



AMERICAN NUCLEAR SOCIETY EDUCATION & TRAINING DIVISION

MESSAGE FROM THE CHAIR

Greetings

ETD has grown over the past four to six years from an okay it's their Division in ANS, and maybe it should be merged with another Division, to a Division that now stands firmly on its own and that is achieving Green status in all the Professional Division Committee's vitality measures. These results have come from the dedication of a small group of individuals who have taken on the responsibility of Division Chairs, Officers, Executive Committee, and Standing Committee members. Following in their footsteps is a hard act to follow. However, with the continued dedication of your current Division Management Team, I am confident that ETD will continue to make strides in its contributions to member needs, ANS, and our industry.

This isn't to say that we don't need more help in our Division. We are facing several challenges, both within ANS and within our industry. The recent blackout in the Northeast offers particular challenges not only to the T&D industry, but also to the generators. It offers additional challenges to the nuclear generators as they search for operating plans to enable plants to come back to power more quickly when the physics and thermodynamics allow it. We as members of the education and training communities also face challenges to explain nuclear plant operations to the public and to our law and rule makers.

Within ETD during this next year, we are taking the initiative to form a strategic partnership with ANS's Public Information efforts. You will notice several PI sessions sponsored by ETD at this fall's meeting. We plan to continue this effort and also to work with the ANS Outreach Department to help ANS members more effectively respond to media reports, and to produce their own articles for submittal to media outlets. We need volunteers to help with these efforts!

We also are taking initiatives to be more responsive to our Honors and Awards opportunities. This includes better advertising, better committee management, and more visibility for the honorees.

Notice among your officers and Executive Committee members a balance between the academic and training communities. We believe this is vital to our continued viability. It also is contributing to greater recognition within ANS of the needs of the nuclear training community. ETD is a sponsor of the Second Conference on Nuclear Training and Education (CONTE) to be held in Orlando in early February 2004. For the first time, CONTE is an ANS Class 2 Topical. To support CONTE, ETD also has worked with the Nuclear News editorial staff to have an issue with nuclear training features ready in time for the meeting.

To continue these successes, we need your help! There are many committee opportunities available, and past-Chair Joe Kowalski is currently developing a slate of candidates for next spring's ballot. I hope you will consider becoming more involved with ETD and contributing to our future success. Don't wait to be contacted! Contact us now. Contact information is available on the last page of the Newsletter. I'm looking forward to working with more of you during this next year, and to continuing the tradition of recent ETD Chairs for the improvement of ETD services to its members.

Brian Hajek, 2003-2004 ETD Chair

Table of Contents	
Message from the Chair.....	1
Educational Assistance Program – National Academy for Nuclear Training.....	2
Outcomes Assessment Session Slated for the Pittsburgh Meeting.....	2
Calling all Parties Interested in Accreditation.	3
2004 Conference (CONTE II).....	4
Message from the new ETD Secretary.....	4
ETD 2003 Winter Meeting Sessions.....	5
2004 Annual Meeting: Pittsburgh, PA.....	4
College Credit for NANT Accredited Programs.....	5
Contact List of ETD Officers	6

EDUCATIONAL ASSISTANCE PROGRAM – NATIONAL ACADEMY FOR NUCLEAR TRAINING

As the Educational Assistance Program of the National Academy for Nuclear Training enters its 24th year, there are many success stories about students who received support from this industry program. During its more than two decades, the program has provided more than \$20 million in educational assistance. Between 1993 and 2002, 67 percent of those students receiving graduate degrees and 39 percent of those receiving bachelor's degrees who received National Academy scholarships and fellowships went on to jobs in the nuclear power industry. Students accepted jobs with U.S. nuclear utilities as well as NSSS vendors, major architect/engineering firms, NRC, DOE, national laboratories, and universities. Many of those graduates who entered the job market in the mid-1980's have enjoyed successful careers in the industry and are now the "older" members of the workforce. While there is increasing student interest in National Academy scholarships and fellowships and, ultimately, careers in the nuclear industry, that interest may not be enough to meet projected future industry workforce needs.

