HFICD
A Division of the American Nuclear Society

HUMAN FACTORS, INSTRUMENTATION & CONTROLS
DIVISION OF THE AMERICAN NUCLEAR SOCIETY

WINTER 2014–2015 NEWSLETTER
http://hficd.ans.org

ANS CELEBRATES 60 YEARS

HFICD joined the seventeen other professional divisions in wishing a happy 60th birthday to the American Nuclear Society at the 2014 Winter Meeting and Technology Expo. ANS was organized in 1954 and quickly met several key milestones in the society development. ANS held its first Annual Meeting and elected its first President in June 1955, launched its first journal (Nuclear Science and Engineering) in March 1956, and formed its Standards Committee in November 1956. By the end of the 1950s, ANS had three professional divisions, 14 local sections, and 11 student branches. Today, ANS serves 10,500 members in 46 countries with 21 standing committees, 18 professional divisions (and one technical group), 54 local sections (including 7 overseas and one affiliated society), 34 student sections, and 24 plant branches.

HFICD has been a proud member of the ANS community for 35 years, since the formation of the technical group for human factors in 1979. The group became a division in 1985. As instrumentation and controls became a key focus of the Human Factors Division, the division was renamed in 2008 as the Human Factors Instrumentation and Controls Division. Today, HFICD has over 800 members and a bi-annual topical meeting, Nuclear Plant Instrumentation and Control and Human–Machine Interface Technology (NPIC & HMIT). See page 5 for more information.

The officers, executive committee, and members of HFICD congratulate ANS on its first 60 years of important contributions to the use of nuclear science and technology in the US and abroad. We look forward to working with ANS to support the safe, reliable, and economic generation of nuclear energy for the next 60 years and beyond.

—Jamie Baalis Coble

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THOUGHTS FROM THE CHAIR

—John M. Mahoney

It is a privilege to serve the Human Factors, Instrumentation and Controls Division as your Chair for the 2014–2015 year and celebrating the 60th birthday of the American Nuclear Society. Over the past ten years, our membership has continued to grow and now boasts over 800 members (more than 6% of total ANS memberships). Our division is financially sound and has this year increased our scholarship award to a graduate student level for the first time ever. We are continuing to be a major contributor at the national level for HFICD volunteers doing great work in programs, standards, and technical practice areas of science, research and utility operations and maintenance.

In 2013, our efforts as a division were focused on improved information sharing and increased communication with a new website (http://hficd.ans.org) and ANS outreach that included sustaining leadership roles for students and the ANS Young Members Group on our Executive Committee. Additional insight into our diverse demographics and member's interests and work will help us strategically to be a better society and our vision of being recognized as the leading division for advancing and promoting measurement and control technologies as well as the interface between operators, controls and instruments.

With our mission set, it is my honor to work with you and our executive committee, standing and special sub-committees to make decisions on, assist with, and influence our membership to:

- Focus on improving plant safety, performance, reliability, personnel safety, and efficiency of nuclear power plants;
- Expose and enable science, systems and technologies that consider human performance within nuclear plant operation and the underlying instrumentation, control, and human–machine interface technologies;
- Share and disseminate the scientific and technological knowledge and standards that promote use for the benefit of the nuclear industry and our membership; and
- Seize opportunities for professional development and leadership providing the means to share information, educate others, and support the overall ANS mission to engage the public and policy makers through various portals of communication.

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THOUGHTS FROM THE CHAIR

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Recently, we established the following four strategic mission components for accomplishing our leadership objectives

Mission Component 1: Professional Development

Promote the education of nuclear industry professionals in the expanding fields of human factors and instrumentation and control related topics. We will encourage development and recognize outstanding member achievement and performance.

Mission Component 2: Sharing Information and Advancements in Technology

We will regularly inform division members and others on division activities and recent developments in our fields of expertise. We will also provide the technical information (papers, articles, and publications) that will inform others about HFICD science, standards, and technologies.

Mission Component 3: Growing HFICD Membership

We will work to grow membership by 20 percent over the next five years. Our growth will be a result of our dedication to mission with focus on:

INSTRUMENTATION AND CONTROLS	HUMAN–MACHINE INTERFACES
Industry Standards and Procedures	Online Monitoring
Cyber Security and Infrastructure	Diagnostics and Prognostics
Artificial Intelligence / Expert Systems	Industrial and Graphic Design
HUMAN PERFORMANCE	**STRESS CONTROL**
Human Info. Processing	Psychological Input
Human Risk Assessment	Organizational Structure
Training and Task Design	Ergonomics

Mission Component 4: Engaging the Public and Policy Makers

We will support the overall ANS outreach programs and goal to increase awareness of the safe, effective, and efficient applications and contributions of nuclear technology as well as obtaining policy makers support for use of nuclear science to meet societal needs and improve our quality of life.

