

resources, the important thing to remember is that continuous learning is a must in today's radically changing world.

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#### ABOUT THE AUTHOR

**Chuck Miles** has been with Johnson Controls since 1977, where he has spent 20 years developing the Johnson Controls Institute. He shares his training expertise at many seminars, including the Association of School Business Officials and Wisconsin First in Quality. He is an active member of the American Society of Quality Control and the International Society of Performance and Instruction.

## The Role of Technical Associates in Professional Development

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#### PURPOSE

The Association of Energy Engineers celebrates its 20th Anniversary and reflects on its accomplishments in developing the energy engineering and management profession. We have made great strides and see great new growth opportunities ahead. This article is part of a series of papers describing associations and professional development. We hope that by reviewing the accomplishments of AEE it will give insight

for future development.

The Epilog written by Dr. Winebrake states it well. This set of articles “discusses the role of private trade organizations, technical associations, and companies in fostering the continued education and training of existing energy and environmental professionals, trade groups and technical associations have a mission to keep their members current—a task that can be facilitated by the formation of alliances—”

The thoughts presented in the article reflect where AEE is, where we are going and how AEE works with various allies. Hopefully the Association of Energy Engineers will prove useful to other organizations.

## BACKGROUND

Perhaps it’s important to understand what technical (professional) societies are. To do that, let’s first visit Webster’s dictionary:

*technical*            “a) having a special and usually practical knowledge especially of a mechanical or scientific subject”

*professional*        “a) of, relating to, or characteristic of a profession— b) engaged in one of the learned professions”

*society*                “a) companionship or association with one’s fellows— b) a voluntary association of individuals for common ends.”

The Association of Energy Engineer’s mission is to promote the scientific and education interests of those engaged in the energy industry and to foster cooperative action in advancing the common purposes of its members and to promote activities designed to enable the industry to be conducted with the greatest economy and efficiency.

With all of this as background, let’s look at the role AEE is playing and its impact on energy and environmental education.

## CERTIFICATION

One of AEE’s greatest achievements is in starting the first certification program for energy managers. Many professional societies shy away from specialty certification because of the inherent legal risks and

the structure which must be in place. AEE's certification programs are second to none.

One way to dramatically improve a profession is to offer certification programs where successful certification of an individual conveys a sign of technical competence using standards accepted by the society. This standard setting activity ensures a professional competence and should enhance the status of the profession. The Certification would also help the society members seek jobs and sell services.

**Certified Energy Managers Program (CEM)**—AEE has very strong certification programs. Today, there are about 2,500 certified energy managers practicing in many different countries. Most are in North America; but there are significant numbers in Bulgaria, Romania, Hungary, Ukraine, Jamaica, Brazil and a number of other developed and developing countries. In addition AEE offers other certifications including:

**Certified Lighting Efficiency Professional (CLEP)**—a program developed to identify specialists in lighting efficiency. This program is recognized as meeting the certification requirements of the EPA Green Lights' Lighting Management Company Ally Program.

**Certified Cogeneration Professional (CCP)** identifies individuals who have demonstrated proficiency in cogeneration, independent power and the growing competitive power industry. The CCP program covers legal, financial and technical issues.

**Certified Indoor Air Quality Professional (CIAQP)** program is designed to meet the growing needs of businesses to identify qualified indoor air quality practitioners who solve problems created by "sick buildings" as well as facility managers who are responsible for operating healthy buildings while maintaining comfort and reducing energy costs.

The first certification program, CEM was started in 1982. It has taken more than 14 years for the CEM to be adopted by industry and government.

Our vision for the future is that all AEE certification programs get adopted by trade allies as quickly as possible. We should educate both government and educational leaders in the important role AEE certification programs play in identifying qualified professionals.

## CONTINUING EDUCATION

A major role of the technical society should be to foster a top-notch continuing education program for its members. This continuing educa-

tion should include new and developing technologies as well as enhancing basic educational courses. When the technical society offers a course, the material should be technically sound and well presented by qualified faculty.