A continuing challenge for the industry and academia is keeping enough students—academically superior and interested students—in the education pipeline. The National Academy for Nuclear Training, through support such as the Educational Assistance Program, is working to help ensure that the challenge is met. Additionally, the National Academy is collaborating with the Nuclear Energy Institute on its workforce initiatives. Encouraging students to study disciplines that prepare them for careers in the industry remains a major goal of the program. While the number of scholarship applications increased significantly the past two years compared to the five-year period prior to 2002, there is always room for improvement. The students who participate in this program are the ones who seriously consider joining the industry and reaching them is a top priority for the Educational Assistance Program.

*Ann D. Winters, Manager
Educational Assistance Program, NANT*

OUTCOMES ASSESSMENT SESSION SLATED FOR THE PITTSBURGH MEETING

A session entitled "Good Practices in Outcomes Assessment Under EC2000 and TC2K" will provide the nuclear educational community with the opportunity to learn of good practices for assessing the outcomes of their programs that are accredited under the new ABET EC2000 or TC2K criteria. The session is

scheduled for the 2004 ANS Summer Meeting in Pittsburgh, and will feature both invited and contributed papers on the assessment part of continuous program improvement.

Under the new ABET criteria, nuclear programs must establish processes for continuously improving their ability to instill learned capabilities, called outcomes, in their students. Assessment processes that identify, collect, use, and prepare data for the evaluation of achievement are a required part of those continuous improvement processes. Assessment methods for educational outcomes are quite diverse, ranging from major-field tests, such as the Fundamentals of Engineering examination, to surveys of employers or students.

The implementation of new assessment methods can be challenging for nuclear programs. Many assessment methods are frequently unfamiliar to engineering programs. For example, the use of portfolios is rarely used to assess the outcomes of engineering programs. Even assessment methods that are familiar to engineering programs have often not been used to assess outcomes. The successful application of some effective assessment methods is particularly difficult for most nuclear programs because of their relatively small size. For instance, the development of statistically significant survey results is more difficult for small programs.

Speakers will discuss good outcomes assessment methods and how to effectively apply them in the context of nuclear educational programs.

Those interested in contributing to the session can contact Mike Robinson at robinsma@capslock.net

CALLING ALL PARTIES INTERESTED IN ACCREDITATION

Are you interested in the accreditation of nuclear educational programs? I would like to introduce you to the ANS activities in the accreditation area and invite you to attend a meeting of the ANS committee that oversees accreditation activities.

The Accreditation Policy and Procedures committee (APPC) has the lead responsibility for ANS activities concerning the accreditation of Nuclear Engineering and Nuclear Engineering Technology educational programs. In particular, the APPC has two primary responsibilities that are specified in the ANS Bylaws, Rules, and Procedures. First, the APPC is responsible for "all interface activities" for the ANS with ABET. (ABET is the national organization responsible for accrediting engineering and engineering technology programs.) Second, the APPC is responsible for developing "policy, procedures and criteria for accreditation of nuclear, radiological, and similarly

Named programs in engineering and technology.” These Responsibilities have kept the committee very busy. I’ll describe some of the recent activities of the committee below. One of the most important activities of the APPC is to train and nominate program evaluators who join ABET teams to review nuclear programs. Three ANS evaluators are scheduled to evaluate nuclear programs this fall. These ANS evaluators most often receive their initial training from the ANS. The APPC has conducted two recent evaluator-training sessions in November of 2002 and May of 2003. These training sessions are open to all interested ANS members. In addition, the committee has placed several trainees on ABET teams to observe the visit process this fall.

In addition to program evaluators, the APPC also supports the activities of other ANS representatives to ABET. The ANS representative to the ABET Board of Directors, the two representatives to the Engineering Accreditation Commission, and the representative to the Technology Accreditation Commission (TAC), as well as the alternates for these positions, are members of the APPC. Four ANS members are scheduled to lead ABET teams to visit institutions this fall.