A great deal of work went into structuring our division for success and many people are responsible for the foundation we have to move the work of the ANS and our division forward. We have much to accomplish.

I think about the past 40 years in a career that I love. I've seen the evolution of expanded scientific breakthroughs, improved materials for products, and the ever increasing requirements for everything smaller, faster lighter, denser, and cheaper with higher quality and production rates that continue at an increasing pace. I've been a part of the generation that had the opportunity to build, design and re-design. It is not hard to envision an expanding horizon for our students and young generation members. They are the hope of tomorrow.

Thank you for your participation in HFICD. Your involvement and contributions as members help to sustain this organization for the benefit not only of fellow members but of the industry as a whole. The 60 years of the American Nuclear Society has enabled real and sustaining change. It is not hard to be excited about our future!

Kindest Regards,

John Mahoney, PMP
HFICD 2014–2015 Chair

2014–2015 HFICD OFFICIALS

OFFICERS

John M. Mahoney
CHAIR
President and COO
High Expectations International, LLC

Sean M. Smith
1st VICE CHAIR
Embedded Software Engineer
Lockheed Martin Corporation

Jamie Baalis Coble
2nd VICE CHAIR
Assistant Professor
Department of Nuclear Engineering
University of Tennessee

Sacit M. Cetiner
SECRETARY
R&D Staff
ORNL

Terry W. Jackson
TREASURER
Chief of Instrumentation, Controls,
and Electronics
Engineering Branch 1
Office of New Reactors, U.S. NRC

EXECUTIVE COMMITTEE (NEW MEMBERS)

Leroy A. Hardin Jr.
Digital Instrumentation
and Controls (I&C) Engineer
U.S. NRC

Raymond L. Herb
Digital Principal Engineer
I&C Design,
Southern Nuclear

J. Wesley Hines
Nuclear Engineering
Department Head,
University of Tennessee

Kathryn A. McCarthy
Director
Light Water Reactor Sustainability Program
Technical Integration Office
Idaho National Laboratory

John O'Hara
Senior Scientist
Brookhaven National Laboratory

PAST HFICD CHAIRS

Joseph Naser
2013–2014 CHAIR
Technical Executive
EPRI

Hash Hashemian
2012–2013 CHAIR
President and CEO
AMS Corporation

Richard Wood
2011–2012 CHAIR
Senior Research
Staff Member
ORNL

NPIC & HMIT 2015 CONFERENCE

FEBRUARY 23–26, 2015 • Westin Hotel • Charlotte, North Carolina

H.M. Hashemian, Ph.D.
General Chair, NPIC & HMIT 2015
hash@ams-corp.com
www.npic-hmit2015.org

The 9th International Conference on Nuclear Plant Instrumentation, Control & Human–Machine Interface Technologies (NPIC & HMIT 2015) will be held at The Westin Charlotte Hotel in Charlotte, North Carolina, from February 23–26, 2015. This topical meeting of the American Nuclear Society (ANS) is the premier forum for nuclear instrumentation and control (I&C) and human factors engineering professionals to meet with leaders in industry and academia, gauge the state of the technology, exchange information, and discuss future directions of the industry.

We anticipate a spectacular turnout for this NPIC & HMIT Conference, with nearly 400 attendees from industry, government, and academia. Keynote speakers and panel members from the top officials in the U.S. government, utility executives, industry executives, and high level members of the academia from national laboratories and universities will present on nuclear energy–related topics as they pertain to nuclear plant I&C or human–machine interface technologies.

Conference Special Features

- 4 full days of plenary and panel sessions, featuring nuclear utility executives and senior managers, top government officials, and high-level executives of vendor organizations.
- Nearly 400 scientific and technical papers presented by utilities, academia, and suppliers.
- Special 2-day training course on the fundamentals of nuclear plant instrumentation, offered on the weekend preceding the conference (February 21–22, 2015).
- Up to 40 vendor exhibits showcasing the latest products in nuclear plant I&C and HMI.
- NASCAR Hall of Fame banquet dinner in downtown Charlotte on the second night of the conference, Tuesday, February 24, 2015.

