead. Inventories are valued at the lower of market or cost, computed on a first-in, first-out basis.

**MARKETABLE SECURITIES - TRADING** -- The Company has investments in marketable equity securities and municipal bonds, which have original maturities of 90 days or more. In accordance with Statement of Financial Accounting Standards ("SFAS") No. 115, "Accounting for Certain Investments in Debt and Equity Securities," the investments are classified as trading securities and reported at fair value with unrealized gains and losses included in earnings.

**DEMONSTRATION AND CUSTOMER SERVICE EQUIPMENT** -- Demonstration and customer service equipment are manufactured products utilized for sales demonstration and evaluation purposes. The Company also utilizes this equipment in its customer service function as replacement and loaner equipment to existing customers.

The Company depreciates the equipment based on its estimated useful life in the sales and customer service functions. The depreciation is computed based on a 3-year life.

**PROPERTY AND EQUIPMENT** -- Property and equipment is stated at cost. Additions, improvements, and major renewals are capitalized. Maintenance, repairs, and minor renewals are expensed as incurred.

Depreciation is provided using straight-line and accelerated methods over three to ten years for machinery and equipment. Amortization of leasehold improvements and leased equipment is provided using the straight-line method over the life of the lease term or the life of the assets, whichever is shorter.

**GOODWILL AND INTANGIBLES** -- Goodwill and intangibles are recorded at the date of acquisition at their allocated cost. Amortization is provided over the estimated useful lives of approximately 7 years for both the goodwill and the intangible assets.

**CONCENTRATIONS OF CREDIT RISK** -- The Company's revenues generally are concentrated among a small number of customers, the majority of which are in the semiconductor capital equipment industry. The Company's foreign subsidiaries sales are primarily denominated in currencies other than the U.S. dollar (see note 14). The Company establishes an allowance for doubtful accounts based upon factors surrounding the credit risk of specific customers, historical trends and other information.

**WARRANTY POLICY** -- The Company estimates the anticipated costs of repairing products under warranty based on the historical average cost of the repairs. The Company offers warranty coverage for its systems for periods ranging from 12 to 24 months after shipment.

**CUMULATIVE TRANSLATION ADJUSTMENT** -- The functional currency for the Company's foreign operations is the applicable local currency.

The Company records a cumulative translation adjustment from translation of the financial statements of AE-Japan, AE-Germany, AE-Korea, AE-UK and AE-Taiwan. This equity account includes the results of translating balance sheet assets and liabilities at current exchange rates as of the balance sheet date, and the statements of operations and cash flows at the average exchange rates during the respective year.

The Company recognizes gain or loss on foreign currency transactions, which are not considered to be of a long-term investment nature. The Company recognized a gain on foreign currency transactions of \$1,504,000, \$369,000 and \$97,000 for the years ended December 31, 1999, 1998 and 1997, respectively.

**REVENUE RECOGNITION** -- The Company recognizes revenue when products are shipped.

**INCOME TAXES** -- The Company accounts for income taxes in accordance with SFAS No. 109, "Accounting for Income Taxes." In accordance with SFAS No. 109, deferred tax assets and liabilities are recognized for temporary differences between the tax basis and financial reporting basis of assets and liabilities, computed at current tax rates. Also, the Company's deferred income tax assets include certain future tax benefits. The Company records a valuation allowance against any portion of those deferred income tax assets which it believes it will more likely than not fail to realize.

**EARNINGS PER SHARE** -- Basic EPS is computed by dividing income available to common stockholders by the weighted-average number of common shares outstanding during the period. The computation of diluted EPS is similar to the computation of basic EPS except that the denominator is increased to include the number of additional common shares that would have been outstanding (using the treasury stock method)

if dilutive potential common shares had been issued. Basic and diluted EPS were the same for fiscal 1998 as the Company incurred losses from operations, therefore, making the effect of all potential common shares anti-dilutive.

**COMPREHENSIVE INCOME (LOSS)** -- SFAS No. 130, "Reporting Comprehensive Income," established rules for the reporting of comprehensive income (loss) and its components. Comprehensive income (loss) for the Company consists of net income (loss) and foreign currency translation adjustments and is presented in the Consolidated Statement of Stockholders' Equity.

**SEGMENT REPORTING** -- SFAS No. 131, "Disclosure about Segments of an Enterprise and Related Information," requires a public business enterprise to report financial and descriptive information about its reportable operating segments. Operating segments are components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision-maker in deciding how to allocate resources and in assessing performance. Management operates and manages its business of supplying power conversion and control systems as one operating segment, as their products have similar economic characteristics and production processes.

**RECENT ACCOUNTING PRONOUNCEMENTS** -- In June 1998 the FASB issued SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities." The Company is required to adopt SFAS No. 133, as amended by SFAS No. 137, in fiscal 2001. SFAS No. 133 establishes accounting and reporting standards for derivative instruments and for hedging activity by requiring all derivatives to be recorded on the balance sheet as either an asset or liability and measured at their fair value. Changes in the derivative's fair value will be recognized currently in earnings unless specific hedging accounting criteria are met. SFAS No. 133 also establishes uniform hedge accounting criteria for all derivatives. The Company does not believe that the adoption of SFAS No. 133 will have a material impact on the consolidated financial statements.

In December 1999 the staff of the Securities and Exchange Commission issued its Staff Accounting Bulletin ("SAB") No. 101, "Revenue Recognition." SAB No. 101 provides guidance on the measurement and timing of revenue recognition in financial statements of public companies. Changes in accounting policies to apply the guidance of SAB No. 101 must be adopted by recording the cumulative effect of the change in the fiscal quarter ending March 31, 2000. Management does not believe that the adoption of SAB No. 101 will have a material effect on the Company's financial position or results of operations.

**ESTIMATES AND ASSUMPTIONS** -- The preparation of the Company's consolidated financial statements in conformity with generally accepted accounting principles requires the Company's management to make estimates and assumptions that affect the amounts reported and disclosed in the consolidated financial statements and accompanying notes. Actual results could differ from those estimates.

**ASSET IMPAIRMENTS** -- The Company reviews its long-lived assets and certain identifiable intangibles to be held and used by the Company for impairment whenever events or changes in circumstances indicate their carrying amount may not be recoverable. In so doing, the Company estimates the future net cash flows expected to result from the use of the asset and its eventual disposition. If the sum of the expected future net cash flows (undiscounted and without interest charges) is less than the carrying amount of the asset, an impairment loss is recognized to reduce the asset to its estimated fair value. Otherwise, an impairment loss is not recognized. Long-lived assets and certain identifiable intangibles to be disposed of, if any, are reported at the lower of carrying amount or fair value less cost to sell.

### (3) ACQUISITIONS

**LITMAS** -- During 1998 the Company acquired a 29% ownership interest in LITMAS, a privately held, North Carolina-based start-up company that designs and manufactures plasma gas abatement systems and high-density plasma sources. The purchase price consisted of \$1 million in cash. On October 1, 1999, the

Company acquired an additional 27.5% interest in LITMAS for an additional \$560,000. The purchase price consisted of \$385,000 in the Company's common stock and \$175,000 in cash. The acquisition was accounted for using the purchase method of accounting and resulted in \$523,000 allocated to intangible assets as goodwill. The results of operations of LITMAS are included within the accompanying consolidated financial statements from the date the controlling interest of 56.5% was acquired.

AEV -- On October 8, 1998, AEV (formerly RF Power Products, Inc.), a New Jersey-based designer and manufacturer of radio frequency power systems, matching networks and peripheral products primarily for original equipment providers in the semiconductor capital equipment, commercial coating, flat panel display and analytical instrumentation markets, was merged with a wholly owned subsidiary of the Company. The Company issued approximately 4 million shares of its common stock to the former shareholders of AEV. Each share of AEV common stock was exchanged for 0.3286 of one share of the Company's common stock. In addition, outstanding AEV stock options were converted at the same exchange factor into options to purchase approximately 148,000 shares of the Company's common stock.

The merger constituted a tax-free reorganization and has been accounted for as a pooling of interests under Accounting Principles Board Opinion No. 16. Accordingly, all prior period consolidated financial statements presented have been restated to include the combined balance sheet, statements of operations and cash flows of AEV as though it had always been part of the Company. AEV's year-end was November 30, and therefore, the combined statements of operations and cash flows for fiscal 1997 include AEV's results for the year ended November 30, 1997.

AEV's operating results for the month of December 1998 are not reflected in the accompanying consolidated statement of operations. This is due to changing AEV's year-end from November 30 to December 31 to conform to the Company's year-end. AEV's month of December 1998 operating results were revenues of approximately \$723,000 and a net loss of \$482,000, which has been charged directly to retained earnings in order to report only twelve months' operating results. In connection with the merger, the Company recorded in the fourth quarter of 1998 a charge to operating expenses of \$2,742,000 for direct merger-related costs.

There were no transactions between the Company and AEV prior to the combination, and immaterial adjustments were recorded to conform AEV's accounting policies. Certain reclassifications were made to conform the AEV financial statements to the Company's presentations. The results of operations for the separate companies and combined amounts presented in the consolidated financial statements follow:

	YEARS ENDED DECEMBER 31,	
	1998	1997
	( IN THOUSANDS )	
Sales:		
Pre-merger		
Advanced Energy .....	\$ 86,289	\$141,923
AEV .....	18,436	33,835
Post-merger .....	19,973	--
Consolidated .....	\$ 124,698	\$175,758
	=====	=====
Net (loss) income:		
Pre-merger		
Advanced Energy .....	\$ (2,748)	\$ 10,362
AEV .....	(3,859)	1,694
Post-merger .....	(168)	--
Merger cost .....	(2,742)	--
Consolidated .....	\$ (9,517)	\$ 12,056
	=====	=====

FST -- Effective September 3, 1998, the Company acquired substantially all of the assets of Fourth State Technology, Inc. ("FST"), a privately held, Texas-based designer and manufacturer of process controls used to monitor and analyze data in the RF process. The purchase price consisted of \$2.5 million in cash, assumption of a \$113,000 liability, and an earn-out provision which is based on profits over a twelve-

quarter period beginning October 1, 1998. Approximately \$2.6 million of the initial purchase price was allocated to intangible assets. During the fourth quarter of 1999, the Company accrued \$240,000 to intangible assets as a result of the earn-out provision being met during the fifth quarter period. The results of operations of FST are included within the accompanying consolidated financial statements from the date of acquisition.

TOWER -- Effective August 15, 1997, the Company acquired all of the outstanding stock of Tower, a Minnesota-based designer and manufacturer of custom, high-performance switchmode power supplies used principally in the telecommunications, medical and non-impact printing industries. The purchase price consisted of \$14.5 million in cash and a \$1.5 million non-interest-bearing promissory note to the seller (the "Note"), which was paid in full during August 1998. Total consideration, including the effect of imputing interest on the Note, equaled \$15,889,000. The acquisition was accounted for using the purchase method of accounting and resulted in a one-time charge of \$3,080,000 for in-process research and development costs acquired as a result of the transaction. Acquisition costs totaled approximately \$209,000.

The purchase price was allocated to the net assets of Tower as summarized below:

	(In thousands)
Cash and cash equivalents	\$ 1,714
Accounts receivable	2,555
Inventories	2,691
Deferred tax asset	57
Fixed assets	280
Goodwill	7,490
Purchased in-process research and development	3,080
Other assets	39
Accounts payable	(1,292)
Accrued liabilities	(516)
	-----
	\$ 16,098
	=====

The purchase agreement included a contingent purchase price based on Tower exceeding a certain sales level in 1998. No additional purchase price was recorded during 1998 as the sales level was not achieved.

The results of operations of Tower are included within the accompanying consolidated financial statements from the date of acquisition.

#### (4) PUBLIC OFFERING OF COMMON STOCK

In October 1997 the Company closed on an offering of its common stock. In connection with the offering, 1,000,000 shares of common shares were sold at a price of \$31 per share, providing gross proceeds of \$31,000,000, less \$2,276,000 in offering costs.

In November 1999 the Company closed on an additional offering of its common stock. In connection with the offering, 1,000,000 shares of common shares were sold at a price of \$39 per share, providing gross proceeds of \$39,000,000, less \$2,448,000 in offering costs.

## (5) MARKETABLE SECURITIES - TRADING

MARKETABLE SECURITIES - TRADING are reported at their fair value and consisted of the following:

	DECEMBER 31,	
	1999	1998
	(IN THOUSANDS)	
Commercial paper .....	\$118,894	\$12,290
Municipal bonds and notes .....	67,453	2,815
Mutual funds .....	93	734
	\$186,440	\$15,839
	=====	=====

These marketable securities have original costs of \$185,069,000 and \$14,900,000 as of December 31, 1999 and 1998, respectively.

## (6) ACCOUNTS RECEIVABLE - TRADE

ACCOUNTS RECEIVABLE - TRADE consisted of the following:

	DECEMBER 31,	
	1999	1998
	(IN THOUSANDS)	
Domestic .....	\$ 19,269	\$ 8,295
Foreign .....	22,792	7,128
Allowance for doubtful accounts .....	(537)	(582)
	\$ 41,524	\$14,841
	=====	=====

## (7) INVENTORIES

INVENTORIES consisted of the following:

	DECEMBER 31,	
	1999	1998
	(IN THOUSANDS)	
Parts and raw materials .....	\$ 17,029	\$13,212
Work in process .....	2,523	1,934
Finished goods .....	5,922	6,266
	\$ 25,474	\$21,412
	=====	=====

## (8) PROPERTY AND EQUIPMENT

PROPERTY AND EQUIPMENT consisted of the following:

	DECEMBER 31,	
	1999	1998
	(IN THOUSANDS)	
Machinery and equipment .....	\$ 17,734	\$14,680
Computers and communication equipment .....	8,731	7,306
Furniture and fixtures .....	3,548	3,591
Vehicles .....	136	155
Leasehold improvements .....	4,516	3,904
	34,665	29,636
Less - accumulated depreciation .....	(17,990)	(14,316)
	\$ 16,675	\$15,320
	=====	=====

## (9) NOTES PAYABLE

	DECEMBER 31,	
	1999	1998
(IN THOUSANDS)		
Revolving line of credit of \$30,000,000, expiring December 7, 2000, interest at bank's prime rate minus 1.25% or the LIBOR 360-day rate plus 150 basis points, (average 2.06848% during 1999, 2.02857% at December 31, 1999) This line includes \$20,000,000 available for general use, with an option to convert up to \$10,000,000 to a three-year term loan; additional advances up to \$5,000,000 each for Optional Currency Rate Advances and Foreign Exchange Contracts. Borrowing base consists of the sum of 80% of eligible accounts receivable plus the lesser of 20% of eligible inventory or \$5,000,000. Loan covenants provide certain financial restrictions related to working capital, leverage, net worth, payment and declaration of dividends and profitability .....	\$ 1,958	\$ --
Note payable to the New Jersey Economic Development Authority, with interest at 5%, principal and interest due monthly, matures January 2002 and secured by machinery and equipment .....	216	316
	2,174	316
Less -- current portion .....	(2,058)	(100)
	\$ 116	\$ 216
	=====	=====

## (10) CONVERTIBLE SUBORDINATED NOTES PAYABLE

In November 1999 the Company issued \$135 million of convertible subordinated notes payable at 5.25%. These notes mature November 15, 2006, with interest payable on May 15th and November 15th each year beginning May 15, 2000. Net proceeds to the Company were approximately \$130.5 million, after deducting \$4.5 million of offering costs which have been capitalized and are being amortized over a period of 7 years. The notes may be converted, by the holder at any time, into shares of the Company's common stock at \$49.53 per share, and are convertible by the Company on or after November 19, 2002 at conversion prices ranging from \$100.75 to \$103.00 per common share. At December 31, 1999, \$886,000 of interest expense was accrued as a current liability.

## (11) INCOME TAXES

For the years ended December 31, 1999, 1998 and 1997, the provision for income taxes consists of an amount for taxes currently payable and a provision for tax effects deferred to future periods. In 1997 the Company increased its statutory U.S. tax rate from 34% to 35%.

The provision (benefit) for income taxes for the years ended December 31, 1999, 1998 and 1997 is as follows:

	DECEMBER 31,		
	1999	1998	1997
(IN THOUSANDS)			
Federal .....	\$ 6,645	\$ (3,307)	\$ 5,964
State and local .....	1,254	(475)	1,432
Foreign taxes .....	2,278	882	71
	\$ 10,177	\$ (2,900)	\$ 7,467
	=====	=====	=====
Current .....	\$ 9,145	\$ (2,108)	\$ 9,124
Deferred .....	1,032	(792)	(1,657)
	\$ 10,177	\$ (2,900)	\$ 7,467
	=====	=====	=====



The following reconciles the Company's effective tax rate to the federal statutory rate for the years ended December 31, 1999, 1998 and 1997:

	DECEMBER 31,		
	1999	1998	1997
	(IN THOUSANDS)		
Income tax expense (benefit) per federal statutory rate .....	\$ 9,479	\$ (4,346)	\$ 6,808
State income taxes, net of federal deduction .....	815	(309)	830
Foreign sales corporation .....	(331)	--	(209)
Nondeductible merger costs .....	(228)	960	--
Nondeductible goodwill amortization .....	353	353	132
Nondeductible purchased in-process research and development .....	--	--	1,078
Other permanent items, net .....	(94)	(191)	(22)
Effect of foreign taxes .....	1,000	80	275
Foreign operating loss with no benefit provided .....	--	610	--
Change in valuation allowance .....	(717)	107	(530)
Tax credits .....	(100)	(164)	(511)
Other .....	--	--	(384)
	=====	=====	=====
	\$ 10,177	\$ (2,900)	\$ 7,467

The Company's deferred income taxes assets are summarized as follows:

	DECEMBER 31, 1999	CHANGE	DECEMBER 31, 1998
	(IN THOUSANDS)		
Employee bonuses .....	\$ --	\$ (67)	\$ 67
Warranty reserve .....	512	103	409
Bad debt reserve .....	196	(9)	205
Vacation accrual .....	488	211	277
Obsolete and excess inventory .....	740	(515)	1,255
Foreign operating loss carryforwards .....	--	(1,253)	1,253
Research and development credit carryforwards .....	--	(324)	324
Alternative minimum tax credit carryforwards .....	--	(276)	276
Investment in LITMAS .....	343	112	231
Depreciation and amortization .....	428	256	172
Other .....	373	13	360
Less: Valuation allowance on foreign operating loss carryforwards .....	--	717	(717)
	=====	=====	=====
	\$3,080	\$ (1,032)	\$ 4,112

The domestic versus foreign component of the Company's net income (loss) before income taxes at December 31, 1999, 1998 and 1997, was as follows:

	DECEMBER 31,		
	1999	1998	1997
	(IN THOUSANDS)		
Domestic .....	\$ 21,385	\$ (12,891)	\$18,594
Foreign .....	5,699	474	929
	=====	=====	=====
	\$ 27,084	\$ (12,417)	\$19,523

## (12) RETIREMENT PLAN

The Company has a 401(k) Profit Sharing Plan which covers all full-time employees who have completed six months of full-time continuous service and are age eighteen or older. Participants may defer up to 20% of their gross pay up to a maximum limit determined by law. Participants are immediately vested in their contributions.

The Company may make discretionary contributions based on corporate financial results for the fiscal year. Effective January 1, 1998, the Company increased its matching contribution for participants in the 401(k) Plan up to a 50% matching on contributions by employees up to 6% of the employee's compensation. The Company's total contributions to the plan were approximately \$831,000, \$746,000 and \$620,000 for the

years ended December 31, 1999, 1998 and 1997, respectively. Vesting in the profit sharing contribution account is based on years of service, with a participant fully vested after five years of credited service.

### (13) COMMITMENTS AND CONTINGENCIES

#### CAPITAL LEASES

The Company finances a portion of its property and equipment under capital lease obligations at interest rates ranging from 7.63% to 8.96%. The future minimum lease payments under capitalized lease obligations as of December 31, 1999 are as follows:

	( IN THOUSANDS )
2000.....	\$ 89
2001.....	52
	-----
Total minimum lease payments.....	141
Less -- amount representing interest.....	(10)
Less -- current portion.....	(89)
	-----
	\$ 42
	=====

#### OPERATING LEASES

The Company has various operating leases for automobiles, equipment, and office and production space (Note 15). Lease expense under operating leases was approximately \$4,628,000, \$4,556,000 and \$2,976,000 for the years ended December 31, 1999, 1998 and 1997, respectively.

The future minimum rental payments required under noncancelable operating leases as of December 31, 1999 are as follows:

	( IN THOUSANDS )
2000.....	\$ 4,554
2001.....	3,486
2002.....	2,903
2003.....	2,512
2004.....	2,200
Thereafter.....	8,274
	-----
	\$23,929
	=====

#### GUARANTEE

Subsequent to year-end, the Company extended a guarantee for a \$2,500,000 bank term loan through March 31, 2000, entered into by a non-public entity that serves as a supplier to the Company. An officer of the Company serves as a director of such entity. The Company has received warrants to purchase shares of the supplier for providing this guarantee. No value has currently been assigned to these warrants.

#### (14) FOREIGN OPERATIONS

The Company operates in a single operating segment with operations in the U.S., Asia and Europe. The following is a summary of the Company's foreign operations:

	YEARS ENDED DECEMBER 31,		
	1999	1998	1997
	(IN THOUSANDS)		
Sales:			
Originating in Japan to unaffiliated customers .....	\$ 16,270	\$ 6,300	\$ 11,431
Originating in Europe to unaffiliated customers .....	12,724	8,489	7,487
Originating in U.S. and sold to foreign customers .....	22,767	20,457	21,885
Originating in U.S. and sold to domestic customers .....	130,762	89,452	134,955
Originating in South Korea to unaffiliated customers .....	1,435	--	--
Transfers between geographic areas .....	24,053	10,304	14,523
Intercompany eliminations .....	(24,053)	(10,304)	(14,523)
	\$ 183,958	\$ 124,698	\$ 175,758
	=====	=====	=====
Income (loss) from operations:			
Japan .....	\$ 1,758	\$ (1,505)	\$ (73)
Europe .....	2,379	1,722	1,488
U.S. ....	21,405	(12,971)	18,602
South Korea .....	188	(186)	--
Intercompany eliminations .....	(389)	165	(303)
	\$ 25,341	\$ (12,775)	\$ 19,714
	=====	=====	=====
Identifiable assets:			
Japan .....	\$ 13,967	\$ 6,039	
Europe .....	11,950	5,073	
U.S. ....	332,383	120,675	
South Korea .....	1,393	610	
Intercompany eliminations .....	(47,308)	(31,362)	
	\$ 312,385	\$ 101,035	
	=====	=====	

Intercompany sales among the Company's geographic areas are recorded on the basis of intercompany prices established by the Company.

#### (15) RELATED PARTY TRANSACTIONS

The Company leases office and production spaces from a limited liability partnership consisting of certain officers of the Company and other individuals. The leases relating to these spaces expire in 2009 and 2011 with monthly payments of approximately \$52,000 and \$58,000, respectively.

The Company also leases other office and production space from another limited liability partnership consisting of certain officers of the Company and other individuals. The lease relating to this space expires in 2002 with a monthly payment of approximately \$28,000.

Approximately \$1,693,000, \$1,359,000 and \$1,320,000 was charged to rent expense attributable to these leases for the years ended December 31, 1999, 1998 and 1997, respectively.

The Company leases, for business purposes, a condominium owned by a partnership of certain stockholders. The Company paid the partnership approximately \$36,000 for each of the years ended December 31, 1999, 1998 and 1997, relating to this lease.

In prior years, certain stockholders of the Company exercised options to purchase shares of the Company's common stock in exchange for notes receivable in the amount of the exercise price. These notes receivable and accrued interest have been paid in full.

## (16) MAJOR CUSTOMERS

The Company's sales to major customers (purchases in excess of 10% of total sales) are to entities which are primarily manufacturers of semiconductor capital equipment and disk storage equipment and, for the years ended December 31, 1999, 1998 and 1997 are as follows:

	DECEMBER 31,		
	1999	1998	1997
Customer A .....	32 %	23%	31%
Customer B .....	7%	7%	11%
Customer C .....	7%	10%	5%
	46%	40%	47%
	====	====	====

## (17) FORWARD CONTRACTS

AE-Japan enters into foreign currency forward contracts to buy U.S. dollars to hedge its payable position arising from trade purchases and intercompany transactions with its parent. Foreign currency forward contracts reduce the Company's exposure to the risk that the eventual net cash outflows resulting from the purchase of products denominated in other currencies will be adversely affected by changes in exchange rates. Foreign currency forward contracts are entered into with a major commercial Japanese bank that has a high credit rating and the Company does not expect the counterparty to fail to meet its obligations under outstanding contracts. Foreign currency gains and losses under the above arrangements are not deferred. The Company generally enters into foreign currency forward contracts with maturities ranging from 1 to 4 months, with contracts outstanding at December 31, 1999, maturing through April 2000. At December 31, 1999, the Company held foreign forward exchange contracts with nominal amounts of \$4,500,000 and market settlement amounts of \$4,498,000 for an unrealized gain position of \$2,000.

## (18) STOCK PLANS

**EMPLOYEE STOCK OPTION PLAN** -- During 1993 the Company adopted an Employee Stock Option Plan (the "Employee Option Plan") which was amended and restated in September 1995, February 1998 and February 1999. The Employee Option Plan allows issuance of incentive stock options, non-qualified options, and stock purchase rights. The exercise price of incentive stock options shall not be less than 100% of the stock's fair market value on the date of grant. The exercise price of non-qualified stock options shall not be less than 50% of the stock's fair market value on the date of grant. Options issued in 1999, 1998 and 1997 were issued at 100% of fair market value with typical vesting over three to five years. Under the Employee Option Plan, the Company has the discretion to accelerate the vesting period. The options are exercisable for ten years from the date of grant. The Company has reserved 5,625,000 shares of common stock for the issuance of stock under the Employee Option Plan, which terminates in June 2003.

In connection with the grant of certain stock options on June 30, 1995, the Company recorded \$142,000 of deferred compensation for the difference between the deemed fair value for accounting purposes and the option price as determined by the Company at the date of grant. This amount is presented as a reduction of stockholders' equity and has been amortized over the 3-year vesting period of the related stock options.

**EMPLOYEE STOCK PURCHASE PLAN** -- In September 1995 stockholders approved an Employee Stock Purchase Plan (the "Stock Purchase Plan") covering an aggregate of 200,000 shares of common stock. Employees are eligible to participate in the Stock Purchase Plan if employed by the Company for at least 20 hours per week during at least five months per calendar year. Participating employees may have up to 15% (subject to a 5% limitation set by the Company) of their earnings or a maximum of \$1,250 per six month period withheld pursuant to the Stock Purchase Plan. Common stock purchased under the Stock Purchase Plan will be equal to 85% of the lower of the fair market value on the commencement date of each offering period or the relevant purchase date. During 1999, 1998 and 1997, employees purchased an aggregate of

22,390, 20,264 and 8,186 shares under the Stock Purchase Plan, respectively.

**NON-EMPLOYEE DIRECTORS STOCK OPTION PLAN** -- In September 1995 the Company adopted the 1995 Non-Employee Directors Stock Option Plan (the "Directors Plan") covering 50,000 shares of common stock. In February 1999 the plan was amended to increase the number of shares of common stock issuable under such plan to 100,000 shares of common stock. The Directors Plan provides for automatic grants of non-qualified stock options to directors of the Company who are not employees of the Company ("Outside Directors"). Pursuant to the Directors Plan, upon becoming a director of the Company, each Outside Director will be granted an option to purchase 7,500 shares of common stock. Such options will be immediately exercisable as to 2,500 shares of common stock, and will vest as to 2,500 shares of common stock on each of the second and third anniversaries of the grant date. On each anniversary of the date on which a person became an Outside Director, an option for an additional 2,500 shares is granted. Such additional options vest on the third anniversary of the date of grant. Options will expire ten years after the grant date, and the exercise price of the options will be equal to the fair market value of the common stock on the grant date. The Directors Plan terminates September 2005.

The following summarizes the activity relating to options for the years ended December 31, 1999, 1998 and 1997:

	1999		1998		1997	
	(IN THOUSANDS, EXCEPT SHARE PRICES)					
	Shares	Weighted-Average Exercise Price	Shares	Weighted-Average Exercise Price	Shares	Weighted-Average Exercise Price
	-----	-----	-----	-----	-----	-----
Stock options:						
Incentive stock options --						
Options outstanding at beginning						
of period .....	1,987	\$ 9.01	1,475	\$ 7.02	1,017	\$ 3.57
Granted .....	377	31.69	937	10.23	731	11.60
Exercised .....	(487)	8.44	(219)	3.35	(225)	3.25
Terminated .....	(67)	10.44	(206)	6.35	(48)	4.96
	-----		-----		-----	
Options outstanding at end of period ...	1,810	13.82	1,987	9.01	1,475	7.02
	=====		=====		=====	
Options exercisable at end of period ...	801	9.10	651	6.89	489	4.35
	=====		=====		=====	
Weighted-average fair value of						
options granted during the period ....	\$ 19.26		\$ 6.71		\$ 7.41	
	=====		=====		=====	
Price range of outstanding options .....	\$0.67-\$44.97		\$0.67-\$31.63		\$0.67-\$31.63	
	=====		=====		=====	
Price range of options terminated .....	\$3.88-\$28.16		\$0.83-\$12.75		\$ 3.40-\$9.00	
	=====		=====		=====	
Non-employee directors stock options--						
Options outstanding at beginning						
of period .....	45	\$ 12.18	25	\$ 14.67	20	\$ 9.82
Granted .....	18	32.94	20	7.55	17	16.64
Exercised .....	(3)	11.05	--	--	(2)	7.13
Terminated .....	--	--	--	--	(10)	9.82
	-----		-----		-----	
Options outstanding at end of period ....	60	18.34	45	11.61	25	14.67
	=====		=====		=====	
Options exercisable at end of period ....	22	17.27	15	11.40	8	14.62
	=====		=====		=====	
Weighted-average fair value of options						
granted during the period .....	\$ 20.11		\$ 4.93		\$ 11.43	
	=====		=====		=====	
Price range of outstanding options .....	\$6.13- \$36.94		\$8.63-\$29.88		\$8.63-\$31.63	
	=====		=====		=====	
Price range of options terminated .....	\$ --		\$ --		\$6.13-\$11.05	
	=====		=====		=====	

Statement of Financial Accounting Standards No. 123, "Accounting for Stock-Based Compensation" ("SFAS No. 123"), defines a fair value based method of accounting for employee stock options or similar equity instruments. However, SFAS No. 123 allows the continued measurement of compensation cost for such plans using the intrinsic value based method prescribed by APB Opinion No. 25, "Accounting for Stock Issued to Employees" ("APB No. 25"), provided that pro forma disclosures are made of net income or loss and net income or loss per share, assuming the fair value based method of SFAS No. 123 had been applied. The Company has elected to account for stock-based compensation plans under APB No. 25, under which no compensation expense is recognized.

For SFAS No. 123 purposes, the fair value of each option grant is estimated on the date of grant using the Black-Scholes option pricing model with the following weighted-average assumptions:

	1999	1998	1997
	----	----	----
Risk-free interest rates	5.92%	5.06%	6.17%
Expected dividend yield rates	0.0%	0.0%	0.0%
Expected lives	4 years	4 years	4 years
Expected volatility	77.33%	87.48%	101.16%

The total fair value of options granted was computed to be approximately \$7,605,000, \$6,056,000 and \$4,912,000 for the years ended December 31, 1999, 1998 and 1997, respectively. These amounts are amortized ratably over the vesting period of the options. Cumulative compensation cost recognized in pro forma net income or loss with respect to options that are forfeited prior to vesting is adjusted as a reduction of pro forma compensation expense in the period of forfeiture. Pro forma stock-based compensation, net of the effect of forfeitures and tax, was approximately \$2,999,000, \$2,033,000 and \$906,000 for 1999, 1998 and 1997, respectively.

Had compensation cost for these plans been determined consistent with SFAS No. 123, the Company's net income would have been reduced to the following pro forma amounts:

	1999	1998	1997
	-----	-----	-----
	(IN THOUSANDS, EXCEPT PER SHARE DATA)		
Net Income (Loss):			
As reported	\$16,838	\$ (9,517)	\$ 12,056
Pro forma	13,839	(11,550)	11,150
Diluted Earnings (Loss) Per Share:			
As reported	\$ 0.59	\$ (0.36)	\$ 0.46
Pro forma	0.49	(0.43)	0.42

Because the SFAS No. 123 method of accounting has not been applied to options granted prior to January 1, 1995, the resulting pro forma compensation cost may not be representative of that to be expected in future years.

The following table summarizes information about the stock options outstanding at December 31, 1999:

Year Granted	Range of Exercise Prices	Number Outstanding	Options Outstanding		Options Exercisable	
			Weighted- Average Remaining Contractual Life	Weighted- Average Exercise Price	Number Exercisable	Weighted- Average Exercise Price
1993 - 1994	\$ 0.67 to \$ 8.76	43,000	4.0 years	\$ 2.69	43,000	\$ 2.69
1995	\$ 2.57 to \$11.05	40,000	5.0 years	\$ 6.42	39,000	\$ 6.42
1996	\$ 3.88 to \$11.05	176,000	6.6 years	\$ 4.97	165,000	\$ 4.99
1997	\$ 7.13 to \$31.63	468,000	6.9 years	\$11.46	320,000	\$ 11.16
1998	\$ 6.75 to \$17.32	756,000	8.5 years	\$10.03	241,000	\$ 10.27
1999	\$26.63 to \$44.97	387,000	9.3 years	\$31.80	15,000	\$ 33.06
		-----	-----	-----	-----	-----
		1,870,000	7.9 years	\$14.15	823,000	\$ 9.39
		=====	=====	=====	=====	=====

# ADVANCED ENERGY INDUSTRIES, INC. AND SUBSIDIARIES

## SCHEDULE II -- VALUATION AND QUALIFYING ACCOUNTS

	BALANCE AT BEGINNING OF PERIOD -----	ADDITIONS CHARGED TO EXPENSE -----	DEDUCTIONS -----	BALANCE AT END OF PERIOD -----
	(IN THOUSANDS)			
Year ended December 31, 1997:				
Inventory obsolescence reserve....	\$ 2,077	\$ 4,526	\$ 3,322	\$ 3,281
Allowance for doubtful accounts...	382	263	58	587
	-----	-----	-----	-----
	\$ 2,459	\$ 4,789	\$ 3,380	\$ 3,868
	=====	=====	=====	=====
Year ended December 31, 1998:				
Inventory obsolescence reserve....	\$ 3,281	\$ 6,712	\$ 7,367	\$ 2,626
Allowance for doubtful accounts...	587	77	82	582
	-----	-----	-----	-----
	\$ 3,868	\$ 6,789	\$ 7,449	\$ 3,208
	=====	=====	=====	=====
Year ended December 31, 1999:				
Inventory obsolescence reserve....	\$ 2,626	\$ 4,867	\$ 5,576	\$ 1,917
Allowance for doubtful accounts...	582	39	84	537
	-----	-----	-----	-----
	\$ 3,208	\$ 4,906	\$ 5,660	\$ 2,454
	=====	=====	=====	=====

### ITEM 9. DISAGREEMENTS ON ACCOUNTING AND FINANCIAL DISCLOSURES

Not applicable.

### **PART III**

In accordance with General Instruction G(3) of Form 10-K, the information required by this Part III is incorporated by reference to the Advanced Energy's definitive proxy statement relating to its 2000 Annual Meeting of Stockholders (the "Proxy Statement"), as set forth below. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days after the end of 1999.

#### **ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT**

The information set forth in the Proxy Statement under the captions "Proposal 1/ Election of Directors--Nominees" and "Section 16(a) Beneficial Ownership Reporting Compliance" and in Part I of this Form 10-K under the caption "Executive Officers of the Company" is incorporated herein by reference.

#### **ITEM 11. EXECUTIVE COMPENSATION**

The information set forth in the Proxy Statement under the caption "Executive Compensation" is incorporated herein by reference.

#### **ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT**

The information set forth in the Proxy Statement under the caption "Common Stock Ownership by Management and Other Stockholders" is incorporated herein by reference.

#### **ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS**

The information set forth in the Proxy Statement under the caption "Certain Transactions with Management" is incorporated herein by reference.



## PART IV

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

	page
	----
(a) (i) Financial Statements:	
Reports of Independent Public Accountants	48
Consolidated Financial Statements:	
Balance Sheets at December 31, 1999 and 1998	50
Statement of Operations for each of the three years in the period ended December 31, 1999	52
Statement of Stockholders' Equity for each of the three years in the period ended December 31, 1999	53
Statement of Cash Flows for each of the three years in the period ended December 31, 1999	54
Notes to Consolidated Financial Statements	55
(ii) Financial Statement Schedules for each of the three years in the period ended December 31, 1999	
Schedule II--Valuation and Qualifying Accounts	68
(iii) Exhibits:	

2.1 Agreement and Plan of Reorganization, dated as of June 1, 1998, by and among the Company, Warpspeed, Inc., a wholly owned subsidiary of the Company, and RF Power Products, Inc.(1)

3.1 The Company's Restated Certificate of Incorporation, as amended(2)

3.2 The Company's By-laws(3)

4.1 Form of Specimen Certificate for the Company's Common Stock(3)

4.2 Indenture dated November 1, 1999 between State Street Bank and Trust Company of California, N.A., as trustee, and the Company (including form of 5 1/4% Convertible Subordinated Note due 2006)

4.3 The Company hereby agrees to furnish to the SEC, upon request, a copy of the instruments which define the rights of holders of long-term debt of the Company. None of such instruments not included as exhibits herein represents long-term debt in excess of 10% of the consolidated total assets of the Company.

10.1 Comprehensive Supplier Agreement, dated May 18, 1998, between Applied Materials Inc. and the Company(1)+

10.2 Purchase Order and Sales Agreement, dated October 12, 1999, between Lam Research Corporation and the Company

10.3 Purchase Agreement, dated November 1, 1995, between Eaton Corporation and the Company(4)+

10.4 Loan and Security Agreement, dated August 15, 1997, among Silicon Valley Bank, Bank of Hawaii and the Company(5)

10.5 Loan Agreement dated December 8, 1997, by and among Silicon Valley Bank, as Servicing Agent and a Bank, and Bank of Hawaii, as a Bank, and the Company, as borrower(6)

10.6 Lease, dated June 12, 1984, amended June 11, 1992, between Prospect Park East Partnership and the Company for property in Fort Collins, Colorado(3)

10.7 Lease, dated March 14, 1994, as amended, between Sharp Point Properties, L.L.C., and the Company for property in Fort Collins, Colorado(3)

- 10.8 Lease, dated May 19, 1995, between Sharp Point Properties, L.L.C. and the Company for a building in Fort Collins, Colorado(3)
- 10.9 Lease agreement, dated March 18, 1996, and amendments dated June 21, 1996 and August 30, 1996, between RF Power Products, Inc., and Laurel Oak Road, L.L.C. for property in Voorhees, New Jersey(7)
- 10.10 Form of Indemnification Agreement(3)
- 10.11 Employment Agreement, dated June 1, 1998, between RF Power Products, Inc., and Joseph Stach(8)
- 10.12 1995 Stock Option Plan, as amended and restated(8)\*
- 10.13 1995 Non-Employee Directors' Stock Option Plan(8)\*
- 10.14 License Agreement, dated May 13, 1992 between RF Power Products and Plasma-Therm, Inc.(9)
- 10.15 Lease Agreement dated March 18, 1996 and amendments dated June 21, 1996 and August 30, 1996 between RF Power Products, Inc. and Laurel Oak Road, L.L.C. for office, manufacturing and warehouse space at 1007 Laurel Oak Road, Voorhees, New Jersey(7)
- 10.16 Direct Loan Agreement dated December 20, 1996 between RF Power Products, Inc. and the New Jersey Economic Development Authority(7)
- 10.17 Lease, dated April 15, 1998, between Cross Park Investors, Ltd., and the Company for property in Austin, Texas(1)
- 10.18 Lease, dated April 15, 1998, between Cameron Technology Investors, Ltd., and the Company for property in Austin, Texas(1)
- 21.1 Subsidiaries of the Company
- 23.1 Consent of Arthur Andersen LLP, Independent Accountants
- 23.2 Consent of KPMG LLP, Independent Accountants
- 24.1 Power of Attorney (included on the signature pages to this Annual Report on Form 10-K)
- 27.1 Financial Data Schedule for the year ended December 31, 1999

(b) The Company filed a report on Form 8-K on November 8, 1999. The report contains the Company's press release, dated October 11, 1999, announcing the Company's financial results for the third fiscal quarter of 1999 and nine-month period ended September 30, 1999.