The APPC also reviews and develops new accreditation criteria. This year ABET will implement an entirely new set of criteria for Nuclear Engineering Technology programs, and a new modification of the criteria for nuclear engineering programs. These criteria were submitted by the ANS, and drafted by the APPC. In addition, the committee recently submitted comments on proposed revisions to the ABET constitution and bylaws.

There is a growing body of experience with accreditation under ABET outcomes-based criteria. All engineering accreditation reviews are currently being conducted under the new engineering criteria (EC2000), while pilot visits under the new technology criteria (TC2K) have been completed in two successive years. The APPC sponsored a panel session, entitled “ABET Accreditation – Constituency Perspectives on Process and Program Improvement” on November 19th during the ANS 2002 Winter meeting. The purpose of the panel was to promote discussion of the effects of the new criteria on the various constituency groups in the ANS. Eight panelists participated, and seven published abstracts in the proceedings.

There were a number of concerns and issues raised during the panel. However, the time constraints of the panel allowed for little more than a beginning of discussions. The major issues raised during the panel have been recorded and discussed by the APPC. Another session is planned for the 2004 Annual meeting that focuses on assessment methods, one of the critical issues identified during the panel session.

Still interested in accreditation? Please consider attending a meeting of the APPC. The APPC welcomes observers. The committee meets on Sunday afternoon immediately prior to each ANS national meeting.

See the preliminary program or contact: Mike Robinson at robinsma@capslock.net or 412-476-5809 for more details.

2004 CONFERENCE ON NUCLEAR TRAINING AND EDUCATION (CONTE II): AN INTERNATIONAL FORUM

“ACHIEVING INDIVIDUAL AND ORGANIZATIONAL SUCCESS”

February 8-11, 2004, Peabody Hotel, Orlando, Florida

The second international Conference on Nuclear Training and Education (CONTE II) will again be held in Orlando, Florida in February 2004. The conference, whose sponsors include ANS, IAEA, Nuclear Plant Journal and various utilities and vendors, will be addressing the major issues of the aging workforce, training, cost control, culture change/ethics and human performance improvement in the global nuclear environment. CONTE II is dedicated to addressing the human resource needs of the global nuclear and related industries.

The Conference offers participants opportunities to network with peers and other professionals, schedule professional meetings, and explore vendor presentations and technology demonstrations. Participants will be exploring training, education, and human performance improvement solutions that they can use for competitive advantage.

The Agenda includes topics such as the Role of Management in Leadership, Culture and Ethics, The Human Equation – Employment Issues and Solutions, Focusing Human Performance Supports, and Maximizing Return on Investments.

If you are a Training Manager, Instructor, University Administrator or Instructor, Human Resource Specialist, Performance Technologist, Instructional Technologist, OD Consultant, or other interested professional, you should attend this conference.

For registration information and presentation information, please visit www.conteonline.com

MESSAGE FROM THE NEW ETD SECRETARY

Greetings!

I am Kent Hamlin, Education and Training Division (ETD) Secretary for 2003-2004. Although I have been an ANS member since 1976, this is my first active role in one of the Divisions. I would like to use this column to introduce myself.

Upon graduation from the U.S. Naval Academy in 1970, I began my nuclear career in the submarine service. In 1976 I left active duty for a job at Combustion Engineering in the business development group. My next job was with American Nuclear Insurers for three years where I managed the power reactor inspection program. In 1982 I joined the Institute of Nuclear Power Operations (INPO) as a training evaluator. Over my 21 year career with INPO my assignments have included team manager for plant evaluations, corporate evaluations, and accreditation visits, Director of Accreditation Division, Director of Nuclear Safety at Palo Verde, and Deputy Director of the World Association of Nuclear Operators (WANO) Coordinating Centre in London.

My present position is Manager of Performance Improvement and Learning – an area that includes training, management and leadership development, operating experience, corrective action, self-assessment, and benchmarking. I also serve as a senior management representative for accreditation site visits. My formal educational and professional accomplishments include a Bachelor of Science degree from the U.S. Naval Academy, a Master of Business Administration degree from the University of Connecticut, completion of Harvard University's Advance Management Program, and I am a registered professional engineer (nuclear) in the State of New Hampshire. I completed my military duty in 2000, retiring as a Captain in the Engineering Duty Officer community.