For more information on the conference, please visit **www.npic-hmit2015.org.**

Keynote and Plenary Speakers (All Confirmed)

Dr. Peter Lyons
Assistant Secretary
U.S. DOE–NE

The Honorable William Ostendorff
Commissioner
U.S. NRC

Mr. Stephen Kuczynski
Chairman, President & CEO
Southern Nuclear

Dr. Thom Mason
Director
ORNL

Mr. Mano Nazar
President & CNO
NextEra Energy

Mr. Preston Gillespie
SVP–Nuclear Operations
Duke Energy

Mr. Amir Shahkarami
President & CEO
CASe Global Partners, Inc.

Mr. Gary Mignogna
President & CEO
AREVA Inc. North America

Mr. David Howell
SVP–Automation and Field Systems
Westinghouse

Mr. John Tappert
Director, Division of Engineering Office of New Reactors
U.S. NRC

Mr. David Czufin
SVP–Engineering and Technical Services
TVA

Dr. Michaele Brady Raap
President
ANS

Mr. Kenneth Canavan
Director, Plant Technology–Nuclear Sector
EPRI

Mr. Jeffrey Merrifield
Partner
Pillsbury Winthrop Shaw Pttman

HFICD Executive Committee

2014–2015 Student Representative
Zach Welz

Term Ending in 2015
Jamie Coble
Daniel Cole
Dan Santos

Term Ending in 2016
Charles C. McCarthy
Barbara A. Newsom
Edward L. Quinn
Carol S. Smidts
Mehdi Tadjalli

Term Ending in 2017
Leroy Hardin
Raymond Herb
Wesley Hines
Kathryn McCarthy
John O'Hara

Staff Liaison
Tari Marshall

Board Liaison
Darby S. Kimball

Ex Officio
Hans D. Gougar
Joseph A. Naser

Upcoming ANS Meetings

NPIC & HMIT 2015 Conference
FEBRUARY 23–26, 2015
9th International Topical Meeting on Nuclear Plant Instrumentation, Control, and Human Machine Interface Technologies (NPIC & HMIT 2015)
"Racing to Improved Cost-Effective Plant Operation"
The Westin Charlotte Hotel
Charlotte, North Carolina
www.npic-hmit2015.org

2015 ANS Annual Meeting
JUNE 7–11, 2015
"Nuclear Technology: An Essential Part of the Solution"
San Antonio, Texas
Grand Hyatt San Antonio

Utility Working Conference and Vendor Technology Expo
AUGUST 9–12, 2015
Amelia Island, Florida
Omni Amelia Island Plantation

ANS Winter Meeting and Nuclear Technology Expo
NOVEMBER 8–12, 2015
Washington, D.C.
Marriott Wardman Park

2014 DON MILLER AWARD WINNERS

The Don Miller Award of the HFICD is presented annually to an individual or team and recognizes outstanding contributions to the advancement within the field of nuclear plant instrumentation, control, and human–machine interface technologies through individual or combined activities that reflect the contributions of Dr. Miller. The award recognizes outstanding engineering, research and development, licensing or project achievements in the fields of nuclear I&C and human–machine interface from around the world, as exemplified by Dr. Miller.

The HFICD Executive Committee is pleased to announce this year's recipients of the Don Miller Award: Dr. Hidekazu Yoshikawa and Dr. Douglas M. Chapin. Both Dr. Yoshikawa and Dr. Chapin were given their awards at the ANS Annual Meeting in Reno, Nevada, in June 2014.

Dr. Hidekazu Yoshikawa

Dr. Douglas M. Chapin

The **DON MILLER AWARD** was established in 2009 by the HFICD of the American Nuclear Society. The award is named after Dr. Don Miller, the first recipient of the award, Professor and Program Chair at the Ohio State University Nuclear Engineering Program, a prior member of the Advisory Committee on Reactor Safeguards, and former ANS President.

Previous Don Miller Award Recipients

Dr. Dieter H. Wach (2013)

Dr. Julius J. Persensky (2013)

Dr. Oszvald Glöckler (2012)

Dr. Rafael B. Perez (2011)

Dr. Robert E. Uhrig (2010)

ABOUT HFICD—WHO WE ARE

The Human Factors, Instrumentation & Controls Division (HFICD) of the American Nuclear Society (ANS) is devoted to the human component of nuclear energy, along with the underlying instrumentation, control, and human–machine interface technologies.

HFICD has been part of the ANS since 1979, when the Technical Group for Human Factors was formed. The Group became a division in 1985 and was broadened to include Instrumentation & Controls in 2008. Today, the HFICD has more than 800 members (166 working in utilities, 128 consultants, 99 educators, and many others).