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(1) Incorporated by reference to the Company's quarterly Report on Form 10-Q for the quarter ended June 30, 1998 (File No. 0-26966), filed August 7, 1998.

(2) Incorporated by reference to the Company's quarterly Report on Form 10-Q for the quarter ended June 30, 1999 (File No. 0-26966), filed July 28, 1999.

(3) Incorporated by reference to the Company's Registration Statement on Form S-1 (File No. 33-97188), filed September 20, 1995, as amended.

(4) Incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 1995 (File No. 0-26966), filed March 28, 1996, as amended.

(5) Incorporated by reference to the Company's Registration Statement on Form S-3 (File No. 333-34039), filed August 21, 1997, as amended.

(6) Incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 1997 (File No. 0-26966), filed March 24, 1998.

(7) Incorporated by reference to RF Power Products' Annual Report on Form 10-K for the fiscal year ended November 30, 1996 (File No. 0-20229), filed February 25, 1997.

(8) Incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 1998 (File No. 0-26966), filed March 24, 1999.

(9) Incorporated by reference to RF Power Products' Registration Statement on Form 10 (File No. 0-020229), filed May 19, 1992 as amended.

\* Compensation Plan

+ Confidential treatment has been granted for portions of this agreement.

## 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.

### **ADVANCED ENERGY INDUSTRIES, INC.**

(Registrant)

*/s/ Douglas S. Schatz*  
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*Douglas S. Schatz*  
*Chief Executive Officer and Chairman*  
*of the Board*

Each person whose signature appears below hereby appoints Douglas S. Schatz and Richard P. Beck, and each of them severally, acting alone and without the other, his true and lawful attorney-in-fact with authority to execute in the name of each such person, and to file with the Securities and Exchange Commission, together with any exhibits thereto and other documents therewith, any and all amendments to this Annual Report on Form 10-K necessary or advisable to enable the registrant to comply with the Securities Exchange Act of 1934, as amended, and any rules, regulations and requirements of the Securities and Exchange Commission in respect thereof, which amendments may make such other changes in the Annual Report on Form 10-K as the aforesaid attorney-in-fact deems appropriate.

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

Signatures	Title	Date
<i>/s/ Douglas S. Schatz</i> ----- Douglas S. Schatz	Chief Executive Officer and Chairman of the Board (Principal Executive Officer)	March 20, 2000
<i>/s/ Hollis L. Caswell</i> ----- Hollis L. Caswell	President, Chief Operating Officer and Director	March 20, 2000
<i>/s/ Richard P. Beck</i> ----- Richard P. Beck	Senior Vice President, Chief Financial Officer, Assistant Secretary and Director (Principal Financial Officer and Principal Accounting Officer)	March 20, 2000
<i>/s/ G. Brent Backman</i> ----- G. Brent Backman	Director	March 20, 2000
<i>/s/ Elwood Spedden</i> ----- Elwood Spedden	Director	March 20, 2000
<i>/s/ Arthur A. Noeth</i> ----- Arthur A. Noeth	Director	March 20, 2000
<i>/s/ Gerald Starek</i> ----- Gerald Starek	Director	March 20, 2000
<i>/s/ Arthur W. Zafiropoulo</i> ----- Arthur W. Zafiropoulo	Director	March 20, 2000

## EXHIBIT INDEX

- 2.1 Agreement and Plan of Reorganization, dated as of June 1, 1998, by and among the Company, Warpspeed, Inc., a wholly owned subsidiary of the Company, and RF Power Products, Inc.(1)
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- 4.2 Indenture dated November 1, 1999 between State Street Bank and Trust Company of California, N.A., as trustee, and the Company (including form of 5 1/4% Convertible Subordinated Note due 2006)
- 4.3 The Company hereby agrees to furnish to the SEC, upon request, a copy of the instruments which define the rights of holders of long-term debt of the Company. None of such instruments not included as exhibits herein represents long-term debt in excess of 10% of the consolidated total assets of the Company.
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- \* Compensation Plan
- + Confidential treatment has been granted for portions of this agreement.

**EXHIBIT 4.2**

**ADVANCED ENERGY INDUSTRIES, INC.**

and

**STATE STREET BANK AND TRUST COMPANY OF CALIFORNIA, N.A.**

**AS TRUSTEE**

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**INDENTURE**

**DATED AS OF NOVEMBER 1, 1999**

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**5 1/4% CONVERTIBLE SUBORDINATED NOTES DUE 2006**

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Reconciliation and tie between Trust Indenture Act of 1939 (the "Trust Indenture Act") and this Indenture, dated as of November 1, 1999.

Trust Indenture Action Section	Indenture Section
Section 310(a)(1)	6.7
(a)(2)	6.7
(b)	6.7, 6.8
Section 311(a)	6.13
(b)	6.13
Section 312(a)	7.4
(b)	7.5
(c)	7.1
Section 313(a)	7.2
(b)	7.2
(c)	1.6, 7.2
(d)	7.2
Section 314(a)	7.3
(a)(4)	10.7
(c)(1)	1.2
(c)(2)	1.2
(c)(3)	13.3
(e)	1.2
Section 315(a)	6.2
(b)	6.1
(c)	6.2
(d)	6.2
(e)	5.15
Section 316(a) (last sentence)	1.1 ("Outstanding")
(a)(1)(A)	5.2, 5.12
(a)(1)(B)	5.13
(b)	5.8
(c)	1.4
Section 317(a)(1)	5.3
(a)(2)	5.4
(b)	10.3
Section 318(a)	1.14
(c)	1.14

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NOTE: This reconciliation and tie shall not, for any purpose, be deemed to be a part of this Indenture. Attention should also be directed to Section 318(c) of the Trust Indenture Act, which provides that the provisions of Sections 310 to and including 317 of the Trust Indenture Act are a part of and govern every qualified indenture, whether or not physically contained therein.



## TABLE OF CONTENTS

	PAGE
RECITALS.....	1
ARTICLE I DEFINITIONS AND OTHER PROVISIONS OF GENERAL APPLICATION.....	1
SECTION 1.1 Definitions.....	1
Act.....	2
Affiliate.....	2
Aggregate Cash Distribution Amount.....	2
Authenticating Agent.....	2
Authorized Newspaper.....	2
Board of Directors.....	2
Board Resolution.....	2
Business Day.....	2
Capital Stock.....	2
Change in Control.....	3
Closing Price Per Share.....	3
Commission.....	3
Common Stock.....	3
Company.....	3
Company Notice.....	3
Company Request and Company Order.....	3
Constituent Person.....	3
Conversion Agent.....	3
Conversion Price.....	3
Conversion Rate.....	3
Corporate Trust Office.....	4
Corporation.....	4
Debt.....	4
Defaulted Interest.....	4
Designated Senior Debt.....	4
DTC.....	5
Dollar or \$ .....	5
Event of Default.....	5
Excess Amount.....	5
Exchange Act.....	5
Expiration Time.....	5
GAAP.....	5
Global Security.....	5
Government Obligations.....	5
Holder.....	6
Indenture.....	6
Interest Payment Date.....	6

Maturity.....	6
Notes.....	6
Notice of Default.....	6
Officers' Certificate.....	6
Opinion of Counsel.....	6
Outstanding.....	6
Paying Agent.....	7
Payment Blockage Notice.....	7
Person.....	7
Place of Conversion.....	7
Place of Payment.....	7
Predecessor Security.....	7
Purchased Shares.....	8
Purchasers.....	8
Record Date.....	8
Redemption Date.....	8
Redemption Price.....	8
Regular Record Date.....	8
Representative.....	8
Repurchase Date.....	8
Repurchase Price.....	8
Responsible Officer.....	8
RF Power.....	8
Secured Debt.....	8
Securities Act.....	9
Security.....	9
Security Register and Security Registrar.....	9
Senior Debt.....	9
Significant Subsidiary.....	10
Special Record Date.....	10
Stated Maturity.....	10
Subsidiary.....	10
Third Party Expiration Time.....	10
Third Party Purchased Shares.....	10
Trading Day.....	10
Triggering Event.....	10
Trust Indenture Act.....	10
Trustee.....	10
United States.....	11
SECTION 1.2 Compliance Certificates and Opinions.....	11
SECTION 1.3 Form of Documents Delivered to Trustee.....	11
SECTION 1.4 Acts of Holders; Record Dates.....	12
SECTION 1.5 Notices, etc., to Trustee and Company.....	13
SECTION 1.6 Notice to Holders; Waiver.....	14
SECTION 1.7 Effect of Headings and Table of Contents.....	14

SECTION 1.8	Successors and Assigns.....	14
SECTION 1.9	Separability Clause.....	14
SECTION 1.10	Benefits of Indenture.....	14
SECTION 1.11	No Personal Liability.....	15
SECTION 1.12	Governing Law.....	15
SECTION 1.13	Legal Holidays.....	15
SECTION 1.14	Conflict with Trust Indenture Act.....	15
SECTION 1.15	Counterparts.....	16
ARTICLE II	SECURITIES FORM.....	16
SECTION 2.1	Designation of Securities; Form Generally.....	16
SECTION 2.2	Form of Security.....	17
SECTION 2.3	Form of Trustee's Certificate of Authentication.....	25
SECTION 2.4	Form of Election of Holder to Require Repurchase.....	26
SECTION 2.5	Form of Conversion Notice.....	26
SECTION 2.6	Form of Assignment.....	27
SECTION 2.7	Securities Issuable in Global Form.....	28
ARTICLE III	THE SECURITIES.....	29
SECTION 3.1	Title and Terms.....	29
SECTION 3.2	Denominations.....	29
SECTION 3.3	Execution, Authentication, Delivery and Dating.....	30
SECTION 3.4	Global Securities.....	30
SECTION 3.5	Registration, Registration of Transfer and Exchange.....	31
SECTION 3.6	Mutilated, Destroyed, Lost and Stolen Securities.....	33
SECTION 3.7	Payment of Interest; Interest Rights Preserved.....	33
SECTION 3.8	Persons Deemed Owners.....	35
SECTION 3.9	Cancellation.....	36
SECTION 3.10	Computation of Interest.....	36
SECTION 3.11	CUSIP Numbers.....	36
ARTICLE IV	SATISFACTION AND DISCHARGE.....	37
SECTION 4.1	Satisfaction and Discharge of Indenture.....	37
SECTION 4.2	Application of Trust Funds.....	38
ARTICLE V	REMEDIES.....	38
SECTION 5.1	Events of Default.....	38
SECTION 5.2	Acceleration of Maturity; Rescission and Annulment.....	40
SECTION 5.3	Collection of Indebtedness and Suits for Enforcement by Trustee.....	41
SECTION 5.4	Trustee May File Proofs of Claim.....	41
SECTION 5.5	Trustee May Enforce Claims Without Possession of Securities.....	42
SECTION 5.6	Application of Money Collected.....	43
SECTION 5.7	Limitation on Suits.....	43
SECTION 5.8	Unconditional Right of Holders to Receive Principal (Premium, if any) and Interest.....	44

SECTION 5.9	Restoration of Rights and Remedies.....	44
SECTION 5.10	Rights and Remedies Cumulative.....	44
SECTION 5.11	Delay or Omission Not Waiver.....	44
SECTION 5.12	Control by Holders of Securities.....	45
SECTION 5.13	Waiver of Past Defaults.....	45
SECTION 5.14	Waiver of Usury, Stay or Extension Laws.....	45
SECTION 5.15	Undertaking for Costs.....	46
SECTION 5.16	Notice of Default or Event of Default.....	46
ARTICLE VI	THE TRUSTEE.....	46
SECTION 6.1	Notice of Defaults.....	46
SECTION 6.2	Certain Duties and Responsibilities.....	47
SECTION 6.3	Not Responsible for Recitals or Issuance of Securities....	48
SECTION 6.4	May Hold Securities.....	48
SECTION 6.5	Money Held in Trust.....	48
SECTION 6.6	Compensation and Reimbursement.....	48
SECTION 6.7	Corporate Trustee Required; Eligibility.....	49
SECTION 6.8	Resignation and Removal; Appointment of Successor.....	50
SECTION 6.9	Acceptance of Appointment by Successor.....	51
SECTION 6.10	Merger, Conversion, Consolidation or Succession to Business.....	52
SECTION 6.11	Appointment of Authenticating Agent.....	52
SECTION 6.12	Preferential Collection of Claims Against Company.....	54
SECTION 6.13	Disqualification; Conflicting Interests.....	54
SECTION 6.14	Certain Rights of Trustee.....	54
ARTICLE VII	HOLDERS' LISTS AND REPORTS BY TRUSTEE AND COMPANY.....	55
SECTION 7.1	The Company to Furnish Trustee Names and Addresses of Holders.....	55
SECTION 7.2	Reports by Trustee.....	55
SECTION 7.3	Reports by Company.....	56
SECTION 7.4	Preservation Of Information; Communications to Holders....	56
ARTICLE VIII	CONSOLIDATION, MERGER, SALE, LEASE OR CONVEYANCE.....	56
SECTION 8.1	Company May Consolidate, Etc., Only on Certain Terms.....	56
SECTION 8.2	Successor Substituted.....	57
ARTICLE IX	SUPPLEMENTAL INDENTURES.....	57
SECTION 9.1	Supplemental Indentures Without Consent of Holders.....	57
SECTION 9.2	Supplemental Indentures with Consent of Holders.....	58
SECTION 9.3	Execution of Supplemental Indentures.....	60
SECTION 9.4	Effect of Supplemental Indentures.....	60
SECTION 9.5	Conformity with Trust Indenture Act.....	60
SECTION 9.6	Reference in Securities to Supplemental Indentures.....	60
SECTION 9.7	Notice of Supplemental Indentures.....	60
ARTICLE X	COVENANTS.....	61

SECTION 10.1	Payment of Principal, Premium and Interest.....	61
SECTION 10.2	Maintenance of Office or Agency.....	61
SECTION 10.3	Money for Securities Payments to Be Held in Trust.....	62
SECTION 10.4	Existence.....	63
SECTION 10.5	Maintenance of Properties.....	63
SECTION 10.6	Payment of Taxes and Other Claims.....	63
SECTION 10.7	Statement as to Compliance.....	64
SECTION 10.8	Waiver of Certain Covenants.....	64
SECTION 10.9	Statement by Officers as to Default.....	64
ARTICLE XI REDEMPTION OF SECURITIES.....		64
SECTION 11.1	Right of Redemption.....	64
SECTION 11.2	Applicability of Article.....	65
SECTION 11.3	Election to Redeem; Notice to Trustee.....	65
SECTION 11.4	Selection by Trustee of Securities to Be Redeemed.....	65
SECTION 11.5	Notice of Redemption.....	65
SECTION 11.6	Deposit of Redemption Price.....	66
SECTION 11.7	Securities Payable on Redemption Date.....	66
SECTION 11.8	Securities Redeemed in Part.....	67
SECTION 11.9	Conversion Arrangement on Call For Redemption.....	67
ARTICLE XII REPURCHASE OF SECURITIES AT THE OPTION OF HOLDERS UPON THE CHANGE OF CONTROL.....		68
SECTION 12.1	Right to Require Repurchase.....	68
SECTION 12.2	Conditions to The Company's Election to Pay the Repurchase Price in Common Stock.....	69
SECTION 12.3	Notices; Method of Exercising Repurchase Right, Etc.....	69
SECTION 12.4	Certain Definitions.....	72
SECTION 12.5	Consolidation, Merger, Etc.....	74
ARTICLE XIII SUBORDINATION.....		74
SECTION 13.1	Agreement to Subordinate.....	74
SECTION 13.2	Liquidation; Dissolution; Bankruptcy.....	74
SECTION 13.3	No Payment in Certain Circumstances, Payment over of Proceeds upon Dissolution, Etc.....	75
SECTION 13.4	Prior Payment of Senior Debt Upon Acceleration of Securities.....	76
SECTION 13.5	When Distribution Must Be Paid Over.....	76
SECTION 13.6	Reliance on Judicial Order or Certificate of Liquidating Agent.....	76
SECTION 13.7	Subrogation.....	77
SECTION 13.8	Relative Rights.....	77
SECTION 13.9	Subordination May Not Be Impaired By Company.....	78
SECTION 13.10	Distribution or Notice to Representative.....	78
SECTION 13.11	Rights of Trustee and Paying Agent.....	78
SECTION 13.12	Notice to Trustee.....	78
SECTION 13.13	Payment Permitted If No Default.....	79

SECTION 13.14	Trustee to Effectuate Subordination.....	79
SECTION 13.15	Reliance by Holders of Senior Debt on Subordination Provisions.....	80
SECTION 13.16	Rights of Trustee as Holder of Senior Debt; Preservation of Trustee's Rights.....	80
SECTION 13.17	Article Applicable to Paying Agents.....	80
SECTION 13.18	Determination of Certain Conversions and Repurchases as Payments.....	80
ARTICLE XIV CONVERSION OF SECURITIES.....		81
SECTION 14.1	Conversion Privilege And Conversion Rate.....	81
SECTION 14.2	Exercise Of Conversion Privilege.....	81
SECTION 14.3	Fractions Of Shares.....	82
SECTION 14.4	Adjustment Of Conversion Rate.....	83
SECTION 14.5	Notice Of Adjustments Of Conversion Rate.....	90
SECTION 14.6	Notice Of Certain Corporate Action.....	90
SECTION 14.7	Company To Reserve Common Stock.....	91
SECTION 14.8	Taxes On Conversions.....	91
SECTION 14.9	Covenant As To Common Stock.....	91
SECTION 14.10	Cancellation Of Converted Securities.....	92
SECTION 14.11	Provisions In Case Of Consolidation, Merger Or Sale Of Assets.....	92
SECTION 14.12	Responsibility of Trustee for Conversion Provisions.....	93
ARTICLE XV MEETINGS OF HOLDERS OF SECURITIES.....		93
SECTION 15.1	Purposes For Which Meetings May Be Called.....	93
SECTION 15.2	Call, Notice And Place Of Meetings.....	93
SECTION 15.3	Persons Entitled To Vote At Meetings.....	94
SECTION 15.4	Quorum; Action.....	94
SECTION 15.5	Determination Of Voting Rights; Conduct And Adjournment Of Meetings.....	95
SECTION 15.6	Counting Votes And Recording Action Of Meetings.....	96

This Indenture (this "Indenture") is dated as of November 1, 1999, by and between Advanced Energy Industries, Inc., a Delaware corporation (the "Company"), having its principal office at 1625 Sharp Point Drive, Fort Collins, Colorado 80525, and State Street Bank and Trust Company of California, N.A., a national banking association, as Trustee hereunder (the "Trustee"), having its Corporate Trust Office (as defined below) at 633 West 5th Street, 12th Floor, Los Angeles, California 90071.

## **RECITALS**

The Company deems it necessary and advisable to issue a series of debt securities designated as the 5 1/4% Convertible Subordinated Notes due 2006 (the "Securities") evidencing its unsecured subordinated indebtedness, and has duly authorized the execution and delivery of this Indenture to provide for the issuance of the Securities.

This Indenture is subject to the provisions of the Trust Indenture Act of 1939, as amended, that are deemed to be incorporated into this Indenture and shall, to the extent applicable, be governed by such provisions.

All things necessary to make the Securities, when executed by the Company and authenticated and delivered hereunder and duly issued by the Company, the valid obligation of the Company, and to make this Indenture a valid agreement of the Company, in accordance with their and its terms, have been done.

## **NOW, THEREFORE, THIS INDENTURE WITNESSETH:**

For and in consideration of the premises and the purchase of the Securities by the Holders thereof, it is mutually covenanted and agreed, for the equal and proportionate benefit of all Holders of the Securities, as follows:

## **ARTICLE I**

### **DEFINITIONS AND OTHER PROVISIONS OF GENERAL APPLICATION**

#### **SECTION 1.1 Definitions.**

For all purposes of this Indenture, except as otherwise expressly provided or unless the context otherwise requires:

- (1) the terms defined in this Article have the meanings assigned to them in this Article, and include the plural as well as the singular;
- (2) all other terms used herein which are defined in the Trust Indenture Act, either directly or by reference therein, have the meanings assigned to them therein;

(3) all accounting terms not otherwise defined herein have the meanings assigned to them in accordance with GAAP;

(4) the words "herein," "hereof" and "hereunder" and other words of similar import refer to this Indenture as a whole and not to any particular Article, Section or other subdivision;

"Act," when used with respect to any Holder, has the meaning specified in Section 1.4.

"Affiliate" of any specified Person means any other Person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified Person. For the purposes of this definition, "control" when used with respect to any specified Person means the power to direct the management and policies of such Person, directly or indirectly, whether through the ownership of voting securities, by contract or otherwise; and the terms "controlling" and "controlled" have meanings correlative to the foregoing.

"Aggregate Cash Distribution Amount" has the meaning specified in Section 14.4(5).

"Authenticating Agent" means any Person authorized by the Trustee pursuant to Section 6.11 to act on behalf of the Trustee to authenticate Securities.

"Authorized Newspaper" means a newspaper, printed in the English language or in an official language of the place of publication, customarily published on each day that is a Business Day in the place of publication, whether or not published on days that are not Business Days in the place of publication, and of general circulation in each place in connection with which the term is used or in the financial community of each such place. Whenever successive publications are required to be made in Authorized Newspapers, the successive publications may be made in the same or in different Authorized Newspapers in the same city meeting the foregoing requirements and in each case on any day that is a Business Day in the place of publication.

"Board of Directors" means the board of directors of the Company or any committee of that board duly authorized to act hereunder, as the case may be.

"Board Resolution" means a copy of a resolution of the Company, certified by the Secretary or an Assistant Secretary of the Company to have been duly adopted by the Board of Directors and to be in full force and effect on the date of such certification, which is delivered to the Trustee.

"Business Day" when used with respect to any Place of Payment, Place of Conversion or any other location referred to in this Indenture or in the Securities, means any day, other than a Saturday, Sunday or other day on which banking institutions in that Place of Payment, Place of Conversion or location are authorized or obligated by law, regulation or executive order to close.

"Capital Stock" means with respect to any Person, any and all shares, interests, participations or other equivalents (however designated, whether voting or non-voting) in equity



of such Person, whether now outstanding or issued after the Closing Date, including, without limitation, all common stock and preferred stock.

"Change in Control" has the meaning specified in Section 12.4.

"Closing Price Per Share" has the meaning specified in Section 12.4.

"Commission" means the United States Securities and Exchange Commission, as from time to time constituted, created under the Exchange Act, or, if at any time after execution of this Indenture such Commission is not existing and performing the duties now assigned to it under the Trust Indenture Act, then the body performing such duties on such date.

"Common Stock" means the Common Stock, par value \$0.001 per share, of the Company authorized at the date of this instrument as originally executed. Subject to the provisions of Section 14.11, shares issuable on conversion or repurchase of Securities shall include only shares of Common Stock or shares of any class or classes of common stock resulting from any reclassification or reclassifications thereof; provided, however, that if at any time there shall be more than one such resulting class, the shares so issuable on conversion of Securities shall include shares of all such classes, and the shares of each such class then so issuable shall be substantially in the proportion which the total number of shares of such class resulting from all such reclassifications bears to the total number of shares of all such classes resulting from all such reclassifications.

"Company" means the Person named as the "Company" in the first paragraph of this Indenture until a successor Company shall have become such pursuant to the applicable provisions of this Indenture, and thereafter "Company" shall mean such successor Company.

"Company Notice" has the meaning specified in Section 12.3.

"Company Request" and "Company Order" mean, respectively, a written request or order signed in the name of and on behalf of the Company by its Chairman of the Board, its President or a Vice President, and by its Chief Financial Officer, its Treasurer, an Assistant Treasurer, its Secretary or an Assistant Secretary of the Company, and which is delivered to the Trustee.

"Constituent Person" has the meaning specified in Section 14.11.

"Conversion Agent" means any Person authorized by the Company to convert Securities in accordance with Article XIV. The Company has initially appointed the Trustee as its Conversion Agent pursuant to Section 10.2 hereof.

"Conversion Price" shall equal \$1,000 divided by the Conversion Rate (rounded to the nearest cent).

"Conversion Rate" has the meaning specified in Section 14.1.

"Corporate Trust Office" means the corporate trust office of the Trustee at which, at any particular time, the trust created by this Indenture shall be administered, which office at the date hereof is located at 633 West 5th Street, 12th Floor, Los Angeles, California 90071, attention: Corporate Trust Department (Advanced Energy Industries, Inc.), except that for purposes of Section 10.2 and all other references to a Corporate Trust Office in the Borough of Manhattan, City of New York, such term shall mean the office or agency of the Trustee in the Borough of Manhattan, the City of New York, which office at the date hereof is located at State Street Bank and Trust Company, N.A., 61 Broadway, New York, New York 10006, attention: Corporate Trust Department (Advanced Energy Industries, Inc.)

"Corporation" includes corporations, limited liability companies, partnerships, joint stock companies, associations, companies and business and real estate investment trusts.

"Debt" of the Company or any Subsidiary means any indebtedness of the Company or any Subsidiary, whether or not contingent, in respect of (i) borrowed money or evidenced by bonds, notes, debentures or similar instruments, (ii) indebtedness secured by any mortgage, pledge, lien, charge, encumbrance or any security interest existing on property owned by the Company or any Subsidiary, (iii) letters of credit or amounts representing the balance deferred and unpaid of the purchase price of any property except any such balance that constitutes an accrued expense or trade payable or (iv) any lease of property by the Company or any Subsidiary as lessee which is reflected on the Company's consolidated balance sheet as a capitalized lease in accordance with GAAP, in the case of items of indebtedness under (i) through (iii) above to the extent that any such items (other than letters of credit) would appear as a liability on the Company's consolidated balance sheet in accordance with GAAP, and also includes, to the extent not otherwise included, any obligation by the Company or any Subsidiary to be liable for, or to pay, as obligor, guarantor or otherwise (other than for purposes of collection in the ordinary course of business), indebtedness of another person (other than the Company or any Subsidiary) and all renewals, extensions, refundings, deferrals, restructurings, amendments and modifications of any such indebtedness, obligation or guarantee (it being understood that "Debt" shall be deemed to be incurred by the Company and its Subsidiaries on a consolidated basis whenever the Company and its Subsidiaries on a consolidated basis shall create, assume, guarantee or otherwise become liable in respect thereof); Debt of a Subsidiary of the Company existing prior to the time it became a Subsidiary of the Company shall be deemed to be incurred upon such Subsidiary's becoming a Subsidiary of the Company; and Debt of a Person existing prior to a merger or consolidation of such Person with the Company or any Subsidiary of the Company in which such Person is the successor of the Company or such Subsidiary shall be deemed to be incurred upon the consummation of such merger or consolidation; provided, however, that the term "Debt" shall not include any indebtedness that has been the subject of an "in substance" defeasance in accordance with GAAP.

"Defaulted Interest" has the meaning specified in Section 3.7.

"Designated Senior Debt" means the Company's obligations under that certain Loan and Security Agreement dated December 8, 1997, as now in effect and as the same may be amended from time to time, by and among the Company as Borrower, Silicon Valley Bank, as Servicing

Agent and a Bank, and Bank of Hawaii, as a Bank (such capitalized terms being understood to have the meanings ascribed thereto in the Credit Agreement), and any particular Senior Debt in which the instrument creating or evidencing the same or the assumption or guarantee thereof (or related agreements or documents to which the Company is a party) expressly provides that such indebtedness shall be "Designated Senior Debt" for purposes of the Indenture (provided that such instrument, agreement or other document may place limitations and conditions on the right of such Senior Debt to exercise the rights of Designated Senior Debt), in each case, including any amendments, replacements, supplements or other modifications thereto, or any refinancings or extensions thereof, in whole or in part.

"DTC" means The Depository Trust Company for so long as it shall be a clearing agency registered under the Exchange Act, or such successor as the Company shall designate from time to time in an Officers' Certificate delivered to the Trustee.

"Dollar" or "\$" means a dollar or other equivalent unit in such coin or currency of the United States of America as at the time shall be legal tender for the payment of public and private debts.

"Event of Default" has the meaning specified in Section 5.1.

"Excess Amount" has the meaning specified in Section 14.4(5).

"Exchange Act" means the Securities Exchange Act of 1934 and any successor statute thereto, in each case as amended from time to time, and the rules and regulations of the Commission thereunder.

"Expiration Time" has the meaning specified in Section 14.4(6).

"GAAP" means generally accepted accounting principles, as in effect from time to time, as used in the United States applied on a consistent basis; provided that, solely for purposes of any calculation required or permitted hereunder, "GAAP" shall mean generally accepted accounting principles as used in the United States on the date hereof, applied on a consistent basis.

"Global Security" means a Security that is registered in the Security Register in the name of DTC or a nominee thereof or a substitute depository or a nominee of such substitute depository.

"Government Obligations" means securities which are (i) direct obligations of the United States of America, for the payment of which its full faith and credit is pledged or (ii) obligations of a Person controlled or supervised by and acting as an agency or instrumentality of the United States of America, the payment of which is unconditionally guaranteed as a full faith and credit obligation by the United States of America, which, in either case, are not callable or redeemable at the option of the issuer thereof, and shall also include a depository receipt issued by a bank or trust company as custodian with respect to any such Government Obligation or a specific

payment of interest on or principal of any such Government Obligation held by such custodian for the account of the holder of a depository receipt, provided that (except as required by law) such custodian is not authorized to make any deduction from the amount payable to the holder of such depository receipt from any amount received by the custodian in respect of the Government Obligation or the specific payment of interest on or principal of the Government Obligation evidenced by such depository receipt.

"Holder" means the Person in whose name such Security is registered in the Security Register.

"Indenture" means this instrument as originally executed or as it may from time to time be supplemented or amended by one or more indentures supplemental hereto entered into pursuant to the applicable provisions hereof, including, for all purposes of this instrument and any supplemental indenture, the provisions of the Trust Indenture Act that are deemed to be a part of and govern this instrument and any such supplemental indenture, respectively.

"Interest Payment Date" means the Stated Maturity of an installment of interest on the Securities.

"Maturity" when used with respect to any Security, means the date on which the principal of (and premium, if any, on) such Security or an installment of principal or premium becomes due and payable as therein or herein provided, whether at the Stated Maturity or by declaration of acceleration, notice of redemption or repurchase, repurchase or otherwise, and includes the Redemption Date.

"Notes" has the meaning specified in Section 2.1.

"Notice of Default" has the meaning specified in Section 5.1.

"Officers' Certificate" means a certificate signed by the Chairman of the Board of Directors, the Chief Executive Officer, the President, the Chief Financial Officer of the Company or an Executive Vice President and by the Treasurer, an Assistant Treasurer, the Secretary or an Assistant Secretary of the Company, and which is delivered to the Trustee.

"Opinion of Counsel" means a written opinion of counsel, who may be counsel for the Company and who shall be acceptable to the Trustee.

"Outstanding" when used with respect to Securities, means, as of the date of determination, all Securities theretofore authenticated and delivered under this Indenture, except:

- (i) Securities theretofore canceled by the Trustee or the Security Registrar or delivered to the Trustee or Security Registrar for cancellation;
- (ii) Securities for whose payment, redemption or repurchase money in the necessary amount has been theretofore deposited with the Trustee or any Paying Agent (other

than the Company) in trust or set aside and segregated in trust by the Company (if the Company shall act as its own Paying Agent) for the Holders of such Securities, provided that, if such Securities are to be redeemed, notice of such redemption has been duly given pursuant to this Indenture or provision therefor satisfactory to the Trustee has been made; and

(iii) Securities which have been paid pursuant to Section 3.6 or in exchange for or in lieu of which other Securities have been authenticated and delivered pursuant to this Indenture, other than any such Securities in respect of which there shall have been presented to the Trustee proof satisfactory to it that such Securities are held by a bona fide purchaser in whose hands such Securities are valid obligations of the Company;

provided, however, that in determining whether the Holders of the requisite principal amount of the Outstanding Securities have given any request, demand, authorization, direction, notice, consent or waiver hereunder, and for the purpose of making the calculations required by Trust Indenture Act Section 313, Securities owned by the Company or any other obligor upon the Securities or any Affiliate of the Company or of such other obligor shall be disregarded and deemed not to be Outstanding, except that, in determining whether the Trustee shall be protected in making such determination or calculation or in relying upon any such request, demand, authorization, direction, notice, consent or waiver, only Securities which a Responsible Officer of the Trustee actually knows to be so owned shall be so disregarded. Securities so owned which have been pledged in good faith may be regarded as Outstanding if the pledgee establishes to the satisfaction of the Trustee the pledgee's right so to act with respect to such Securities and that the pledgee is not the Company or any other obligor upon the Securities or any Affiliate of the Company or of such other obligor.

"Paying Agent" means any Person authorized by the Company to pay the principal of (and premium, if any) or interest on any Securities on behalf of the Company.

"Payment Blockage Notice" has the meaning specified in Section 13.3.

"Person" means any individual, corporation, partnership, limited liability company, joint venture, association, joint-stock company, trust, unincorporated organization, real estate investment trust or government or any agency or political subdivision thereof or other entity of any kind.

"Place of Conversion" has the meaning specified in Section 3.1.

"Place of Payment" means the place or places where the principal of (and premium, if any) and interest on the Securities are payable as specified as contemplated by Sections 3.1 and 10.2. Such term shall include the Company if it shall act as its own Paying Agent.

"Predecessor Security" of any particular Security means every previous Security evidencing all or a portion of the same debt as that evidenced by such particular Security; and, for the purposes of this definition, any Security authenticated and delivered under Section 3.6 in

exchange for or in lieu of a mutilated, destroyed, lost or stolen Security shall be deemed to evidence the same debt as the mutilated, destroyed, lost or stolen Security.

"Purchased Shares" has the meaning specified in Section 14.4(6).

"Purchasers" has the meaning specified in Section 11.9.

"Record Date" means any Regular Record Date on Special Record Date.

"Redemption Date" when used with respect to any Security to be redeemed, in whole or in part, means the date fixed for such redemption by or pursuant to this Indenture.

"Redemption Price" when used with respect to any Security to be redeemed, means the price at which it is to be redeemed pursuant to this Indenture.

"Regular Record Date" for the interest payable on any Interest Payment Date on the Securities means the date specified for that purpose as contemplated by Section 3.1, whether or not a Business Day.

"Representative" means the (a) indenture trustee or other trustee, agent or representative for any Senior Debt or (b) with respect to any Senior Debt that does not have any such trustee, agent or other representative, (i) in the case of such Senior Debt issued pursuant to an agreement providing for voting arrangements as among the holders or owners of such Senior Debt, any holder or owner of such Senior Debt acting with the consent of the required persons necessary to bind such holders or owners of such Senior Debt and (ii) in the case of all other such Senior Debt, the holder or owner of such Senior Debt.

"Repurchase Date" when used with respect to any Security to be repurchased at the option of the Holder, means the date fixed for such repurchase specified in Section 12.1.

"Repurchase Price" when used with respect to any Security to be repurchased at the option of the Holder, means the price at which it is to be repurchased specified in Section 12.1.

"Responsible Officer" when used with respect to the Trustee, means any officer in the Corporate Trust Office of the Trustee or any other officer of the Trustee customarily performing functions similar to those performed by any of the above designated officers and also means, with respect to a particular corporate trust matter, any other officer to whom such matter is referred because of such officer's knowledge and familiarity with the particular subject.

"RF Power" means RF Power Products, Inc., a New Jersey corporation, or any other subsidiary of the Company who is the successor in interest to the assets of RF Power Products, Inc.

"Secured Debt" means, without duplication, Debt that is secured by a mortgage, trust deed, deed of trust, deed to secure Debt, security agreement, pledge, conditional sale or other title

retention agreement, capitalized lease, or other like agreement granting or conveying security title to or a security interest in real property or other tangible assets.

"Securities Act" means the Securities Act of 1933 and any successor statute thereto, in each case as amended from time to time, and the rules and regulations of the Commission thereunder.

"Security" has the meaning stated in the first recital of this Indenture and, more particularly, means any Security or Securities authenticated and delivered under this Indenture.

"Security Register" and "Security Registrar" have the respective meanings specified in Section 3.5.

"Senior Debt" means the principal of (and premium, if any) and interest (including all interest accruing subsequent to the commencement of any bankruptcy or similar proceeding, whether or not a claim for post-petition interest is allowable as a claim in such proceeding) on, and all fees and other amounts payable in connection with, the following, whether absolute or contingent secured or unsecured, due or to become due, whether outstanding at the date of execution of this Indenture or thereafter incurred, created or assumed: (a) indebtedness of the Company evidenced by a credit or loan agreement, note, bond, debenture or other written obligation, (b) all obligations of the Company for money borrowed, (c) all obligations of the Company evidenced by a note or similar instrument given in connection with the acquisition of any businesses, properties or assets of any kind, (d) obligations of the Company (i) as lessee under leases required to be capitalized on the balance sheet of the lessee under GAAP and (ii) as lessee under other leases for facilities, capital equipment or related assets, whether or not capitalized, entered into or leased for financing purposes, (e) all obligations of the Company under interest rate and currency swaps, caps, floors, collars, hedge agreements, forward contracts or similar agreements or arrangements, (f) all obligations of the Company with respect to letters of credit, bankers' acceptances and similar facilities (including reimbursement obligations with respect to the foregoing), (g) all obligations of the Company issued or assumed as the deferred purchase price of property or services (but excluding trade accounts payable and accrued liabilities), (h) all obligations of the type referred to in clauses (a) through (g) above of another Person, the payment of which, in either case, the Company has assumed or guaranteed, or for which the Company is responsible or liable, directly or indirectly, jointly or severally, as obligor, guarantor or otherwise, or which is secured by a lien on the property of the Company, and (i) renewals, extensions, modifications, replacements, restatements and refundings of, or any indebtedness or obligation issued in exchange for, any such indebtedness or obligation described in clauses (a) through (h) of this paragraph; provided, however, that Senior Debt shall not include the Securities or any such indebtedness or obligation if the terms of such indebtedness or obligation (or the terms of the instrument under which, or pursuant to which it is issued) expressly provide that such indebtedness or obligation is not superior in right of payment to the Securities.

"Significant Subsidiary" means any Subsidiary which is a "significant subsidiary" (as defined in Article I, Rule 1-02 of Regulation S-X, promulgated under the Securities Act) of the Company.

"Special Record Date" for the payment of any Defaulted Interest on the Securities means a date fixed by the Trustee pursuant to Section 3.7.

"Stated Maturity" when used with respect to any Security or any installment of principal thereof, premium thereon or interest thereon, means the date specified in such Security as the fixed date on which the principal of such Security or such installment of principal, premium or interest is due and payable.

"Subsidiary" means (a) a corporation at least a majority of the outstanding voting stock of which is owned, directly or indirectly, by the Company or by one or more other Subsidiaries of the Company or (b) a Person (other than a corporation) in which the Company or one or more other Subsidiaries, directly or indirectly, has at least a majority equity ownership. For the purposes of this definition, "voting stock" means stock having voting power for the election of directors, or persons performing similar functions, whether at all times or only so long as no senior class of stock has such voting power by reason of any contingency.

"Third Party Expiration Time" has the meaning specified in Section 14.4(8).

"Third Party Purchased Shares" has the meaning specified in Section 14.4(8).

"Trading Day" means (i) if the Common Stock is quoted on the Nasdaq National Market or any other system of automated dissemination of quotations of securities prices, days on which trades may be effected through such system, (ii) if the Common Stock is listed or admitted for trading on any national or regional securities exchange, days on which such national or regional securities exchange is open for business, or (iii) if the Common Stock is not listed on a national or regional securities exchange or quoted on the Nasdaq National Market or any other system of automated dissemination of quotation of securities prices, days on which the Common Stock is traded regular way in the over-the-counter market and for which a closing bid and a closing asked price for the Common Stock are available.