AEE offers numerous continuing education courses around the world. In calendar year 1996, 90 courses were offered in seven countries to approximately 2,000 professionals.

### **AEE Government Partnership Program**

The Energy Policy Act of 1992 required trained facility energy managers. We are proud that the U.S. Government invited AEE to develop a training program for governmental energy managers which was presented through the Office of Federal Energy Management Programs. The curriculum was jointly developed and has been presented throughout the governmental sector. In 1996, AEE was selected to develop the official workshop for the Geothermal Consortium on Geothermal Applications for Government Buildings. The consortium is a public/private collaborative supported by the U.S. Department of Energy, U.S. Environmental Protection Agency, more than 240 electric utilities, and more than 250 trade allies.

### **Utility Partnership Program**

AEE has developed specialized continuing education programs for utilities throughout the nation. These programs have been presented at utility facilities for their customers and utility account representatives. Some utilities who have used our programs include: Florida Power & Light, Detroit Edison, Southern California Gas, Virginia Power, Southern California Edison, United Illumination and Houston Power & Light.

### **Curriculum Development and Evaluation**

Programs are presented by industry professionals and instructors from Universities including: North Carolina State, Oklahoma State University, Texas A&M, Virginia Tech and the University of Florida. Each program is evaluated by the students. Continuing education units are awarded. New course ideas develop from member needs and an annual survey conducted by the Association.

### **Conferences and Expositions**

AEE has one of the best conference and exposition programs in the nation. Many are hosted by utilities such as Virginia Power, Southern

California Edison, Wisconsin Electric, Texas Utilities and Boston Gas, to name a few. In 1996, AEE was chosen by the American Gas Cooling Center to develop the Gas Cooling Technology Conference and Exposition. Curricula are developed jointly by the sponsoring organizations and AEE. In 1978, the Association of Energy Engineers presented for the first time the World Energy Engineering Congress (WEEC). Last year, 4,400 professionals from 47 states and 32 countries attended. The WEEC Advisory Board reviews papers and chairpersons are invited to develop the 185 presentations and 44 sessions which comprise the program.

#### IN 1996, CONFERENCES AND EXPOSITIONS HELD:

<b>Conference Name</b>	<b>Location</b>	<b>Partner</b>
<i>Globalcon</i>	Denver, CO	Public Service of Colorado
<i>Strategic Gas Forum</i>	Detroit, MI	Michcon
<i>Competitive Power Congress/National Industrial Efficiency Expo</i>	Somerset, NJ	Public Service Enterprise Group
<i>Gas Cooling Technologies</i>	Boston, MA	American Gas Cooling Center
<i>International Energy &amp; Environmental Congress</i>	Milwaukee, WI	Wisconsin Electric
<i>World Energy Engineers Congress/Plant &amp; Facilities Expo/Environmental Technology Expo/Energy Services &amp; Power Marketing Center/OSHA Compliance</i>	Atlanta, GA	

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One of the goals of the WEEC is to get more academe involvement. In 1997, we have invited professors with the Industrial Assessment Centers to participate in the program.

Our vision for the future is to get more utility, government and academic participants in our programs. The strength of AEE is that it brings together all segments of the energy marketplace.

### U.S. Agency for International Development Partnership Program

In 1996, AEE was selected by the U.S. Agency for International Development to develop conferences in Romania, Bulgaria and Hungary. AEE utilized the Eastern European chapters to help develop curricula and market programs.

Our vision for the future is for AEE to help implement an Eastern European regional meeting with invited attendees from U.S. AID programs in the Ukraine, Russia, Armenia, Romania, Bulgaria, Hungary and Poland.

### COMMUNICATIONS

AEE is seeking ways to improve communications with its members. In 1996 AEE started its homepage at [www.aeecenter.org](http://www.aeecenter.org). Complete listings of publications, seminars and our conferences can be found on the homepage. Each year AEE members indicate future directions for the industry in an annual survey. In 1996 members rated AEE programs with very high marks as indicated below.