The HFICD focuses on the information processing, control, and human system interaction aspects of nuclear systems. This includes the sensors that transduce physical processes into signals, monitoring, control and communications systems that process data into information and manage control and protective actions, the interfaces that display plant operational and health information, and the human cognitive capabilities that enable perception and interpretation of information.

Among the HFICD's main goals are to disseminate HFICD information among its members and to promote HFICD–related activities in the nuclear power industry.

HFICD COMMITTEES

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Brent Shumaker (nominee for Secretary)

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HFICD Winter 2014–2015 newsletter produced by Dan Forrest-Bank, Graphic Designer, AMS Corporation.

HFICD Standard Rules and Bylaws approved by the American Nuclear Society in May 2013. For more information, go to http://hficd.ans.org/wp-content/uploads/2013/05/HFICD-Rules-and-Bylaws-Feb.2013.pdf.

INDUSTRY NEWS

Human Factors, Instrumentation & Controls Division Upgrades Sponsored Scholarship—Robert E. Uhrig Scholarship

The Human Factors, Instrumentation & Controls Division (HFICD) in 2013 established a $4,000 graduate student scholarship as a replacement for its $2,000 undergraduate student scholarship. This was done in recognition that students usually focus on human factors and/or instrumentation and controls specialties when they are graduate students.


Dr. Robert E. Uhrig

HFICD is proud to name this new graduate student scholarship, which will first be awarded for the 2015–2016 school year, for Dr. Robert E. Uhrig, who died on June 12, 2013. He was a giant in the areas of nuclear energy and instrumentation & controls (I&C), as well as a great leader in education, research, and the nuclear power industry.

Dr. Uhrig retired in 2002 from a joint appointment as Distinguished Professor of Engineering in the Nuclear Engineering department at the University of Tennessee–Knoxville, and as Distinguished Scientist in the Advanced Science and Technology Division at Oak Ridge National Laboratory. His work at both institutions concerned the application of artificial intelligence methods, primarily expert systems, neural networks, fuzzy systems, and genetic algorithms to nuclear power plants and other complex systems. From 1973 to 1986, Dr. Uhrig was Vice President for Advanced Systems and Technology at Florida Power and Light Company (FP&L). For 12 years he was responsible for the company's nuclear power licensing activities, environmental licensing and planning, research and development program, nuclear quality assurance program and nuclear fuel analysis activity, and served as Chair of the company's nuclear safety board.

Prior to joining FP&L, he was with the University of Florida from 1960 to 1973. Initially Chairman of the Department of Nuclear Engineering Sciences (1960–1968), Professor Uhrig initiated the Ph.D. program and innovative research programs in the application of random noise techniques to nuclear reactor systems. Later, he served as Dean of the College of Engineering. Earlier, he was Associate Professor of Engineering Mechanics and Nuclear Engineering and Research Engineer for the Atomic Energy Commission's Ames Laboratory at Iowa State University–Ames (1956–1960); and was an instructor in the Department of Mechanics at the U.S. military academy at West Point, New York, while on active duty with the U.S. Air Force (1954–1956).

Dr. Uhrig was an ANS Fellow. In addition, he served as a member of the Nuclear Regulatory Commission (NRC) Advisory Committee on Reactor Safeguards (1997–2001) and Nuclear Safety Research Review Committee (1989–1995) and the NASA/NRC committees on U.S. nuclear engineering education (1989–1990). The author of over 250 technical and professional publications, he received his bachelor's degree with honors in mechanical engineering at the University of Illinois, Urbana–Champaign, in 1948. He earned his master's and Ph.D. in theoretical and applied mechanics (now part of aerospace engineering) at Iowa State University in 1950 and 1954 respectively.

