Retrospective: Historical Highlights of an Evolving Society

World War II was over. War had been waged in every environment—the Arctic, the tropics, at sea, in the mountains, in the air—and in every season and climate. Environmental engineers had answered the call by simulating these diverse conditions in their labs to evaluate military equipment.

Now the growing profession was at a crossroads. The next frontier would be the "atmosphereless" environment of outer space. How would the industry launch a concerted effort to capture new opportunities?

Evolutionary Milestones

1950s In the early 1950s, Monroe Seligman, President of Tenney Engineering, Inc., recognized a need for an environmental industry society to act as an information clearinghouse, address common problems, and establish standards for quality in workmanship and performance of equipment. Seligman joined forces with leaders from seven other environmental equipment manufacturers in 1953 to form the Environmental Equipment Institute (EEI), parent organization of the Institute of Environmental Sciences and Technology (IEST).

Three years later, EEI and its Science Section split to form the Institute of Environmental Engineers (IEE). In 1959, IEE and the Society of Environmental Engineers (SEE) merged to form the Institute of Environmental Sciences (IES).

1970s IES celebrated the accomplishments of its members in a manned mission to the moon, but membership dropped off as national aerospace activities dwindled. In a brief flirtation with "going green," IES added an Ecological Sciences Division and established contacts with the Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA).

This diversion was quickly abandoned to pursue more promising directions. In a 1973 merger with the American Association for Contamination Control (A^2C^2), the Institute gained a new category of members involved in industrial contamination control and biosciences. IES then became a member of the newly formed International Committee of Contamination Control Societies (ICCCS) and was represented at the London Symposium.

In 1975, IES formed an Environmental/Reliability Projects Groups to work with a Department of Defense Joint Logistics Command Coordinating Group in Improving Systems Reliability. This effort evolved into the Product Reliability Division.

1990s Reflecting a renewed commitment of service to the technical community, IES was renamed the Institute of Environmental Sciences and Technology (IEST) in 1997.

Who Am I?

It is 1969. I am 41 years old and have a bachelor degree in mechanical engineering. After gaining about 10 years of experience in my field, I now hold a management position earning an annual salary of $16,000.

Answer: I am a professional environmental engineer and a reader of the *IES Journal*.

Source: IES membership survey results reported in the August 1969 issue.

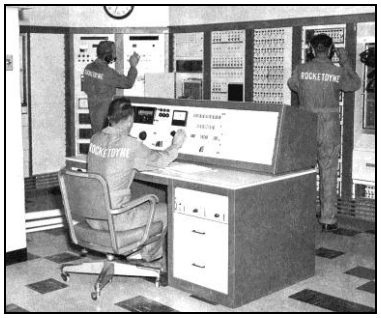

Figure 1—A 100-channel high-speed digital data acquisition system with a sampling rate of 15,000 samples/sec (Journal of Environmental Sciences, 1963).

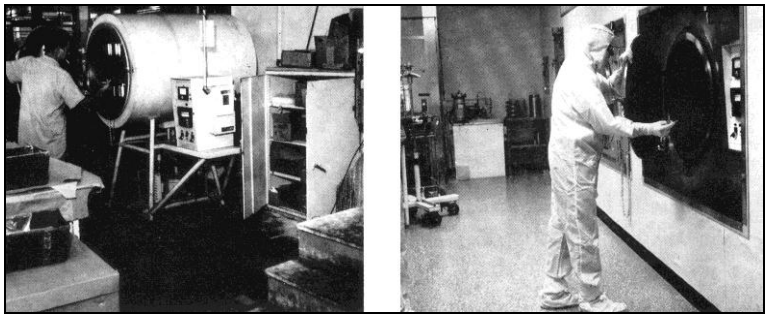

Figure 2—Contrast between an uncontrolled environment (left) and an environment in which "the total population of airborne particles 20 millionths of an inch and larger are under control," according to an article in the Journal of Environmental Sciences in 1974.

Setting Standards

1950s Initial activities in national standards development included the first review of MIL-STD-810, contributions to the Air Force Handbook on Environmental Engineering, and serving as Secretariat, American Standards Association, Environmental Terminology.

1960s MIL-STD-810 was submitted to the US Air Force. IES appointed a delegate to the International Electrotechnical Committee (IEC), TC 50 Committee.