It is great to be back in the training and education arena, and I look forward to working with ETD in this new role, as we seek out ways to continue to improve training and education in our industry and develop the workforce for the future.

I can be contacted at hamlinkw@inpo.org.

Best Regards, Kent

ETD 2003 WINTER MEETING SESSIONS

ETD's renewed vitality will again be highlighted during the ANS National 2003 winter meeting entitled "Nuclear

Technology: Achieving Global Economic Growth While Safeguarding the Environment" with the division sponsoring 9 sessions.

The meeting will be held in New Orleans, Louisiana from November 16 to November 20, at the Hyatt Regency New Orleans. The preliminary program and registration forms are located at the ANS website:
<http://www.ans.org/meetings/winter/>

The Education and Training sessions are listed below:

Session 8a, Education and Training: General, Mon PM.
Organizer: Wes Hines, (split and following Session 8c, 2 papers)

Session 8b, Training, Human Performance, and Work Force Development, Wed AM
Organizer and Chair: Jane LeClair (7 papers)

Session 8c, Student Design Competition, Mon PM.
Organizer and Chair: H. Lee Dodds (4 papers selected later, split with 8a)

Session 8e, Innovation in Nuclear Engineering Education Training and Distance Education, Wed PM.
Organizer and Chair: Brian Hajek (7 papers)

Session 8f, INIE: Innovations in Nuclear Infrastructure and Education Program Experience, Tues PM.
Organizer and Chair: John Gutheridge (7 papers)

Session 8g, Innovative Education/Industry Collaboration, Tues AM
Organizaer: John Gutheridge (8 papers)
Chair: Craig Williamson

Session 8h Innovative Public Communications, Wed PM.
Organizer: Denis Beller (7 panelists)
Chair: Mimi Limbach

Session 8i Communications with Policy Makers, Tues AM.
Organizer: Denis Beller (6 panelists)
Chair: Denis Beller

Session 8j Communications with the Public, Tues PM.
Organizer: Denis Beller (5 panelists)
Chair: David Pointer

We hope you find the ETD sessions interesting and enjoyable. Many thanks to all of you who have helped make the upcoming sessions a success.

2004 ANNUAL MEETING: PITTSBURGH, PA

The 2004 ANS Annual Meeting, entitled “2004: ANS Celebrates 50 years (1954-2004)! A Golden Anniversary – A Golden Opportunity”, will be held in Pittsburgh, PA, from June 13 to 17, 2004 at the Omni William Penn Hotel.

The Education and Training Division is sponsoring four sessions:

1. “Education and Training: General”
organized by Wes Hines, jhines2@utk.edu
2. “Training, Human Performance, and Work Force Development”
organized by Jane LeClair,
Jane.LeClair@constellation.com
3. “Research by U.S. Department of Energy Sponsored Students”
organized by Brian Hajek, hajek.1@osu.edu
4. “Good Practices in Outcomes Assessment Under EC2000 and TC2K”
organized by Mike Robinson, robinsma@bettis.gov

Summaries are accepted from November 1, 2003 to January 9, 2004, authors will be notified of acceptance by February 24th, and revised summaries are due March 9th. We are excited to hear about your new projects, successes, and lessons learned, and welcome your submissions. Please notice that the tracks are not organized by division but a cross listing of topical tracks and division sponsorship is given on the last page or the call for papers.

A conference flyer is available at <http://www.ans.org/meetings/docs/2004/am2004-flyer.pdf> and the complete call for papers can be found at <http://www.ans.org/meetings/docs/2004/am2004-flyer.pdf>

COLLEGE CREDIT FOR NANT ACCREDITED PROGRAMS

In 1982, INPO established an accreditation process that required all utilities to seek the accreditation of their operator, maintenance and technical programs. In 1985 the National Academy for Nuclear Training (NANT) was formed to integrate of the nuclear industry training-related activities. That was followed by the 1985 NRC endorsement of the INPO

accreditation process. In 1993 the NRC established a final rule requiring that industry-training programs be established, implemented and maintained using the systematic approach to training (SAT). The NRC went on to say that INPO accreditation was a means of compliance with federal regulations.