"Triggering Event" has the meaning specified in Section 14.4(9).

"Trust Indenture Act" means the Trust Indenture Act of 1939, and the rules and regulations thereunder, as in force at the date as of which this Indenture was executed, provided, however, that in the event the Trust Indenture Act of 1939 is amended after such date, "Trust Indenture Act" means, to the extent required by any such amendment, the Trust Indenture Act of 1939, and the rules and regulations thereunder, as so amended.

"Trustee" means the Person named as the "Trustee" in the first paragraph of this Indenture until a successor Trustee shall have become such pursuant to the applicable provisions



of this Indenture, and thereafter "Trustee" shall mean or include each Person who is then a Trustee hereunder.

"United States" means the United States of America (including the states and the District of Columbia), its territories, its possessions and other areas subject to its jurisdiction.

#### SECTION 1.2 Compliance Certificates and Opinions.

Upon any application or request by the Company to the Trustee to take any action under any provision of this Indenture, the Company shall furnish to the Trustee an Officers' Certificate in form and substance satisfactory to the Trustee stating that all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with and an Opinion of Counsel in form and substance satisfactory to the Trustee stating that in the opinion of such counsel all such conditions precedent, if any, have been complied with, except that in the case of any such application or request as to which the furnishing of such documents is specifically required by any provision of this Indenture relating to such particular application or request, no additional certificate or opinion need be furnished.

Every certificate or opinion with respect to compliance with a condition or covenant provided for in this Indenture (including certificates delivered pursuant to Section 10.9) shall include:

- (1) a statement that each individual signing such certificate or opinion has read such condition or covenant and the definitions herein relating thereto;
- (2) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such certificate or opinion are based;
- (3) a statement that, in the opinion of each such individual, he or she has made such examination or investigation as is necessary to enable the individual to express an informed opinion as to whether or not such condition or covenant has been complied with; and
- (4) a statement as to whether, in the opinion of each such individual, such condition or covenant has been complied with.

#### SECTION 1.3 Form of Documents Delivered to Trustee.

In any case where several matters are required to be certified by, or covered by an opinion of, any specified Person, it is not necessary that all such matters be certified by, or covered by the opinion of, only one such Person, or that they be so certified or covered by only one document, but one such Person may certify or give an opinion as to some matters and one or more other such Persons as to other matters, and any such Person may certify or give an opinion as to such matters in one or several documents.

Any certificate or opinion of an officer of the Company may be based, insofar as it relates to legal matters, upon an Opinion of Counsel, or a certificate or representations by counsel, unless such officer knows, or in the exercise of reasonable care should know, that the Opinion of Counsel, certificate or representations with respect to the matters upon which his or her certificate or opinion is based are erroneous. Any such Opinion of Counsel, certificate or representations may be based, insofar as it relates to factual matters, upon a certificate or opinion of, or representations by, an officer or officers of the Company stating that the information as to such factual matters is in the possession of the Company, unless such counsel or officer knows, or in the exercise of reasonable care should know, that the certificate, opinion or representations as to such matters are erroneous.

Where any Person is required to make, give or execute two or more applications, requests, consents, certificates, statements, opinions or other instruments under this Indenture, they may, but need not, be consolidated and form one instrument.

#### SECTION 1.4 Acts of Holders; Record Dates.

(a) Any request, demand, authorization, direction, notice, consent, waiver or other action provided by this Indenture to be given or taken by Holders of the Outstanding Securities, may be embodied in and evidenced by (1) one or more instruments of substantially similar tenor signed by such Holders in person or by agents duly appointed in writing or (2) the record of Holders of Securities voting in favor thereof, either in person or by proxies duly appointed in writing, at any meeting of Holders of Securities duly called and held in accordance with the provisions of Article XV. Except as herein otherwise expressly provided, such action shall become effective when such instrument or instruments or record are delivered to the Trustee and, where it is hereby expressly required, to the Company. Such instrument or instruments and records (and the action embodied therein and evidenced thereby) are herein sometimes referred to as the "Act" of the Holders signing such instrument or instruments or so voting at such meeting. Proof of execution of any such instrument or of a writing appointing any such agent, or of the holding by any Person of a Security, shall be sufficient for any purpose of this Indenture and (subject to Section 6.14) conclusive in favor of the Trustee and the Company and any agent of the Trustee or the Company, if made in the manner provided in this Section. The record of any meeting of Holders of Securities shall be proved in the manner provided in Section 15.6.

(b) The fact and date of the execution by any Person of any such instrument or writing may be proved by the affidavit of a witness of such execution or by a certificate of a notary public or other officer authorized by law to take acknowledgments of deeds, certifying that the individual signing such instrument or writing acknowledged to him the execution thereof. Where such execution is by a signer acting in a capacity other than his or her individual capacity, such certificate or affidavit shall also constitute sufficient proof of his or her authority. The fact and date of the execution of any such instrument or writing, or the authority of the Person executing the same, may also be proved in any other reasonable manner which the Trustee deems sufficient.

(c) The ownership of Securities shall be proved by the Security Register.

(d) If the Company shall solicit from the Holders of Securities any request, demand, authorization, direction, notice, consent, waiver or other Act, the Company may, at its option, in or pursuant to an Officer's Certificate, fix in advance a record date for the determination of Holders entitled to give such request, demand, authorization, direction, notice, consent, waiver or other Act, but the Company shall have no obligation to do so. Notwithstanding the Trust Indenture Act, Section 316(c), such record date shall be the record date specified in or pursuant to such Board Resolution, which shall be a date not earlier than the date 30 days prior to the first solicitation of Holders generally in connection therewith and not later than the date such solicitation is completed. If such a record date is fixed, such request, demand, authorization, direction, notice, consent, waiver or other Act may be given before or after such record date, but only the Holders of record at the close of business on such record date shall be deemed to be Holders for the purposes of determining whether Holders of the requisite proportion of Outstanding Securities have authorized or agreed or consented to such request, demand, authorization, direction, notice, consent, waiver or other Act, and for that purpose the Outstanding Securities shall be computed as of such record date.

(e) Any request, demand, authorization, direction, notice, consent, waiver or other Act of the Holder of any Security shall bind every future Holder of the same Security and the Holder of every Security issued upon the registration of transfer thereof or in exchange therefor or in lieu thereof in respect of anything done, omitted or suffered to be done by the Trustee, any Security Registrar, any Paying Agent, any Authenticating Agent or the Company in reliance thereon, whether or not notation of such action is made upon such Security.

#### SECTION 1.5 Notices, etc., to Trustee and Company.

Any request, demand, authorization, direction, notice, consent, waiver or Act of Holders or other document provided or permitted by this Indenture to be made upon, given or furnished to, or filed with,

(1) the Trustee by any Holder or by the Company shall be sufficient for every purpose hereunder if made, given, furnished or filed in writing to or with the Trustee at its Corporate Trust Office, or

(2) the Company by the Trustee or by any Holder shall be sufficient for every purpose hereunder (unless otherwise herein expressly provided) if in writing and mailed, first class postage prepaid, to the Company addressed to it at the address of its principal office specified in the first paragraph of this Indenture or at any other address previously furnished in writing to the Trustee by the Company.

#### SECTION 1.6 Notice to Holders; Waiver.

Where this Indenture provides for notice of any event to Holders of Securities by the Company or the Trustee, such notice shall be sufficiently given (unless otherwise herein expressly provided) if in writing and mailed, first-class postage prepaid, to each such Holder affected by such event, at such Holder's address as it appears in the Security Register, not later than the latest date, and not earlier than the earliest date, prescribed for the giving of such notice. In any case where notice to Holders of Securities is given by mail, neither the failure to mail such notice, nor any defect in any notice so mailed, to any particular Holder shall affect the sufficiency of such notice with respect to other Holders of Securities. Any notice mailed to a Holder in the manner herein prescribed shall be deemed to have been given when such notice is mailed.

If by reason of the suspension of regular mail service or by reason of any other cause it shall be impracticable to give such notice by mail, then such notification to Holders of Securities as shall be made with the approval of the Trustee shall constitute a sufficient notification to such Holders for every purpose hereunder.

Where this Indenture provides for notice in any manner, such notice may be waived in writing by the Person entitled to receive such notice, either before or after the event, and such waiver shall be the equivalent of such notice. Waivers of notice by Holders shall be filed with the Trustee, but such filing shall not be a condition precedent to the validity of any action taken in reliance upon such waiver.

#### SECTION 1.7 Effect of Headings and Table of Contents.

The Article and Section headings herein and the Table of Contents are for convenience only and shall not affect the construction hereof.

#### SECTION 1.8 Successors and Assigns.

All covenants and agreements in this Indenture by the Company shall be binding on their successors and assigns, whether so expressed or not.

#### SECTION 1.9 Separability Clause.

In case any provision in this Indenture or in any Security shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

#### SECTION 1.10 Benefits of Indenture.

Nothing in this Indenture or in the Securities, express or implied, shall give to any Person, other than the Parties hereto, any Security Registrar, any Paying Agent, any

Authenticating Agent and their successors hereunder and the Holders any benefit or any legal or equitable right, remedy or claim under this Indenture.

#### SECTION 1.11 No Personal Liability.

No recourse under or upon any obligation, covenant or agreement contained in this Indenture, in any Security or because of any indebtedness evidenced thereby, shall be had against any incorporator, as such, or against any past, present or future stockholder, officer or director, as such, of the Company or of any successor, either directly or through the Company or any successor, under any rule of law, statute or constitutional provision or by the enforcement of any assessment or by any legal or equitable proceeding or otherwise, all such liability being expressly waived and released by the acceptance of the Securities by the Holders thereof and as part of the consideration for the issue of the Securities.

#### SECTION 1.12 Governing Law.

This Indenture and the Securities shall be governed by and construed in accordance with the internal laws of the State of New York, without regard to the principles of conflict of law.

#### SECTION 1.13 Legal Holidays.

In any case where any Interest Payment Date, Repurchase Date, Redemption Date, Stated Maturity or Maturity of any Security shall not be a Business Day at any Place of Payment or Place of Conversion, then (notwithstanding any other provision of this Indenture or any Security other than a provision in the Securities which specifically states that such provision shall apply in lieu hereof), payment of interest or principal (and premium, if any) need not be made at such Place of Payment or Place of Conversion on such date, but may be made on the next succeeding Business Day at such Place of Payment or Place of Conversion with the same force and effect as if made on the Interest Payment Date, Repurchase Date or Redemption Date, or at the Stated Maturity or Maturity, provided that no interest shall accrue on the amount so payable for the period from and after such Interest Payment Date, Repurchase Date, Redemption Date, Stated Maturity or Maturity, as the case may be, so long as payment is made on such succeeding Business Day.

#### SECTION 1.14 Conflict with Trust Indenture Act.

If any provision hereof limits, qualifies or conflicts with a provision of the Trust Indenture Act that is required under the Trust Indenture Act to be a part of and govern this Indenture, the latter provision shall control. If any provision of this Indenture modifies or excludes any provision of the Trust Indenture Act that may be so modified or excluded, the latter provision shall be deemed to apply to this Indenture as so modified or to be excluded, as the case may be.

## SECTION 1.15 Counterparts.

This Indenture may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, but all such counterparts shall together constitute but one and the same instrument.

## ARTICLE II

### SECURITIES FORM

#### SECTION 2.1 Designation of Securities; Form Generally.

Pursuant to the terms hereof, the Company hereby creates a series of its debt securities designated as the "5 1/4% Convertible Subordinated Notes due 2006" (the "Notes"), which Notes shall be deemed "Securities" for all purposes hereunder.

The Securities shall be in substantially the form set forth in this Article, with such appropriate insertions, omissions, substitutions and other variations as are required or permitted by this Indenture, and may have such letters, numbers or other marks of identification and such legends or endorsements placed thereon as may be required to comply with the rules of any securities exchange, the Internal Revenue Code of 1986, as amended, and regulations thereunder (the "Code"), or as may, consistent herewith, be determined by the officers executing such Securities, as evidenced by their execution thereof. All Securities shall be in fully registered form, without coupon.

The Trustee's certificates of authentication shall be in substantially the form set forth in Section 2.3.

Conversion notices shall be substantially in the form set forth in Section 2.4.

Repurchase notices shall be substantially in the form set forth in Section 2.5.

Assignments shall be substantially in the form set forth in Section 2.6.

The Securities shall be printed, lithographed, typewritten or engraved or produced by any combination of these methods or may be produced in any other manner permitted by the rules of any automated quotation system or securities exchange (including on steel engraved borders if so required by any securities exchange upon which the Securities may be listed) on which the Securities may be quoted or listed, as the case may be, all as determined by the officers executing such Securities, as evidenced by their execution thereof.

**[FORM OF NOTE FACE]**

**[THE FOLLOWING LEGEND SHALL APPEAR ON THE FACE OF EACH GLOBAL SECURITY:**

THIS NOTE IS A GLOBAL SECURITY WITHIN THE MEANING OF THE INDENTURE HEREINAFTER REFERRED TO AND IS REGISTERED IN THE NAME OF THE DEPOSITARY OR A NOMINEE OF THE DEPOSITARY, WHICH MAY BE TREATED BY THE COMPANY, THE TRUSTEE AND ANY AGENT THEREOF AS OWNER AND HOLDER OF THIS NOTE FOR ALL PURPOSES.

UNLESS THIS CERTIFICATE IS PRESENTED BY AN AUTHORIZED REPRESENTATIVE OF THE DEPOSITORY TRUST COMPANY, A NEW YORK CORPORATION ("DTC"), TO THE COMPANY OR ITS AGENT FOR REGISTRATION OF TRANSFER, EXCHANGE OR PAYMENT, AND ANY CERTIFICATE ISSUED IS REGISTERED IN THE NAME OF CEDE & CO. OR IN SUCH OTHER NAME AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC (AND ANY PAYMENT IS MADE TO CEDE & CO. OR TO SUCH OTHER ENTITY AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC), ANY TRANSFER, PLEDGE OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL INASMUCH AS THE REGISTERED OWNER HEREOF, CEDE & CO., HAS AN INTEREST HEREIN.

UNLESS AND UNTIL IT IS EXCHANGED IN WHOLE OR IN PART FOR NOTES IN DEFINITIVE REGISTERED FORM IN THE LIMITED CIRCUMSTANCES REFERRED TO IN THE INDENTURE, THIS GLOBAL SECURITY MAY NOT BE TRANSFERRED EXCEPT AS A WHOLE BY THE DEPOSITARY TO A NOMINEE OF THE DEPOSITARY OR BY A NOMINEE OF THE DEPOSITARY TO THE DEPOSITARY OR ANOTHER NOMINEE OF THE DEPOSITARY OR BY THE DEPOSITARY OR ANY SUCH NOMINEE TO A SUCCESSOR DEPOSITARY OR A NOMINEE OF SUCH SUCCESSOR DEPOSITARY.]

**ADVANCED ENERGY INDUSTRIES, INC.**

**5 1/4% CONVERTIBLE SUBORDINATED NOTE  
DUE 2006**

No. \_\_\_\_\_ \$ \_\_\_\_\_

**CUSIP NO. 007973AA8**

ADVANCED ENERGY INDUSTRIES, INC., a corporation duly organized and existing under the laws of the State of Delaware (herein called the "Company", which term includes any successor Person under the Indenture referred to on the reverse hereof), for value received, hereby promises to pay to \_\_\_\_\_, the principal sum of \_\_\_\_\_ United States Dollars (\$\_\_\_\_\_) [if this Security is a Global Security, then insert - (which principal amount may from time to time be increased or decreased to such other principal amounts by adjustments made on the records of the Trustee hereinafter referred to in accordance with the Indenture)] on November 15, 2006 and to pay interest thereon, from November 10, 1999, or from the most recent Interest Payment Date (as defined below) to which interest has been paid or duly provided for, semi-annually in arrears on May 15 and November 15 in each year (each, an "Interest Payment Date"), commencing May 15, 2000, at the rate of 5 1/4% per annum, until the principal hereof is due, and at the rate of 5 1/4% per annum on any overdue principal and premium, if any, and, to the extent permitted by law, on any overdue interest. The interest so payable, and punctually paid or duly provided for, on any Interest Payment Date will, as provided in the Indenture, be paid to the Person in whose name this Note (or one or more Predecessor Securities) is registered at the close of business on the Regular Record Date for such interest, which shall be the May 1 or November 1 (whether or not a Business Day), as the case may be, next preceding such Interest Payment Date. Except as otherwise provided in the Indenture, any such interest not so punctually paid or duly provided for will forthwith cease to be payable to the Holder on such Regular Record Date and may either be paid to the Person in whose name this Note (or one or more Predecessor Securities) is registered at the close of business on a Special Record Date for the payment of such Defaulted Interest to be fixed by the Company, notice whereof shall be given to Holders of Notes not less than 10 days prior to the Special Record Date, or be paid at any time in any other lawful manner not inconsistent with the requirements of any automated quotation system or securities exchange on which the Notes may be quoted or listed, and upon such notice as may be required by such exchange, all as more fully provided in the Indenture. Payments of principal shall be made upon the surrender of this Note at the Corporate Trust Office of the Trustee, or at such other office or agency of the Company as may be designated by the Company for such purpose, in the Borough of Manhattan, The City of New York, in such coin or currency of the United States of America as at the time of payment shall be legal tender for the payment of public and private debts, by Dollar check drawn on, or transfer to, a Dollar account. Payments of interest on this Note may be made by Dollar check, drawn on a Dollar account, mailed to the address of the Person entitled thereto as such address shall appear in the Security Register, or, upon written application by the Holder to the Security Registrar setting forth wire instructions not later than the relevant Record Date, by transfer to a Dollar account; provided however, that transfers to Dollar accounts will be made only to Holders of an aggregate principal amount of Notes in excess of \$2,000,000.

Except as specifically provided herein and in the Indenture, the Company shall not be required to make any payment with respect to any tax, assessment or other governmental charge imposed by any government or any political subdivision or taxing authority thereof or therein.

Reference is hereby made to the further provisions of this Note set forth on the reverse hereof, which further provisions shall for all purposes have the same effect as if set forth at this place.



Unless the certificate of authentication hereon has been executed by the Trustee referred to on the reverse hereof or an Authenticating Agent by the manual signature of one of their respective authorized signatories, this Note shall not be entitled to any benefit under the Indenture or be valid or obligatory for any purpose.

IN WITNESS WHEREOF, the Company has caused this Note to be duly executed and delivered under its corporate seal.

**Advanced Energy Industries, Inc.**

[Corporate Seal]

By:

Name:

Title:

**Attest:**

Name:

Title:

(Trustee's Certificate of Authentication)

This is one of the 5 1/4% Convertible Subordinated Notes due 2006 referred to in the within-mentioned Indenture.

**STATE STREET BANK AND  
TRUST COMPANY OF CALIFORNIA, N.A.,  
as Trustee**

By:

**Authorized Signatory**

**[FORM OF REVERSE]**

This Note is one of a duly authorized issue of securities of the Company designated as its "5 1/4% Convertible Subordinated Notes due 2006" (herein called the "Notes"), issued and to be issued under an Indenture, dated as of November 1, 1999 (herein called the "Indenture"), between the Company and State Street Bank and Trust Company of California, N.A., as Trustee (herein called the "Trustee", which term includes any successor trustee under the Indenture), to which Indenture and all indentures supplemental thereto reference is hereby made for a statement of the respective rights, limitations of rights, duties and immunities thereunder of the Company, the Trustee, the holders of Senior Debt and the Holders of the Notes and of the terms upon which

the Notes are, and are to be, authenticated and delivered. As provided in the Indenture and subject to certain limitations therein set forth, Notes are exchangeable for a like aggregate principal amount of Notes of any authorized denominations as requested by the Holder surrendering the same upon surrender of the Note or Notes to be exchanged, at the Corporate Trust Office of the Trustee. The Trustee upon such surrender by the Holder will issue the new Notes in the requested denominations.

No sinking fund is provided for the Notes.

The Notes are subject to redemption at the option of the Company at any time on or after November 19, 2002, in whole or in part, upon not less than 30 nor more than 60 days' notice to the Holders prior to the Redemption Date at the following Redemption Prices (expressed as percentages of the principal amount) for the twelve-month period beginning on November 15 of the following years:

YEAR ----	REDEMPTION PRICE -----
2002	103.00%
2003	102.25%
2004	101.50%
2005	100.75%

and at a Redemption Price equal to 100% of the principal amount beginning on November 15, 2006, together, in each case, with accrued and unpaid interest to the Redemption Date; provided, however, that interest installments on Notes whose Stated Maturity is on or prior to such Redemption Date will be payable to the Holders of such Notes, or one or more Predecessor Securities, of record at the close of business on the relevant Record Dates referred to on the face hereof, all as provided in the Indenture.

In the event of a redemption of the Notes, the Company will not be required (a) to register the transfer or exchange of Notes for a period of 15 days immediately preceding the date notice is given identifying the serial numbers of the Notes called for such redemption or (b) to register the transfer or exchange of any Note, or portion thereof, called for redemption.

In any case where the due date for the payment of the principal of, premium, if any, or interest on any Note or the last day on which a Holder of a Note has a right to convert such Note shall be, at any Place of Payment or Place of Conversion as the case may be, a day on which banking institutions at such Place of Payment or Place of Conversion are authorized or obligated by law, regulation or executive order to close, then payment of principal, premium, if any, interest or delivery for conversion of such Note need not be made on or by such date at such place but may be made on or by the next succeeding day at such place which is not a day on which banking institutions are authorized or obligated by law, regulation or executive order to close, with the same force and effect as if made on the date for such payment or the date fixed for

redemption or repurchase, or by such last day for conversion, and no interest shall accrue on the amount so payable for the period after such date.

Subject to and upon compliance with the provisions of the Indenture, the Holder of this Note is entitled, at such Holder's option, at any time following the original issue date of the Notes and on or before the close of business on the Business Day immediately preceding November 15, 2006, or in case this Note or a portion hereof is called for redemption or the Holder hereof has exercised his or her right to require the Company to repurchase this Note or such portion hereof, then in respect of this Note until but (unless the Company defaults in making the payment due upon redemption or repurchase, as the case may be) not after, the close of business on Business Day immediately preceding the Redemption Date or the Repurchase Date, as the case may be, to convert this Note (or any portion of the principal amount hereof that is an integral multiple of \$1,000, provided that the unconverted portion of such principal amount is \$1,000 or any integral multiple of \$1,000 in excess thereof) into fully paid and nonassessable shares of Common Stock of the Company at an initial Conversion Rate of 20.1898 shares of Common Stock for each \$1,000 principal amount of Notes (or at the current adjusted Conversion Rate if an adjustment has been made as provided in the Indenture, including pursuant to Section 14.4(2)) by surrender of this Note, duly endorsed or assigned to the Company or in blank and, in case such surrender shall be made during the period from the close of business on any Regular Record Date next preceding any Interest Payment Date to the opening of business on such Interest Payment Date (except if this Note or portion thereof has been called for redemption on a Redemption Date or is repurchasable on a Repurchase Date and the conversion rights of this Note, or such portion thereof, would terminate during the period between such Regular Record Date and the close of business on such Interest Payment Date), also accompanied by payment in New York Clearing House or other funds acceptable to the Company of an amount equal to the interest payable on such Interest Payment Date on the principal amount of this Note then being converted, and also the conversion notice hereon duly executed, to the Company at the Corporate Trust Office of the Trustee, or at such other office or agency of the Company, subject to any laws or regulations applicable thereto and subject to the right of the Company to terminate the appointment of any Conversion Agent (as defined below) as may be designated by it for such purpose, in the Borough of Manhattan, The City of New York, or at such other offices or agencies as the Company may designate (each a "Conversion Agent"), provided, however, that if this Note or portion hereof has been called for redemption on a Redemption Date or is repurchasable on a Repurchase Date and the conversion rights of this Note, or such portion thereof, would terminate during the period between such Regular Record Date and the close of business on such Interest Payment Date, then the Holder of this Note on such Regular Record Date will be entitled to receive the interest accruing hereon from the Interest Payment Date next preceding the date of such conversion to such succeeding Interest Payment Date and the Holder of this Note who converts this Note or a portion hereof during such period shall not be required to pay such interest upon surrender of this Note for conversion. Subject to the provisions of the preceding sentence and, in the case of a conversion after the close of business on the Regular Record Date next preceding any Interest Payment Date and on or before the close of business on such Interest Payment Date, to the right of the Holder of this Note (or any Predecessor Security of record as of such Regular Record Date) to receive the related installment of interest to the

extent and under the circumstances provided in the Indenture, no cash payment or adjustment is to be made on conversion for interest accrued hereon from the Interest Payment Date next preceding the day of conversion, or for dividends on the Common Stock issued on conversion hereof. The Company shall thereafter deliver to the Holder the fixed number of shares of Common Stock (together with any cash adjustment, as provided in the Indenture) into which this Note is convertible and such delivery will be deemed to satisfy the Company's obligation to pay the principal amount of this Note. No fractions of shares or scrip representing fractions of shares will be issued on conversion, but instead of any fractional interest (calculated to the nearest 1/100th of a share) the Company shall pay a cash adjustment as provided in the Indenture. The Conversion Rate is subject to adjustment as provided in the Indenture. In addition, the Indenture provides that in case of certain consolidations or mergers to which the Company is a party (other than a consolidation or merger that does not result in any reclassification, conversion, exchange or cancellation of the Common Stock) or the conveyance, transfer, sale or lease of all or substantially all of the property and assets of the Company, the Indenture shall be amended, without the consent of any Holders of Notes, so that this Note, if then Outstanding, will be convertible thereafter, during the period this Note shall be convertible as specified above, only into the kind and amount of securities, cash and other property receivable upon such consolidation, merger, conveyance, transfer, sale or lease by a holder of the number of shares of Common Stock of the Company into which this Note could have been converted immediately prior to such consolidation, merger, conveyance, transfer, sale or lease (assuming such holder of Common Stock is not a Constituent Person or an Affiliate of a Constituent Person, failed to exercise any rights of election and received per share the kind and amount received per share by a plurality of Non-electing Shares and further assuming, if such consolidation, merger, conveyance, transfer, sale or lease occurs prior to the original issue date of the Notes, that the Note was convertible at the time of such occurrence at the Conversion Rate specified above as adjusted from the issue date of such Note to such time as provided in the Indenture). No adjustment in the Conversion Rate will be made until such adjustment would require an increase or decrease of at least one percent of such price, provided that any adjustment that would otherwise be made, but for the application of the foregoing, will be carried forward and taken into account in the computation of any subsequent adjustment.

If a Change in Control occurs, the Holder of this Note, at the Holder's option, shall have the right, in accordance with the provisions of the Indenture, to require the Company to repurchase this Note (or any portion of the principal amount hereof that is equal to \$1,000 or an integral multiple of \$1,000 in excess thereof) for cash at a Repurchase Price equal to 100% of the principal amount thereof plus interest accrued to the Repurchase Date. At the option of the Company, the Repurchase Price may be paid in cash or, subject to the conditions provided in the Indenture, by delivery of shares of Common Stock having a fair market value equal to the Repurchase Price. For purposes of this paragraph, the fair market value of shares of Common Stock shall be determined by the Company and shall be equal to 95% of the average of the Closing Prices Per Share for the five consecutive Trading Days immediately preceding and including the third Trading Day prior to the Repurchase Date. Whenever in this Note there is a reference, in any context, to the principal of any Note as of any time, such reference shall be deemed to include reference to the Repurchase Price payable in respect of such Note to the extent that such Repurchase Price is, was or would be so payable at such time, and express mention of

the Repurchase Price in any provision of this Note shall not be construed as excluding the Repurchase Price so payable in those provisions of this Note when such express mention is not made; provided, however, that, for the purposes of the second succeeding paragraph, such reference shall be deemed to include reference to the Repurchase Price only to the extent the Repurchase Price is payable in cash.

[The following paragraph shall appear in each Global Security:

In the event of a deposit or withdrawal of an interest in this Note, including an exchange, transfer, redemption, repurchase or conversion of this Note in part only, the Trustee, as custodian of the Depository, shall make an adjustment on its records to reflect such deposit or withdrawal in accordance with the rules and procedures of The Depository Trust Company applicable to, and as in effect at the time of, such transaction.]

[The following paragraph shall appear in each Note that is not a Global Security:

In the event of redemption, repurchase or conversion of this Note in part only, a new Note or Notes for the unredeemed, unrepurchased or unconverted portion hereof will be issued in the name of the Holder hereof.]

The indebtedness evidenced by this Note is, to the extent and in the manner provided in the Indenture, subordinate and subject in right of payment to the prior payment in full in cash of all Senior Debt of the Company, and this Note is issued subject to such provisions of the Indenture with respect thereto. Each Holder of this Note, by accepting the same, (a) agrees to and shall be bound by such provisions, (b) authorizes and directs the Trustee on such Holder's behalf to take such action as may be necessary or appropriate to effectuate the subordination so provided and (c) appoints the Trustee such Holder's attorney-in-fact for any and all such purposes.

If an Event of Default shall occur and be continuing, the principal of all the Notes, together with accrued interest to the date of declaration, may be declared due and payable in the manner and with the effect provided in the Indenture. Upon payment (i) of the amount of principal so declared due and payable, together with accrued interest to the date of declaration, and (ii) of interest on any overdue principal and, to the extent permitted by applicable law, overdue interest, all of the Company's obligations in respect of the payment of the principal of and interest on the Notes shall terminate.

The Indenture permits, with certain exceptions as therein provided, the amendment thereof and the modification of the rights and obligations of the Company and the rights of the Holders of the Notes under the Indenture at any time by the Company and the Trustee with either (a) the written consent of the Holders of not less than a majority in aggregate principal amount of the Outstanding Notes, or (b) by the adoption of a resolution, at a meeting of Holders of the Outstanding Notes at which a quorum is present, by the Holders of at least 66-2/3% in aggregate principal amount of the Outstanding Notes represented and entitled to vote at such meeting. The Indenture also contains provisions permitting the Holders of specified percentages in principal

amount of the Outstanding Notes, on behalf of the Holders of all the Notes, to waive compliance by the Company with certain provisions of the Indenture and certain past defaults under the Indenture and their consequences. Any such consent or waiver by the Holder of this Note shall be conclusive and binding upon such Holder and upon all future Holders of this Note and of any Note issued in exchange therefor or in lieu hereof whether or not notation of such consent or waiver is made upon this Note or such other Note.

As provided in and subject to the provisions of the Indenture, the Holder of this Note shall not have the right to institute any proceeding with respect to the Indenture or for the appointment of a receiver or trustee or for any other remedy thereunder, unless such Holder shall have previously given the Trustee written notice of a continuing Event of Default, the Holders of not less than 25% in principal amount of the Outstanding Notes shall have made written request to the Trustee to institute proceedings in respect of such Event of Default as Trustee and offered the Trustee reasonable indemnity and the Trustee shall not have received from the Holders of a majority in principal amount of the Outstanding Notes a direction inconsistent with such request, and shall have failed to institute any such proceeding, for 60 days after receipt of such notice, request and offer of indemnity. The foregoing shall not apply to any suit instituted by the Holder of this Note for the enforcement of any payment of principal hereof, premiums if any, or interest hereon on or after the respective due dates expressed herein or for the enforcement of the right to convert this Note as provided in the Indenture.

No reference herein to the Indenture and no provision of this Note or of the Indenture shall alter or impair the obligation of the Company, which is absolute and unconditional, to pay the principal of, premium, if any, and interest on this Note at the times, places and rate, and in the coin or currency, herein prescribed or to convert this Note as provided in the Indenture.

As provided in the Indenture and subject to certain limitations therein set forth, the transfer of this Note is registrable on the Security Register upon surrender of this Note for registration of transfer at the Corporate Trust Office of the Trustee or at such other office or agency of the Company as may be designated by it for such purpose in the Borough of Manhattan, The City of New York (which shall initially be an office or agency of the Trustee), or at such other offices or agencies as the Company may designate, duly endorsed by, or accompanied by a written instrument of transfer in form satisfactory to the Company and the Security Registrar duly executed by, the Holder thereof or such Holder's attorney duly authorized in writing, and thereupon one or more new Notes, of authorized denominations and for the same aggregate principal amount, will be issued to the designated transferee or transferees by the Security Registrar. No service charge shall be made for any such registration of transfer or exchange, but the Company may require payment of a sum sufficient to recover any tax or other governmental charge payable in connection therewith.

Prior to due presentation of this Note for registration of transfer, the Company, the Trustee and any agent of the Company or the Trustee may treat the Person in whose name Note is registered, as the owner thereof for all purposes, whether or not such Note be overdue, and neither the Company, the Trustee nor any such agent shall be affected by notice to the contrary.

No recourse for the payment of the principal (and premium, if any) or interest on this Note and no recourse under or upon any obligation, covenant or agreement of the Company in the Indenture or any indenture supplemental thereto or in any Note, or because of the creation of any indebtedness represented thereby, shall be had against any incorporator, stockholder, officer or director, as such, past, present or future, of the Company or of any successor corporation, either directly or through the Company or any successor corporation, whether by virtue of any rule of law, statute or constitutional provision or by the enforcement of any assessment or by any legal or equitable proceeding or otherwise, all such liability being expressly waived and released, by the acceptance hereof and as part of consideration for the issue hereof.

THE INDENTURE AND THIS NOTE SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK, UNITED STATES OF AMERICA WITHOUT REGARD TO THE PRINCIPLES OF CONFLICT OF LAW.

All terms used in this Note which are defined in the Indenture shall have the meanings assigned to them in the Indenture.

ABBREVIATIONS

The following abbreviations, when used in the inscription of the face of this Note, shall be construed as though they were written out in full according to applicable laws or regulations:

TEN COM	-	as tenants in common
TEN ENT	-	as tenants by the entireties (Cust)
JT TEN	-	as joint tenants with right of survivorship and not as tenants in common
UNIF GIFT MIN ACT	-	Custodian ----- (Minor)  under Uniform Gifts to Minors Act ----- (State)

Additional abbreviations may also be used though not in the above list.

SECTION 2.3 Form of Trustee's Certificate of Authentication.

Subject to Section 6.11, the Trustee's certificate of authentication shall be in substantially the following form:

This is one of the 5 1/4% Convertible Subordinated Notes due 2006 referred to in the within-mentioned Indenture.

Dated:

By:

**Authorized Signatory**

SECTION 2.4 Form of Election of Holder to Require Repurchase.

(1 Pursuant to Article XII of the Indenture, the undersigned hereby elects to have this Note repurchased by the Company.

(2 The undersigned hereby directs the Trustee or the Company to pay to the undersigned an amount in cash or, at the Company's election, Common Stock valued as set forth in the Indenture, equal to 100% of the principal amount to be repurchased (as set forth below), plus interest accrued to the Repurchase Date, as provided in the Indenture.

Dated:

**Signature(s)**

Signature(s) must be guaranteed by an  
Eligible Guarantor Institution with  
membership in an approved signature  
guarantee program pursuant to Rule  
17Ad-15 under the Securities Exchange  
Act of 1934.

**Signature Guaranteed**

Principal amount to be repurchased (at least \$1,000 or an integral multiple \$1,000 in excess thereof): \_\_\_\_\_

Remaining principal amount following such repurchase (not less than \$1,000):

NOTICE: The signature to the foregoing Election must correspond to the Name as written upon the face of this Note in every particular, without alteration or any change whatsoever.

SECTION 2.5 Form of Conversion Notice.



The undersigned Holder of this Note hereby irrevocably exercises the option to convert this Note, or any portion of the principal amount hereof (which is \$1,000 or an integral multiple of \$1,000 in excess thereof, PROVIDED that the unconverted portion of such principal amount is at least \$1,000 or any integral multiple of \$1,000 in excess thereof) below designated, into shares of Common Stock in accordance with the terms of the Indenture referred to in this Note, and directs that such shares, together with a check in payment for any fractional share and any Notes representing any unconverted principal amount hereof, be delivered to and be registered in the name of the undersigned unless a different name has been indicated below. If shares of Common Stock or Notes are to be registered in the name of a Person other than the undersigned, (a) the undersigned will pay all applicable transfer taxes payable with respect thereto and (b) signature(s) must be guaranteed by an Eligible Guarantor Institution with membership in an approved signature guarantee program pursuant to Rule 17Ad-15 under the Securities Exchange Act of 1934. Any amount required to be paid by the undersigned on account of interest accompanies this Note.

Dated: \_\_\_\_\_

\_\_\_\_\_  
Signature(s)

If shares or Notes are to be registered in the name of a Person other than the Holder, please print such Person's name and address:

**Name**

**Address**

Social Security or other Identification  
Number, if any

**Signature Guaranteed**

If only a portion of the Notes is to be converted, please indicate:

- 1. Principal amount to be converted: \$\_\_\_\_\_
- 2. Principal amount and denomination of Notes representing unconverted principal amount to be issued: \$\_\_\_\_\_

(\$1,000 or any integral multiple of \$1,000 in excess thereof, provided that the unconverted portion of such principal amount is at least \$1,000 or any integral multiple of \$1,000 in excess thereof)

SECTION 2.6 Form of Assignment.

For value received \_\_\_\_\_ hereby sell(s), assign(s) and transfer(s) unto \_\_\_\_\_ (Please insert social security or other identifying number of assignee) the within Note, and hereby irrevocably constitutes and appoints \_\_\_\_\_ as attorney to transfer the said Note on the books of the Company, with full power of substitution in the premises.

Dated: \_\_\_\_\_

\_\_\_\_\_  
Signature(s)

Signature(s) must be guaranteed by an Eligible Guarantor Institution with membership in an approved signature guarantee program pursuant to Rule 17Ad-15 under the Securities Exchange Act of 1934.

Signature Guaranteed

SECTION 2.7 Securities Issuable in Global Form.

The Securities initially will be represented by one or more notes in registered, global form without interest coupons, referred to as global notes. Any such Security shall represent Outstanding Securities and may provide that it shall represent the aggregate amount of Outstanding Securities and that the aggregate amount of Outstanding Securities may from time to time be increased or decreased to reflect exchanges. Any endorsement of a Security in global form to reflect the amount, or any increase or decrease in the amount, of Outstanding Securities represented thereby shall be made by the Trustee in such manner and upon instructions given by such Person or Persons as shall be specified therein or in the Company Order to be delivered to the Trustee pursuant to Section 3.3 or 3.4. Subject to the provisions of Section 3.3 and, if applicable, Section 3.4, the Trustee shall deliver and redeliver any Security in permanent global form in the manner and upon instructions given by the Person or Persons specified therein or in the applicable Company Order. If a Company Order pursuant to Section 3.3 or 3.4 has been, or simultaneously is, delivered, any instructions by the Company with respect to endorsement or delivery or redelivery of a Security in global form shall be in writing but need not comply with Section 1.2 and need not be accompanied by an Opinion of Counsel.

The provisions of the last sentence of Section 3.3 shall apply to any Security represented by a Security in global form if such Security was never issued and sold by the Company and the Company delivers to the Trustee the Security in global form together with written instructions

(which need not comply with Section 1.2 and need not be accompanied by an Opinion of Counsel) with regard to the reduction in the principal amount of Securities represented thereby, together with the written statement contemplated by the last sentence of Section 3.3.

Notwithstanding the provisions of Section 3.7, payment of principal of (and premium, if any) and interest on any Security in permanent global form shall be made to the Person or Persons specified therein.

### **ARTICLE III**

#### **THE SECURITIES**

##### **SECTION 3.1 Title and Terms.**

The aggregate principal amount of Securities which may be authenticated and delivered under this Indenture is unlimited.

The Securities shall be known and designated as the "5 1/4% Convertible Subordinated Notes due 2006" of the Company. Their Stated Maturity shall be November 15, 2006 and they shall bear interest on their principal amount from November 10, 1999, payable semi-annually in arrears on May 15 and November 15 in each year, commencing May 15, 2000, at the rate of 5 1/4% per annum until the principal thereof is due and at the rate of 7 1/4% per annum on any overdue principal and, to the extent permitted by law, on any overdue interest; provided, however, that payments shall only be made on a Business Day as provided in Section 1.13.