#### Survey Based on 505 Responses

	<i>Very Good</i>	<i>Good</i>	<i>Unsatisfactory</i>
Energy Engineering Journal	34.5%	60.2%	5.3%
Strategic Planning for Energy & the Environ.	26.0%	65.4%	8.7%
Cogeneration & Competitive Power Journal	26.0%	65.5%	8.5%
AEE Energy Insight	21.0%	66.7%	12.4%
Environmental News	17.1%	74.1%	8.8%
Energy Services Marketing News	20.0%	69.7%	10.3%
Continuing Education Seminars	29.8%	59.9%	9.8%
Certified Energy Managers Program	50.4%	45.2%	4.4%
Certified Lighting Efficiency	36.9%	56.6%	6.6%
Certified Cogeneration Professional	29.6%	59.1%	11.3%
Certified Indoor Air Quality	29.9%	57.3%	12.8%
World Energy Engineering Congress	38.0%	53.3%	8.6%
Scholarship Program	26.8%	59.9%	13.4%

Our vision for the future is to investigate the potential of delivering training through other communication vehicles including the Internet, correspondence programs and satellite basic instruction.

## DIVISIONS AND COUNCILS

AEE has developed specialty programs to meet the needs of its members. Divisions include the Energy Services Marketing Society, Environmental Engineers and Managers Institute and the Cogeneration and Competitive Power Institute.

Although AEE is not a lobbying trade organization, it does provide input into legislation, such as the Energy Policy Act by developing position papers to inform legislators through the National Energy Policy Council, composed of past presidents of AEE and our chapter in Washington.

## FUTURE PROJECTS

### **Curriculum Development**

Curriculum development in academe is usually left to the different educational institutions. Consequently, there is a diversity of orientation that some feel is healthy. Too much diversity is usually controlled through an accrediting group such as Accrediting Board for Engineering and Technology (ABET). Technical societies and practitioners usually have little input to this curriculum development; but some universities have advisory groups that periodically review curricula and make changes.

A technical society could play a vital role by bringing the allies together to jointly review curricula and make suggestions for changes. Practitioners could ensure the curricula "works" and academicians could ensure the curriculum is modern and includes some research component. This could be done through the development of a "model curriculum."

Presently, AEE is not involved in any large-scale curriculum development effort. Several universities work with AEE and several others offer energy management-oriented curricula. However, there is no central or coordinated effort.

AEE could play a role in developing a symposium to discuss energy management curricula and suggest necessary components. This project would need to be funded through a foundation.

## SUMMARY

This article examines how technical societies could work with allies (utilities, government and academe) to further enhance the *member's* profession and welfare. Numerous ideas are presented; but they are all based on the idea of cooperation between the allies.

In general, the technical society (in this case the Association of Energy Engineers) becomes the forum and the catalyst for discussion and subsequent change. We appreciate the opportunity to present this article and encourage its use in future planning activities.

Remember, AEE is YOU. We sincerely want you to profit from membership and this is best done by your input. Al and Wayne (we) both strongly encourage you to talk to us, your local chapter leadership, and AEE staff. **We are here for you and the profession. Use us!**

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## ABOUT THE AUTHORS

**Wayne C. Turner, Ph.D., P.E., CEM**, is a regents professor of industrial engineering at Oklahoma State University (OSU). He is founder and co-director of OSU's Oklahoma Energy Analysis and Diagnostic Center. As part of his work with the center, he has supervised energy audits in approximately 400 buildings. Dr. Turner received his Ph.D. from the Virginia Polytechnic Institute and State University in 1971. He is the recipient of numerous academic and professional awards, including AEE's Engineering Educator of the Year. With a strong background in energy management, he has written five books and more than 200 articles on energy management and related subjects.

**Albert Thumann, P.E., CEM**, is a certified state auditor in Georgia, a certified energy manager, and is a licensed professional engineer. A 13-year veteran of Bechtel Corporation, he is presently executive director of the Association of Engineers. He holds a masters in electrical engineering from New York State University.