In two decades, training in the commercial nuclear industry has evolved from minimal commitment of budget and instructors to a world-class benchmark of excellence.

Today a uniform, mature and focused accreditation process ties all of the 100+ operating plants together in 12 program areas. The accredited programs are:

Operations

- Nonlicensed Operator
- Reactor Operator
- Senior Reactor Operator
- Shift Manager
- Shift Technical Advisor
- Licensed continuing training

Technical

- I&C Technician and Supervisor
- Electrical Maintenance and Supervisor
- Mechanical Maintenance and Supervisor
- Chemistry Technician
- Radiological Protection Technician
- Engineering Personnel

The accreditation objectives and criteria apply to utility training processes and training results. *Training that meets the accreditation objectives has the following attributes:*

- *It is based on specific learning objectives that relate to job performance requirements and that trainees are responsible for achieving*
- *The training content is technically accurate and presented in an instructionally effective manner*
- *Trainees are evaluated to verify that the learning objectives have been achieved*

Fundamental to the accreditation program is the use of the systematic approach to training (ACAD 02-001)

The estimated utility population, without college degrees, in all of the NANT accredited programs is over ten thousand. Many of these workers will be retiring causing a looming shortage of workers and managers. The American Nuclear Society (ANS) May 2002 Position Statement #29 describes the gap between qualified workers and the number of existing jobs as first becoming significant in 1999 and growing annually. The Nuclear Energy Institute (NEI) March 2002 survey predicts the

need for about 90,000 additional entry level workers by 2011. Current trends indicate that this may be a conservative prediction.

As new workers enter the commercial nuclear field, they will find new requirements for college degrees in many existing and redesigned jobs as well as management and supervisory positions. The new hires can begin training in accredited utility programs and become candidates for future degrees. By awarding college credit for NANT accredited programs the new workforce and incumbents will find an ability to fill a broader level of vacancies and have greater job mobility.

Excelsior College (EC), (formerly known as Regents) began awarding college credits for the US Navy Nuclear Training in 1984. Many navel personnel went on to earn a Bachelor of Science Degree in Nuclear Technology (BSNT). Beyond the BSNT degree, which is accredited by the Accrediting Board for Engineering and Technology (ABET), Excelsior College also offers a Bachelor of Science in Technology (BST) with a technical specialty along with other degree programs such as a Bachelor of Science in Electronics Engineering Technology (BSEET) and Associate in Science in Technology with a specialty in Chemical, Electronic/Instrumentation, Electromechanical or Nuclear Technologies.

In the Bachelor of Science Degree in Nuclear Engineering Technology (BSNET), which is accredited by the Accrediting Board for Engineering and Technology (ABET), there are 16 required core courses. Learning objectives and topical requirements have been developed, in a detailed matrix, for each of the courses by the Excelsior College Nuclear Technology Faculty.

Evaluation teams comprised of experts in commercial nuclear training and nuclear engineering are visiting a sampling of utility sites and making a comparison of the Excelsior College requirements to the content of the utility training programs for each of the ten selected accredited programs. The data from all the visits will be compiled and presented to the EC Nuclear Technology faculty who will assign credit based on the site evaluation visits and team recommendations. A preliminary review of several site visits indicates that there is a strong alignment between the BSNET requirements and the Senior Reactor Operator, Reactor Operator, and Shift Technical Advisor program requirements. It is becoming apparent that there is also significant credit potential in the other utility training programs within the scope of this project.

After the credit worthiness of the NANT accredited utility training programs has been established, there will be a

significant communication/marketing program to make all who may benefit from such a program aware of their options. Interested graduates of the NANT accredited programs will be able to contact Excelsior College for a formal evaluation of earned credit and courses needed to complete their degree beginning in 2004.