The principal of, premium, if any, and interest on the Securities shall be payable as provided in the form of Securities set forth in Section 2.2, and the Repurchase Price, whether payable in cash or in shares of Common Stock, shall be payable at such places as are identified in the Company Notice given pursuant to Section 12.3 (any city in which any Paying Agent is located being herein called a "Place of Payment").

The Securities shall be redeemable at the option of the Company at any time on or after November 19, 2002, in whole or in part, subject to the conditions and as otherwise provided in Article XI and in the form of Security set forth in Section 2.2.

The Securities shall be subject to repurchase by the Company at the option of the Holders as provided in Article XII.

The Securities shall be subordinated in right of payment to Senior Debt of the Company as provided in Article XIII.

The Securities shall be convertible as provided in Article XIV (any city in which any Conversion Agent is located being herein called a "Place of Conversion").

##### **SECTION 3.2 Denominations.**

The Securities shall be issuable in minimum denominations of \$1,000 and any integral multiple thereof.

### SECTION 3.3 Execution, Authentication, Delivery and Dating.

The Securities shall be executed by the Company's Chairman of the Board, its Chief Executive Officer its President or one of its Executive Vice Presidents, and attested by its Chief Financial Officer or its Secretary. The signature of any of these officers on the Securities may be manual or facsimile signatures and may be imprinted or otherwise reproduced on the Securities.

Securities bearing the manual or facsimile signatures of individuals who were at any time the proper officers of the Company shall bind the Company, notwithstanding that such individuals or any of them have ceased to hold such offices prior to the authentication and delivery of such Securities did not hold such offices at the date of such Securities.

At any time and from time to time after the execution and delivery of this Indenture, the Company may deliver the Securities, executed by the Company to the Trustee for authentication, together with a Company Order for the authentication and delivery of such Securities, and the Trustee in accordance with the Company Order shall authenticate and deliver such Securities.

Each Security shall be dated the date of its authentication.

No Security shall be entitled to any benefit under this Indenture or be valid or obligatory for any purpose unless there appears on such Security a certificate of authentication substantially in the form provided for herein duly executed by the Trustee by manual signature of an authorized signatory, and such certificate upon any Security shall be conclusive evidence, and the only evidence, that such Security has been duly authenticated and delivered hereunder and is entitled to the benefits of this Indenture. Notwithstanding the foregoing, if any Security shall have been authenticated and delivered hereunder but never issued and sold by the Company, and the Company shall deliver such Security to the Trustee for cancellation as provided in Section 3.9 together with a written statement (which need not comply with Section 1.2 and need not be accompanied by an Opinion of Counsel) stating that such Security has never been issued and sold by the Company, for all purposes of this Indenture such Security shall be deemed never to have been authenticated and delivered hereunder and shall never be entitled to the benefits of this Indenture.

### SECTION 3.4 Global Securities.

Any Global Security shall be exchangeable only as provided in this paragraph. If the depositary for any permanent Global Security is DTC, then, unless the terms of such Global Security expressly permit such Global Security to be exchanged in whole or in part for definitive Securities, a Global Security may be transferred, in whole but not in part, only to a nominee of DTC, or by a nominee of DTC to DTC, or to a successor to DTC for such Global Security selected or approved by the Company or to a nominee of such successor to DTC. If at any time

DTC notifies the Company that it is unwilling or unable to continue as depository for the applicable Global Security or Securities or if at any time DTC ceases to be a clearing agency registered under the Exchange Act if so required by applicable law or regulation, the Company shall appoint a successor depository with respect to such Global Security or Securities. If (x) a successor depository for such Global Security or Securities is not appointed by the Company within 90 days after the Company receives such notice or becomes aware of such unwillingness, inability or ineligibility, (y) an Event of Default has occurred and is continuing or any event which after notice or lapse of time or both would be an Event of Default with respect to such Security or Securities, or (z) the Company, in its sole discretion, determines at any time that all Outstanding Securities (but not less than all) issued or issuable in the form of one or more Global Securities shall no longer be represented by such Global Security or Securities, then the Company shall execute, and the Trustee shall authenticate and deliver definitive Securities of like rank, tenor and terms in definitive form in an aggregate principal amount equal to the principal amount of such Global Security or Securities. If any beneficial owner of an interest in a Global Security is otherwise entitled to exchange such interest for Securities of like tenor and principal amount of another authorized form and denomination, as specified as contemplated by Section 3.1 and provided that any applicable notice provided in the Global Security shall have been given, then without unnecessary delay but in any event not later than the earliest date on which such interest may be so exchanged, the Company shall execute, and the Trustee shall authenticate and deliver definitive Securities in aggregate principal amount equal to the principal amount of such beneficial owner's interest in such Global Security. On or after the earliest date on which such interests may be so exchanged, such Global Security shall be surrendered for exchange by DTC or such other depository as shall be specified in the Company Order with respect thereto to the Trustee, as the Company's agent for such purpose; provided, however, that no such exchanges may occur during a period beginning at the opening of business 15 days before selection of the Securities to be redeemed under Section 11.3 and ending at the close of business on the day of the mailing of the relevant notice of redemption. If a Security is issued in exchange for any portion of a Global Security after the close of business at the office or agency where such exchange occurs on (i) any Regular Record Date and before the opening of business at such office or agency on the relevant Interest Payment Date, or (ii) any special Record Date and the opening of business at such office or agency on the related proposed date for payment of Defaulted Interest, interest or Defaulted Interest, as the case may be, will not be payable on such Interest Payment Date or proposed date for payment, as the case may be, in respect of such Security, but will be payable on such Interest Payment Date or proposed date for payment, as the case may be, only to the Person to whom interest in respect of such portion of such Global Security is payable in accordance with the provisions of this Indenture.

#### SECTION 3.5 Registration, Registration of Transfer and Exchange.

The Company shall cause to be kept at the Corporate Trust Office of the Trustee or in any office or agency of the Company in a Place of Payment a register of the Securities (the register maintained in such office or in any such office or agency of the Company in a Place of Payment being herein sometimes referred to as the "Security Register") in which, subject to such reasonable regulations as it may prescribe, the Company shall provide for the registration of Securities and of transfers of Securities. The Security Register shall be in written form or any

other form capable of being converted into written form within a reasonable time. The Trustee, at its Corporate Trust Office, is hereby initially appointed "Security Registrar" for the purpose of registering Securities and transfers of Securities on such Security Register as herein provided. In the event that the Trustee shall cease to be Security Registrar, it shall have the right to examine the Security Register at all reasonable times.

Subject to the provisions of this Section 3.5, upon surrender for registration of transfer of any Security at any office or agency of the Company in a Place of Payment, the Company shall execute, and the Trustee shall authenticate and deliver, in the name of the designated transferee or transferees, one or more new Securities of any authorized denominations and of a like aggregate principal amount, bearing a number not contemporaneously outstanding, and containing identical terms and provisions.

Subject to the provisions of this Section 3.5, at the option of the Holder, Securities may be exchanged for other Securities, of any authorized denomination or denominations and of a like aggregate principal amount, containing identical terms and provisions, upon surrender of the Securities to be exchanged at any such office or agency. Whenever any such Securities are so surrendered for exchange, the Company shall execute, and the Trustee shall authenticate and deliver, the Securities which the Holder making the exchange is entitled to receive.

All Securities issued upon any registration of transfer or exchange of Securities shall be the valid obligations of the Company, evidencing the same debt, and entitled to the same benefits under this Indenture, as the Securities surrendered upon such registration of transfer or exchange.

Every Security presented or surrendered for registration of transfer or for exchange or redemption shall (if so required by the Company or the Security Registrar) be duly endorsed, or be accompanied by a written instrument of transfer in form satisfactory to the Company and the Security Registrar, duly executed by the Holder thereof or such Holder's attorney duly authorized in writing.

No service charge shall be made for any registration of transfer or exchange of Securities, but the Company may require payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in connection with any registration of transfer or exchange of Securities, other than exchanges pursuant to Sections 9.6, 11.8, 12.3(e), or any supplemental indenture not involving any transfer and other than any stamp and similar duties, if any, which may be imposed in connection with any such transfer or exchange by the United States or any political subdivision thereof or taxing authority thereof or therein, which shall be paid by the Company.

The Company, or the Trustee, as applicable, shall not be required (i) to issue, register the transfer of or exchange any Security if such Security may be among those selected for redemption during a period beginning at the opening of business 15 days before selection of the Securities to be redeemed under

Section 11.3 and ending at the close of business on the day of the mailing of the relevant notice of redemption, or (ii) to register the transfer of or exchange any Security so selected for redemption in whole or in part, except, in the case of any Security to be

redeemed in part, the portion thereof not to be redeemed, or (iii) to issue, register the transfer of or exchange any Security which has been surrendered for repurchase at the option of the Holder, except the portion, if any, of such Security not to be so repaid.

#### SECTION 3.6 Mutilated, Destroyed, Lost and Stolen Securities.

If any mutilated Security is surrendered to the Trustee or the Company, together with, in proper cases, such security or indemnity as may be required by the Company or the Trustee to save each of them or any agent of either of them harmless, the Company shall execute and the Trustee shall authenticate and deliver in exchange therefor a new Security of the same principal amount, containing identical terms and provisions and bearing a number not contemporaneously outstanding.

If there shall be delivered to the Company and to the Trustee (i) evidence to their satisfaction of the destruction, loss or theft of any Security, and (ii) such security or indemnity as may be required by them to save each of them and any agent of either of them harmless, then, in the absence of notice to the Company or the Trustee that such Security has been acquired by a bona fide purchaser, the Company shall execute and upon its request the Trustee shall authenticate and deliver, in lieu of any such destroyed, lost or stolen Security, a new Security of the same principal amount, containing identical terms and provisions and bearing a number not contemporaneously outstanding.

Notwithstanding the provisions of the previous two paragraphs, in case any such mutilated, destroyed, lost or stolen Security has become or is about to become due and payable, the Company in its discretion may pay such Security, instead of issuing a new Security.

Upon the issuance of any new Security under this Section, the Company may require the payment of a sum sufficient to cover any tax or other governmental charge (other than any stamp and similar duties, if any, which may be imposed in connection therewith by the United States or any political subdivision thereof or taxing authority thereof or therein, which shall be paid by the Company) that may be imposed in relation thereto and any other expenses (including the fees and expenses of the Trustee) connected therewith.

Every new Security issued pursuant to this Section in lieu of any destroyed, lost or stolen Security, shall constitute an original additional contractual obligation of the Company, whether or not the destroyed, lost or stolen Security shall be at any time enforceable by anyone, and shall be entitled to all the benefits of this Indenture equally and proportionately with any and all other Securities duly issued hereunder.

The provisions of this Section are exclusive and shall preclude (to the extent lawful) all other rights and remedies with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities.

#### SECTION 3.7 Payment of Interest; Interest Rights Preserved.

Interest on any Security that is payable, and is punctually paid or duly provided for, on any Interest Payment Date shall be paid to the Person in whose name that Security (or one or more Predecessor Securities) is registered at the close of business on the Regular Record Date for such interest at the office or agency of the Company maintained for such purpose pursuant to Section 10.2; provided, however, that, except as otherwise provided below with respect to Global Securities, each installment of interest on any Security may at the Company's option be paid by (i) mailing a check for such interest, payable to or upon the written order of the Person entitled thereto pursuant to Section 3.8, to the address of such Person as it appears on the Security Register or (ii) upon written order of the Person entitled thereto pursuant to Section 3.8 setting forth instructions not later than the Regular Record Date for such interest, by transfer to an account maintained by the payee located inside the United States.

Every Global Security will provide that interest, if any, payable on any Interest Payment Date will be paid to DTC for the purpose of permitting DTC to credit the interest received by it in respect of such Global Security to the accounts of the beneficial owners thereof and that all payments with respect to such Global Security shall be made by wire transfer of immediately available funds.

Any interest on any Security that is payable, but is not punctually paid or duly provided for, on any Interest Payment Date (herein called "Defaulted Interest") shall forthwith cease to be payable to the registered Holder thereof on the relevant Regular Record Date by virtue of having been such Holder, and such Defaulted Interest may be paid by the Company at its election in each case, as provided in clause (1) or (2) below:

(1 The Company may elect to make payment of any Defaulted Interest to the Persons in whose names the Securities (or their respective Predecessor Securities) are registered at the close of business on a special Record Date for the payment of such Defaulted Interest, which shall be fixed in the following manner. The Company shall notify the Trustee in writing of the amount of Defaulted Interest proposed to be paid on each Security and the date of the proposed payment (which shall not be less than 20 days after such notice is received by the Trustee), and at the same time the Company shall deposit with the Trustee an amount of money equal to the aggregate amount proposed to be paid in respect of such Defaulted Interest or shall make arrangements satisfactory to the Trustee for such deposit on or prior to the date of the proposed payment, such money when deposited to be held in trust for the benefit of the Persons entitled to such Defaulted Interest as in this clause provided. Thereupon the Trustee shall fix a Special Record Date for the payment of such Defaulted Interest which shall be not more than 15 days and not less than 10 days prior to the date of the proposed payment and not less than 10 days after the receipt by the Trustee of the notice of the proposed payment. The Trustee shall promptly notify the Company of such Special Record Date and, in the name and at the expense of the Company, shall cause notice of the proposed payment of such Defaulted Interest and the Special Record Date therefor to be mailed, first-class postage prepaid, to each Holder of Securities at such Holder's address as it appears in the Security Register not less than 10 days prior to such Special Record Date. If the sole registered Holder of the Securities is not DTC, then the Trustee may, in its discretion, in the name and at the expense of the Company, cause a similar notice to be published at least once in an Authorized Newspaper in each place of payment, but such



publications shall not be a condition precedent to the establishment of such Special Record Date. Notice of the proposed payment of such Defaulted Interest and the Special Record Date therefor having been mailed as aforesaid, such Defaulted Interest shall be paid to the Persons in whose names the Securities (or their respective Predecessor Securities) are registered at the close of business on such Special Record Date and shall no longer be payable pursuant to the following clause (2).

(2) The Company may make payment of any Defaulted Interest on the Securities in any other lawful manner not inconsistent with the requirements of any automated quotation system or securities exchange on which such Securities may be listed or quoted, and upon such notice as may be required by such quotation system or exchange, if, after notice given by the Company to the Trustee of the proposed payment pursuant to this clause, such manner of payment shall be deemed practicable by the Trustee.

Subject to the foregoing provisions of this Section and Section 3.5, each Security delivered under this Indenture upon registration of transfer of or in exchange for or in lieu of any other Security shall carry the rights to interest accrued and unpaid, and to accrue, which were carried by such other Security.

In the case of any Security which is converted after any Regular Record Date and prior to the next succeeding Interest Payment Date (other than any Security whose Maturity is prior to such Interest Payment Date), interest whose Stated Maturity is on such Interest Payment Date shall be payable on such Interest Payment Date notwithstanding such conversion, and such interest (whether or not punctually paid or duly provided for) shall be paid to the Person in whose name that Security (or one or more Predecessor Securities) is registered at the close of business on such Regular Record Date.

#### SECTION 3.8 Persons Deemed Owners.

Prior to due presentment of a Security for registration of transfer, the Company, the Trustee and any agent of the Company or the Trustee may treat the Person in whose name such Security is registered as the owner of such Security for the purpose of receiving payment of principal of (and premium, if any), and (subject to Sections 3.5 and 3.7) interest on, such Security and for all other purposes whatsoever, whether or not such Security be overdue, and none of the Company, the Trustee or any agent of the Company or the Trustee shall be affected by notice to the contrary.

None of the Company, the Trustee, any Paying Agent or the Security Registrar will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests of a Global Security or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

Notwithstanding the foregoing, with respect to any Global Security, nothing herein shall (a) prevent the Company, the Trustee, or any agent of the Company, or the Trustee, from giving effect to any written certification or other authorization furnished by any depositary, as a Holder, with respect to such Global Security or (b) impair, as between such depositary and owners of

beneficial interests in such Global Security, the operation of customary practices governing the exercise of the rights of such depository (or its nominee) as Holder of such Global Security.

#### SECTION 3.9 Cancellation.

All Securities surrendered for payment, redemption or repurchase at the option of the Holder, registration of transfer or exchange or conversion shall, if surrendered to any Person other than the Trustee, be delivered to the Trustee, and any such Securities and Securities surrendered directly to the Trustee for any such purpose shall be promptly canceled by it. The Company may at any time deliver to the Trustee for cancellation any Securities previously authenticated and delivered hereunder which the Company may have acquired in any manner whatsoever, and may deliver to the Trustee (or to any other Person for delivery to the Trustee) for cancellation any Securities previously authenticated hereunder which the Company has not issued and sold, and all Securities so delivered shall be promptly canceled by the Trustee. If the Company shall so acquire any of the Securities, however, such acquisition shall not operate as a redemption or satisfaction of the indebtedness represented by such Securities unless and until the same are surrendered to the Trustee for cancellation. No Securities shall be authenticated in lieu of or in exchange for any Securities canceled as provided in this Section, except as expressly permitted by this Indenture. All canceled Securities held by the Trustee shall be returned to the Company or disposed of by the Trustee in accordance with its customary practices as directed by a Company Order.

#### SECTION 3.10 Computation of Interest.

Interest on the Securities (including, without limitation, any interest on overdue interest) shall be computed on the basis of a 360-day year consisting of twelve 30-day months.

#### SECTION 3.11 CUSIP Numbers.

The Company in issuing the Securities may use CUSIP numbers (if then generally in use) in addition to serial numbers, and, if so, the Trustee shall use CUSIP numbers in addition to serial numbers in notices of redemption as a convenience to Holders; provided that any such notice may state that no representation is made as to the correctness of such numbers either as printed on the Securities or as contained in any notice of a redemption and that reliance may be placed only on the other identification numbers printed on the Securities, and any such redemption shall not be affected by any defect in or omission of such numbers. The Company will promptly notify the Trustee of any change in the CUSIP numbers.

## ARTICLE IV

### SATISFACTION AND DISCHARGE

#### SECTION 4.1 Satisfaction and Discharge of Indenture.

This Indenture shall upon Company Request cease to be of further effect (except as to (i) rights of registration of transfer and exchange, right of conversion and the Company's right of optional redemption, (ii) substitution of apparently mutilated, destroyed, lost or stolen Securities, (iii) rights of Holders to receive payment of principal of and premium, if any, and interest (including, without limitation, interest on overdue interest) on the Securities,

(iv) rights, obligations and immunities of the Trustee under this Indenture, (v) rights of the Holders as beneficiaries of this Indenture with respect to any property deposited with the Trustee payable to all or any of them) and the Trustee, upon receipt of a Company Order, and at the expense of the Company, shall execute proper instruments acknowledging satisfaction and discharge of this Indenture when,

(1) either

(A) all Securities of theretofore authenticated and delivered (other than (i) Securities which have been destroyed, lost or stolen and which have been replaced or paid as provided in Section 3.6, and (ii) Securities for whose payment money has theretofore been deposited in trust or segregated and held in trust by the Company and thereafter repaid to the Company or discharged from such trust, as provided in Section 10.3) have been delivered to the Trustee for cancellation; or

(B) all Securities not theretofore delivered to the Trustee for cancellation

(i) have become due and payable, or

(ii) will become due and payable at their Stated Maturity within one year, or

(iii) if redeemable at the option of the Company, are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption by the Trustee in the name, and at the expense of the Company,

and the Company, in the case of (i), (ii) or (iii) above, has irrevocably deposited or caused to be deposited with the Trustee as trust funds (immediately available to the Holders in the case of clause (a)) in trust for the purpose an amount in cash sufficient to pay and discharge the entire indebtedness on such Securities not theretofore delivered to the Trustee for cancellation, for principal (and premium, if any) and interest (including, without limitation, interest on overdue interest) to the date of such deposit (in the case of Securities which have become due and payable) or to the Stated Maturity or Redemption Date, as the case may be;

(2) the Company has paid or caused to be paid all other sums payable hereunder by the Company, including, without limitation, the payment of all fees and expenses of the Trustee, its agents and counsel; and

(3) the Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the satisfaction and discharge of this Indenture have been complied with; and

(4) the Trustee shall have received such other documents and assurances as the Trustee shall have reasonably requested.

Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company to the Trustee and any predecessor Trustee under

Section 6.6, the obligations of the Company to any Authenticating Agent under

Section 6.11 and, if money shall have been deposited with and held by the Trustee pursuant to subclause (B) of clause (1) of this Section, the obligations of the Trustee under Section 4.2 and the last paragraph of Section 10.3 shall survive such satisfaction and discharge.

#### SECTION 4.2 Application of Trust Funds.

Subject to the provisions of the last paragraph of Section 10.3, all money deposited with the Trustee pursuant to Section 4.1 shall be held in trust and applied by it, in accordance with the provisions of the Securities and this Indenture, to the payment, either directly or through any Paying Agent (including the Company acting as its own Paying Agent) as the Trustee may determine, to the Persons entitled thereto, of the principal (and premium, if any), and any interest for whose payment such money has been deposited with or received by the Trustee, but such money need not be segregated from other funds except to the extent required by law.

### ARTICLE V

#### REMEDIES

##### SECTION 5.1 Events of Default.

"Event of Default," wherever used herein, means any one of the following events (whatever the reason for such Event of Default and whether or not it shall be voluntary or involuntary or be effected by operation of law or pursuant to any judgment, decree or order of any court or any order, rule or regulation of any administrative or governmental body):

(1) default in the payment of any interest on any Security when such interest becomes due and payable, and continuance of such default for a period of 30 days, whether or not such payment is prohibited by the subordination provisions contained in Article XIII hereof; or

(2) default in the payment of the principal of (or premium, if any, on) any Security when it becomes due and payable at its Maturity, whether or not such payment is prohibited by the subordination provisions contained in Article XIII hereof; or

(3) default in the performance, or breach, of any covenant or warranty of the Company in this Indenture (other than a covenant or warranty a default in whose performance or whose breach is elsewhere in this Section specifically dealt with), and continuance of such default or breach for a period of 60 days after there has been given, by registered or certified mail to the Company, by the Trustee or to the Company, and the Trustee by the Holders of at least 25% in principal amount of the Outstanding Securities a written notice specifying such default or breach and requiring it to be remedied and stating that such notice is a "Notice of Default" hereunder; or

(4) (a) a default under any evidence of Debt of the Company or RF Power under any mortgage, indenture, agreement or other instrument of the Company or RF Power under which there may be issued or by which there may be secured any Debt of the Company or by any Subsidiary, whether such Debt now exists or shall hereafter be created, which default shall constitute a failure to pay an aggregate amount of principal, premium or interest exceeding \$10,000,000 when due and payable after the expiration of any applicable grace period with respect thereto and (b) any event of default as defined in any mortgage, indenture, agreement or other instrument of the Company or RF Power evidencing Debt in an aggregate amount of principal, premium or interest exceeding \$10,000,000 becoming or being declared due and payable before the date on which it would otherwise have become due and payable, without such Debt having been discharged, or such acceleration having been annulled, within 30 days after there has been given, by registered or certified mail to the Company, by the Trustee or to the Company and the Trustee by the Holders of at least 25% in principal amount of the Outstanding Securities, a written notice specifying such default or breach and requiring it to be remedied and stating that such notice is a "Notice of Default" hereunder; or

(5) the entry by a court having jurisdiction in the premises of (a) a decree or order for relief in respect of the Company or RF Power in an involuntary case or proceeding under any applicable Federal or State bankruptcy, insolvency, reorganization or other similar law or (b) a decree or order adjudging the Company or RF Power a bankrupt or insolvent, or approving as properly filed a petition seeking reorganization, arrangement, adjustment or composition of or in respect of the Company or RF Power under any applicable Federal or State law, or appointing a custodian, receiver, liquidator, assignee, trustee, sequestrator or other similar official of the Company or RF Power or of any substantial part of the property of either, or ordering the winding up or liquidation of its affairs, and the continuance of any such decree or order for relief or any such other decree or order unstayed and in effect for a period of 60 consecutive days; or

(6) the commencement by the Company or RF Power of a voluntary case or proceeding under any applicable Federal or State bankruptcy, insolvency, reorganization or other similar law or of any other case or proceeding to be adjudicated a bankrupt or insolvent, or the consent by either to the entry of a decree or order for relief in respect of the Company or RF Power in an involuntary case or proceeding under any applicable Federal or State bankruptcy,

insolvency, reorganization or other similar law or to the commencement of any bankruptcy or insolvency case or proceeding against either, or the filing by either of a petition or answer or consent seeking reorganization or similar relief under any applicable Federal or State law, or the consent by either to the filing of such petition or to the appointment of or taking possession by a custodian, receiver, liquidator, assignee, trustee, sequestrator or other similar official of the Company or RF Power or of any substantial part of the property of either, or the making by either of an assignment for the benefit of creditors, or the admission by either in writing of its inability to pay its debts generally as they become due, or the taking of corporate action by the Company or RF Power in furtherance of any such action; or

(7) failure by the Company to give a Company Notice in accordance within Article XII hereof, whether or not such notice is prohibited by the subordination provisions contained in Article XIII hereof.

#### SECTION 5.2 Acceleration of Maturity; Rescission and Annulment.

If an Event of Default (other than an Event of Default specified in Sections 5.1(5) or 5.1(6)) occurs and is continuing, then and in every such case the Trustee or the Holders of not less than 25% in principal amount of the Outstanding Securities may declare the principal and premium (if any) of all the Securities to be due and payable immediately, by a notice in writing to the Company, (and to the Trustee if given by the Holders), and upon any such declaration such principal and premium (if any) or specified portion thereof shall become immediately due and payable. If an Event of Default specified in Sections 5.1(5) or 5.1(6) occurs, the principal of, and premium, if any, and accrued interest on all Securities shall, subject to the provisions of Article XIII or the subordination provisions of any supplemental indenture, ipso facto become immediately due and payable without any declaration or other Act of the Holders or any act on the part of the Trustee.

At any time after such a declaration of acceleration has been made and before a judgment or decree for payment of the money due has been obtained by the Trustee as hereinafter in this Article provided, the Holders of a majority in principal amount of the Outstanding Securities, by written notice to the Company and the Trustee, may rescind and annul such declaration and its consequences if:

(1) the Company has paid or deposited with the Trustee a sum sufficient to pay:

(a) all overdue interest on all Outstanding Securities,

(b) the principal of (and premium, if any, on) any Outstanding Securities which have become due otherwise than by such declaration of acceleration and interest thereon at the rate or rates borne by or provided for in such Securities,

(c) to the extent that payment of such interest is lawful, interest upon overdue interest at the rate or rates borne by or provided for in such Securities, and

(d) all sums paid or advanced by the Trustee hereunder and the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel;

(2) all Events of Default, other than the nonpayment of the principal of (or premium, if any, on) or interest on Securities which have become due solely by such declaration of acceleration, have been cured or waived as provided in Section 5.13; and

(3) such rescission and annulment would not conflict with any judgment or decree issued in appropriate judicial proceedings regarding the payment by the Trustee to the Holders of the amounts referred to in Section 5.2(1).

No such rescission and annulment shall affect any subsequent default or Event of Default or impair any right consequent thereon.

#### SECTION 5.3 Collection of Indebtedness and Suits for Enforcement by Trustee.

The Company covenants that if:

(1) default is made in the payment of any installment of interest on any Security when such interest becomes due and payable and such default continues for a period of 30 days, or

(2) default is made in the payment of the principal of (or premium, if any, on) any Security at its Maturity, then the Company will, upon demand of the Trustee, pay to the Trustee, for the benefit of the Holders of such Securities, the whole amount then due and payable on such Securities for principal (and premium, if any) and interest, with interest upon any overdue principal (and premium, if any) and, to the extent that payment of such interest shall be legally enforceable, upon any overdue installments of interest, at the rate or rates borne by or provided for in such Securities, and, in addition thereto, such further amount as shall be sufficient to cover the costs and expenses of collection, including the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel.

If the Company fails to pay such amounts forthwith upon such demand, the Trustee, in its own name and as trustee of an express trust, may institute a judicial proceeding for the collection of the sums so due and unpaid, and may prosecute such proceeding to judgment or final decree, and may enforce the same against the Company, or any other obligor upon such Securities and collect the moneys adjudged or decreed to be payable in the manner provided by law out of the property of the Company or any other obligor upon such Securities, wherever situated.

If an Event of Default occurs and is continuing, the Trustee may in its discretion proceed to protect and enforce its rights and the rights of the Holders of Securities by such appropriate judicial proceedings as the Trustee shall deem most effectual to protect and enforce any such rights, whether for the specific enforcement of any covenant or agreement in this Indenture or in aid of the exercise of any power granted herein, or to enforce any other proper remedy.

#### SECTION 5.4 Trustee May File Proofs of Claim.

In case of the pendency of any receivership, insolvency, liquidation, bankruptcy, reorganization, arrangement, adjustment, composition or other judicial proceeding relative to the Company or any other obligor upon the Securities or the property of the Company or of such other obligor or their creditors, the Trustee (irrespective of whether the principal of the Securities shall then be due and payable as therein expressed or by declaration or otherwise and irrespective of whether the Trustee shall have made any demand on the Company for the payment of overdue principal or premium, if any, or interest) shall be entitled and empowered, by intervention in such proceeding or otherwise:

(i) to file and prove a claim for the whole amount, or such lesser amount as may be provided for in the Securities, of principal (and premium, if any) and interest owing and unpaid in respect of the Securities and take such other actions and to file such other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel) and of the Holders allowed in such judicial proceeding, and

(ii) to collect and receive any moneys or other property payable or deliverable on any such claims and to distribute the same; and any custodian, receiver, assignee, trustee, liquidator, sequestrator or other similar official in any such judicial proceeding is hereby authorized by each Holder of Securities to make such payments to the Trustee and, in the event that the Trustee shall consent to the making of such payments directly to the Holders, to pay to the Trustee any amount due to it for the reasonable compensation, expenses, disbursements and advances of the Trustee and any predecessor Trustee, their agents and counsel, and any other amounts due the Trustee or any predecessor Trustee under Section 6.6.

Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Holder of a Security any plan of reorganization, arrangement, adjustment or composition affecting the Securities or the rights of any Holder thereof, or to authorize the Trustee to vote in respect of the claim of any Holder of a Security in any such proceeding; provided, however, that the Trustee may, on behalf of such Holders, vote for the election of a trustee in bankruptcy or similar procedures.

#### SECTION 5.5 Trustee May Enforce Claims Without Possession of Securities.

All rights of action and claims under this Indenture or any of the Securities may be prosecuted and enforced by the Trustee without the possession of any of the Securities or the production thereof in any proceeding relating thereto, and any such proceeding instituted by the Trustee shall be brought in its own name as trustee of an express trust, and any recovery of judgment shall, after provision for the payment of the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel and any other amounts due the Trustee under Section 6.6, be for the ratable benefit of the Holders of the Securities in respect of which such judgment has been recovered.



## SECTION 5.6 Application of Money Collected.

Any money collected by the Trustee pursuant to this Article shall be applied in the following order, at the date or dates fixed by the Trustee and, in case of the distribution of such money on account of principal (or premium, if any) or interest, upon presentation of the Securities, and the notation thereon of the payment if only partially paid and upon surrender thereof if fully paid:

FIRST: To the payment of all amounts due the Trustee under Section 6.6;

SECOND: To the payment of the amounts then due and unpaid upon the Securities for principal (and premium, if any) and interest payable, in respect of which or for the benefit of which such money has been collected, ratably, without preference or priority of any kind, according to the aggregate amounts due and payable on such Securities for principal (and premium, if any) and interest, respectively; and

THIRD: To the payment of the remainder, if any, to the Company or any other Person or Persons entitled thereto.

## SECTION 5.7 Limitation on Suits.

No Holder of any Security shall have any right to institute any proceeding, judicial or otherwise, with respect to this Indenture, or for the appointment of a receiver or trustee, or for any other remedy hereunder, unless:

- (1) such Holder has previously given written notice to the Trustee of a continuing Event of Default;
- (2) the Holders of not less than 25% in principal amount of the Outstanding Securities shall have made written request to the Trustee to institute proceedings in respect of such Event of Default in its own name as Trustee hereunder;
- (3) such Holder or Holders have offered and, if requested, provided to the Trustee indemnity reasonably satisfactory to the Trustee against the costs, expenses and liabilities to be incurred in compliance with such request;
- (4) the Trustee for 60 days after its receipt of such notice, request and offer and, if requested, the provision of indemnity, has failed to institute any such proceeding; and
- (5) no direction inconsistent with such written request has been given to the Trustee during such 60-day period by the Holders of a majority in principal amount of the Outstanding Securities;

it being understood and intended that no one or more of such Holders shall have any right in any manner whatever by virtue of, or by availing of, any provision of this Indenture to affect, disturb or prejudice the rights of any other of such Holders, or to obtain or to seek to obtain priority or

preference over any other of such Holders or to enforce any right under this Indenture, except in the manner herein provided and for the equal and ratable benefit of all such Holders.

#### SECTION 5.8 Unconditional Right of Holders to Receive Principal (Premium, if any) and Interest.

Notwithstanding any other provision in this Indenture, the Holder of any Security shall have the right which is absolute and unconditional to receive payment of the principal of (and premium, if any) and (subject to Sections 3.5 and 3.7) interest on such Security or payment on the respective Stated Maturity expressed in such Security (or, in the case of redemption or repurchase, on the Redemption Date or Repurchase Date, as may be the case) and to institute suit for the enforcement of any such payment, and such rights shall not be impaired without the consent of such Holder.

#### SECTION 5.9 Restoration of Rights and Remedies.

If the Trustee or any Holder of a Security has instituted any proceeding to enforce any right or remedy under this Indenture and such proceeding has been discontinued or abandoned for any reason, or has been determined adversely to the Trustee or to such Holder, then and in every such case, the Company, the Trustee and the Holders of Securities shall, subject to any determination in such proceeding, be restored severally and respectively to their former positions hereunder and thereafter all rights and remedies of the Trustee and the Holders shall continue as though no such proceeding had been instituted.

#### SECTION 5.10 Rights and Remedies Cumulative.

Except as otherwise provided with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities in the last paragraph of

Section 3.6, no right or remedy herein conferred upon or reserved to the Trustee or to the Holders of Securities is intended to be exclusive of any other right or remedy, and every right and remedy shall, to the extent permitted by law, be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other appropriate right or remedy.

#### SECTION 5.11 Delay or Omission Not Waiver.

No delay or omission of the Trustee or of any Holder of any Security to exercise any right or remedy accruing upon any Event of Default shall impair any such right or remedy or constitute a waiver of any such Event of Default or an acquiescence therein. Every right and remedy given by this Article or by law to the Trustee or to the Holders may be exercised from time to time, and as often as may be deemed expedient, by the Trustee or by the Holders of Securities, as the case may be.

#### SECTION 5.12 Control by Holders of Securities.

The Holders of not less than a majority in principal amount of the Outstanding Securities shall have the right to direct the time, method and place of conducting any proceeding for any remedy available to the Trustee or exercising any trust or power conferred on the Trustee, provided that

- (1) such direction shall not be in conflict with any rule of law or with this Indenture,
- (2) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction, and
- (3) the Trustee need not take any action which might involve it in personal liability or be unduly prejudicial to the Holders of Securities not joining therein.

In the event that the Trustee takes any action or follows any direction pursuant to this Indenture, the Trustee shall be entitled to indemnity reasonably satisfactory to it against any loss or expense caused by taking such action or following such direction.

#### SECTION 5.13 Waiver of Past Defaults.

The Holders of not less than a majority in aggregate principal amount of the Outstanding Securities may on behalf of the Holders of all the Securities waive any past default hereunder and its consequences, except a default:

- (1) in the payment of the principal of (or premium, if any) or interest on any Security, or
- (2) in respect of a covenant or provision hereof which under Article IX cannot be modified or amended without the consent of the Holder of each Outstanding Security.

The Company shall deliver to the Trustee an Officers' Certificate stating that the requisite percentage of Holders have consented to such waiver and attaching copies of such consents. Upon any such waiver, such default shall cease to exist, and any Event of Default arising therefrom shall be deemed to have been cured, for every purpose of this Indenture; but no such waiver shall extend to any subsequent or other default or Event of Default or impair any right consequent thereon.

#### SECTION 5.14 Waiver of Usury, Stay or Extension Laws.

The Company covenants (to the extent that it may lawfully do so) that it will not at any time insist upon, or plead, or in any manner whatsoever claim or take the benefit or advantage of, any usury, stay or extension law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture; and the Company (to the extent that it may lawfully do so) hereby expressly waives all benefit or advantage of any such law, and covenants that it will not hinder, delay or impede the execution of any power herein granted to

the Trustee, but will suffer and permit the execution of every such power as though no such law had been enacted.

#### SECTION 5.15 Undertaking for Costs.

All parties to this Indenture agree, and each Holder of any Security by such Holder's acceptance thereof shall be deemed to have agreed, that any court may in its discretion require, in any suit for the enforcement of any right or remedy under this Indenture, or in any suit against the Trustee for any action taken or omitted by it as Trustee, the filing by any party litigant in such suit of any undertaking to pay the costs of such suit, and that such court may in its discretion assess reasonable costs, including reasonable attorneys' fees and expenses, against any party litigant in such suit having due regard to the merits and good faith of the claims or defenses made by such party litigant; but the provisions of this Section shall not apply to any suit instituted by the Trustee, to any suit instituted by any Holder, or group of Holders, holding in the aggregate more than 10% in principal amount of the Outstanding Securities, or to any suit instituted by any Holder for the enforcement of the payment of the principal of (or premium, if any) or interest on any Security on or after the respective Stated Maturity expressed in such Security (or, in the case of redemption or repurchase, on or after the Redemption Date or Repurchase Date, as may be the case).

#### SECTION 5.16 Notice of Default or Event of Default.

The Company shall deliver to the Trustee, as soon as possible and in any event within 10 days after an officer of the Company becomes aware of the occurrence of any Event of Default or any event which, with notice or the lapse of time or both, would constitute an Event of Default, an Officers' Certificate setting forth the details of such Event of Default or default and the action which the Company proposes to take with respect thereto.

### **ARTICLE VI**

#### **THE TRUSTEE**

#### SECTION 6.1 Notice of Defaults.

Within 90 days after the occurrence of any default hereunder, the Trustee shall transmit in the manner and to the extent provided in Trust Indenture Act Section 313(c) and Section 1.6 hereof, notice of such default hereunder actually known to a Responsible Officer of the Trustee, unless such default shall have been cured or waived; provided, however, that, except in the case of a default in the payment of the principal of (or premium, if any) or interest on any Security, the Trustee shall be protected in withholding such notice if and so long as Responsible Officers of the Trustee in good faith determine that the withholding of such notice is in the interests of the Holders of the Securities; and provided further that in the case of any default or breach of the character specified in Section 5.1(3), no such notice to Holders shall be given until at least 60 days after the occurrence thereof. For the purpose of this Section, the term "default" means any event which is, or after notice or lapse of time or both would become, an Event of Default.

## SECTION 6.2 Certain Duties and Responsibilities.

(a) If an Event of Default has occurred and is continuing, the Trustee will exercise such of the rights and powers vested in it by this Indenture, and use the same degree of care and skill in such exercise, as a prudent man would exercise or use under the circumstances in the conduct of his own affairs.

(b) Except during the continuance of an Event of Default:

(i) the Trustee need perform only those duties that are specifically set forth in this Indenture and no others, and no implied covenants or obligations will be read into this Indenture against the Trustee; and

(ii) in the absence of bad faith on its part, the Trustee may conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture; but in the case of any such certificates or opinions which are specifically required to be furnished to the Trustee by any of the provisions hereof, the Trustee will examine the certificates and opinions to determine whether or not, on their face, they appear to conform to the requirements of this Indenture.