1970s IES applied a major effort to the revision of MIL-STD-781. The Contamination Control Division issued the Institute's first Recommended Practice (RP).

1990s In 1992, IES Working Group 100 completed a revision of Federal Standard 209 and also began work on a series of international standards that eventually would supersede FED-STD-209. IES was named Secretariat for ISO Technical Committee 209 Cleanrooms and associated controlled environments. IES became a member of the American National Standards Institute (ANSI), the voluntary standardization system in the United States. ANSI appointed IES Administrator of the US TAG (Technical Advisory Group) to ISO/TC 209, which published its first standard, ISO 14644-1: Classification of air cleanliness, in 1999.

The Handbook for Data Acquisition and Analysis was published as the first Design, Test, and Evaluation RP in 1994.

2000s IEST became accredited as an ANSI-approved standards-writing organization. IEST Working Group 100 recommended that FED-STD-209 be discontinued. The US General Services Administration withdrew the standard and replaced its use with ISO 14644-1 and 14644-2.

IEST expanded its efforts into the burgeoning new field of nanotechnology. New Working Groups were formed to develop RPs on nano facility design and operation, nanotechnology safety, vibration and acoustics in nano facilities, and other topics. In addition, the Institute was accepted by ANSI as a founding member of the US TAG to the new ISO/TC 229 Nanotechnologies. A special track on micro/nano facility operations will debut at ESTECH 2013.

Meetings and Conferences

1950s The first EEI Technical Meeting, considered to be the forerunner of the Annual Technical Meeting (ATM), was held in 1954 and focused on environmental engineering applications. The following year saw the first exhibition by equipment manufacturers at the EEI meeting. The first Technical Meeting under the name of IEE (1957) also published the first Proceedings, featuring 30 papers. The first ATM under the name of IES (1959) is considered the official birth date of the Institute.

1960s ATM63 featured the meeting's first tutorial activity on the topic of Vibration Theory and Shock Theory. The Institute also became involved with other industry meetings, joining with American Society for Testing and Materials (ASTM) and the American Institute of Aeronautics and Astronautics (AIAA) to launch the Space Simulation Conference; co-operating with The Aerospace Corporation on the new Aerospace Testing Conference; and becoming a co-sponsor of the Symposium on Reliability and Quality Control and the Annual Reliability and Maintainability Symposium (RAMS).

1980s The Institute was involved in the first conference on Environmental Stress Screening of Electronic Hardware (ESSEH) and the first conference on Reliability Growth. ATM89 ran seven full days and drew 2,761 attendees.

1990s The Institute formed an Education Advisory Committee and organized a series of short courses in various locations. The first Fall Conference took place in 1998 in Chicago, with a schedule of short courses and working groups from all divisions.

2000s A new name for the ATM, ESTECH, was unveiled in 2000. The acronym represents "Environmental Sciences TECHnology."

Figure 3—Attendees crowd the exhibit floor at ESTECH 2012.

Noteworthy

1950s The inaugural issue of the *Journal of Environmental Engineering* was published in 1958. The following year, the periodical became the *Journal of Environmental Sciences*, the official publication of the IES.

1960s The IES Technical Awards program was established with the introduction of the Irwin Vigness Award for work in shock. The Sustaining Sponsor program also was initiated.

Figure 4—At the helm: Executive directors (from left) Julie Kendrick (1997–2007), Janet Ehmann (1986–1997), Betty Peterson (1972–1986), and Roberta Burrows (2008–present).

1990s A new Mission Statement for the organization was adopted: "The IES is an international professional organization dedicated to enhancing process and product quality through the advancement of controlled environment technologies. The IES establishes and maintains standards, recommended practices, educational programs, and communication forums."

The Institute established a home page on the World Wide Web at www.instenvsci.org. In 1998 the website was redesigned and posted at www.iest.org.

2000s The *Journal of the IEST* moved to online publication exclusively, with 25 years of back issues archived and available with subscription. In 2008 the *Journal* celebrated 50 years of continuous publication.

A redesigned website introduced the IEST Campus concept, providing a tailored experience for IEST's web audience and tying in with the society's educational program.

Figure 5—"Institutes" of the IEST Campus focus on the primary technical pursuits of IEST members.