The formal recognition of accredited nuclear industry training programs for college credit will not only expand the educational opportunities of workers throughout the nuclear industry but will also promote the mobility and career opportunities of individuals who seek to have their training applied to a degree program in an allied technical profession.

*Dr. Richard Coe, School of Business,
Richard Stockton College of New Jersey*

ETD CONTACT LIST

OFFICERS

Chair

Mr. Brian K. Hajek
The Ohio State University
Phone# 614-292-5405
E-Mail: hajek.1@osu.edu

1st Vice Chair

Dr. Jane A. LeClair
Constellation Nuclear
Phone# 315-349-4174
E-Mail: Jane.LeClair@constellation.com

2nd Vice Chair

Mr. Pierre Tremblay
Ontario Power Generation
Phone# 905-837-4828
E-Mail: pierre.tremblay@opg.com

Treasurer

Dr. Richard Coe
Richard Stockton College of New Jersey
Phone# 609-652-4466
E-Mail: coer@stockton.edu

Secretary

Mr. Kent Hamlin
Institute of Nuclear Power Operations
Phone# 770-644-8503
E-Mail: HamlinKW@INPO.org

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Who Should Attend

Training and Education Managers
Training Instructors

University/College Professors
University/College Administrators

Performance Technologists

Human Resource Professionals

Instructional Technologists

Human Factors Practitioners

Organizational Development

Professionals

Vendors

Enterprise Resource Planning Managers

Human Performance Managers



The Conference on Nuclear Training and Education, Inc.

PO Box 24371

Knoxville, TN 37933- 2371

TELEPHONE: (865) 671- 1442

FAX: (865) - 675 - 6027

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**CONFERENCE THEME: Achieving
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Success**

Sunday, February 8, 2004:

4:00 - 6:00 PM

Conference Registration

7:30 PM

Reception



The Conference on Nuclear Training and Education, Inc.

PO Box 24371

Knoxville, TN 37933- 2371

TELEPHONE: (865) 671 - 1442

FAX: (865) - 675 - 6027

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Monday, February 9, 2004:

**Morning Session:
Conference Kickoff**

Ronald J. Bruno

8:00 AM - 8:30 AM

• **Welcome**

J. Art Stall, FPL Group, Inc.

8:30 AM - 9:30 AM

• **Keynote Speaker**

David A. Christian, Dominion Energy

10:00 AM - 12:00 PM

• **Mentor Panel: Challenges**

Afternoon Session:

Culture, Leadership and Ethics

Arthur H. Friedman

1:30 PM - 3:00 PM

• **Leadership Impact On Culture**

3:30 PM - 5:00 PM

• **Ethical Fitness**

• **Building and Changing Culture**

Tuesday, February 10, 2004:

Morning Session:

Workforce Issues Related to Performance

Ann D. Winters and William E. Burchill

8:00 AM - 9:15 AM

• **Transferring Knowledge From The**

Current Worker To The Future Worker

9:30 AM - 10:30 AM

• **Status of Current Demographics**

10:30 AM - 12:00 PM

• **Industry/Educational Partnering--Panel**

Afternoon Session:

Focusing Performance Support

Lawrence B. Durham and Jo P. Magenris

1:30 - 3:00 PM

• **Revisiting The Implications Of
"Performance-Based Training"**

3:30 - 5:00 PM

• **Responding To Performance
Improvement Needs**



Wednesday, February 11, 2004

Morning Session:

Measuring Performance Improvement

Jerome F. McMahon and Robert L. Sandstrom

8:00 AM - 11:30 AM

Return On Investment For An Intervention

• **New Paradigms of VP Support**

• **Metrics For Individual And**

Organizational Effectiveness

• **Performance Equation**

(Investment x Effectiveness Formula)

• **Cost of Performance Indicators**

• **Return on Investment (ROI)**

• **Sharing Performance "Good Practices"**

Conference Closing Session:

11:30 PM-12:15 PM

• **Mentor Panel: Conference Take-Homes**