(c) No provision of this Indenture shall be construed to relieve the Trustee from liability for its own gross negligent action, its own gross negligent failure to act, or its own willful misconduct, except that:

(i) this paragraph (c) does not limit the effect of paragraph

(b) of this Section 6.2;

(ii) the Trustee will not be liable for any error of judgment made in good faith by a Responsible Officer, unless it is proved that the Trustee was grossly negligent in ascertaining the pertinent facts;

(iii) the Trustee will not be liable with respect to any action it takes or omits to take in good faith in accordance with the direction received by it pursuant to Section 6.2 of the Holders of a majority in principal amount of the Outstanding Securities relating to the time, method and place of conducting any proceeding for any remedy available to the Trustee, or when exercising any other trust or power conferred upon the Trustee under this Indenture; and

(iv) no provision of this Indenture shall require the Trustee to expend or risk its own funds or otherwise incur any financial liability in the performance of any or its duties hereunder or in the exercise of any of its rights or powers hereunder if it has reasonable grounds for believing that repayment of such funds or adequate indemnity against such risk or liability is not reasonably assured to it.

(d) Whether or not herein expressly so provided, every provision of this Indenture that in any way relates to the Trustee is subject to clauses (i), (ii), (iii) and (iv) of paragraph (c) of this Section 6.2.

#### SECTION 6.3 Not Responsible for Recitals or Issuance of Securities.

The recitals contained herein and in the Securities, except the Trustee's certificate of authentication, shall be taken as the statements of the Company and neither the Trustee nor any Authenticating Agent assumes any responsibility for their correctness. The Trustee makes no representations as to the validity or sufficiency of this Indenture or of the Securities, except that the Trustee represents that it is duly authorized to execute and deliver this Indenture, authenticate the Securities and perform its obligations hereunder. Neither the Trustee nor any Authenticating Agent shall be accountable for the use or application by the Company of Securities or the proceeds thereof.

#### SECTION 6.4 May Hold Securities.

The Trustee, any Paying Agent, Conversion Agent, Security Registrar, Authenticating Agent or any other agent of the Company, in its individual or any other capacity, may become the owner or pledgee of Securities and, subject to Sections 6.12 and 6.13, may otherwise deal with the Company with the same rights it would have if it were not the Trustee, Paying Agent, Conversion Agent, Security Registrar, Authenticating Agent or such other agent.

#### SECTION 6.5 Money Held in Trust.

Money held by the Trustee in trust hereunder need not be segregated from other funds except to the extent required by law. The Trustee shall be under no liability for interest on any money received by it hereunder except as otherwise agreed with the Company in writing.

#### SECTION 6.6 Compensation and Reimbursement.

The Company agrees:

(1) to pay to the Trustee from time to time reasonable compensation for all services rendered by it hereunder as agreed with the Company in writing (which compensation shall not be limited by any provision of law in regard to the compensation of a trustee of an express trust);

(2) except as otherwise expressly provided herein, to reimburse each of the Trustee and any predecessor Trustee upon its request for all reasonable expenses, disbursements and advances incurred or made by the Trustee in accordance with any provision of this Indenture (including the reasonable compensation and the expenses and disbursements of its agents and counsel), except any such expense, disbursement or advance as may be attributable to its negligence or bad faith; and

(3) to indemnify each of the Trustee and any predecessor Trustee and their agents for, and to hold it harmless against, any loss, liability, claim, damage or expense (including reasonable attorneys' fees and expenses) incurred without negligence or bad faith on its own part, arising out of or in connection with the acceptance or administration of the trust or trusts hereunder, including the costs and expenses of enforcing this Indenture (including this Section 6.6), defending itself against any claim (whether asserted by a Holder, the Company or otherwise) or liability in connection with the exercise or performance of any of its powers or duties hereunder.

When the Trustee incurs expenses or renders services in connection with an Event of Default specified in Section 5.1(5) or Section 5.1(6), the expenses (including the reasonable charges and expenses of its counsel) and the compensation for the services are intended to constitute expenses of administration under any applicable Federal or State bankruptcy, insolvency or other similar law.

As security for the performance of the obligations of the Company under this Section, the Trustee shall have a lien prior to the Securities upon all property and funds held or collected by the Trustee as such, except funds held in trust for the payment of principal of (or premium, if any) or interest on particular Securities. The Trustee's right to receive payment of any amounts due under this Section 6.6 shall not be subordinate to any other liability or Debt of the Company (even though the Securities may be so subordinated).

The provisions of this Section shall survive the termination of this Indenture, the resignation and removal of any Trustee, the discharge of the Company's obligations hereunder and any rejection or termination under any applicable Federal or State bankruptcy, insolvency or other similar laws.

#### SECTION 6.7 Corporate Trustee Required; Eligibility.

There shall at all times be a Trustee hereunder which shall be eligible to act as Trustee under the Trust Indenture Act and shall have (or, in the case of a subsidiary of a bank holding company, its corporate parent shall have) a combined capital and surplus of at least \$50,000,000, subject to supervision or examination by Federal or State authority and in good standing under the laws of the United States or of any State or the District of Columbia. If such corporation publishes reports of condition at least annually, pursuant to law or the requirements of Federal, State, Territorial or District of Columbia supervising or examining authority, then for the purposes of this Section, the combined capital and surplus of such corporation shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. Except as otherwise provided in Section 6.13, if at any time the Trustee shall cease to be eligible in accordance with the provisions of this Section, it shall resign immediately in the manner and with the effect hereinafter specified in this Article. The Trustee or an Affiliate of the Trustee shall maintain an established place of business in the Borough of Manhattan, the City of New York.

## SECTION 6.8 Resignation and Removal; Appointment of Successor.

(a) No resignation or removal of the Trustee and no appointment of a successor Trustee pursuant to this Article shall become effective until the acceptance of appointment by the successor Trustee in accordance with the applicable requirements of Section 6.9.

(b) The Trustee may resign at any time by giving written notice thereof to the Company. If an instrument of acceptance by a successor Trustee shall not have been delivered to the Trustee within 30 days after the giving of such notice of resignation, the resigning Trustee may petition any court of competent jurisdiction for the appointment of a successor Trustee.

(c) The Trustee may be removed at any time by Act of the Holders of a majority in principal amount of the Outstanding Securities delivered to the Trustee and the Company. If an instrument of acceptance by a successor Trustee shall not have been delivered to the Trustee within 30 days after the giving of such notice of removal, the Trustee who is being removed may petition any court of competent jurisdiction for the appointment of a successor Trustee.

(d) If at any time:

(1) the Trustee shall fail to comply with the provisions of Section 6.13 after written request therefor by the Company or by any Holder of a Security who has been a bona fide Holder of a Security for at least six months, or

(2) the Trustee shall cease to be eligible under Section 6.7 and shall fail to resign after written request therefor by the Company or by any Holder of a Security who has been a bona fide Holder of a Security for at least six months, or

(3) the Trustee shall become incapable of acting or shall be adjudged a bankrupt or insolvent or a receiver of the Trustee or of its property shall be appointed or any public officer shall take charge or control of the Trustee or of its property or affairs for the purpose of rehabilitation, conservation or liquidation,

then, in any such case, (i) the Company by or pursuant to a Board Resolution may remove the Trustee and appoint a successor Trustee, or (ii) subject to Section 5.15, any Holder of a Security who has been a bona fide Holder of a Security for at least six months may, on behalf of such Holder and all others similarly situated, petition any court of competent jurisdiction for the removal of the Trustee and the appointment of a successor Trustee.

(e) If the Trustee shall resign, be removed or become incapable of acting, or if a vacancy shall occur in the office of Trustee for any cause, the Company, by or pursuant to a Board Resolution, shall promptly appoint a successor Trustee. If, within one year after such resignation, removal or incapacity, or the occurrence of such vacancy, a successor Trustee shall be appointed by Act of the Holders of a majority in principal amount of the Outstanding Securities delivered to the Company and the retiring Trustee, the successor Trustee so appointed shall, forthwith upon its acceptance or such appointment, become the successor Trustee and to that extent supersede the successor Trustee appointed by the Company. If no successor Trustee shall have been so appointed by the Company or the Holders of Securities and accepted



appointment in the manner hereinafter provided, any Holder of a Security who has been a bona fide Holder of a Security for at least six months may, on behalf of such Holder and all others similarly situated, petition any court of competent jurisdiction for the appointment of a successor Trustee.

(f) So long as no Event of Default or event which is, or after notice or lapse of time, or both, could become, an Event of Default shall have occurred and be continuing, and except with respect to a Trustee appointed by or at the request of the Holders of Securities pursuant to subsection (e) of this Section, if the Company shall have delivered to the Trustee (i) a Board Resolution appointing a successor Trustee, effective as of a date specified therein, and

(ii) an instrument accepting such appointment, effective as of such date, by such successor Trustee in accordance with Section 6.9, the Trustee shall be deemed to have resigned as contemplated in subsection (b) of this Section, the successor Trustee shall be deemed to have been appointed by the Company pursuant to subsection (e) of this Section and such appointment shall be deemed to have been accepted as contemplated in Section 6.9, all as of the date specified in such Board Resolution, and all other provisions of this Section and Section 6.9 shall be applicable to such resignation, appointment and acceptance except to the extent inconsistent with this subsection (f).

(g) The Company shall give notice of each resignation and each removal of the Trustee and each appointment of a successor Trustee in the manner provided for notices to the Holders of Securities in Section 1.6. Each notice shall include the name of the successor Trustee and the address of its Corporate Trust Office.

#### SECTION 6.9 Acceptance of Appointment by Successor.

(a) In case of the appointment hereunder of a successor Trustee, every such successor Trustee shall execute, acknowledge and deliver to the Company and the retiring Trustee an instrument accepting such appointment, and thereupon the resignation or removal of the retiring Trustee shall become effective and such successor Trustee, without any further act, deed or conveyance, shall become vested with all the rights, powers, trusts and duties of the retiring Trustee; but, on request of the Company or the successor Trustee, such retiring Trustee shall, upon payment of all sums then owing to the Trustee pursuant to Section 6.6, execute and deliver an instrument transferring to such successor Trustee all the rights, powers and trusts of the retiring Trustee, and shall duly assign, transfer and deliver to such successor Trustee all property and money held by such retiring Trustee hereunder, subject nevertheless to its claim, if any, provided for in Section 6.6.

(b) Upon request of any such successor Trustee, the Company shall execute any and all instruments for more fully and certainly vesting in and confirming to such successor Trustee all such rights, powers and trusts referred to in paragraph (a) of this Section.

(c) No successor Trustee shall accept its appointment unless at the time of such acceptance such successor Trustee shall be qualified and eligible under this Article.

#### SECTION 6.10 Merger, Conversion, Consolidation or Succession to Business.

Any corporation into which the Trustee may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion or consolidation to which the Trustee shall be a party, or any corporation succeeding to all or substantially all of the corporate trust business of the Trustee (including the administration of the trust created by this Indenture), shall be the successor of the Trustee hereunder, provided such corporation shall be otherwise qualified and eligible under this Article, without the execution or filing of any paper or any further act on the part of any of the parties hereto. In case any Securities shall have been authenticated, but not delivered, by the Trustee then in office, any successor by merger, conversion or consolidation to such authenticating Trustee may adopt such authentication and deliver the Securities so authenticated with the same effect as if such successor Trustee had itself authenticated such Securities. In case any Securities shall not have been authenticated by such predecessor Trustee, any such successor Trustee may authenticate and deliver such Securities, in either its own name or that of its predecessor Trustee, with the full force and effect which this Indenture provides for the certificate of authentication of the Trustee.

#### SECTION 6.11 Appointment of Authenticating Agent.

The Trustee may appoint an Authenticating Agent or Agents reasonably acceptable to the Company with respect to the Securities which shall be authorized to act on behalf of the Trustee to authenticate Securities issued upon exchange, registration of transfer or partial redemption or, repurchase thereof, and Securities so authenticated shall be entitled to the benefits of this Indenture and shall be valid and obligatory for all purposes as if authenticated by the Trustee hereunder. Any such appointment shall be evidenced by an instrument in writing signed by a Responsible Officer of the Trustee, a copy of which instrument shall be promptly furnished to the Company. Wherever reference is made in this Indenture to the authentication and delivery of Securities by the Trustee or the Trustee's certificate of authentication, such reference shall be deemed to include authentication and delivery on behalf of the Trustee by an Authenticating Agent and a certificate of authentication executed on behalf of the Trustee by an Authenticating Agent. Each Authenticating Agent shall be acceptable to the Company and shall at all times be a bank or trust company or corporation organized and doing business and in good standing under the laws of the United States or of any State or the District of Columbia, authorized under such laws to act as Authenticating Agent, having (or, in the case of a subsidiary of a bank holding company, its corporate parent shall have) a combined capital and surplus of at least \$50,000,000 and subject to supervision or examination by Federal or State authority. If such Authenticating Agent publishes reports of condition at least annually, pursuant to law or the requirements of Federal, State, Territorial or District of Columbia supervising or examining authority, then for the purposes of this Section, the combined capital and surplus of such Authenticating Agent shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. If at any time an Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section, such Authenticating Agent shall resign immediately in the manner and with the effect specified in this Section.

Any corporation into which an Authenticating Agent may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion or

consolidation to which such Authenticating Agent shall be a party, or any corporation succeeding to all or substantially all of the corporate agency or corporate trust business of an Authenticating Agent, shall continue to be an Authenticating Agent (including the authenticating agency contemplated by this Indenture), provided such corporation shall be otherwise eligible under this Section, without the execution or filing of any paper or further act on the part of the Trustee or the Authenticating Agent.

An Authenticating Agent may at any time resign by giving written notice of resignation to the Trustee and to the Company. The Trustee may at any time terminate the agency of an Authenticating Agent by giving written notice of termination to such Authenticating Agent and the Company. Upon receiving such a notice of resignation or upon such a termination, or in case at any time such Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section, the Trustee may appoint a successor Authenticating Agent which shall be reasonably acceptable to the Company and shall give notice of such appointment to all Holders of Securities in the manner set forth in Section 1.6. Any successor Authenticating Agent upon acceptance of its appointment hereunder shall become vested with all the rights, powers and duties of its predecessor hereunder, with like effect as if originally named as an Authenticating Agent herein. No successor Authenticating Agent shall be appointed unless eligible under the provisions of this Section.

The Company agrees to pay to each Authenticating Agent from time to time reasonable compensation including reimbursement of its reasonable expenses for its services under this Section.

If an appointment is made pursuant to this Section, the Securities may have endorsed thereon, in addition to or in lieu of the Trustee's certificate of authentication, an alternate certificate of authentication substantially in the following form:

This is one of the 5 1/4% Convertible Subordinated Notes due 2006 referred to in the within-mentioned Indenture.

Dated:

State Street Bank and Trust Company  
of California, N.A., as Trustee

By:

**as Authenticating Agent**

By:

**Authorized Signatory**

#### SECTION 6.12 Preferential Collection of Claims Against Company.

If and when the Trustee shall be or become a creditor of the Company (or any other obligor upon the Securities), the Trustee shall be subject to the provisions of the Trust Indenture Act regarding the collection of claims against the Company (or any such other obligor).

#### SECTION 6.13 Disqualification; Conflicting Interests.

If the Trustee has or shall acquire a conflicting interest within the meaning of the Trust Indenture Act, the Trustee shall either eliminate such interest or resign, to the extent and in the manner provided by, and subject to the provisions of, the Trust Indenture Act and this Indenture.

#### SECTION 6.14 Certain Rights of Trustee

Subject to the provisions of Section 6.1:

- (1) the Trustee may conclusively rely and shall be protected in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note or other paper or document (whether in its original or facsimile form) believed by it to be genuine and to have been signed or presented by the proper party or parties;
- (2) any request or direction of the Company mentioned herein shall be sufficiently evidenced by a Company Request or Company Order (other than delivery of any Security to the Trustee for authentication and delivery pursuant to Section 3.3 which shall be sufficiently evidenced as provided therein) and any resolution of the Board of Directors may be sufficiently evidenced by a Board Resolution;
- (3) whenever in the administration of this Indenture the Trustee shall deem it desirable that a matter be proved or established prior to taking, suffering or omitting any action hereunder, the Trustee (unless other evidence be herein specifically prescribed) may, in the absence of bad faith on its part, conclusively rely upon an Officers' Certificate or an Opinion of Counsel;
- (4) the Trustee may consult with counsel of its selection and the advice of such counsel or any Opinion of Counsel shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder in good faith and in reliance thereon;
- (5) the Trustee shall be under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request or direction of any of the Holders of Securities pursuant to this Indenture, unless such Holders shall have offered to the Trustee security or indemnity satisfactory to the Trustee against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction;

(6) the Trustee shall not be bound to make any investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note, or other paper or document, but the Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters as it may see fit, and, if the Trustee shall determine to make such further inquiry or investigation, it shall be entitled to examine the books, records and premises of the Company personally or by agent or attorney;

(7) the Trustee may execute any of the trusts or powers hereunder or perform any duties hereunder either directly or by or through agents or attorneys and the Trustee shall not be responsible for any misconduct or negligence on the part of any agent or attorney appointed with due care by it hereunder; and

(8) the Trustee shall not be liable for any action taken, suffered or omitted by it in good faith and reasonably believed by it to be authorized or within the discretion or rights or powers conferred upon it by this Indenture.

## **ARTICLE VII**

### **HOLDERS' LISTS AND REPORTS BY TRUSTEE AND COMPANY**

#### **SECTION 7.1 The Company to Furnish Trustee Names and Addresses of Holders.**

The Company will furnish or cause to be furnished to the Trustee:

(a) semi-annually, not later than 15 days after the Regular Record Date, a list, in such form as the Trustee may reasonably require, of the names and addresses of the Holders of Securities as of such Regular Record Date, and

(b) at such other times as the Trustee may request in Writing, within 30 days after the receipt by the Company of any such request, a list of similar form and content as of a date not more than 15 days prior to the time such list is furnished,

provided, however, that, so long as the Trustee is the Security Registrar, no such list shall be required to be furnished.

#### **SECTION 7.2 Reports by Trustee.**

(a) The Trustee shall transmit to Holders such reports concerning the Trustee and its actions under this Indenture as may be required pursuant to the Trust Indenture Act at the times and in the manner provided by the Trust Indenture Act. Reports required pursuant to the Trust Indenture Act Section 313(a), if any, will be transmitted annually.

(b) A copy of each such report shall, at the time of such transmission to Holder, be filed with the Commission and the Company. The Company will notify the Trustee, in writing, if and when the Securities are listed on any stock exchange.

#### SECTION 7.3 Reports by Company.

The Company shall file with the Trustee and the Commission, and transmit to Holders, such information, documents and other reports, if any, and such summaries thereof, as may be required pursuant to the Trust Indenture Act at the times and in the manner provided pursuant to such Act; provided that any such information, documents or reports required to be filed with the Commission pursuant to Section 13 or 15(d) of the Exchange Act shall be filed with the Trustee within 15 days after the same is so required to be filed with the Commission.

#### SECTION 7.4 Preservation Of Information; Communications to Holders.

(1) The Trustee shall preserve, in as current a form as is reasonably practicable, the names and addresses of Holders contained in the most recent list furnished to the Trustee as provided in Section 7.1 and the names and addresses of Holders received by the Trustee in its capacity as Security Registrar if the Trustee is acting in such capacity. The Trustee may destroy any list furnished to it as provided in Section 7.1 upon receipt of a new list so furnished.

(2) The rights of the Holders to communicate with other Holders with respect to their rights under this Indenture or under the Securities, and the corresponding rights and privileges of the Trustee, shall be as provided by the Trust Indenture Act and other applicable law.

(3) Every Holder of Securities, by receiving and holding the same, agrees with the Company and the Trustee that none of the Company, the Trustee or any agent of any of them shall be held accountable by reason of any disclosure of information as to names and addresses of Holders made pursuant to the Trust Indenture Act.

### **ARTICLE VIII**

#### **CONSOLIDATION, MERGER, SALE, LEASE OR CONVEYANCE**

##### SECTION 8.1 Company May Consolidate, Etc., Only on Certain Terms.

The Company (1) shall not consolidate with or merge into any other Person or, directly or indirectly, convey, transfer, sell, lease or otherwise dispose of its properties and assets as an entirety or substantially as an entirety to any Person, and (2) shall not permit any Person to consolidate or merge with or into the Company or convey, transfer, sell, lease or otherwise dispose of such Person's properties and assets as an entirety or substantially as an entirety to the Company, unless:

(a) the Person formed by such consolidation or into or with which the Company is merged or the Person which acquires by conveyance, transfer or sale, or which leases or

otherwise acquires, the properties and assets of the Company as an entirety or substantially as an entirety (i) shall be a corporation, limited liability company, partnership or trust, (ii) shall be organized and validly existing under the laws of the United States of America, any State thereof or the District of Columbia and (iii) shall expressly assume, by an indenture supplemental hereto, executed and delivered to the Trustee, in form satisfactory to the Trustee, the due and punctual payment of the principal of (and premium, if any) and interest on all the Securities and the performance or observance of every covenant of this Indenture on the part of the Company to be performed or observed;

(b) immediately after giving effect to such transaction, no Event of Default, and no event which, after notice or lapse of time or both, would become an Event of Default, shall have happened and be continuing; and

(c) the Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that such consolidation, merger, conveyance, transfer, sale, lease or other disposition and, if a supplemental indenture is required in connection with such transaction, such supplemental indenture comply with this Article and that all conditions precedent herein provided for relating to such transaction have been complied with, together with any documents required by Section 9.3.

#### SECTION 8.2 Successor Substituted.

Upon any consolidation by the Company with, or merger by the Company into, any other Person or any conveyance, transfer, sale, lease or other disposition of the properties and assets of the Company as an entirety or substantially as an entirety as described in Section 8.1, the Person resulting from such consolidation or into which the Company is merged or to which such conveyance, transfer, sale, lease or other disposition is made, will succeed to, and be substituted for, and may exercise every right and power of, the Company under this Indenture with the same effect as if such successor Person had been named as the Company herein, and thereafter, except in the case of a lease, the predecessor (if still in existence) will be released from its obligations and covenants under this Indenture and the Securities.

### ARTICLE IX

#### SUPPLEMENTAL INDENTURES

##### SECTION 9.1 Supplemental Indentures Without Consent of Holders.

Without the consent of any Holders of Securities, the Company, when authorized by or pursuant to a Board Resolution, and the Trustee, at any time and from time to time, may enter into one or more indentures supplemental hereto, in form satisfactory to the Trustee, for any of the following purposes:

- (1) to evidence the succession of another Person to the Company and the assumption by any such successor of the covenants and obligations of the Company herein and in the Securities as permitted by Article VIII; or
- (2) to add to the covenants of the Company for the benefit of the Holders of the Securities or to surrender any right or power herein conferred upon the Company; or
- (3) to add any additional Events of Default for the benefit of the Holders of the Securities provided, however, that in respect of any such additional Events of Default such supplemental indenture may provide for a particular period of grace after default (which period may be shorter or longer than that allowed in the case of other defaults) or may provide for an immediate enforcement upon such default or may limit the remedies available to the Trustee upon such default or may limit the right of the Holders of a majority in aggregate principal amount of the Securities to waive such default; or
- (4) to secure the Securities; or
- (5) to evidence and provide for the acceptance of appointment hereunder by a successor Trustee; or
- (6) to cure any ambiguity, to correct or supplement any provision herein which may be defective or inconsistent with any other provision herein, or to make any other provisions with respect to matters or questions arising under this Indenture which shall not be inconsistent with the provisions of this Indenture as the Company and the Trustee may deem necessary or desirable; provided that any such action shall not adversely affect the interests of the Holders of Securities in any material respect; or
- (7) subject to Section 13.15, to make any change in Article XIII that would limit or terminate the benefits to any holder of Senior Debt under such Article; or
- (8) to comply with the requirements of the Trust Indenture Act; or
- (9) to make any change that does not adversely affect the legal rights under this Indenture of any Holder of Securities; or
- (10) to change any Place of Payment to another location within the same city provided that the Company delivers notice of such change to the Holders prior to such change of Place of Payment; or
- (11) to add a guarantor of the Securities.

#### SECTION 9.2 Supplemental Indentures with Consent of Holders.

With either (i) the consent of the Holders of not less than a majority in principal amount of all Outstanding Securities by the Act of said Holders delivered to the Company and the



Trustee, or (ii) by the adoption of a resolution, at a meeting of Holders of the Outstanding Securities at which a quorum is present, by the Holders of at least 66-2/3% in aggregate principal amount of the Outstanding Securities represented at such meeting, the Company, when authorized by or pursuant to a Board Resolution, and the Trustee may enter into an indenture or indentures supplemental hereto for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Indenture or of modifying in any manner the rights of the Holders of Securities under this Indenture; provided, however, that no such supplemental indenture shall, without the consent of the Holder of each Outstanding Security affected thereby:

- (1) change the Stated Maturity of the principal of (or premium, if any, on) or any installment of principal of or interest on, any Security; or reduce the principal amount thereof or the rate or amount of interest thereon, or any premium payable upon the redemption or mandatory repurchase thereof, or adversely affect any right of repurchase at the option of the Holder of any Security, or change the city of any Place of Payment where, or the currency in which, the principal of or any premium or the interest on any Security is payable, including any payment of the Redemption Price or Repurchase Price in respect of such Security or impair the right to institute suit for the enforcement of any such payment on or after the Stated Maturity thereof, (or, in the case of redemption or repurchase at the option of the Holder, on or after the Redemption Date or the Repurchase Date, as the case may be), or
- (2) reduce the requirements of Section 15.4 for quorum or voting or the percentage in principal amount of the Outstanding Securities, the consent of whose Holders is required for any such supplemental indenture, or the consent of whose Holders is required for any waiver with respect to such Outstanding Securities (or compliance with certain provisions of this Indenture or certain defaults hereunder and their consequences) provided for in this Indenture, or
- (3) modify any of the provisions of this Section or Sections 5.13 or 10.8, except to increase the required percentage to effect such action or to provide that certain other provisions of this Indenture cannot be modified or waived without the consent of the Holder of each Outstanding Security affected thereby, or
- (4) release any guarantors from their guarantees of the Securities, or, except as contemplated in any supplemental indenture, make any change in a guarantee of a Security that would adversely affect the interests of the Holders, or
- (5) adversely affect the right of a Holder of a Security to require the Company to repurchase any Note other than as provided in Article XII, or
- (6) adversely affect the right of a Holder of a Security to require the Company to convert any Note other than as provided in Article XIV, or
- (7) modify the obligation of the Company to maintain an office or agency in the Borough of Manhattan, the City of New York, pursuant to Section 10.2.

It shall not be necessary for any Act of Holders under this Section to approve the particular form of any proposed supplemental indenture, but it shall be sufficient if such Act shall approve the substance thereof.

### SECTION 9.3 Execution of Supplemental Indentures.

In executing, or accepting the additional trusts created by, any supplemental indenture permitted by this Article or the modification thereby of the trusts created by this Indenture, the Trustee shall be entitled to receive, and subject to Section 6.2 shall be fully protected in relying upon, an Officer's Certificate and an Opinion of Counsel, each stating that the execution of such supplemental indenture is authorized or permitted by this Indenture, is in compliance with Article IX, constitutes the legal, valid and binding obligation of the Company, enforceable in accordance with its terms (subject to customary exceptions) and that all conditions precedent to the execution of such supplemental indenture have been fulfilled. The Trustee may, but shall not be obligated to, enter into any such supplemental indenture which affects the Trustee's own rights, duties or immunities under this Indenture or otherwise.

### SECTION 9.4 Effect of Supplemental Indentures.

Upon the execution of any supplemental indenture under this Article, this Indenture shall be modified in accordance therewith, and such supplemental indenture shall form a part of this Indenture for all purposes; and every Holder of Securities theretofore or thereafter authenticated and delivered hereunder shall be bound thereby.

### SECTION 9.5 Conformity with Trust Indenture Act.

Every supplemental indenture executed pursuant to this Article shall conform to the requirements of the Trust Indenture Act as then in effect.

### SECTION 9.6 Reference in Securities to Supplemental Indentures.

Securities authenticated and delivered after the execution of any supplemental indenture pursuant to this Article may, and shall, if required by the Trustee, bear a notation in form approved by the Trustee as to any matter provided for in such supplemental indenture. If the Company shall so determine, new Securities so modified as to conform, in the opinion of the Trustee and the Company, to any such supplemental indenture may be prepared and executed by the Company and authenticated and delivered by the Trustee in exchange for Outstanding Securities.

### SECTION 9.7 Notice of Supplemental Indentures.

Promptly after the execution by the Company and the Trustee of any supplemental indenture pursuant to the provisions of Article IX, the Company shall give notice thereof to the Holders of each Outstanding Security affected, in the manner provided for in Section 1.6, setting forth in general terms the substance of such supplemental indenture.

## ARTICLE X

### COVENANTS

#### SECTION 10.1 Payment of Principal, Premium and Interest.

The Company covenants and agrees for the benefit of the Holders of Securities that it will duly and punctually pay the principal of (and premium, if any) and interest on the Securities in accordance with the terms thereof. The Company will deposit or cause to be deposited with the Trustee, no later than the opening of business on the date of the Stated Maturity of any Security or no later than the opening of business on the due date for any installment of interest, all payments so due, which payments shall be in immediately available funds on the date of such Stated Maturity or due date, as the case may be.

#### SECTION 10.2 Maintenance of Office or Agency.

The Company shall maintain in each Place of Payment an office or agency where Securities may be presented or surrendered for payment or conversion, where Securities may be surrendered for registration of transfer or exchange and where notices and demands to or upon the Company in respect of the Securities and this Indenture may be served. The Company will give prompt written notice to the Trustee of the location, and any change in the location, of each such office or agency. If at any time the Company shall fail to maintain any such required office or agency or shall fail to furnish the Trustee with the address thereof, such presentations, surrenders, notices and demands may be made or served at the Corporate Trust Office of the Trustee, and the Company hereby appoints the Trustee its agent to receive all such presentations, surrenders, notices and demands.

The Company may from time to time designate one or more other offices or agencies where Securities may be presented or surrendered for any or all of such purposes, and may from time to time rescind such designations; provided, however, that no such designation or rescission shall in any manner relieve the Company of its obligation to maintain an office or agency in accordance with the requirements set forth above for Securities for such purposes. The Company will give prompt written notice to the Trustee of any such designation or rescission and of any change in the location of any such other office or agency. The Company hereby designates as a Place of Payment for Securities the office or agency of the Company in the Borough of Manhattan, The City of New York, and initially appoints State Street Bank and Trust Company, N.A., an Affiliate of the Trustee, at its Corporate Trust Office in such city as Paying Agent, Security Registrar and Conversion Agent and as its agent to receive all such presentations, surrenders, notices and demands.

### SECTION 10.3 Money for Securities Payments to Be Held in Trust.

If the Company shall at any time act as its own Paying Agent, it will, on or before each due date of the principal of (and premium, if any) or interest on, the Securities, segregate and hold in trust for the benefit of the Persons entitled thereto a sum sufficient to pay the principal (and premium, if any) or interest so becoming due until such sums shall be paid to such Persons or otherwise disposed of as herein provided, and will promptly notify the Trustee of its action or failure so to act.

Whenever the Company shall have one or more Paying Agents for the Securities, it will, no later than the opening of business on each due date of the principal of (and premium, if any) or interest on, any Securities, deposit with a Paying Agent a sum in immediately available funds sufficient to pay the principal (and premium, if any) or interest, so becoming due, such sum to be held in trust for the benefit of the Persons entitled to such principal (and premium, if any) or interest and (unless such Paying Agent is the Trustee) the Company will promptly notify the Trustee of its action or failure so to act.

The Company will cause each Paying Agent other than the Trustee to execute and deliver to the Trustee an instrument satisfactory to the Trustee in which such Paying Agent shall agree with the Trustee, subject to the provisions of this Section, that such Paying Agent will

- (1) hold all sums held by it for the payment of principal of (and premium, if any) or interest on Securities in trust for the benefit of the Persons entitled thereto until such sums shall be paid to such Persons or otherwise disposed of as herein provided;
- (2) give the Trustee notice of any default by the Company (or any other obligor upon the Securities) in the making of any such payment of principal (and premium, if any) or interest;
- (3) at any time during the continuance of any such default upon the written request of the Trustee, forthwith pay to the Trustee all sums so held in trust by such Paying Agent; and
- (4) acknowledge, accept and agree to comply in all respects with the provisions of this Indenture relating to the duties, rights and liabilities of such Paying Agent.

The Company may at any time, for the purpose of obtaining the satisfaction and discharge of this Indenture or for any other purpose, pay, or by Company Order direct any Paying Agent to pay, to the Trustee all sums held in trust by the Company or such Paying Agent, such sums to be held by the Trustee upon the same trusts as those upon which such sums were held by the Company or such Paying Agent; and, upon such payment by any Paying Agent to the Trustee, such Paying Agent shall be released from all further liability with respect to such sums.

Except as otherwise provided in the Securities, any money deposited with the Trustee or any Paying Agent, or then held by the Company, in trust for the payment of the principal of (and premium, if any) or interest on any Security and remaining unclaimed for two years after such principal (and premium, if any) and interest has become due and payable shall be paid to the

Company upon Company Request or (if then held by the Company) shall be discharged from such trust; and the Holder of such Security shall thereafter, as an unsecured general creditor, look only to the Company for payment of such principal of (and premium, if any) or interest on any Security, without interest thereon, and all liability of the Trustee or such Paying Agent with respect to such trust money, and all liability of the Company as trustee thereof, shall thereupon cease; provided, however, that the Trustee or such Paying Agent, before being required to make any such repayment, may at the expense of the Company cause to be published once, in an Authorized Newspaper, notice that such money remains unclaimed and that, after a date specified therein, which shall not be less than 30 days from the date of such publication, any unclaimed balance of such money then remaining will be repaid to the Company.

#### SECTION 10.4 Existence.

Subject to Article VIII, the Company will do or cause to be done all things necessary to preserve and keep in full force and effect its existence, rights (charter and statutory) and franchises; provided, however, that the Company shall not be required to preserve any right or franchise if the Board of Directors determines that the preservation thereof is no longer desirable in the conduct of the business of the Company and the loss thereof is not disadvantageous in any material respect to the Holders.

#### SECTION 10.5 Maintenance of Properties.

The Company will cause all of the properties of itself and of each Subsidiary used or useful in the conduct of its business or the business of any Subsidiary to be maintained and kept in good condition, repair and working order and supplied with all necessary equipment and will cause to be made all necessary repairs, renewals, replacements, betterments and improvements thereof, all as in the judgment of the Company may be necessary so that the business carried on in connection therewith may be properly and advantageously conducted at all times; provided, however, the Company and its Subsidiaries shall not be prevented from discontinuing the operation and maintenance of any of such properties if such discontinuance is, in the judgment of the Company, desirable in the conduct of its business and not disadvantageous in any material respect to the Holders.

#### SECTION 10.6 Payment of Taxes and Other Claims.

The Company will pay or discharge or cause to be paid or discharged, before the same shall become delinquent, (1) all taxes, assessments and governmental charges levied or imposed upon it or any Subsidiary or upon the income, profits or property of the Company or any Subsidiary, (2) all lawful claims for labor, materials and supplies which, if unpaid, might by law become a lien upon the property of the Company or any Subsidiary; and (3) all stamps and similar duties, if any, which may be imposed by the United States or any political subdivision thereof or taxing authority thereof or therein in connection with the issuance, transfer, exchange or conversion of any Securities or with respect to this Indenture; provided, however, that, in the case of clauses (1) and (2) that the Company shall not be required to pay or discharge or cause to

be paid or discharged any such tax, assessment, charge or claim whose amount, applicability or validity is being contested in good faith by appropriate proceedings.

#### SECTION 10.7 Statement as to Compliance.

The Company will deliver to the Trustee, within 120 days after the end of each fiscal year, a brief certificate in the form of an Officers' Certificate from its chief executive officer, chief operating officer, or principal accounting officer as to his or her best knowledge of the Company's compliance with all conditions and covenants under this Indenture and, in the event of any noncompliance, specifying such noncompliance and the nature and status thereof. For purposes of this Section 10.7, such compliance shall be determined without regard to any period of grace or requirement of notice under this Indenture.

#### SECTION 10.8 Waiver of Certain Covenants.

The Company may omit in any particular instance to comply with any term, provision or condition set forth in Section 10.4 (other than with respect to the existence of the Company (subject to Article VII)), 10.5 and 10.6, inclusive (other than a covenant or condition which under Article IX cannot be modified or amended without the consent of the Holder of each Outstanding Security affected), if before or after the time for such compliance the Holders of at least a majority in principal amount of all outstanding Securities, by Act of such Holders, either waive such compliance in such instance or generally waive compliance with such covenant or condition, but no such waiver shall extend to or affect such covenant or condition except to the extent so expressly waived, and, until such waiver shall become effective, the obligations of the Company and the duties of the Trustee or any Paying Agent or Conversion Agent in respect of any such term, provision or condition shall remain in full force and effect.

#### SECTION 10.9 Statement by Officers as to Default.

The Company shall deliver to the Trustee, as soon as possible and in any event within 10 days after an officer of Company becomes aware of the occurrence of any Event of Default or any event which, with notice or the lapse of time or both, would constitute an Event of Default, an Officers' Certificate setting forth the details of such Event of Default or Default and the action which the Company proposes to take with respect thereto.

### **ARTICLE XI**

#### **REDEMPTION OF SECURITIES**

##### SECTION 11.1 Right of Redemption.

The Securities may be redeemed in accordance with the provisions of the form of Securities set forth in Section 2.2.

## SECTION 11.2 Applicability of Article.

Redemption of Securities at the election of the Company or otherwise, as permitted or required by any provision of the Securities or this Indenture, shall be made in accordance with such provision and this Article XI.

## SECTION 11.3 Election to Redeem; Notice to Trustee.

The election of the Company to redeem any Securities shall be evidenced by or pursuant to a Board Resolution. In case of any redemption at the election of the Company of less than all of the Securities, the Company shall, at least 45 but not more than 60 days prior to the Redemption Date (unless a shorter notice shall be satisfactory to the Trustee), notify the Trustee of such Redemption Date and of the principal amount of the Securities to be redeemed.

## SECTION 11.4 Selection by Trustee of Securities to Be Redeemed.

If less than all the Securities are to be redeemed, the particular Securities to be redeemed shall be selected not more than 30 days prior to the Redemption Date by the Trustee, from the Outstanding Securities not previously called for redemption, by lot or by such other method as the Trustee shall deem fair and appropriate and which may provide for the selection for redemption of portions (equal to the minimum authorized denomination for Securities or any integral multiple thereof) of the principal amount of Securities of a denomination larger than the minimum authorized denomination therefor.

If any Security selected for partial redemption is converted in part before termination of the conversion right with respect to the portion of the Security so selected, the converted portion of such Security shall be deemed (so far as may be) to be the portion selected for redemption. Securities which have been converted during a selection of Securities to be redeemed may be treated by the Trustee as Outstanding for the purpose of such selection. The Trustee shall promptly notify the Company and the Security Registrar (if other than itself) in writing of the Securities selected for redemption and, in the case of any Securities selected for partial redemption, the principal amount thereof to be redeemed.

For all purposes of this Indenture, unless the context otherwise requires, all provisions relating to the redemption of Securities shall relate, in the case of any Security redeemed or to be redeemed only in part, to the portion of the principal amount of such Security which has been or is to be redeemed.

## SECTION 11.5 Notice of Redemption.

Notice of redemption shall be given in the manner provided in Section 1.6, not less than 30 days nor more than 60 days prior to the Redemption Date to each Holder of Securities to be redeemed at such Holder's address appearing in the Security Register and such notice shall be irrevocable.

All notices of redemption shall include a description of the Securities and shall state:

(1) the Redemption Date,

(2) the Redemption Price, accrued interest to the Redemption Date payable as provided in Section 11.7, if any,

(3) if less than all Outstanding Securities are to be redeemed, the identification (and, in the case of partial redemption, the principal amount) of the particular Security or Securities to be redeemed,

(4) in case any Security is to be redeemed in part only, the notice which relates to such Security shall state that on and after the Redemption Date, upon surrender of such Security, the holder will receive, without a charge, a new Security or Securities of authorized denominations for the principal amount thereof remaining unredeemed,

(5) that on the Redemption Date the Redemption Price and accrued interest to the Redemption Date payable as provided in Section 11.7, if any, will become due and payable upon each such Security, or the portion thereof, to be redeemed and that interest thereon shall cease to accrue on and after said date,

(6) the Place or Places of Payment where such Securities maturing after the Redemption Date, are to be surrendered for payment of the Redemption Price and accrued interest, if any, or for conversion,

(7) the CUSIP number of such Security, if any, and

(8) the then existing Conversion Rate, the date and time when the option to convert such Securities to be redeemed shall expire and the places where such Securities may be surrendered for conversion.

Notice of redemption of Securities to be redeemed shall be given by the Company or, at the Company's request, by the Trustee in the name and at the expense of the Company.

#### SECTION 11.6 Deposit of Redemption Price.

At least one Business Day prior to any Redemption Date, the Company shall deposit with the Trustee or with a Paying Agent (or, if the Company is acting as its own Paying Agent, segregate and hold in trust as provided in Section 10.3) an amount of money sufficient to pay on the Redemption Date the Redemption Price of, and (except if the Redemption Date shall be an Interest Payment Date) accrued interest on, all the Securities or portions thereof which are to be redeemed on that date other than any Securities called for redemption on that date which have been converted prior to the date of such deposit.

#### SECTION 11.7 Securities Payable on Redemption Date.

Notice of redemption having been given as aforesaid, the Securities so to be redeemed shall, on the Redemption Date, become due and payable at the Redemption Price therein



specified, and from and after such date (unless the Company shall default in the payment of the Redemption Price and accrued interest in which case the Securities to be redeemed shall continue to bear interest at the default rate of interest, if any) such Securities shall cease to bear interest. Upon surrender of any such Security for redemption in accordance with said notice, such Security shall be paid by the Company at the Redemption Price, together with accrued interest, if any, to the Redemption Date; provided, however, that installments of interest on Securities whose Stated Maturity is on or prior to the Redemption Date shall be payable to the Holders of such Securities, or one or more Predecessor Securities, registered as such at the close of business on the relevant Record Dates according to their terms and the provisions of Section 3.7.

If any Security called for redemption shall not be so paid upon surrender thereof for redemption as a result of the failure by the Company to fund such redemption, the principal of (and premium, if any) and, to the extent permitted by applicable law, accrued interest on such Security shall, until paid, bear interest from the Redemption Date at a rate of 7 1/4% per annum and such Security shall remain convertible until the full Redemption Price and accrued interest shall have been paid or duly provided for.

#### SECTION 11.8 Securities Redeemed in Part.

Any Security which is to be redeemed only in part shall be surrendered at a Place of Payment therefor (with, if the Company or the Trustee so requires, due endorsement by, or a written instrument of transfer in form satisfactory to the Company and the Trustee duly executed by, the Holder thereof or such Holder's attorney duly authorized in writing) and the Company shall execute and the Trustee shall authenticate and deliver to the Holder of such Security without service charge a new Security or Securities of any authorized denomination as requested by such Holder in aggregate principal amount equal to and in exchange for the unredeemed portion of the principal of the Security so surrendered.

#### SECTION 11.9 Conversion Arrangement on Call For Redemption.

In connection with any redemption of the Securities, the Company may arrange for the purchase and conversion of any Securities by an agreement with one or more investment bankers or other purchasers (the "Purchasers") to purchase such Securities by paying to the Trustee in trust for the Holders, on or before the Redemption Date, an amount not less than the applicable Redemption Price, together with interest accrued and unpaid to the Redemption Date, of such Securities. Notwithstanding anything to the contrary contained in this Article XI, the obligation of the Company to pay the Redemption Price, together with interest accrued and unpaid to the Redemption Date, shall be deemed to be satisfied and discharged to the extent such amount is so paid by such Purchasers. If such an agreement is entered into (a copy of which shall be filed with the Trustee prior to the close of business on the Business Day immediately prior to the Redemption Date), any Securities called for redemption that are not duly surrendered for conversion by the Holders thereof may, at the option of the Company, be deemed, to the fullest extent permitted by law, and consistent with any agreement or agreements with such Purchasers, to be acquired by such Purchasers from such Holders and (notwithstanding anything to the contrary contained in this Article XI) surrendered by such Purchasers for conversion, all as of

immediately prior to the close of business on the Redemption Date (and the right to convert any such Securities shall be extended through such time), subject to payment of the above amount as aforesaid. At the direction of the Company, the Trustee shall hold and dispose of any such amount paid to it by the Purchasers to the Holders in the same manner as it would monies deposited with it by the Company for the redemption of Securities. Without the Trustee's prior written consent, no arrangement between the Company and such Purchasers for the purchase and conversion of any Securities shall increase or otherwise affect any of the powers, duties, responsibilities or obligations of the Trustee as set forth in this Indenture, and the Company agrees to indemnify the Trustee from, and hold it harmless against, any loss, liability or expense arising out of or in connection with any such arrangement for the purchase and conversion of any Securities between the Company and such Purchasers, including the costs and expenses, including reasonable legal fees, incurred by the Trustee in the defense of any claim or liability arising out of or in connection with the exercise or performance of any of its powers, duties, responsibilities or obligations under this Indenture.

## **ARTICLE XII**

### **REPURCHASE OF SECURITIES AT THE OPTION OF HOLDERS UPON THE CHANGE OF CONTROL**

#### **SECTION 12.1 Right to Require Repurchase.**

In the event that a Change in Control (as hereinafter defined) shall occur, then each Holder shall have the right, at the Holder's option, but subject to the provisions of Section 12.2., to require the Company to repurchase, and upon the exercise of such right the Company shall repurchase, all of such Holder's Securities not theretofore called for redemption, or any portion of the principal amount thereof that is equal to \$1,000 or any integral multiple of \$1,000 in excess thereof (provided that no single Securities may be repurchased in part unless the portion of the principal amount of such Securities to be Outstanding after such repurchase is equal to \$1,000 or integral multiples of \$1,000 in excess thereof), on the date (the "Repurchase Date") that is 45 days after the date of the Company Notice at a purchase price equal to 100% of the principal amount of the Securities to be repurchased plus interest accrued to the Repurchase Date (the "Repurchase Price"); provided, however, that installments of interest on Securities whose Stated Maturity is on or prior to the Repurchase Date shall be payable to the Holders of such Securities, or one or more Predecessor Securities, registered as such on the relevant Record Date according to their terms and the provisions of Section 3.7. Such right to require the repurchase of the Securities shall not continue after a discharge of the Company from its obligations with respect to the Securities in accordance with the provision of Article IV unless a Change in Control shall have occurred prior to such discharge. At the option of the Company, the Repurchase Price may be paid in cash or, subject to the fulfillment by the Company of the conditions set forth Section 12.2, by delivery of shares of Common Stock having a fair market value equal to the Repurchase Price. Whenever in this Indenture (including Sections 2.2, 3.1, 5.1(2) and 5.8) there is a reference, in any context, to the principal of any Securities as of any time, such reference shall be deemed to include reference to the Repurchase Price payable in respect of such Securities to the extent that such Repurchase Price is, was or would be so payable

at such time, and express mention of the Repurchase Price in any provision of this Indenture shall not be construed as excluding the Repurchase Price in those provisions of this Indenture when such express mention is not made; provided, however, that for the purposes of Article XIV such reference shall be deemed to include reference to the Repurchase Price only to the extent the Repurchase Price is payable in cash.

#### SECTION 12.2 Conditions to The Company's Election to Pay the Repurchase Price in Common Stock.

The Company may elect to pay the Repurchase Price by delivery of shares of Common Stock pursuant to Section 12.1 if and only if the following conditions shall have been satisfied:

- (1) The shares of Common Stock deliverable in payment of the Repurchase Price shall have a fair market value as of the Repurchase Date of not less than the Repurchase Price. For purposes of Section 12.1 and this Section 12.2, the fair market value of shares of Common Stock shall be determined by the Company and shall be equal to 95% of the average of the Closing Prices Per Share of the Common Stock for the five consecutive Trading Days immediately preceding and including the third Trading Day prior to the Repurchase Date;
- (2) The shares of Common Stock to be issued upon repurchase of Securities hereunder (i) shall not require registration under any federal securities law before such shares may be freely transferable without being subject to any transfer restrictions under the Securities Act upon repurchase or, if such registration is required, such registration shall be completed and shall become effective prior to the Repurchase Date, and (ii) shall not require registration with or approval of any governmental authority under any state law or any other federal law before such shares may be validly issued or delivered upon repurchase or if such registration is required or such approval must be obtained, such registration shall be completed or such approval shall be obtained prior to the Repurchase Date;
- (3) The shares of Common Stock to be issued upon repurchase of Securities hereunder are, or shall have been, approved for quotation on the Nasdaq National Market or listed on a national securities exchange, in any case, prior to the Repurchase Date; and
- (4) All shares of Common Stock which may be issued upon repurchase of Securities will be issued out of the Company's authorized but unissued Common Stock and, will upon issue, be duly and validly issued and fully paid and non-assessable and free of any preemptive or similar rights.

If all of the conditions set forth in this Section 12.2 are not satisfied in accordance with the terms thereof, the Repurchase Price shall be paid by the Company only in cash.

#### SECTION 12.3 Notices; Method of Exercising Repurchase Right, Etc.

- (a) Unless the Company shall have theretofore called for redemption all of the Outstanding Securities, on or before the 30th day after the occurrence of a Change in Control, the Company or, at the request and expense of the Company on or before the 30th day after such

occurrence, the Trustee, shall give to all Holders of Securities, in the manner provided in Section 1.6 notice (the "Company Notice") of the occurrence of the Change of Control and of the repurchase right set forth herein arising as a result thereof. The Company shall also deliver a copy of such Company Notice to the Trustee.

Each notice of a repurchase right shall state:

- (i) the Repurchase Date,
- (ii) the date by which the repurchase right must be exercised pursuant to Section 12.3(b),
- (iii) the Repurchase Price, and whether the Repurchase Price shall be paid by the Company in cash or by delivery of shares of Common Stock,
- (iv) a description of the procedure which a Holder must follow to exercise a repurchase right, and the place or places where such Securities, are to be surrendered for payment of the Repurchase Price and accrued interest, if any, to the Repurchase Date,
- (v) that on the Repurchase Date the Repurchase Price, and accrued and unpaid interest, if any, will become due and payable upon each such Securities designated by the Holder to be repurchased, and that interest thereon shall cease to accrue on and after said date,
- (vi) the Conversion Rate then in effect, the date on which the right to convert the principal amount of the Securities to be repurchased will terminate and the place or places where such Securities may be surrendered for conversion, and
- (vii) the place or places that the Securities certificate with the Election of Holder to Require Repurchase as specified in Section 2.2 shall be delivered.

No failure of the Company to give the foregoing notices or defect therein shall limit any Holder's right to exercise a repurchase right or affect the validity of the proceedings for the repurchase of Securities.

If any of the foregoing provisions or other provisions of this Article VIII are inconsistent with applicable law, such law shall govern.

(b) To exercise a repurchase right, a Holder shall deliver to the Trustee on or before the 30th day after the date of the Company Notice (i) written notice of the Holder's exercise of such right, which notice shall set forth the name of the Holder, the principal amount of the Securities to be repurchased (and, if any Securities is to repurchased in part, the serial number thereof, the portion of the principal amount thereof to be repurchased and the name of the Person in which the portion thereof to remain Outstanding after such repurchase is to be registered) and a statement that an election to exercise the repurchase right is being made thereby, and, in the event that the Repurchase Price shall be paid in shares of Common Stock, the name or names (with addresses) in which the certificate or certificates for shares of Common Stock shall be

issued, and (ii) the Securities with respect to which the repurchase right is being exercised. Such written notice shall be irrevocable, except that the right of the Holder to convert the Securities with respect to which the repurchase right is being exercised shall continue until the close of business on the Repurchase Date.

(c) In the event a repurchase right shall be exercised in accordance with the terms hereof, the Company shall pay or cause to be paid to the Trustee the Repurchase Price in cash or shares of Common Stock, as provided above, for payment to the Holder on the Repurchase Date or, if shares of Common Stock are to be paid, as promptly after the Repurchase Date as practicable, together with accrued and unpaid interest to the Repurchase Date payable with respect to the Securities as to which the repurchase right has been exercised; provided, however, that installments of interest that mature on or prior to the Repurchase Date shall be payable in cash to the Holders of such Securities, or one or more Predecessor Securities, registered as such at the close of business on the relevant Regular Record Date. The Company covenants that, if the Repurchase Price is to be paid in cash, at least one Business Day prior to the Repayment Date it will deposit with the Trustee or with a Paying Agent (or, if the Company is acting as its own Paying Agent, segregate and hold in trust as provided in Section 10.3) an amount of money sufficient to pay the principal of, and (except if the Repayment Date shall be an Interest Payment Date) accrued interest on, all the Securities or portions thereof, as the case may be, to be repaid on such Repayment Date.

(d) If any Securities (or portion thereof) surrendered for repurchase shall not be so paid on the Repurchase Date, the principal amount of such Securities (or portion thereof, as the case may be) shall, until paid, bear interest to the extent permitted by applicable law from the Repurchase Date at the rate of 7 1/4% per annum, and each Securities shall remain convertible into Common Stock until the principal of such Securities (or portion thereof, as the case may be) shall have been paid or duly provided for.

(e) Any Securities which is to be repurchased only in part shall be surrendered to the Trustee (with, if the Company or the Trustee so requires, due endorsement by, or a written instrument of transfer in form satisfactory to the Company and the Trustee duly executed by, the Holder thereof or such Holder's attorney duly authorized in writing), and the Company shall execute, and the Trustee shall authenticate and make available for delivery to the Holder of such Securities without service charge, a new Security or Securities, containing identical terms and conditions, each in an authorized denomination in aggregate principal amount equal to and in exchange for the unrepurchased portion of the principal of the Securities so surrendered.

(f) Any issuance of shares of Common Stock in respect of the Repurchase Price shall be deemed to have been effected immediately prior to the close of business on the Repurchase Date and the Person or Persons in whose name or names any certificate or certificates for shares of Common Stock shall be issuable upon such repurchase shall be deemed to have become on the Repurchase Date the holder or holders of record of the shares represented thereby; provided, however, that any surrender for repurchase on a date when the stock transfer books of the Company shall be closed shall constitute the Person or Persons in whose name or names the certificate or certificates for such shares are to be issued as the record holder or holders thereof

for all purposes at the opening of business on the next succeeding day on which such stock transfer books are open. No payment or adjustment shall be made for dividends or distributions on any Common Stock issued upon repurchase of any Securities declared prior to the Repurchase Date.

(g) No fractions of shares shall be issued upon repurchase of Securities. If more than one Security shall be repurchased from the same Holder and the Repurchase Price shall be payable in shares of Common Stock, the number of full shares which shall be issuable upon such repurchase shall be computed on the basis of the aggregate principal amount of the Securities so repurchased. Instead of any fractional share of Common Stock which would otherwise be issuable on the repurchase of any Securities or Securities, the Company will deliver to the applicable Holder its check for the current market value of such fractional share. The current market value of a fraction of a share is determined by multiplying the current market price of a full share by the fraction, and rounding the result to the nearest cent. For purposes of this Section, the current market price of a share of Common Stock is the Closing Price Per Share of the Common Stock on the Trading Day immediately preceding the Repurchase Date.

(h) Any issuance and delivery of certificates for shares of Common Stock on repurchase of Securities shall be made without charge to the Holder of Securities being repurchased for such certificates or for any tax or duty in respect of the issuance or delivery of such certificates or the Securities represented thereby; provided, however, that the Company shall not be required to pay any tax or duty which may be payable in respect of (i) income of the Holder or (ii) any transfer involved in the issuance or delivery of certificates for shares of Common Stock in a name other than that of the Holder of the Securities being repurchased, and no such issuance or delivery shall be made unless and until the Person requesting such issuance or delivery has paid to the Company the amount of any such tax or duty or has established, to the satisfaction of the Company, that such tax or duty has been paid.

(i) All Securities delivered for repurchase shall be delivered to the Trustee to be canceled at the direction of the Trustee, which shall dispose of the same as provided in Section 3.9.

#### SECTION 12.4 Certain Definitions.

For purposes of this Article XII,

(1) the term "beneficial owner" shall be determined in accordance with Rule 13d-3, as in effect on the date of the original execution of this Indenture, promulgated by the Commission pursuant to the Exchange Act;

(2) a "Change in Control" shall be deemed to have occurred at the time, after the original issuance of the Securities, of:

(i) the acquisition by any Person (including any syndicate or group deemed to be a "person" under Section 13(d)(3) of the Exchange Act as in effect on the date of

the original execution of this Indenture) of beneficial ownership, directly or indirectly, through a purchase, merger or other acquisition transaction or series of transactions, of shares of Capital Stock of the Company entitling such person to exercise 50% or more of the total voting power of all shares of Capital Stock of the Company entitled to vote generally in the elections of directors (or persons holding a similar function), other than any such acquisition by the Company, any subsidiary of the Company or any employee benefit plan of the Company; or

(ii) any consolidation of the Company with, or merger of the Company into, any other Person, any merger of another Person into the Company, or any conveyance, sale, transfer, lease or other disposition of all or substantially all of the assets of the Company to another Person (other than (a) any such transaction (x) which does not result in any reclassification, conversion, exchange or cancellation of outstanding shares of Capital Stock of the Company and (y) pursuant to which the holders of the Common Stock immediately prior to such transaction have the entitlement to exercise, directly or indirectly, 50% or more of the total voting power of all shares of Capital Stock entitled to vote generally in the election of directors (or persons holding a similar function) of the continuing or surviving corporation immediately after such transaction and (b) any merger which is effected solely to change the jurisdiction of incorporation of the Company and results in a reclassification, conversion or exchange of outstanding shares of Common Stock into solely shares of common stock of the surviving entity);

provided, however, that a Change in Control shall not be deemed to have occurred if the Closing Sales Price Per Share of the Common Stock for any five Trading Days within the period of 10 consecutive Trading Days ending immediately after the later of the Change in Control or the public announcement of the Change in Control (in the case of a Change in Control under clause (i) above) or the period of 10 consecutive Trading Days ending immediately before the Change in Control (in the case of a Change in Control under clause (ii) above) shall equal or exceed 105% of the Conversion Price of the Securities in effect on each such Trading Day; and

(3) the term "Closing Price Per Share" means, with respect to the Common Stock, for any day, (i) the last reported sale price regular way on the Nasdaq National Market or, (ii) if the Common Stock is not listed on the Nasdaq National Market, the last reported sale price regular way per share or, in case no such reported sale takes place on such day, the average of the reported closing bid and asked prices regular way, in either case, on the principal national securities exchange on which the Common Stock is listed or admitted to trading, or (iii) if the Common Stock is not quoted on the Nasdaq National Market or listed or admitted to trading on any national securities exchange, the average of the closing bid prices in the over-the-counter market as furnished by any Nasdaq National Market member firm selected from time to time by the Company for that purpose.

## **SECTION 12.5 Consolidation, Merger, Etc.**

In the case of any consolidation, merger, conveyance, sale, transfer or lease of all or substantially all of the assets of the Company to which Section 14.11 applies, in which the Common Stock of the Company is changed or exchanged as a result into the right to receive shares of stock and other securities or property or assets (including cash) which includes shares of Common Stock of the Company or common stock of another Person that are, or upon issuance will be, traded on a United States national securities exchange or approved for trading on an established automated over-the-counter trading market in the United States and such shares constitute at the time such change or exchange becomes effective in excess of 50% of the aggregate fair market value of such shares of stock and other securities, property and assets (including cash) (as determined by the Company, which determination shall be conclusive and binding), then the Person formed by such consolidation or resulting from such merger or combination or which acquires the properties or assets (including cash) of the Company, as the case may be, shall execute and deliver to the Trustee a supplemental indenture (which shall comply with the Trust Indenture Act as in force at the date of execution of such supplemental indenture) modifying the provisions of this Indenture relating to the right of Holders to cause the Company to repurchase the Securities following a Change in Control, including without limitation the applicable provisions of this Article XII and the definitions of the Common Stock and Change in Control, as appropriate, and such other related definitions set forth herein and in the Indenture as determined in good faith by the Company (which determination shall be conclusive and binding), to make such provisions apply in the event of a subsequent Change of Control to the common stock and the issuer thereof if different from the Company and Common Stock of the Company (in lieu of the Company and the Common Stock of the Company).

## **ARTICLE XIII**

### **SUBORDINATION**

#### **SECTION 13.1 Agreement to Subordinate.**

The Company agrees, and each Holder by accepting a Security agrees, that the indebtedness evidenced by the Securities is subordinated in right of payment, to the extent and in the manner provided in this Article, to the prior payment in full in cash of all Senior Debt and that the subordination is for the benefit of the holders of Senior Debt.

#### **SECTION 13.2 Liquidation; Dissolution; Bankruptcy.**

Upon any distribution to creditors of the Company in a liquidation or dissolution of the Company or in a bankruptcy, reorganization, insolvency, receivership or similar proceeding relating to the Company or its property:

(1) Senior Debt shall be entitled to receive payment in full in cash of the principal of (and premium, if any) and interest (including all interest accruing after the commencement of any such bankruptcy or similar proceeding) to the date of payment on the Senior Debt before Holders shall be entitled to receive any payment of principal of or interest on Securities;



(2) until the Senior Debt is paid in full in cash, any distribution to which Holders would be entitled but for this Article shall be made to holders of Senior Debt as their interests may appear, except that Holders may receive securities that are subordinated in right of payment to Senior Debt to at least the same extent as the Securities; and

(3) the Trustee is entitled to rely upon an order or decree of a court of competent jurisdiction or a certificate of a bankruptcy trustee or other similar official for the purpose of ascertaining the persons entitled to participate in such distribution, the holders of Senior Debt and other Company debt, the amount thereof or payable thereon and all other pertinent facts relating to the Trustee's obligations under this Article XIII.

The consolidation of the Company with, or the merger of the Company into, another Person or the liquidation or dissolution of the Company following the conveyance or transfer of its properties and assets substantially as an entirety to another Person upon the terms and conditions set forth in Article VIII shall not be deemed a dissolution, winding up, liquidation, reorganization, assignment for the benefit of creditors or marshaling of assets and liabilities of the Company for the purposes of this Section if the Person formed by such consolidation or into which the Company is merged or which acquires by conveyance, transfer, lease, sale or other disposition such properties and assets as an entirety or substantially as an entirety, as the case may be, shall, as a part of such consolidation, merger, conveyance or transfer, comply with the conditions set forth in Article VIII.

#### SECTION 13.3 No Payment in Certain Circumstances, Payment over of Proceeds

No payment shall be made with respect to the principal of, or premium, if any, or interest on the Securities (including, but not limited to, the Redemption Price with respect to the Securities to be called for redemption in accordance with Article XI or the Repurchase Price with respect to Securities submitted for repurchase in accordance with Article XII), except payments and distributions made by the Trustee as permitted by Section 13.11, if:

(i) a default in the payment of principal, premium, if any, or interest (including a default under any repurchase or redemption obligation) or other amounts with respect to any Senior Debt occurs and is continuing (or, in the case of Senior Debt for which there is a period of grace, in the event of such a default that continues beyond the period of grace, if any, specified in the instrument, agreement or lease evidencing such Senior Debt) unless and until such default shall have been cured or waived or shall have ceased to exist; or

(ii) a default, other than a payment default, on any Designated Senior Debt occurs and is continuing that then permits holders of such Designated Senior Debt to accelerate its maturity and the Trustee receives a notice of the default (a "Payment Blockage Notice") from a holder of such Designated Senior Debt or any other person entitled to give such notice under this Indenture.

If the Trustee receives any Payment Blockage Notice pursuant to clause (ii) above, no subsequent Payment Blockage Notice shall be effective for purposes of this Section unless and until (A) at least 365 days shall have elapsed since the initial effectiveness of the immediately prior Payment Blockage Notice, and (B) all scheduled payments of principal, premium, if any, and interest on the Securities that have come due have been paid in full in cash. No nonpayment default that existed or was continuing on the date of delivery of any Payment Blockage Notice to the Trustee shall be, or be made, the basis for a subsequent Payment Blockage Notice.

The Company may and shall resume payments on and distributions in respect of the Securities upon the earlier of:

(1) In the case of default referred to in clause (i) above, the date upon which the default is cured or waived or ceases to exist, or

(2) in the case of a default referred to in clause (ii) above, the earlier of the date on which the nonpayment default is cured or waived or 179 days after the date on which the Trustee receives the Payment Blockage Notice, if the maturity of such Designated Senior Debt has not been accelerated,

unless this Article otherwise prohibits the payment or distribution at the time of such payment or distribution.

#### SECTION 13.4 Prior Payment of Senior Debt Upon Acceleration of Securities.

In the event of the acceleration of the principal on the Securities because of an Event of Default, no payment or distribution shall be made to the Trustee or any holder of Securities in respect of the principal of, premium, if any, or interest on the Securities (including, but not limited to, the Redemption Price with respect to the Securities called for redemption in accordance with Article XI or the Repurchase Price with respect to the Securities submitted for repurchase in accordance with Article XII), except payments and distributions made by the Trustee as permitted by this Article, until all Senior Debt has been paid in full in cash or other payment satisfactory to the holders of Senior Debt or such acceleration is rescinded in accordance with the terms of this Indenture.

#### SECTION 13.5 When Distribution Must Be Paid Over.

If a distribution is made to Holders that because of this Article should not have been made to them, the Holders who receive the distribution shall hold it in trust for holders of Senior Debt and pay it over to them as their interests may appear.

#### SECTION 13.6 Reliance on Judicial Order or Certificate of Liquidating Agent.

Upon any payment or distribution of assets of the Company referred to in this Article, the Trustee, subject to the provisions of Section 6.2, and the Holders of the Securities shall be entitled to rely upon any order or decree entered by any court of competent jurisdiction in which such insolvency, bankruptcy, receivership, liquidation, reorganization, dissolution, winding up or

similar case or proceeding is pending, or a certificate of the trustee in bankruptcy, receiver, liquidating trustee, custodian, assignee for the benefit of creditors, agent or other Person making such payment or distribution, delivered to the Trustee or to the Holders of Securities, for the purpose of ascertaining the Persons entitled to participate in such payment or distribution, the holders of the Senior Debt and other indebtedness of the Company, the amount thereof or payable thereon, the amount or amounts paid or distributed thereon and all other facts pertinent thereto or to this Article.

#### SECTION 13.7 Subrogation.

Subject to the payment in full of all Senior Debt, the Holders of the Securities shall be subrogated to the extent of the payments or distributions made to the holders of such Senior Debt pursuant to the provisions of this Article to the rights of the holders of such Senior Debt to receive payments and distributions of cash, property and securities applicable to the Senior Debt until the principal of (and premium, if any) and interest on the Securities shall be paid in full. For purposes of such subrogation, no payments or distributions to the holders of the Senior Debt of any cash, property or securities to which the Holders of the Securities or the Trustee would be entitled except for the provisions of this Article, and no payments over pursuant to the provisions of this Article to the holders of Senior Debt by Holders of the Securities or the Trustee, shall, as among the Company, its creditors other than holders of Senior Debt and the Holders of the Securities, be deemed to be a payment or distribution by the Company to or on account of the Senior Debt.

#### SECTION 13.8 Relative Rights.

This Article XIII defines, and is intended solely to define, the relative rights of Holders of Securities and holders of Senior Debt. Nothing contained in this Indenture or the Securities shall:

- (1) impair, as between the Company and Holders of Securities, the obligation of the Company, which is absolute and unconditional, to pay principal of, premium, if any, and interest on the Securities as and when the same shall become due and payable in accordance with their terms;
- (2) affect the relative rights against the Company of Holders of Securities and creditors of the Company other than holders of Senior Debt; or
- (3) prevent the Trustee or any Holder of any Security from exercising its available remedies upon the occurrence of a default or an Event of Default, subject to the rights of holders of Senior Debt to receive cash, property and securities otherwise payable to Holders of Securities.

If the Company fails because of this Article to pay principal of, premium, if any, or interest on a Security as and when the same shall become due and payable, the failure is still a default.

SECTION 13.9 Subordination May Not Be Impaired By Company.

No right of any holder of Senior Debt to enforce the subordination of the indebtedness evidenced by the Securities shall be impaired by any act or failure to act by the Company or by its failure to comply with this Indenture.

SECTION 13.10 Distribution or Notice to Representative.

Whenever a distribution is to be made or a notice given to holders of Senior Debt, the distribution may be made and the notice given to their Representative.

SECTION 13.11 Rights of Trustee and Paying Agent.

The Trustee or any Paying Agent may continue to make payments on the Securities until it receives written notice of facts that would cause a payment of principal of or interest on the Securities to violate the Article. Only the Company, a Representative or a Holder of an issue of Senior Debt that has no Representative may give the written notice.

The Trustee has no fiduciary duty to the holders of Senior Debt other than as created under this Indenture. The Trustee in its individual or any other capacity may hold Senior Debt with the same rights it would have if it were not Trustee.

The Company's obligation to pay, and the Company's payment of, the Trustee's fees pursuant to Section 6.6 are excluded from the operation of this Article XIII.

SECTION 13.12 Notice to Trustee.

The Company shall give prompt written notice to the Trustee of any fact known to the Company which would prohibit the making of any payment to or by the Trustee in respect of the Securities. Notwithstanding the provisions of this Article or any other provision of this Indenture, the Trustee shall not be charged with knowledge of the existence of any facts which would prohibit the making of any payment to or by the Trustee in respect of the Securities, unless and until a Responsible Officer of the Trustee shall have received written notice thereof from the Company or a Representative or a holder of Senior Debt (including, without limitation, a holder of Designated Senior Debt) and, prior to the receipt of any such written notice, the Trustee, subject to the provisions of Section 6.14, shall be entitled in all respects to assume that no such facts exist; provided, however, that if a Responsible Officer of the Trustee shall not have received the notice provided for in this Section 13.12 at least two Business Days prior to the date upon which by the terms hereof any money may become payable for any purpose (including, without limitation, the payment of the principal of (and premium, if any) or interest on any Security), then, anything herein contained to the contrary notwithstanding, the Trustee shall have full power and authority to receive such money and to apply the same to the purpose for which such money was received and shall not be affected by any notice to the contrary which may be received by a Responsible Officer of the Trustee less than two Business Days prior to such date.

Notwithstanding anything in this Article XIII to the contrary, nothing shall prevent any payment by the Trustee to the Holders of monies deposited with it pursuant to Section 4.1, and any such payment shall not be subject to the provisions of Sections 13.2, 13.3 and 13.4.

Subject to the provisions of Section 6.14, the Trustee shall be entitled to rely on the delivery to it of a written notice by a Person representing himself to be a Representative or a holder of Senior Debt (including, without limitation, a holder of Designated Senior Debt) to establish that such notice has been given by a Representative or a holder of Senior Debt (including, without limitation, a holder of Designated Senior Debt). In the event that the Trustee determines in good faith that further evidence is required with respect to the right of any Person as a holder of Senior Debt to participate in any payment or distribution pursuant to this Article, the Trustee may request such Person to furnish evidence to the reasonable satisfaction of the Trustee as to the amount of Senior Debt held by such Person, the extent to which such Person is entitled to participate in such payment or distribution and any other facts pertinent to the rights of such Person under this Article, and if such evidence is not furnished, the Trustee may defer any payment to such Person pending judicial determination as to the right of such Person to receive such payment.

#### SECTION 13.13 Payment Permitted If No Default.

Nothing contained in this Article XIII or elsewhere in this Indenture or in the Securities shall prevent (a) the Company, at any time except during the pendency of any case, proceeding, dissolution, liquidation or in a bankruptcy, reorganization, insolvency, receivership or similar proceeding referred to in Section 13.2, during the circumstance referred to in the first paragraph of Section 13.3 or under the conditions described in Section 13.4 hereof, from making payments at any time of principal of (and premium, if any) or interest on the Securities (including, but not limited to, the Redemption Price with respect to the Securities called for redemption in accordance with Article XI or the Repurchase Price with respect to the Securities submitted for repurchase in accordance with Article XII), or (b) the application by the Trustee of any money deposited with it hereunder to the payment of or on account of the principal of (and premium, if any) or interest on the Securities (including, but not limited to, the Redemption Price with respect to the Securities called for redemption in accordance with Article XI or the Repurchase Price with respect to the Securities submitted for repurchase in accordance with Article XII) or the retention of such payment by the Holders, if, at the time of such application by the Trustee, it did not have knowledge that such payment would have been prohibited by the provisions of this Article.

#### SECTION 13.14 Trustee to Effectuate Subordination.

Each Holder of a Securities by its acceptance thereof authorizes and directs the Trustee on its behalf to take such action as may be necessary or appropriate to effectuate the subordination provided in this Article and appoints the Trustee its attorney-in-fact for any and all such purposes.

#### SECTION 13.15 Reliance by Holders of Senior Debt on Subordination Provisions.

Each Holder by accepting a Securities acknowledges and agrees that the foregoing subordination provisions are, and are intended to be, an inducement and a consideration to each holder of any Senior Debt, whether such Senior Debt was created or acquired before or after the issuance of the Securities, to acquire and continue to hold, or to continue to hold, such Senior Debt and such holder of Senior Debt shall be deemed conclusively to have relied on such subordination provisions in acquiring and continuing to hold, or in continuing to hold, such Senior Debt, and no amendment or modification of the provisions contained herein shall diminish the rights of such holders of Senior Debt unless such holders shall have agreed in writing thereto.

#### SECTION 13.16 Rights of Trustee as Holder of Senior Debt; Preservation of Trustee's Rights.

The Trustee in its individual capacity shall be entitled to all the rights set forth in this Article with respect to any Senior Debt which may at any time be held by it, to the same extent as any other holder of Senior Debt, and nothing in this Indenture shall deprive the Trustee of any of its rights as such holder. Nothing in this Article shall apply to claims of, or payments to, the Trustee under or pursuant to Section 6.6 hereof.

#### SECTION 13.17 Article Applicable to Paying Agents.

In case at any time any Paying Agent other than the Trustee shall have been appointed by the Company and be then acting hereunder, the term "Trustee" as used in this Article shall in such case (unless the context otherwise requires) be construed as extending to and including such Paying Agent within its meaning as fully for all intents and purposes as if such Paying Agent were named in this Article in addition to or in place of the Trustee; provided, however, that Section 13.16 shall not apply to the Company or any Affiliate of the Company if it or such Affiliate acts as Paying Agent.

#### SECTION 13.18 Determination of Certain Conversions and Repurchases as Payments.

For the purposes of this Article only, (a) the issuance and delivery of junior securities upon (i) conversion of Securities in accordance with Article XIV or (ii) the repurchase of Securities in accordance with Article VIII, shall not be deemed to constitute a payment or distribution on account of the principal of, or premium or interest on, Securities or on account of the purchase or other acquisition of the Securities, and (b) the payment, issuance or delivery of cash (except in satisfaction of fractional shares pursuant to Section 14.3), property or securities (other than junior securities) upon conversion of a Securities shall be deemed to constitute payment on account of the principal of such Securities. For the purposes of this Section, the term "junior securities" means (i) shares of any stock of any class of the Company and securities into which the Securities are convertible pursuant to Article XIV or the terms of the Securities and (ii) securities of the Company which are subordinated in right of payment to all Senior Debt which may be outstanding at the time of issuance or delivery of such securities to substantially the same extent as, or to a greater extent than, the Securities are so subordinated as provided in

this Article. Nothing contained in this Article or elsewhere in this Indenture or in the Securities is intended to or shall impair, as among the Company, its creditors other than holders of Senior Debt and the Holders of the Securities, the right, which is absolute and unconditional, of the Holder of any Securities to convert such Securities in accordance with Article XIV or to exchange such Securities for Common Stock in accordance with Article XII if the Company elects to satisfy the obligations under Article XII by the delivery of Common Stock.

## **ARTICLE XIV**

### **CONVERSION OF SECURITIES**

#### **SECTION 14.1 Conversion Privilege And Conversion Rate.**

Subject to and upon compliance with the provisions of this Article, at the option of the Holder thereof, any Security or any portion of the principal amount thereof which is \$1,000 or an integral multiple of \$1,000 may be converted at the principal amount thereof, or of such portion thereof, into fully paid and nonassessable shares (calculated as to each conversion to the nearest 1/100 of a share) of Common Stock of the Company, at the Conversion Rate, determined as hereinafter provided, in effect at the time of conversion. Such conversion right shall commence at anytime following the original issue date of the Securities and expire at the close of business on the Business Day immediately preceding the date of Maturity of such Securities. In case a Security or portion thereof is called for redemption (or delivered for repurchase, if applicable), such conversion right in respect of the Security or portion so called shall expire at the close of business on the Business Day immediately preceding the Redemption Date or Repurchase Date, if applicable, unless the Company defaults in making the payment due upon redemption or repurchase, if applicable. The rate at which shares of Common Stock shall be delivered upon conversion (the "Conversion Rate") shall be initially 20.1898 shares of Common Stock for each \$1,000 principal amount of the Securities. The Conversion Rate shall be adjusted in certain instances as provided in this Article XIV.

#### **SECTION 14.2 Exercise Of Conversion Privilege.**

In order to exercise the conversion privilege, the Holder of any Security to be converted shall surrender such Security, duly endorsed in blank or assigned to the Company at any office or agency of the Company, maintained for that purpose pursuant to Section 10.2 accompanied by a duly signed notice of conversion substantially in the form set forth in Section 2.4 stating that the Holder elects to convert such Security or, if less than the entire principal amount thereof is to be converted, the portion thereof to be converted. Securities surrendered for conversion during the period from the close of business on any Regular Record Date next preceding any Interest Payment Date to the opening of business on such Interest Payment Date shall (except in the case of Securities or portions thereof which have been called for redemption or are eligible to be delivered for repurchase, the conversion rights of which would terminate between such Regular Record Date and the close of business on such Interest Payment Date) be accompanied by payment in New York Clearing House funds or other funds acceptable to the Company of an amount equal to the interest payable on such Interest Payment Date on the principal amount of

Securities being surrendered for conversion. Except as provided in the preceding sentence and subject to the last paragraph of Section 3.7, no payment or adjustment shall be made upon any conversion on account of any interest accrued on the Securities surrendered for conversion or on account of any dividends on the Common Stock issued upon conversion.

Securities shall be deemed to have been converted immediately prior to the close of business on the day of surrender of such Securities for conversion in accordance with the foregoing provisions, and at such time the rights of the Holders of such Securities as Holders shall cease, and the Person or Persons entitled to receive the Common Stock issuable upon conversion shall be treated for all purposes as the record holder or holders of such Common Stock at such time. As promptly as practicable on or after the conversion date, the Company shall issue and shall deliver to the Trustee a certificate or certificates for the number of full shares of Common Stock issuable upon conversion, together with payment in lieu of any fraction of a share, as provided in Section 14.3. Such certificate or certificates shall be sent by the Trustee, if applicable, to the Conversion Agent for delivery to the Person or Persons entitled to receive the Common Stock. In the case of any Security which is converted in part only, upon such conversion the Company shall execute and the Trustee shall authenticate and deliver to the Holder thereof, at the expense of the Company, a new Security or Securities of authorized denominations in aggregate principal amount equal to the unconverted portion of the principal amount of such Security.

#### SECTION 14.3 Fractions Of Shares.

No fractional shares of Common Stock shall be issued upon conversion of any Security or Securities. If more than one Security shall be surrendered for conversion at one time by the same Holder, the number of full shares which shall be issuable upon conversion thereof shall be computed on the basis of the aggregate principal amount of the Securities (or specified portions thereof) so surrendered. Instead of any fractional share of Common Stock which would otherwise be issuable upon conversion of any Security or Securities (or specified portions thereof), the Company will deliver to the applicable Holder its check for the current market value of such fractional share. The current market value of a fraction of a share is determined by multiplying the current market price of a full share by the fraction, and rounding the result to the nearest cent. For purposes of this Section, the current market price of a share of Common Stock is the Closing Price Per Share of the Common Stock on the Trading Day immediately preceding the date of conversion.



#### SECTION 14.4 Adjustment Of Conversion Rate.

The Conversion Rate shall be subject to adjustment from time to time as follows:

(1) In case the Company shall pay or make a dividend or other distribution on any class of Capital Stock of the Company payable in shares of Common Stock, the Conversion Rate in effect at the opening of business on the day following the date fixed for the determination of stockholders entitled to receive such dividend or other distribution shall be increased by dividing such Conversion Rate by a fraction of which the numerator shall be the number of shares of Common Stock outstanding at the close of business on the date fixed for such determination and the denominator shall be the sum of such number of shares and the total number of shares constituting such dividend or other distribution, such increase to become effective immediately prior to the opening of business on the day following the date fixed for such determination. For the purposes of this paragraph (1), the number of shares of Common Stock at any time outstanding shall not include shares held in the treasury of the Company but shall include shares issuable in respect of scrip certificates issued in lieu of fractions of shares of Common Stock. The Company will not pay any dividend or make any distribution on shares of Common Stock held in the treasury of the Company.

(2) Subject to paragraph 9 of this Section 14.4, in case the Company shall issue rights, options or warrants to all holders of its Common Stock (other than any rights, options or warrants that by their terms will also be issued to any Holder upon conversion of a Security into Common Stock without any action required by the Company or any other person) entitling them to subscribe for or purchase shares of Common Stock at a price per share less than the current market price per share (determined as provided in paragraph (10) of this Section 14.4) of the Common Stock on the date fixed for the determination of stockholders entitled to receive such rights, options or warrants, the Conversion Rate in effect at the opening of business on the day following the date fixed for such determination shall be increased by dividing such Conversion Rate by a fraction of which the numerator shall be the number of shares of Common Stock outstanding at the close of business on the date fixed for such determination plus the number of shares of Common Stock which the aggregate of the offering price of the total number of shares of Common Stock so offered for subscription or purchase would purchase at such current market price per share and the denominator shall be the number of shares of Common Stock outstanding at the close of business on the date fixed for such determination plus the number of shares of Common Stock so offered for subscription or purchase, such increase to become effective immediately prior to the opening of business on the day following the date fixed for such determination. For the purposes of this paragraph (2), the number of shares of Common Stock at any time outstanding shall not include shares held in the treasury of the Company but shall include shares issuable in respect of scrip certificates issued in lieu of fractions of shares of Common Stock. The Company will not issue any rights, options or warrants in respect of shares of Common Stock held in the treasury of the Company.

(3) In case outstanding shares of Common Stock shall be subdivided into a greater number of shares of Common Stock, the Conversion Rate in effect at the opening of business on the day following the day upon which such subdivision becomes effective shall be

proportionately increased, and, conversely, in case outstanding shares of Common Stock shall be combined into a smaller number of shares of Common Stock, the Conversion Rate in effect at the opening of business on the day following the day upon which such combination becomes effective shall be proportionately reduced, such reduction or increase, as the case may be, to become effective immediately prior to the opening of business on the day following the day upon which such subdivision or combination becomes effective.

(4) In case the Company shall, by dividend or otherwise, distribute to all holders of its Common Stock, shares of any class of its Capital Stock, evidences of its indebtedness, cash or other assets (including securities, but excluding (a) any rights, options or warrants referred to in paragraph (2) of this Section, (b) any dividend or distribution paid exclusively in cash, (c) any dividend or distribution referred to in paragraph (1) of this Section and (d) any distributions referred to in paragraph (5) of this Section), the Conversion Rate shall be adjusted so that the same shall equal the price determined by dividing the Conversion Rate in effect immediately prior to the close of business on the date fixed for the determination of stockholders entitled to receive such distribution by a fraction of which the numerator shall be the current market price per share (determined as provided in paragraph (10) of this Section) of the Common Stock on the date fixed for such determination less the then fair market value (as determined by the Board of Directors, whose determination shall be conclusive and described in a Board Resolution filed with the Trustee) of the portion of the assets, shares of Capital Stock or evidences of indebtedness so distributed applicable to one share of Common Stock and the denominator shall be such current market price per share of the Common Stock, such adjustment to become effective immediately prior to the opening of business on the day following the date fixed for the determination of stockholders entitled to receive such distribution.

(5) In case the Company shall, by dividend or otherwise, distribute to all holders of its Common Stock cash (excluding any cash that is distributed upon a merger or consolidation to which Section 14.11 applies or as part of a distribution referred to in paragraph (4) of this Section other than those referenced in the first parenthetical contained therein) in an aggregate amount that, combined together with:

(a) the aggregate amount of any other distributions to all holders of its Common Stock made exclusively in cash within the 12 months preceding the date of payment of such distribution and in respect of which no adjustment pursuant to this paragraph (5) has been made, and

(b) the aggregate of any cash plus the fair market value (as determined by the Board of Directors, whose determination shall be conclusive and described in a Board Resolution filed with the Trustee) of consideration payable in respect of any tender offer by the Company or any of its subsidiaries for all or any portion of the Common Stock concluded within the 12 months preceding the date of payment of such distribution and in respect of which no adjustment pursuant to paragraph (6) of this Section has been made (the amount of such cash distribution together with the amounts described in clauses (a) and

(b) above being referred to herein as the "Aggregate Cash Distribution Amount"),

exceeds 10% of the product of (i) the current market price per share of the Common Stock on the date for the determination of holders of shares of Common Stock entitled to receive such distribution, times (ii) the number of shares of Common Stock outstanding on such date (the amount by which the Aggregate Cash Distribution Amount exceeds 10% of the product of the amounts described in clauses (i) and (ii) above being referred to herein as the "Excess Amount"), then, and in each such case, immediately after the close of business on such date for determination, the Conversion Rate shall be increased in accordance with the following formula:

**EA**

$AC = CR / M - (O)$

$(M)$

**Where:**

AC = the adjusted Conversion Rate.

CR = the Conversion Rate in effect immediately prior to the close of business on the date fixed for determination of the stockholders entitled to receive the applicable distribution.

M = the current market price per share (determined as provided in paragraph (10) of this Section) of the Common Stock on the date fixed for determination of the stockholders entitled to receive the applicable distribution.

**EA = the Excess Amount.**

O = the number of shares of Common Stock outstanding on the date fixed for determination of the stockholders entitled to receive the distribution.

(6) In case a tender offer made by the Company or any Subsidiary for all or any portion of the Common Stock shall expire and such tender offer (as amended upon the expiration thereof) shall require the payment to stockholders (based on the acceptance (up to any maximum specified in the terms of the tender offer) of Purchased Shares (as defined below)) of an aggregate consideration having a fair market value (as determined by the Board of Directors, whose determination shall be conclusive and described in a Board Resolution filed with the Trustee) that combined together with:

(a) the aggregate of the cash plus the fair market value (as determined by the Board of Directors, whose determination shall be conclusive and described in a Board Resolution filed with the Trustee), as of the expiration of such tender offer, of consideration payable in respect of any other tender offer, by the Company or any Subsidiary for all or any portion of the Common Stock expiring within the 12 months preceding the expiration of such tender offer and in respect of which no adjustment pursuant to this paragraph

(6) has been made, and

(b) the aggregate amount of any distributions to all holders of the Company's Common Stock made exclusively in cash within 12 months preceding the expiration of such tender offer and in respect of which no adjustment pursuant to paragraph (5) of this Section has been made,

exceeds 10% of the product of (i) the current market price per share of the Common Stock (determined as provided in paragraph (10) of this Section) as of the last time (the "Expiration Time") tenders could have been made pursuant to such tender offer (as it may be amended), times (ii) the number of shares of Common Stock outstanding (including any tendered shares) on the Expiration Time, then, and in each such case, immediately prior to the opening of business on the day after the date of the Expiration Time, the Conversion Rate shall be reduced in accordance with the following formula:

$$AC = CR / (M \times O) - C$$

$$(M \times (O - TS))$$

**Where:**

AC = the adjusted Conversion Rate.

CR = the Conversion Rate immediately prior to close of business on the date of the Expiration Time.

M = the current market price per share of the Common Stock (determined as provided in paragraph (10) of this Section) on the date of the Expiration Time.

O = the number of shares of Common Stock outstanding (including any tendered shares) on the Expiration Time.

C = the amount of cash plus the fair market value (as determined by the Board of Directors, whose determination shall be conclusive and described in a Board Resolution filed with the Trustee) of the aggregate consideration payable to stockholders based on the acceptance (up to any maximum specified in the terms of the tender offer) of Purchased Shares.

TS = the number of all shares of Common Stock validly tendered and not withdrawn as of the Expiration Time (the shares deemed so accepted up to any such maximum, being referred to as the "Purchased Shares").

(7) The reclassification of Common Stock into securities including securities other than Common Stock (other than any reclassification upon a consolidation or merger to which Section 14.11 applies) shall be deemed to involve (a) a distribution of such securities other than Common Stock to all holders of Common Stock (and the effective date of such reclassification shall be deemed to be "the date fixed for the determination of stockholders entitled to receive such distribution" and "the date fixed for such determination" within the meaning of paragraph

(4) of this Section), and (b) a subdivision or combination, as the case may be, of the number of shares of Common Stock outstanding immediately prior to such reclassification into the number of shares of Common Stock outstanding immediately thereafter (and the effective date of such reclassification shall be deemed to be "the day upon which such subdivision becomes effective" or "the day upon which such combination becomes effective", as the case may be, and "the day upon which such subdivision or combination becomes effective" within the meaning of paragraph (3) of this Section).

(8) In case a tender offer made by a Person other than the Company, any Subsidiary of the Company for an amount which increases the offeror's ownership of Common Stock to more than 25% of the Common Stock outstanding and shall involve payment by such Person of consideration per share of Common Stock having a fair market value (as determined by the Board of Directors, whose determination shall be conclusive and described in a Board Resolution as filed with the Trustee) as of the last time (the "Third Party Expiration Time") tenders could have been made pursuant to such tender offer (as it may be amended) that exceeds the current market price of the Common Stock on the Trading Day next succeeding the Third Party Expiration Time, and in which, as of the Third Party Expiration Time, the Board of Directors is not recommending rejection of the offer, the Conversion Rate shall be adjusted in accordance with the following formula:

$$AC = CR / (M1 \times O)$$

$$(C + (O1 \times M1))$$

**Where:**

AC = the adjusted Conversion Rate.

CR = the Conversion Rate immediately prior to close of business on the date of the Third Party Expiration Time.

M1 = the current market price per share of the Common Stock (determined as provided in paragraph (10) of this Section) on the date next succeeding the Third Party Expiration Time.

O = the number of shares of Common Stock outstanding (including any tendered shares) on the Third Party Expiration Time.

O1 = the number of shares of Common Stock outstanding (less any Third Party Purchased Shares, as defined below) outstanding on the Third Party Expiration Time.

C = the amount of cash plus the fair market value (as determined by the Board of Directors, whose determination shall be conclusive and described in a Board Resolution as filed with the Trustee) of the aggregate consideration payable to

stockholders based on the acceptance (up to any maximum specified in the terms of the tender offer) of Third Party Purchased Shares.

The number of all shares of Common Stock validly tendered and not withdrawn as of the Third Party Expiration Time and deemed accepted up to any such maximum, is herein referred to as the "Third Party Purchased Shares." In the event that such Person is obligated to purchase shares pursuant to any such tender or exchange offer, but such Person is permanently prevented by applicable law from effecting any such purchases or all such purchases are rescinded, the Conversion Rate shall again be adjusted to be the Conversion Rate which would then be in effect if such tender or exchange offer had not been made. Notwithstanding the foregoing, the adjustment described in this Section 14.4(8) shall not be made if, as of the Expiration Time, the offering documents with respect to such offer disclose a plan or intention to cause the Company to engage in any transaction described in Article VIII.

(9) In case the Company shall issue rights, options or warrants to all holders of the Common Stock entitling the holders thereof to subscribe for or purchase shares of Common Stock (either initially or under certain circumstances), which rights, options or warrants (i) are deemed to be transferred with such shares of Common Stock, (ii) are not exercisable and (iii) are also issued in respect of future issuances of Common Stock, in each case in clauses (i) through (iii) until the occurrence of a specified event or events ("Trigger Event"), shall for purposes of this Section 14.4 not be deemed issued or distributed until the occurrence of the earliest Trigger Event, whereupon such rights, options and warrants shall be deemed to have been distributed and an appropriate adjustment (if any is required) to the Conversion Rate shall be made under this Section 14.4. If any such rights, options or warrants, including any such existing rights, options or warrants distributed prior to the date of this Indenture are subject to subsequent events, upon the occurrence of each of which such rights, options or warrants shall become exercisable to purchase different securities, evidences of indebtedness or other assets, then the occurrence of each such event shall be deemed to be such date of distribution and record date with respect to new rights, options or warrants (and a termination or expiration of the existing rights, options or warrants without exercise by the holder thereof). In addition, in the event of any distribution (or deemed distribution) of rights, options or warrants, or any Trigger Event with respect thereto, that was counted for purposes of calculating a distribution amount for which an adjustment to the Conversion Rate under this

Section 14.4 was made, (a) in the case of any such rights, options or warrant which shall all have been redeemed or repurchased without exercise by any holders thereof, the Conversion Rate shall be readjusted upon such final redemption or repurchase to give effect to such distribution or Trigger Event, as the case may be, as though it were a cash distribution, equal to the per share redemption or repurchase price received by a holder or holders of Common Stock with respect to such rights, options or warrants (assuming such holder had retained such rights, options or warrants), made to all holders of Common Stock as of the date of such redemption or repurchase, and (b) in the case of such rights, options or warrants which shall have expired or been terminated without exercise by any holders thereof, the Conversion Rate shall be readjusted as if such rights, options and warrants had not been issued.

(10) For the purpose of any computation under paragraphs (2), (4), (5), (6) and (8) of this Section, the current market price per share of Common Stock on any date shall be deemed to

be the average of the daily closing prices for the five consecutive Trading Days selected by the Company commencing not more than 10 Trading Days before, and ending not later than the earlier of the day in question and the day before the "ex" date with request to the issuance or distribution requiring such computation. The closing price for each day shall be the last reported sales price regular way or, in case no such reported sale takes place on such day, the average of the reported closing bid and asked prices regular way, in either case on the Nasdaq National Market Exchange or, if the Common Stock is not quoted on the Nasdaq National Market, on the principal national securities exchange on which the Common Stock is listed or admitted to trading or, if the Common Stock is not listed or admitted to trading on any national securities exchange or quoted on the Nasdaq National Market, the average of the closing bid and asked prices in the over-the-counter market as furnished by any New York Stock Exchange member firm selected from time to time by the Company for that purpose. For purposes of this paragraph, the term "'ex' date", when used with respect to any issuance or distribution, means the first date on which the Common Stock trades regular way on such exchange or in such market without the right to receive such issuance or distribution.

(11) No adjustment in the Conversion Rate shall be required unless such adjustment (plus any adjustments not previously made by reason of this paragraph

(11)) would require an increase or decrease of at least 1% in such rate; provided, however, that any adjustments which by reason of this paragraph (11) are not required to be made shall be carried forward and taken into account in any subsequent adjustment. All calculations under this paragraph (11) shall be made to the nearest cent or to the nearest one-hundredth of a share, as the case may be.

(12) The Company may make such increases in the Conversion Rate, in addition to those required by this Section, as it considers to be advisable in order to avoid or diminish any income tax to any holders of shares of Common Stock resulting from any dividend or distribution of stock or issuance of rights or warrants to purchase or subscribe for stock or from any event treated as such for income tax purposes or for any other reasons. The Company shall have the power to resolve any ambiguity or correct any error in this paragraph (12) and its actions in so doing shall, absent manifest error, be final and conclusive.

(13) To the extent permitted by applicable law, the Company from time to time may increase the Conversion Rate by any amount for any period of time if the period is at least 20 days, the increase is irrevocable during such period, and the Board of Directors shall have made a determination that such increase would be in the best interests of the Company, which determination shall be conclusive; provided, however, that no such increase shall be taken into account for purposes of determining whether the Closing Price Per Share of the Common Stock exceeds the Conversion Price by 105% in connection with an event which would otherwise be a Change of Control. Whenever the Conversion Rate is increased pursuant to the preceding sentence, the Company shall give notice of the increase to the Holders in the manner provided in Section 1.6 at least 15 days prior to the date the increased Conversion Rate takes effect, and such notice shall state the increased Conversion Rate and the period during which it will be in effect.

#### SECTION 14.5 Notice Of Adjustments Of Conversion Rate.

Whenever the Conversion Rate is adjusted as herein provided:

(1) the Company shall compute the adjusted Conversion Rate in accordance with Section 14.4 and shall prepare an Officers' Certificate, one of the signatories of which shall be the Treasurer or Chief Financial Officer of the Company, setting forth the adjusted Conversion Rate and showing in reasonable detail the calculation of the adjusted Conversion Rate and the facts upon which such adjustment is based, and such certificate shall promptly be filed with the Trustee and with each Conversion Agent and at each office or agency maintained for the purpose of conversion of Securities pursuant to Section 10.2; and

(2) a notice stating that the Conversion Rate has been adjusted and setting forth the adjusted Conversion Rate shall forthwith be prepared, and as soon as practicable after it is prepared, such notice shall be mailed by the Company to all Holders in accordance with Section 1.6.

Unless and until a Responsible Officer of the Trustee shall receive an Officers' Certificate setting forth an adjusted Conversion Rate, the Trustee may assume without inquiry that no adjustment has been made and that the last Conversion Rate of which it has notice remains in effect.

#### SECTION 14.6 Notice Of Certain Corporate Action.

In case:

(1) the Company shall declare a dividend (or any other distribution) on its Common Stock payable (a) otherwise than exclusively in cash or (b) exclusively in cash in an amount that would require any adjustment pursuant to Section 14.4;

(2) the Company shall authorize the granting to the holders of its Common Stock of rights, options or warrants to subscribe for or purchase any shares of Capital Stock of any class or of any other rights;

(3) of any reclassification of the Common Stock of the Company, or of any consolidation, merger or share exchange to which the Company is a party and for which approval of any stockholders of the Company is required, or of the conveyance, lease, sale, transfer or other disposition of all or substantially all of the assets of the Company; or

(4) of the voluntary or involuntary dissolution, liquidation or winding up of the Company;

then the Company shall cause to be filed at each office or agency maintained for the purpose of conversion of Securities pursuant to Section 10.2, and shall cause to be mailed to all Holders in accordance with Section 1.6, at least 20 days (or 10 days in any case specified in clause (1) or (2) above) prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, rights,



options or warrants, or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights, options or warrants are to be determined, or (y) the date on which such reclassification, consolidation, merger, share exchange, conveyance, lease, sale, transfer, disposition, dissolution, liquidation or winding up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, share exchange, conveyance, lease, sale, transfer, disposition, dissolution, liquidation or winding up. Neither the failure to give such notice nor any defect therein shall affect the legality or validity of the proceedings described in clauses (1) through (4) of this Section 14.6. If at the time the Trustee shall not be the Conversion Agent, a copy of such notice shall also forthwith be filed by the Company with the Trustee.

The Company shall cause to be filed at the Corporate Trust Office and each office or agency maintained for the purpose of conversion of Securities pursuant to Section 10.2, and shall cause to be provided to all Holders in accordance with Section 1.6, notice of any tender offer by the Company or any Subsidiary for all or any portion of the Common Stock at or about the time that such notice of tender offer is provided to the public generally.

#### SECTION 14.7 Company To Reserve Common Stock.

The Company shall at all times reserve and keep available, free from preemptive or similar rights, out of its authorized but unissued Common Stock, for the purpose of effecting the conversion of Securities, the full number of shares of Common Stock then issuable upon the conversion of all Outstanding Securities.

#### SECTION 14.8 Taxes On Conversions.

Except as provided in the next sentence, the Company will pay any and all taxes or duties that may be payable in respect of the issue or delivery of shares of Common Stock on conversion of Securities pursuant hereto. The Company shall not, however, be required to pay any tax or duty which may be payable in respect of any transfer involved in the issue or delivery of shares of Common Stock in a name other than that of the Holder of the Security or Securities to be converted, and no such issue or delivery shall be made unless and until the Person requesting such issue has paid to the Company the amount of any such tax or duty, or has established to the satisfaction of the Company that such tax or duty has been paid.

#### SECTION 14.9 Covenant As To Common Stock.

The Company agrees that all shares of Common Stock which may be issued upon conversion of Securities will, upon issuance, have been duly authorized and validly issued and will be fully paid and nonassessable and, except as provided in Section 14.8, the Company will pay all taxes, liens and charges with respect to the issue thereof.

#### SECTION 14.10 Cancellation Of Converted Securities.

All Securities delivered for conversion shall be delivered to the Trustee or its agent to be canceled by or at the direction of the Trustee, which shall dispose of the same as provided in Section 3.9.

#### SECTION 14.11 Provisions In Case Of Consolidation, Merger Or Sale Of Assets.

In case of any consolidation of the Company with, or merger of the Company into, any other Person, any merger of another Person into the Company (other than a merger which does not result in any reclassification, conversion, exchange or cancellation of outstanding shares of Common Stock of the Company) or any conveyance, lease, sale, transfer or other disposition of all or substantially all of the assets of the Company, the Person formed by such consolidation or resulting from such merger or to which acquires such assets, as the case may be, shall execute and deliver to the Trustee a supplemental indenture providing that the Holder of each Security then Outstanding shall, without the consent of the Holders, have the right thereafter, to convert each Security into the kind and amount of securities, cash and other property receivable upon such consolidation, merger, conveyance, lease, sale, transfer or other disposition by a holder of the number of shares of Common Stock of the Company into which such Security might have been converted immediately prior to such consolidation, merger, conveyance, lease, sale, transfer or other disposition, assuming such holder of Common Stock of the Company (i) is not a Person with which the Company consolidated or into which the Company merged or which merged into the Company or to which such sale, conveyance, lease, transfer or other disposition was made, as the case may be ("Constituent Person"), or an Affiliate of a Constituent Person and (ii) failed to exercise his or her rights of election, if any, as to the kind or amount of securities, cash and other property receivable upon such consolidation, merger, conveyance, lease, sale, transfer or other disposition (provided that if the kind or amount of securities, cash and other property receivable upon such consolidation, merger, conveyance, lease, sale, transfer or other disposition is not the same for each share of Common Stock of the Company held immediately prior to such consolidation, merger, conveyance, lease, sale, transfer or other disposition by other than a Constituent Person or an Affiliate thereof and in respect of which such rights of election shall not have been exercised ("Non-electing Share"), then for the purpose of this Section the kind and amount of securities, cash and other property receivable upon such consolidation, merger, conveyance, lease, sale, transfer or other disposition by the holder of each Non-electing Share shall be deemed to be the kind and amount so receivable per share by a plurality of the holders of the Non-electing Shares), and assuming, if such consolidation, merger, conveyance, lease, sale, transfer or other disposition is prior to the date upon which the Securities first become convertible, that the Securities were convertible at the time of such consolidation, merger, conveyance, lease, sale, transfer or other disposition at the initial Conversion Rate specified in

Section 14.1 as adjusted from the date of the issuance of the applicable Securities to such time pursuant to Section 14.4. Such supplemental indenture shall provide for adjustments which, for events subsequent to the effective date of such supplemental indenture, shall be as nearly equivalent as may be practicable to the adjustments provided for in this Article. The above provisions of this Section shall similarly apply to successive consolidations, mergers, conveyances, leases, sales, transfers or other dispositions.

Neither the Trustee nor any Conversion Agent shall be under any duty or responsibility with respect to any such certificate or the information and calculations contained therein, except to exhibit the same to any Holder of Securities desiring inspection thereof at its office during normal business hours, and shall not be deemed to have knowledge of any adjustment in the Conversion Rate unless and until a Responsible Officer of the Trustee shall have received such a certificate. Until a Responsible Officer of the Trustee receives such a certificate, the Trustee and each Conversion Agent may assume without inquiry that the last Conversion Rate of which the Trustee has knowledge of remains in effect.

#### **SECTION 14.12 Responsibility of Trustee for Conversion Provisions.**

The Trustee, subject to the provisions of Section 6.2, and any Conversion Agent shall not at any time be under any duty or responsibility to any Holder of Securities to determine whether any facts exist which may require any adjustment of the Conversion Rate, or with respect to the nature or extent of any such adjustment when made, or with respect to the method employed, herein or in any supplemental indenture provided to be employed, in making the same, or whether a supplemental indenture need be entered into. Neither the Trustee, subject to the provisions of Section 6.2, nor any Conversion Agent shall be accountable with respect to the validity or value (or the kind or amount) of any Common Stock, or of any other securities or property or cash, which may at any time be issued or delivered upon the conversion of any Security; and it or they do not make any representation with respect thereto. Neither the Trustee, subject to the provisions of Section 6.2, nor any Conversion Agent shall be responsible for any failure of the Company to make or calculate any cash payment or to issue, transfer or deliver any shares of Common Stock or share certificates or other securities or property or cash upon the surrender of any Security for the purpose of conversion; and the Trustee, subject to the provisions of Section 6.2, and any Conversion Agent shall not be responsible for any failure of the Company to comply with any of the covenants of the Company contained in this Article.

### **ARTICLE XV**

#### **MEETINGS OF HOLDERS OF SECURITIES**

##### **SECTION 15.1 Purposes For Which Meetings May Be Called.**

A meeting of Holders of Securities may be called at any time and from time to time pursuant to this Article to make, give or take any request, demand, authorization, direction, notice, consent, waiver or other action provided by this Indenture to be made, given or taken by Holders of Securities.

##### **SECTION 15.2 Call, Notice And Place Of Meetings.**

(a) The Trustee may at any time call a meeting of Holders of Securities for any purpose specified in Section 15.1, to be held at such time and at such place in the Borough of Manhattan, The City of New York, as the Trustee shall determine. Notice of every meeting of

Holders of Securities, setting forth the time and the place of such meeting and in general terms the action proposed to be taken at such meeting, shall be given, in the manner provided in Section 1.6, not less than 21 nor more than 180 days prior to the date fixed for the meeting.

(b) In case at any time the Company, pursuant to a Board Resolution, or the Holders of at least 10% in principal amount of the Outstanding Securities shall have requested the Trustee to call a meeting of the Holders of Securities for any purpose specified in Section 15.1, by written request setting forth in reasonable detail the action proposed to be taken at the meeting, and the Trustee shall not have mailed the notice of such meeting within 21 days after receipt of such request or shall not thereafter proceed to cause the meeting to be held as provided herein, then the Company or the Holders of Securities in the amount specified, as the case may be, may determine the time and the place in the Borough of Manhattan, the City of New York, for such meeting and may call such meeting for such purposes by giving notice thereof as provided in paragraph (a) of this Section.

#### SECTION 15.3 Persons Entitled To Vote At Meetings.

To be entitled to vote at any meeting of Holders of Securities, a Person shall be (i) a Holder of one or more Outstanding Securities, or (ii) a Person appointed by an instrument in writing as proxy for a Holder or Holders of one or more Outstanding Securities by such Holder or Holders. The only Persons who shall be entitled to be present or to speak at any meeting of Holders shall be the Persons entitled to vote at such meeting and their counsel, any representatives of the Trustee and its counsel and any representatives of the Company and its counsel.

#### SECTION 15.4 Quorum; Action.

The Persons entitled to vote a majority in aggregate principal amount of the Outstanding Securities shall constitute a quorum. In the absence of a quorum within 30 minutes of the time appointed for any such meeting, the meeting shall, if convened at the request of Holders of Securities, be dissolved. In any other case, the meeting may be adjourned for a period of not less than 10 days as determined by the chairman of the meeting prior to the adjournment of such meeting. In the absence of a quorum at any such adjourned meeting, such adjourned meeting may be further adjourned for a period not less than 10 days as determined by the chairman of the meeting prior to the adjournment of such adjourned meeting (subject to repeated applications of this sentence). Notice of the reconvening of any adjourned meeting shall be given as provided in Section 15.2(a), except that such notice need be given only once not less than five days prior to the date on which the meeting is scheduled to be reconvened. Notice of the reconvening of an adjourned meeting shall state expressly the percentage of the principal amount of the Outstanding Securities which shall constitute a quorum.

Subject to the foregoing, at the reconvening of any meeting adjourned for a lack of a quorum, the Persons entitled to vote 25% in principal amount of the Outstanding Securities at the time shall constitute a quorum for the taking of any action set forth in the notice of the original meeting.

At a meeting or an adjourned meeting duly reconvened and at which a quorum is present as aforesaid, any resolution and all matters (except as limited by the proviso to Section 9.2 and except to the extent Section 10.8 requires a different vote) shall be effectively passed and decided if passed or decided by the lesser of (i) the Holders of not less than a majority in principal amount of Outstanding Securities and (ii) the Persons entitled to vote not less than 66-2/3% in principal amount of Outstanding Securities represented and entitled to vote at such meeting.

Any resolution passed or decisions taken at any meeting of Holders of Securities duly held in accordance with this Section shall be binding on all the Holders of Securities whether or not present or represented at the meeting. The Trustee shall, in the name and at the expense of the Company, notify all the Holders of Securities of any such resolutions or decisions pursuant to Section 1.6.

#### SECTION 15.5 Determination Of Voting Rights; Conduct And Adjournment Of Meetings.

(a) Notwithstanding any other provisions of this Indenture, the Trustee may make such reasonable regulations as it may deem advisable for any meeting of Holders of Securities in regard to proof of the holding of Securities and of the appointment of proxies and in regard to the appointment and duties of inspectors of votes, the submission and examination of proxies, certificates and other evidence of the right to vote, and such other matters concerning the conduct of the meeting as it shall deem appropriate. Except as otherwise permitted or required by any such regulations, the holding of Securities shall be proved in the manner specified in Section 1.4 and the appointment of any proxy shall be proved in the manner specified in Section 1.4 or by having the signature of the Person executing the proxy guaranteed by any bank, broker or other eligible institution participating in a recognized medallion signature guarantee program.

(b) The Trustee shall, by an instrument in writing, appoint a temporary chairman (which may be the Trustee) of the meeting, unless the meeting shall have been called by the Company or by Holders of Securities as provided in Section 15.2(a), in which case the Company or the Holders of Securities calling the meeting, as the case may be, shall in like manner appoint a temporary chairman. A permanent chairman and a permanent secretary of the meeting shall be elected by vote of the Persons entitled to vote a majority in principal amount of the Outstanding Securities represented at the meeting.

(c) At any meeting, each Holder of a Security or proxy shall be entitled to one vote for each \$1,000 principal amount of Securities held or represented by such Holder; provided, however, that no vote shall be cast or counted at any meeting in respect of any Security challenged as not Outstanding and ruled by the chairman of the meeting to be not Outstanding. The chairman of the meeting shall have no right to vote, except as a Holder of a Security or proxy.

(d) Any meeting of Holders of Securities duly called pursuant to Section 15.2 at which a quorum is present may be adjourned from time to time by Persons entitled to vote a

majority in principal amount of the Outstanding Securities represented at the meeting, and the meeting may be held as so adjourned without further notice.

#### SECTION 15.6 Counting Votes And Recording Action Of Meetings.

The vote upon any resolution submitted to any meeting of Holders of Securities shall be by written ballots on which shall be subscribed the signatures of the Holders of Securities or of their representatives by proxy and the principal amounts at Stated Maturity and serial numbers of the Outstanding Securities held or represented by them. The permanent chairman of the meeting shall appoint two inspectors of votes who shall count all votes cast at the meeting for or against any resolution and who shall make and file with the secretary of the meeting their verified written reports in duplicate of all votes cast at the meeting. A record, at least in duplicate, of the proceedings of each meeting of Holders of Securities shall be prepared by the secretary of the meeting and there shall be attached to said record the original reports of the inspectors of votes on any vote by ballot taken thereat and affidavits by one or more Persons having knowledge of the facts setting forth a copy of the notice of the meeting and showing that said notice was given as provided in Section 15.2 and, if applicable, Section 15.4. Each copy shall be signed and verified by the affidavits of the permanent chairman and secretary of the meeting and one such copy shall be delivered to the Company and another to the Trustee to be preserved by the Trustee, the latter to have attached thereto the ballots voted at the meeting. Any record so signed and verified shall be conclusive evidence of the matters therein stated.

\*\*\*\*\*

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed, and their respective corporate seals to be hereunto affixed and attested, all as of the day and year first above written.

**ADVANCED ENERGY INDUSTRIES, INC.**

By: /s/ DOUGLAS S. SCHATZ  
-----  
Name: Douglas S. Schatz  
Title: Chief Executive Officer,  
President or Executive Vice  
President

[SEAL]

**STATE STREET BANK AND TRUST COMPANY OF  
CALIFORNIA, N.A., as Trustee**

By: /s/ MARK HENSON  
-----  
Name: Mark Henson  
Title: Assistant Vice President

[SEAL]

## **EXHIBIT 10.2**

### **OEM GLOBAL PURCHASE AGREEMENT**

Agreement Number: 20016

This Global Purchase Agreement ("GPA" or "Agreement") is entered into by ADVANCED ENERGY INDUSTRIES, INC. (referred to as "Supplier", "you" or "your") and LAM RESEARCH CORPORATION and any of its wholly-owned subsidiaries (referred to as "Lam") as of the following date: October 12, 1999 ("Effective Date"). Each of the words "parties", "us", "we" or "our" collectively refers to both Supplier and Lam.

#### **1. RECITALS:**

1.1. Purpose: This GPA documents our agreement for our customer-supplier relationship. It includes standard terms for Lam's purchase of goods and services. Although these purchase terms will cover most situations, attachments to this GPA may be included to address specific circumstances.

1.2. Prior Review: Prior to signing this GPA, Lam requests that you review it with your point of contact at Lam, and Lam assumes that you have reviewed it and that you understand it thoroughly so that your and our performance requirements will be met.

In consideration of the mutual obligations and benefits set forth in this GPA, the parties agree as follows:

#### **2. GENERAL MATTERS:**

2.1. Scope: This GPA applies to any purchase of your Products or Services by Lam ("Order") during the term of this GPA, whether or not this GPA is referenced in the documentation of such Order. For Orders issued but not fulfilled prior to expiration of this GPA, the terms of this GPA shall continue to apply.

2.2. Term: The term of this GPA is three (3) years from the Effective Date. This agreement may be extended for additional one (1) year terms at the GPA's anniversary, if both parties agree in writing within 60 days of the termination date.

2.3. Definitions: Words in this GPA, which are defined either when they first appear or in the "Definitions" section at the end of this GPA, shall be interpreted throughout the GPA consistent with those definitions.

#### **3. YOUR OBLIGATIONS AND RIGHTS:**

3.1. Product and Process Quality: Lam has chosen to do business with you based upon your reputation, quality of Products, ability to perform or other business reasons which support Lam's expectation of your reliability in Product and process quality. As part of your continuing commitment to quality, you agree to the performance requirements described in this GPA.

3.2. Specifications and Quality Protocols: Lam shall provide you with technical specifications and/or drawings for each Product ("Specifications"), as well as quality control criteria pertaining to your Products and processes ("Quality Requirements"). You must comply with the Specifications and Quality Requirements at all times. If mutually agreed, you may be required to verify compliance through testing, inspection and/or issuance of a certificate of compliance.



3.3. Technical Support Documents: Supplier shall furnish one complete set of the required documents listed in Schedule 1 of this Agreement applicable to your products sold to Lam. These documents shall be provided at no cost to Lam. Delivery of these documents is a critical performance objective. Reference Section 25.16.

3.4. Critical Components: You agree to abide by for all Critical Components listed in the "Critical Components List" of Attachment E. If no Critical Components are listed, then Attachment E does not apply to you.

3.5. Continued Service and Parts Supply: Subject to your rights to discontinue availability of Products under the "Cancellation" section of this GPA (see paragraph 21.1), you grant Lam the option to continue to purchase service and support, and replacement parts from you in support of Products for a period of seven (7) years after Lam's last purchase of such Product.

3.6. Production Lines; Change Control Requirements: Lam reserves the right periodically to review and inspect your facilities, manufacturing processes, materials and subcontractors; and you shall give Lam 90 days prior written notice of any reasonably significant changes made or anticipated in such items. If you fail to obtain Lam's prior approval for significant changes and continue to ship Product or perform Services, Lam may, at its option and in addition to all other remedies do one of the following: 1) return such Product or suspend such Services without further liability to Lam; 2) accept such Product or Services but with a deduction in the price Lam must pay you, if any, as mutually agreed; or 3) inspect and approve such changes with appropriate notice, or 4) terminate this Agreement.

3.7. Engineering Change Notification (ECN): Supplier must provide prompt notice to Lam of Significant Changes to processes and/or design of Product. This notification shall be sent either by Supplier's e-mail, service bulletin, facsimile, or mail. The ECN will provide complete written details along with drawings so that Lam will have complete understanding of proposed change(s). Upon receipt of the proposed ECN, Lam will have ten (10) working days to review and respond either approving or disapproving the proposed change(s). If no response is received within ten (10) working days, Supplier will notify Lam of the consequences and Supplier's planned actions. Supplier agrees not to ship to Lam any proposed changes without obtaining Lam's written approval in advance. Supplier understands and agrees that an oral change authorization from any Lam employee is not sufficient and Lam has no liability for changed Product, absent Lam's written approval for the changes. If you fail to obtain Lam's prior approval for Significant Changes and continue to ship Product or perform Services, Lam may, at its option and in addition to all other remedies do one of the following: 1) return such Product or suspend such Services without further liability to Lam; 2) accept such Product or Services but with a deduction in the price Lam must pay you, if any, as mutually agreed; or 3) inspect and approve such changes with appropriate notice, or 4) terminate this Agreement.

3.8. Provision of Services: You agree to provide those Services set forth in the Order and in the Description of Services and/or Support attached as Attachment A (and Attachment B if applicable), which is incorporated here by reference. Your Services shall be performed by qualified, certified and adequately supervised personnel. As mutually agreed, you may be required to verify compliance of the Services through testing, inspection and/or issuance of a certificate of compliance. If no Services are set forth in Attachment A and B, then Attachment A and/or B do not apply to you.

#### 4. DELIVERY:

4.1. Force Majeure: Neither party shall be liable for any costs, losses, damages, claims or liabilities ("Damages") due to non-performance caused by events totally beyond its control ("Force Majeure"); provided that the non-performing party provides prompt written notice to the other party of anticipated or existing Force Majeure events and uses all reasonable diligence to perform during and after the Force Majeure event.

4.2. Delivery: Delivery of Products shall be (i) on the delivery date specified in the Order, (ii) FOB your dock, (iii) in accordance with Lam's packaging specifications, and (iv) via carrier specified in the Order (or, if no carrier is specified, then a common carrier from Lam's Authorized Traffic Guide). You shall notify Lam immediately of any anticipated late deliveries or facility shutdowns. If necessary to ensure timely delivery, you shall deliver via expedited transit at your cost, except that Lam will pay such cost if necessitated solely by either Lam's delay or Lam's request.

4.3. Accompanying Materials: One complete set of documentation and/or operating and maintenance manuals for each Product supplied to Lam will be furnished at no cost to Lam. Supplier will not be required to ship a manual with each unit delivered to Lam. Supplier shall provide updated documents when made available by the Supplier at no cost to Lam.

4.4. Non-conforming Deliveries: Any Products not in conformance with the Order on the date of delivery may be rejected and returned at your expense. Any Services not in conformance with the Order or Attachment A or Attachment B on the date of performance may be rejected and suspended. Lam shall notify you of the grounds for rejection. Lam may (i) permit you to cure the non-conformance, (ii) cancel such non-conforming Products or Services without cost or liability to Lam, (iii) or accept them with a reasonable reduction in the purchase price owed by Lam, as mutually agreed.

#### 5. DELIVERY AND QUALITY GOALS:

5.1. Delivery and Quality Goals: Complying with scheduled delivery dates, Specifications and Quality Requirements is a critical performance objective. All Products shipped by you must meet Lam's goals for consistency in Specifications, Quality Requirements and scheduled delivery dates ("Goals"). Lam may review and adjust these Goals periodically based upon Lam's business needs. Reference Section 25.16.

#### 6. QUALITY; ACCEPTANCE; RELIABILITY:

6.1. Criteria: All Products supplied shall comply with Product Specifications and Quality Requirements. Supplier shall demonstrate such compliance and Lam's personnel may witness any related test. Supplier shall make available appropriate technical support. Lam shall have the right to make any inspection or appropriately test that Lam shall deem advisable before and after shipment of Product to insure that the Product meets mutually agreed upon specifications. Payment of Supplier's invoices shall not constitute acceptance, approval or certification by Lam, and shall not relieve Supplier of any warranty or other obligation set forth herein or under the Law.

6.2. Non-conforming Product: With respect to any new Product delivery which Lam determines is non-conforming to mutually agreed specifications, Lam may, at its option: (i) within 30 days of receipt of non-consigned Product or within 30 days of removal of Product from the consignment inventory, reject and return the Product, provided that Lam shows future usage, to Supplier (in which case Supplier shall bear the risk of loss or damage during transit from Lam's manufacturing facility to Supplier's local service facility). After 30 days only options (ii) and (iii) will apply; (ii) make the Product available for correction at Lam's facility.

Supplier shall promptly correct any defect at its expense, either by repairing or replacing any defective part(s) or by replacing the Product within ten (10) working days after your receipt of the rejected Products; or (iii) accept or keep the Product with a deduction in the price of the Product, as reasonably determined by the parties. Any Products or portions thereof replaced by you shall become your property. Lam agrees to pay Supplier for all charges associated with the return and testing of Products which pass all Supplier's tests without any corrective action and are determined to meet the mutually agreed specifications (at time of original shipment). See Attachment D for schedule of agreed upon charges.

6.3. Reliability: Product reliability in the field will also meet all reliability portions of Product Specifications. In addition, certain specifications may require that Lam and/or its customer will have access to spares locally. All reliability performance specifications (e.g. uptime or availability, MTBFp, MTBAp) will be defined and mutually agreed upon by the parties; a resulting Reliability Performance Specifications will be mutually signed and attached hereto as Schedule 2 of the GPA. In those specific cases where Products are shown to provide less than the agreed reliability performance specifications over a period of time, Lam and Supplier will work together to define mutually acceptable corrective actions to remedy the situation.

6.4. Reliability Road Map: If a product listed in Schedule 2 of this Agreement does not meet the required reliability specification, Supplier shall provide to Lam Commodity Manager a road map identifying steps Supplier will take, including milestones, to ensure that the product meets the required reliability specification.

## 7. INSPECTION AND TESTING:

7.1. Procedures: Supplier shall maintain calibrated, capable inspection and test equipment, and associated inspection procedures. Supplier must not proceed with production until all appropriate means for inspecting and testing per mutually agreed upon Specifications and Quality Requirements are met. Lam may reject any material produced without proper verification of compliance to mutually agreed upon Specifications and Quality Requirements.

7.2. Inspection Records: Supplier shall, on request by Supplier Quality Engineering, provide evidence showing that Supplier's inspection and testing methods are consistent with Lam's quality guidelines on correlation between Lam and Supplier inspection and test results.

## 8. ACCEPTANCE SAMPLING AND SCREENING:

8.1. Change in Quality Requirements: Lam reserves the right to alter its quality requirements for acceptance and to change accordingly the acceptable quality levels. In conjunction with this, Lam agrees to provide Supplier with written advance notification of changes to the stated requirements.

## 9. SOURCE INSPECTION:

9.1. Source Inspection Requirements: Supplier must support Lam Source Inspection as designated by Lam, and per the "Lam Source Inspection Procedure for Suppliers". Supplier must provide ample space, access to inspection equipment, and availability of inspection personnel as needed for Lam Source Inspection. The Lam Inspector will not proceed with inspection unless Supplier has demonstrated that all requirements have been met.

9.2. Certificate of Conformance: You will provide a Certificate Of Conformance (COC) with each Product, including repaired Products, certifying that the original or repaired Product meets or exceeds the mutually agreed upon Specification and Quality Requirements.

#### 10. FAILURE REPORTING:

10.1. Failure Reporting: Whenever requested by Lam, and with respect to specific identified failed Products, you will provide to Lam's Commodity Management a worldwide Failure Analysis identifying the following:

10.1.1. Percentage of No-Trouble-Found ("NTF") of the failed Product over the past six months

10.1.2. Total number of assemblies of the failed Product repaired in the past six months

10.1.3. Component or assemblies you replaced in the failed Product that fixed the cause of the failure

10.1.4. Pareto of defective components used to repair the failed Product over the past six months

10.1.5. Engineering changes that have been released that would have affected the failure

10.1.6. Revision level of the Product assembly when received by Supplier

10.1.7. Latest revision level of the repairs to the failed Product

10.1.8. Date received by the Supplier

10.1.9. Date original Product was shipped to Lam

10.2. Root Cause/Failure Analysis Report: You will provide upon request a Root Cause Analysis report on failed Product. The Root Cause Analysis report will be sent to Lam's Commodity Manager containing the following information:

10.2.1. Testing before any repair activity and document failure symptoms

10.2.2. Percentage of No-Trouble-Found (NTF) of the failed Product over the past six months

10.2.3. Total number of assemblies of the failed Product repaired in the past six months

10.2.4. Component or assemblies replaced that fixed the problem

10.2.5. Pareto of defective components used to repair the failed Product over the past six months

10.2.6. A detailed analysis of the cause of the failure to the component level including photographs

10.2.7. Engineering changes that have been released that would affect this failure

10.2.8. Revision level of the assembly when received by Supplier

10.2.9. Latest revision level of the repairs to the failed Product

10.2.10. Date received by the Supplier

10.3. Corrective Action Report: Supplier shall provide upon specific request a Corrective Action Report detailing the required steps to prevent future recurrence of the same failure. This request must be received prior to receipt of the defective unit from Lam. This report is due within ten working days after issuance of the final Root Cause/Failure Analysis report. Lam reserves the right to approve the permanent corrective action steps prior to implementation.

10.4. Delivery of Reports: Supplier shall provide upon specific request a preliminary Root Cause/Failure Analysis within fifteen days after Lam has returned the defective product to Supplier. A detailed Root Cause/ Failure Analysis will be available within 30 days after the defective product is received by Supplier. Supplier shall also provide a Failure Report on a monthly basis. Reference Section 25.16.

## 11. PACKAGING AND LABELING:

11.1. Clean Room Requirements: Clean room parts will be cleaned and packaged to Lam's clean room specifications. For clean room guidelines refer to Lam Product Protection Procedure (Part Number: 505-100342-001). This section does not apply to Advanced Energy.

11.2. Packaging and Crating Guidelines: Both new Product and Repaired product will be shipped (one per) in Lam approved packaging appropriate for shipping anywhere in the world by surface or air without damage to the part. The packaging material will contain no foam "peanuts" or chips. For crating guidelines, see Lam's Crating Instructions (Part Number: 505-100294-001). For repaired product packaging guidelines, see Lam's Packaging Instructions (Part Number: 603-090436-001). Lam reserves the right to review the packaging method used by Supplier to ship the Product. Supplier's packaging and shipping practices shall be designed to protect the product against damage, adjustment, change in calibration, etc., and impairment of the Product's functional integrity as originally shipped to Customer.

11.3. Bar Code Requirement: Supplier shall be required to affix to one end of the approved packing a Bar Code label with readable/legible markings for all shipments. This process shall be implemented by 3/01/00.

11.4. ESD Requirement: Lam and Supplier shall be required to utilize processes, procedures and packaging that protects the Product against Electrostatic Discharge (ESD) damage.

## 12. WARRANTY:

12.1. Form, Fit and Function Warranty: You warrant that all of your Products conform to proper form, fit and initial function reasonably intended as of both the date of the Order and date of shipment.

12.2. Material, Workmanship and Specifications Warranty: You warrant that all of your Products are free from defects in workmanship and material and conform to mutually agreed upon Specifications and Quality Requirements for a period of twenty four (24) months from the date of shipment to Lam. This warranty shall be effective on shipments after 11/01/99.

12.3. Service Warranty: Unless otherwise agreed in writing by both of us, you warrant that any Services performed by you shall be free from all defects in workmanship for a period of ninety (90) days from the date you completed such Services.

12.4. Software Warranty: Software is warranted as being free from defects in design, workmanship and material for a period of ninety (90) days from the date of delivery.

12.5. Breach of Warranty: In addition to your obligations described in paragraph 6.2, following the date the defective Product has been made available to you, you shall, at your expense, (1) submit a detailed, written corrective action plan (if applicable and mutually agreed upon by both parties) to Lam within thirty (30) days, and (2) use your best efforts immediately to correct the defect and complete delivery of the repaired Product and/or corrected Service. If you cannot correct the defect, then you shall, at your option, either (a) replace the defective Product or (b) refund Lam the price of the defective Product or Service. For new units which are deemed "defective" at Lam's manufacturing facility, you shall bear the risk of loss or damage during transit to Supplier's local service facility. This warranty covers materials,

parts, labor, travel, and all other related costs needed to inspect, replace or correct design, material and/or workmanship defects. In these cases, you agree during the warranty period that you will not charge Lam any fees or expenses whatsoever you incur in connection with your warranty obligations. You shall own any defective Products once replaced under this warranty provision. Lam's rights under this Warranty are in addition to any other rights or remedies to which Lam may be entitled under this Agreement or applicable law.

12.6. Limitations on Your Warranty Obligations: These warranties will not apply if: (a) the Product was not properly installed or operated by Lam or its Customer under reasonable manufacturer-recommended conditions, (b) Lam fails to notify you in writing of the defect in question during the warranty period, (c) Lam fails to make the item available for correction within a reasonable time, (d) we reasonably agree after examination of the Product that such claimed defect or nonconformity does not exist, (e) the Product was manufactured or modified to Lam's detailed design and such design is the contributory cause of the defect, or (f) the Product is utilized for an application for which it is not suited or intended by the manufacturer. In these cases only, Lam agrees to reimburse you your reasonable fees and expenses incurred in connection with your demonstration to Lam that the Product complies with the Specification and Quality Requirements. Further, any software you supply to Lam is not warranted as free from errors or "bugs," and your sole obligation shall be to use reasonable efforts to supply Lam with a corrected version promptly after Lam notifies you of the defect. The original warranty period shall not be extended by your acts in compliance with this section. The foregoing warranties are exclusive of all other warranties, whether written, oral, expressed or implied, including any warranty of merchantability or fitness for a particular purpose.

### 13. SUPPLIER EFFICIENCY:

13.1. Supplier Efficiency: In exchange for Lam's commitment to purchase Products, you will use your best efforts to reduce lead times, manufacturing cycle times and costs of Products during our relationship. We anticipate that this can be accomplished by implementing better business practices, improved processes, value engineering or by other methods.

13.2. Lead Time Reductions: With respect to new product Our goal is that no more than four weeks will elapse between Lam's placement of an Order and your delivery of the Product, unless there is an Excused Event or Lam's Order specifies a longer delivery schedule. Our lead-time goal for repaired Product is separately described in Attachment A. In the event any new Product lead time exceeds four weeks, then you agree to submit a detailed written plan in ten working days, to reduce such lead times to four weeks within a six month period. You agree to use your best efforts to meet such lead time reduction goals. Lam agrees to provide Supplier with a detailed forecast for Products released for Lam production. Supplier will have the right to request "Excused Event" if there are extensive short term changes in the forecast or actual consumption versus forecast.

#### 13.3. Cost Reductions:

13.3.1. Reduced Aggregate Cost for All Products: Our goal is to achieve a seven percent annual reduction in the aggregate purchase price of all Products purchased by Lam. Upon request, you shall submit a detailed written plan to meet this goal through design changes, Product introduction or improved efficiencies and you agree to use your best efforts to meet such cost reduction goals.

13.3.2. Volume Discount: High volume purchasing by Lam shall be rewarded annually on a calendar year basis. If at anytime the monetary value of Lam's total purchases of all products within a calendar year exceeds the Total Dollar Volume Thresholds listed in

the table attached in Attachment C, then Lam shall be entitled to the corresponding Volume Discount on the amount by which the Threshold was exceeded during that calendar year. The discount shall be credited to Lam after all invoices for product delivered to and fully accepted by Lam have been paid for that calendar year. Volume discounts earned by Lam for purchases during a given year shall be reset to zero at the end of that year, and shall not carry over to affect pricing in the subsequent year. If Attachment C does not have specified volume discounts listed, then this paragraph does not apply to you.

#### 14. INTELLECTUAL PROPERTY:

14.1. Intellectual Property: You agree to indemnify, hold harmless and defend (with counsel reasonably approved by Lam), Lam and its affiliates, shareholders, directors, officers, employees and agents from and against any claims, fees, costs, awards, judgments, liabilities and or damages (including without limitation court costs and reasonable fees of attorneys and other professionals) ("Damages") arising out of a claim as to a Product asserted within ten (10) years from the date of its sale under this Agreement that the Product (as a stand alone unit) infringes, directly or contributorily, any patent, copyright, maskwork right, trade secret or similar right of any third party. You also agree to provide Lam prompt and reasonable written notice of bona fide claims made with respect to your Products. Notwithstanding these obligations, you may at your expense and at your option: (i) procure for Lam and/or its customers the ownership, use or distribution rights granted with respect to the Products; (ii) modify the infringing item to remove the infringement, without impairing compliance with the Quality Requirements and Specifications; or (iii) replace the infringing item with a non-infringing item, without impairing compliance with the Quality Requirements and Specifications; however, if you have used reasonable efforts and cannot accomplish options (i), (ii) or (iii), then you shall refund to Lam the amount paid for the infringing Products, less reasonable depreciation. Lam agrees to use reasonable efforts to facilitate the exercising of options (i), (ii) or (iii). This indemnification clause does not apply when the Products are manufactured or modified to Lam's design, quality requirements and/or specifications, and such design, quality requirements and/or specifications results in the Damages.

#### 15. LAM SUPPLY PROGRAMS:

15.1. Lam Supply Programs: The manner in which you supply Products to Lam may vary depending on the type of Lam Supply Program your Products are assigned to by Lam. The Lam Supply Programs include: purchases through issuance of direct purchase orders; the Automatic Part Pull System ("APPS"); the Ship To Point of Use Program ("STP"); Freestock, the Consignment Inventory Agreement (CIA); or other program which, as a result of future experience, Lam decides to implement. During the course of our relationship, Lam may decide to assign or re-assign your Products to one of these Lam Supply Programs. Prior to assignment to one of these programs, your Lam contact will discuss the program with you. Each of these Lam Supply Programs has different requirements for the performance of our respective obligations. Your responsibility is to discuss and understand why and how any Lam Supply Program is applicable to you. Your agreement to support and comply with the specific requirements of any applicable Lam Supply Program to which your Product is assigned must be provided in writing prior to your inclusion in the program or shall be deemed given the first time you ship Product after inclusion in the program.

#### 16. CUSTOMS & INSURANCE DOCUMENTATION:

16.1. Customs & Insurance Documentation: Upon request, you shall provide  
(a) a completed manufacturer's affidavit and/or other documentation as may be required by US Customs or

other governmental authorities with respect to your Products, and (b) proof, in form and substance reasonably requested by Lam, of any insurance policies that we might mutually agree you must carry.

#### 17. SECURITY AND SAFETY MATTERS:

17.1. Security and Safety Matters: Each party may enter the premises of the other party during normal business hours with respect to the performance of this Order, subject to facility security regulations and US Government clearance requirements, if applicable. Each party may, in its sole discretion, remove from its premises any employee, contractor or agent of the other not in compliance with such regulations. You shall not introduce any substance which is regulated by any governmental authority as being a threat to health, safety or the environment onto Lam's premises without prior written approval, and then only in compliance with law. You shall immediately notify Lam if the Products or Services violate any law or have a defect threatening health, safety or the environment. Replacements, modifications, associated service calls or other acts or items required to remedy such defect or violation shall be provided promptly and at no cost to Lam or its Customers.

#### 18. LAM TOOLS:

18.1. Lam Tools: Any equipment, materials or other items provided or paid for by Lam as part of either parties' performance under this GPA (i) shall remain the property of Lam, (ii) shall be used by you only in performance of Lam's Orders, and (iii) shall be returned to Lam upon request.

#### 19. LAM'S OBLIGATIONS AND RIGHTS:

19.1. Orders; Electronic Transmission of Documents: Lam will issue you an Order to purchase Products. The Order is subject to your acceptance. Your acceptance of the Order will be evidenced by the earlier of either your return of a signed Order acknowledgment or your delivery of any Products and/or Services pursuant to the Order. Orders and other related documents may be issued by Lam in document or electronic form, including via electronic data interchange ("EDI"), provided that we have established an EDI program between us.

19.2. Forecasts Generally: Lam will give you forecasts (for Products released for Lam production) of estimated quantities of Products it may purchase ("Forecast"). The Forecasts are for information purposes only, and are simply Lam's estimate at that time of its anticipated needs. However, Forecasts may change and may differ significantly from Lam's actual Orders. Forecasts are neither commitments to purchase nor authorizations by Lam to deliver Product.

19.3. Payment: Payment shall be made in U.S. dollars (unless otherwise agreed) with the following terms: net thirty (30) days after receipt of your invoice. At Lam's discretion, any payment you are owed may be set off by amounts you otherwise owe to Lam. Any tax, duty, or other charge imposed by any taxing authority, shall, upon demand by you, be paid by Lam, except where Lam timely provides you with an applicable tax exemption certificate.

19.4. Pricing: Unless otherwise agreed between us, Lam will pay you for Product at prices determined according to the terms as stated in paragraph 19.3.

19.5. Agreed Prices: Subject to any volume discounts, the agreed purchase price for Products shall be as set forth in the most recent Order, unless set forth in the "Price List" attached as Attachment D. Such price may be periodically revised by our mutual written agreement. Any prices set forth in such price list shall supersede prices in Orders. Prices for ordered Products or Services shall not exceed the lowest prices offered to your other customers for like Products or Services under like terms and circumstances.



19.6. Changes in Requirements: Lam may at any time require changes to an Order, any Specifications, shipment or packing methods, time or place of delivery, and the like ("Change"). A Change is only effective upon issuance of a Change Order. If any Change causes a variation in your costs or the time required for performing under an Order, a mutually agreeable, equitable adjustment will be made in the Order price, delivery dates or both, based upon your written, itemized request for an adjustment substantiated by evidence reasonably satisfactory to Lam; provided that no adjustment will be made unless an actual Change Order has been issued.

19.7. Audit: At reasonable times and upon reasonable prior notice, Lam may, with Supplier approval, examine your operations and processes which pertain to the ordered Products or Services to verify conformance with this GPA.

19.8. Inventions: Any new ideas, creations, works or inventions ("Inventions") created by you as part of the specific course and scope of engineering design efforts under this agreement (and separately paid for apart from product sales) shall be jointly owned by the parties. In such matters, each party shall cooperate reasonably with the other to pursue any patent, copyright or trademark which either party deems appropriate to pursue. Each party shall separately own any Invention to the extent arising from its own efforts outside of this agreement, except that Lam shall have an irrevocable, permanent, fully paid up, royalty free and non-transferable license to use, make and have made any of Supplier's Inventions to the extent based on, derivative of, or arising from Lam's separately created designs; provided that Lam agrees not to make or have made any products from such Inventions unless Supplier ceases to be a commercially reasonable source of supply for such products. In this regard, and without limitation, if Supplier does not offer Lam the same price (or lower) that Supplier offers to other customers on such products containing the Inventions, Supplier will not be deemed a "commercially reasonable source of supply" to Lam.

## 20. BOTH OF OUR OBLIGATIONS:

20.1. Advertising: Neither party shall, without the prior written consent of the other, (i) use any identifying names, logos or other commercial or product designations of the other party, (ii) make reference to the other party in any advertising or other promotion, or (iii) disclose the existence of this transaction.

20.2. Assignment; Subcontracting Approvals: Neither your nor our rights or obligations may be assigned to any other person or entity in whole or in part, unless the party proposing such assignment has obtained the other's prior written consent.

## 21. CANCELLATION

21.1 Cancellation by Supplier: Supplier and Lam agree to work cooperatively towards Product consolidation and elimination of slow moving Products. Supplier may discontinue availability of slow moving Products at any time by giving Lam prior written notice ("Discontinuation Notice") offering Lam the opportunity to place a "last buy" purchase order. Upon request from Lam, Supplier will provide Lam

up to six (6) months from date of Discontinuation Notice for placement of "last buy" purchase order with deliveries not to exceed nine (9) months from date of Discontinuation Notice. Upon request, Lam agrees to provide Supplier with a forecast for Products which Supplier deems to be slow moving. Supplier agrees to provide Lam with the same time period when a Discontinuation Notice is issued by the Supplier when the business relationship is truncated by the Supplier. Supplier also agrees to continue to provide products that meets the mutually agreed upon specification and quality requirements and agrees to deliver product per the mutually agreed upon schedule. 21.1.

21.2. Cancellation for Default: Either of us may cancel this GPA or any Order, in whole or in part, immediately without any cost or liability if the other party has (1) failed to perform fully any obligation of this GPA and (2) has not cured such failure within thirty (30) days, or within a reasonable period if the failure is not curable in thirty (30) days, from the date of written notice of the failure to perform. If you repeatedly fail to meet scheduled delivery dates, Specifications or Quality Requirements, then Lam may, but is not obligated to, cancel any Order without cost or liability, and exclusive of any other remedy Lam may have under the GPA or applicable law.

21.3. Lam's Commitment for Cancellations for Convenience: Lam may at any time cancel for convenience any Order, in whole or in part, upon prior written notice or facsimile ("Cancel Notice"). If Lam's Cancel Notice is issued three (3) months or more prior to the scheduled delivery date, then Lam shall have no liability whatsoever for such canceled Products and/or Services. If Lam issues a Cancel Notice less than three (3) months in advance of a scheduled delivery date or makes a Change, either of which renders your Product inventory or any Service performed obsolete, then, with respect to such obsoleted inventory or Service, the parties shall negotiate in good faith to determine the amount to be paid by Lam. If the parties fail to agree, Lam commits to pay your claims for the following enumerated items as your sole and exclusive remedy for such cancellation or Change, up to a maximum amount not to exceed in any case the total purchase price for all Products and/or Services canceled or Changed:

21.3.1. Completed Products or Services: (i) the purchase price for any such Products or Services Lam has not yet paid for, which are completed in accordance with an Order prior to the date of Lam's Cancel Notice or Change ("Notice Date"), to the extent such Products comply with the applicable Quality Requirements and Specifications in effect prior to the Notice Date, and to the extent such Services comply with the Order or Attachment A (as applicable); provided, however, that Lam will not pay for any Products or Services completed after the Notice Date.

21.3.2. Product WIP and Raw Materials: and, with respect to Products only, (ii) the actual costs incurred by you prior to the Notice Date for Raw Materials and WIP which are allocable to the canceled or changed portion of the Order, less any salvage value. However, in all cases your recovery will be limited as follows: (a) you will only be reimbursed for Raw Materials and WIP which are not cancelable, salable, or otherwise usable by you; (b) the reasonable manufacturing cycle time period for the Products in question will be the maximum period for which you may claim WIP costs prior to the Notice Date; and (c) the reasonable lead time necessary to order Raw Materials for the Products in question will be the maximum period for which you may claim Raw Materials' costs prior to the Cancel Date. "WIP" means all labor performed and material that has been transformed, altered or processed by you, your contractors, agents or consultants pursuant and directly allocable to the Order. "Raw Materials" mean materials, excluding WIP, that have been purchased or committed to by you in good faith for the Order.

**22. Your Obligations Upon Notice of Cancellation or Specification Change:**

Immediately following your receipt of a Cancellation Notice or notice of a Change (as defined previously), you must (i) stop all work, (ii) incur no further costs, and (iii) protect all property in which Lam has or may acquire an interest or for which you feel Lam is obligated to pay. You are also required to use reasonable efforts to minimize any Damages to you which could result from the cancellation or Change. Lam's liability under this GPA will be decreased to the extent you fail to take such actions. In the event of cancellation or Change, Lam may require you promptly to transfer and assign title and immediately deliver to Lam any completed Products, WIP, Raw Materials, Lam Tools, Intellectual Property, confidential information and other items that you have produced or acquired for the performance of the canceled or Changed portions of the Order. All claims by you for any cancellation or Change must be substantiated with evidence in form and substance reasonably satisfactory to Lam.

22.1. In no event will Lam be liable to you any consequential, special, indirect or punitive damages of any kind.

**23. CONFIDENTIAL INFORMATION:**

23.1. Confidential Information: In the course of performing our obligations under this GPA, we may obtain or be provided with each other's confidential information. We will in all cases attempt to enter into specific non-disclosure agreements to protect each other's confidential information from unauthorized disclosure and use. However, in the absence of such non-disclosure agreements, you agree, for five years from the date you receive Lam's confidential information, neither to use the confidential information in any manner which would result in a disclosure to third parties (except as necessary to perform your obligations under this GPA), nor disclose it to any third party (except to your employees with a need to know and who previously sign an agreement protecting Lam's rights). You also agree to limit your use of such information as needed to carry out your obligations under this Agreement. You shall prevent unauthorized disclosure by using the same degree of care you use to prevent disclosure of your own confidential information, but not less than a reasonable degree of care. Lam confidential information shall be immediately returned upon request. Either party providing the other with confidential information shall clearly mark it as such or, in the event of oral or intangible information, may identify it in writing as confidential within a reasonable time. In the event either party inadvertently discloses any item of confidential information not so marked or identified, the other party's sole recourse shall be to prevent any further disclosure of such information.

**24. INDEMNITY:**

24.1. Indemnity: Subject to other provisions herein, each party agrees to defend, indemnify and hold the other party harmless from and against all Damages (including without limitation court costs and reasonable fees of attorneys and other professionals) arising out of the indemnifying party's acts or omissions or breach of any term in this GPA.

**25. MISCELLANEOUS:**

25.1. Relationship of the Parties: You are an independent contractor under this GPA. This GPA is not to be construed as creating an employment, agency, partnership, joint venture or any other relationship or form of legal association between us.

25.2. Insolvency: In the event that a party: (i) becomes insolvent or unable to pay its debts or perform its obligations as they mature; (ii) becomes the subject of any voluntary or involuntary proceeding in liquidation, dissolution, receivership, attachment, composition or general assignment for the benefit of creditors; or (iii) pursues any other remedies under any other law relating to relief for debtors, then such party will provide prompt notice to the other and reasonable assurances therefore, as may be requested from the other party from time to

time, that it can and will perform its obligations under an Order or this GPA. If such notices or assurances are not received in a timely manner or are not reasonably satisfactory to the party receiving the assurances, then such party may terminate any Order or this GPA in whole or in part without any cost or liability.

25.3. Entire Agreement: This GPA, together with all attachments, constitutes our entire understanding and agreement with respect to the subject matter of this GPA, and supersedes all prior and contemporaneous understandings, representations and agreements, whether written or oral, with respect to such subject matter. Any other terms or conditions, including those in either party's purchase orders, invoices, confirming documents and the like, are deemed deleted unless attached hereto or separately agreed to in writing to be a part of this Agreement. This GPA may only be modified by our written agreement.

25.4. Notices: All notices must be in writing and are deemed effective on the earlier of: the date of personal delivery, the receipt of confirmed telex or fax; or, if given by mail, three business days after the date deposited in the United States mails, postage prepaid, registered or certified, with return receipt requested. Notices will be addressed to Lam and Supplier at their respective addresses appearing in the signature block of this GPA, but each party may change its address by prior written notice.

25.5. Governing Law: This GPA will be governed and construed in all respects by the laws of the State of California without regard to conflict of laws considerations. Unless otherwise agreed, implementation and jurisdiction of any litigation or other dispute resolution modality will be in Santa Clara County, California.

25.6. Disputes: If either one of us is aware of a dispute, controversy or claim arising out of this GPA or the Products or Services provided ("Dispute"), then that party will immediately give written notice to the other. We will first try to resolve the Dispute through good faith negotiation and by whatever escalation policies are agreed between us. However, if we cannot resolve the Dispute by negotiation, then, within 90 days after written request from either of us to the other ("Arbitration Notice"), the Dispute shall be submitted to binding arbitration administered in accordance with the American Arbitration Association's Commercial Arbitration Rules and Supplementary Procedures for Large Complex Disputes ("Rules"). Arbitration proceedings shall be conducted in English by a single arbitrator selected by the parties, who must have at least ten (10) years' of dispute resolution experience in related industry matters, or be either a retired judge or a practicing lawyer. Each party may conduct such discovery as it deems necessary; however the arbitrator may limit the conduct of such discovery as appropriate. The arbitrator may only provide remedies available under California law, and in no event in excess of those permitted under this GPA. The arbitrator may not fashion any provisional or other equitable relief. The award shall be final and binding on the parties, and each party waives, to the fullest extent permitted by law, any appeal right it may have in any jurisdiction. The existence, proceedings, discovery and results of the arbitration may not be disclosed, without prior written consent of both parties. Filing a judicial action for recording a notice of pending action, order of attachment, receivership, injunction or other provisional remedies shall not waive or diminish these arbitration rights.

25.7. Attorneys Fees: In any judicial or arbitration proceeding arising out of this GPA, or the Products or Services provided, the prevailing party is entitled to recover all reasonable costs incurred pertaining to such proceeding, including without limitation reasonable costs and fees of attorneys or other professionals ("Expenses"), except that

- (i) if the prevailing party has at any time refused a settlement offer pertaining to such dispute which is equal to or greater than the prevailing party's actual recovery as determined in such judicial or arbitration proceeding, then no such Expenses will be awarded, and
- (ii) if the prevailing party has at any time refused a settlement offer pertaining to such dispute which is less than the prevailing party's actual

recovery as determined in such judicial or arbitration proceeding, then any such Expenses associated with recovering the difference between the refused settlement offer and the actual recovery must bear a reasonable relation to such difference.

25.8. Order of Precedence: The following list of documents is the order of precedence which will govern any situation where there is a conflict of terms and conditions among these documents or obligations of the parties: (i) any supplemental terms or instructions on the face of Lam's Orders accepted by you will govern first and foremost; then (ii) the terms of this GPA (including any modifications or addenda) then (iii) the Specifications; and then (iv) the Quality Requirements.

25.9. Severability: To the extent any part of this GPA is determined to be unenforceable, the remaining provisions will remain in effect and be interpreted and enforced to effectuate the intent of the parties.

25.10. Counterparts; Successors: This GPA may be signed in counterparts. This GPA binds and inures to the benefit of the parties' respective successors or permitted assignees.

25.11. Survival: The following sections of this GPA (as denoted by the following list of corresponding captions) and related subsections, if any, shall survive expiration or early termination of this GPA:

Warranty; Intellectual Property; Customs; Advertising; Cancellation; Compliance with Laws; Confidential Information; Indemnity; Security Procedures; Attorneys Fees; Disputes; Entire Agreement; Force Majeure; Governing Law; Notices; Order of Precedence; Severability; Successors; Survival; Waiver; and Definitions.

25.12. Waiver: Failure by a party to take affirmative action with respect to any breach of these terms by the other party shall not be construed as a waiver of that breach or of future breaches.

25.13. Addenda: Proposed addendum(a) or modification(s) shall be mutually agreed upon in writing by local management and forwarded to the Lam Commodity Manager (CM), who shall review the addendum or modification for consistency with this Agreement. Upon acceptance by both Lam and Supplier, the proposed addendum(a) or modification(s) shall be incorporated into this Agreement. If the proposed addendum(a) or modification(s) is rejected by either party, the CM shall return it to the originator and identify the reason for rejection.

25.14. Limitation of Liability: In no event will either party be liable to the other party for any consequential, special, indirect or punitive damages.

25.15. Miscellaneous: Neither the section headings nor the recitals are intended to be terms of this GPA or used to interpret the terms of this GPA, or any attachment hereto.

25.16. Corrective Action : If Lam is dissatisfied with performance for (3.3) Technical Support Documents; or (5.1) Delivery and Quality Goals; or (6.4) Reliability Road Map; or (10.4) Delivery of Report; then Supplier will put in place a mutually agreed upon corrective action plan that will address the issue.

26. DEFINITIONS: As used in this GPA, the following capitalized terms have the following meanings:

26.1. "Excused Event" means a breach of your obligations under this GPA which is either waived

in writing by Lam, caused by a force majeure event, caused by a Lam change order, or otherwise caused solely by Lam.

26.2. "Order" shall mean any purchase order, change order or other document requesting Supplier to provide Products or Services. The terms and conditions of this Agreement are hereby incorporated by reference into any such Order.

26.3. "Product" means all Products and other items ordered by Lam from you, including, without limitation, assemblies, parts, spare parts, software, hardware and upgrades.

26.4. "Service" means work to be performed by Supplier pursuant to an Order or this GPA, including, without limitation, installation, qualification, maintenance, warranty repair, service call, upgrades/modification, refurbishment, retrofits, spares and service contract work.

26.5. "Refurbishment" shall mean replacement of non-defective components in the repair process that have: 1) known reliability problems; 2) wear due to usage that will likely cause the FRU to fail within one year after installation; 3) high failure rates based upon the FRU component failure data; or are a part of preventative maintenance.

26.6. "Upgrade" shall mean a component or part that can be added to the FRU to enhance its performance to the current revision level.

26.7. "Retrofit" shall mean to replace a Product's components or parts to insure that the Product meets the applicable Specification and Quality Requirements.

26.8. "PM" shall mean Preventative Maintenance.

26.9. "FRU" shall mean "Field Replaceable Unit", which is the assembly or part used to repair products in the field.

26.10. "NTF" shall mean No Trouble Found.

26.11. "Significant Change" shall mean any change that affects Fit, Form or Function.

**ATTACHMENTS:**

Documents, attachments, schedules, exhibits which are attached and incorporated by reference into this Agreement are referenced below:

Yes General Agreement  
Yes Attachment A - Global In-Country Repair/Exchange Support Agreement No Attachment B - Global On-site/Repair Support Agreement  
Yes Attachment C - Volume Discounts Yes Attachment D - Price List  
No Attachment E - Critical Components Yes Attachment F - Consigned Inventory Agreement (CIA) No Attachment G - Software Agreement  
No Other \_\_\_\_\_

The parties have caused this GPA to be executed by their duly authorized representatives.

ADVANCED ENERGY INDUSTRIES, INC.  
  
Principal Place of Business:  
1625 Sharp Point Drive  
Fort Collins, Colorado 80525, USA

/s/ Allen G. Vallei  
-----  
Signature

Allen G. Vallei  
Printed Name  
  
Western Region Manager  
Title

10/12/99  
Dated

LAM RESEARCH CORPORATION  
  
Principal Place of Business:  
Cushing Parkway  
Fremont, California 94538, USA

/s/ Manuel C. Carreira, Jr.  
-----  
Signature

Manuel C. Carreira, Jr.  
Printed Name  
  
Sr. Commodity Mgr.  
Title

10/12/99  
Dated

**SCHEDULE 1 TO OEM  
GLOBAL PURCHASING AGREEMENT  
Technical Support Requirement Specification**

Purpose: To define Lam`s Technical Support requirements to Suppliers for documentation and support materials on equipment sold to Lam Research Corp.

Documentation Requirements: All documents/procedures must be printed on regular paper (clean room paper available at extra cost) and available in PDF electronic format.

Categories: The types of documentation required to support Lam's Technical Support Group is as follows:

I. Support Documentation

II. Documentation Distribution List

III. Training

I. SUPPORT DOCUMENTATION

**DELIVERABLES**

- Theory of operations showing design criteria, functionality of the component/system and performance specifications

- o Safety - Provide necessary information to conform to CE-Mark/S2 requirements, including but not limited to:

- Safety Features/Precautions

- EMO description with block diagram and interface and interconnect schematic

- Hardware and software Interlocks

- Lockout/tag-out of hazardous voltages

- Labeling of hazards and cautions

- o Configuration/Operation Instructions for proper operation:

- Pre-run Checklist

- Specification defining all software I/O points including default values for each configuration type.

- o Indicators:

- Category/definitions

- Causes for each indicator

- Recovery steps for each indicator

- o Installation/Startup Procedures:

- A comprehensive Installation/Startup manual must depict how to Prepare, Install and Startup the component/system

- o Schematics:

- All non-proprietary schematics are available in hard copy only but are not included in the manual (available upon request)



- Schematics must be available for but not limited to: cables, PC boards and interconnect drawings

- o Maintenance Procedures:

- Procedures necessary for preparation of the system

- o Troubleshooting Guide:

- A comprehensive Troubleshooting Guide must be provided in the form of a decision tree or table

## II. DOCUMENTATION DISTRIBUTION LIST

### **DELIVERABLES**

o Documentation Distribution:

- Lam Commodity Management (or designee) must receive copies of all proposed ECN's

## III. TRAINING DOCUMENTATION

### **DELIVERABLES**

o Training classes must be made available prior to first Product shipment. Additional training classes can be provided at an additional cost. Lam may have the authority to video tape any training course provided by Supplier. Training classes must include the following:

- Maintenance Procedures
- Calibration Procedures
- FRU Replacement Procedures
- Serviceability Procedures

## EXHIBIT 21.1

### SUBSIDIARIES OF THE REGISTRANT

Name -----	Jurisdiction of Incorporation or Organization -----
Advanced Energy Japan K.K.	Japan
Advanced Energy Industries GmbH	Germany
Advanced Energy Industries U.K. Limited	United Kingdom
Advanced Energy Industries, FSC Inc.	Virgin Islands
Tower Electronics, Inc.	Minnesota
Advanced Energy Industries Korea, Inc.	South Korea
Advanced Energy Voorhees, Inc.	New Jersey
LITMAS	California
Advanced Energy Taiwan, Ltd.	Taiwan
AEI US Subsidiary, Inc.	Delaware
Advanced Energy California, Inc.	California
Advanced Energy Nevada, LLC	Nevada
Advanced Energy Voorhees Nevada, LLC	Nevada
Advanced Energy Industries Texas, L.P.	Texas

**ARTHUR ANDERSEN LLP**

**EXHIBIT 23.1**

**CONSENT OF INDEPENDENT PUBLIC ACCOUNTANTS**

As independent public accountants, we hereby consent to the incorporation of our report included in this Form 10-K, into the Company's previously filed Registration Statements on Form S-8 (File Nos. 333-01616, 333-04073, 333-46705, 333-57233, 333-65413, 333-79425 and 333-79429).

*/s/ Arthur Andersen LLP*

Denver, Colorado,  
March 17, 2000.

## EXHIBIT 23.2

### CONSENT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS

To the Board of Directors  
Advanced Energy Industries, Inc.:

We consent to the use of our report dated January 16, 1998 with respect to the consolidated statements of income, changes in shareholders' equity and cash flows of RF Power Products, Inc. and subsidiary, currently known as Advanced Energy Voorhees, Inc., for the year ended November 30, 1997 and the related schedule (not separately presented herein), which report appears in the annual report on Form 10-K of Advanced Energy Industries, Inc. for the year ended December 31, 1999. We also consent to incorporation by reference of such report in the registration statements (Nos. 333-79425 and 333-79429) on Form S-8 and the registration statements (Nos. 333-87455, 333-87459 and 333-90469) on Form S-3 of Advanced Energy Industries, Inc.

*/s/ KPMG LLP*

*Philadelphia, Pennsylvania  
March 17, 2000*

## ARTICLE 5

MULTIPLIER: 1,000

PERIOD TYPE	YEAR
FISCAL YEAR END	DEC 31 1999
PERIOD START	JAN 01 1999
PERIOD END	DEC 31 1999
CASH	19,352
SECURITIES	186,440
RECEIVABLES	43,880
ALLOWANCES	(537)
INVENTORY	25,474
CURRENT ASSETS	280,621
PP&E	34,665
DEPRECIATION	(17,990)
TOTAL ASSETS	312,385
CURRENT LIABILITIES	28,752
BONDS	135,000
PREFERRED MANDATORY	0
PREFERRED	0
COMMON	28
OTHER SE	148,319
TOTAL LIABILITY AND EQUITY	312,385
SALES	183,958
TOTAL REVENUES	183,958
CGS	102,101
TOTAL COSTS	102,101
OTHER EXPENSES	56,516
LOSS PROVISION	0
INTEREST EXPENSE	1,206
INCOME PRETAX	27,084
INCOME TAX	10,177
INCOME CONTINUING	16,838
DISCONTINUED	0
EXTRAORDINARY	0
CHANGES	0
NET INCOME	16,838
EPS BASIC	0.62
EPS DILUTED	0.59

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**End of Filing**

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