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INDUSTRY NEWS
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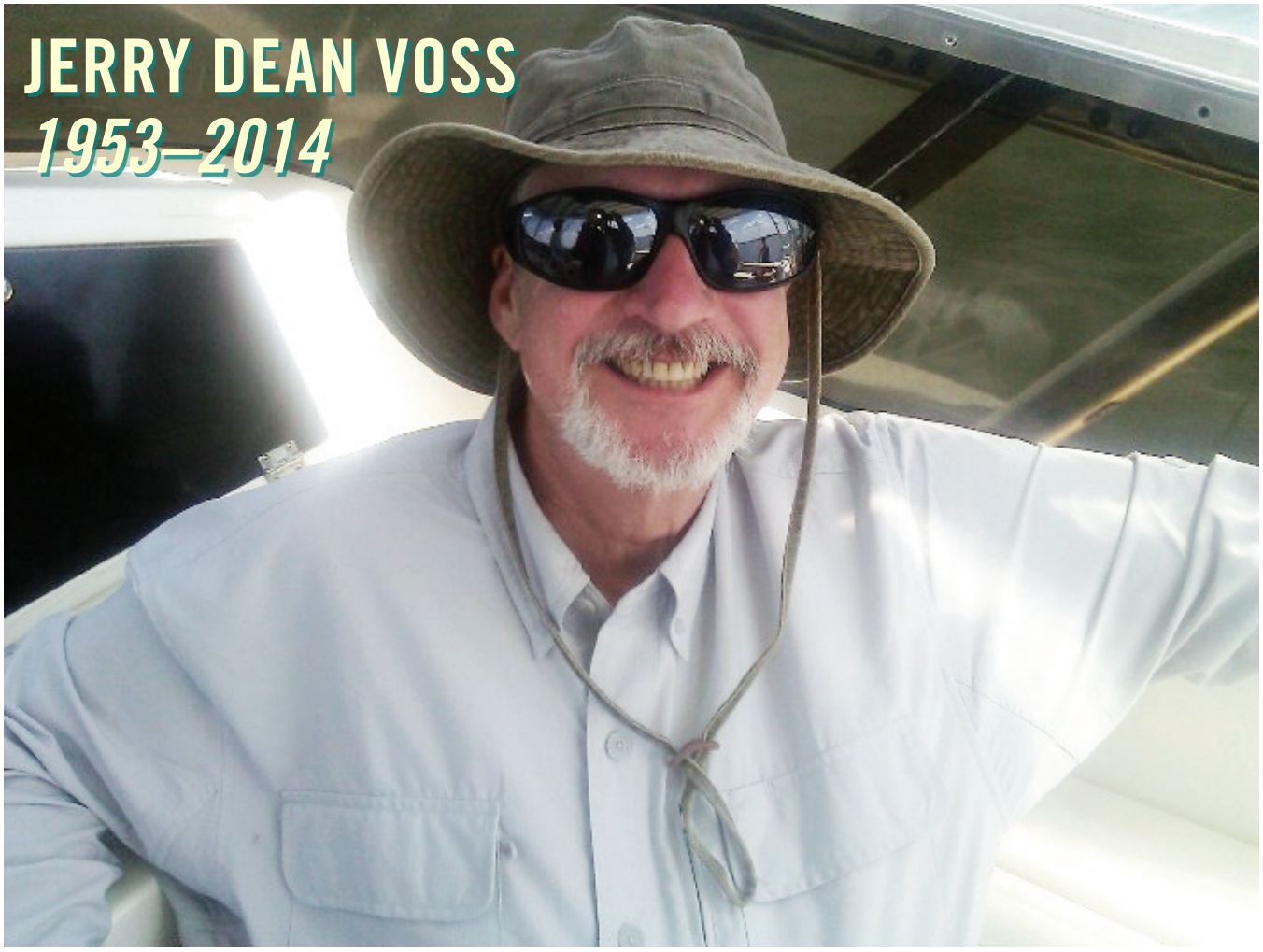
The Robert E. Uhrig Graduate Scholarship is available for students pursuing graduate studies in nuclear engineering with a focus in the fields of human factors, instrumentation, and controls in the context of nuclear power or other nuclear engineering specific applications. An applicant for this scholarship must be a full–time graduate student of a North American university engaged in masters– or Ph.D.–level research into technical aspects of human factors, instrumentation, and/or controls. Students of all nationalities are eligible for the Robert E. Uhrig Graduate Scholarship.

To apply for the Robert E. Uhrig Graduate Scholarship go to http://www.ans.org/honors/scholarships/ where the application is currently online to fill out if you feel that you qualify. In addition to the qualifications mentioned above, in order to apply, you must:

- Be an ANS student member(U.S. or non–U.S. citizen).
- Complete the application with a grade transcript and three confidential reference forms, which must all be received by February 1, 2015. (Note that one request and one application covers all of the graduate and undergraduate scholarships. Be sure to check the Robert E. Uhrig Graduate Scholarship box on the application form.)

—Dr. Joseph A. Naser
ANS Fellow
Past HFICD Chairman, 2013–2014



CELEBRATION OF LIFE FOR JERRY VOSS

January 27, 1953–November 1, 2014

It is with great sadness that we recognize the sudden passing of our beloved friend and colleague Jerry Voss on November 1, 2014.

For more than 35 years, Jerry worked in the nuclear industry. He was Vice President of Engineering and Technical Support for EXCEL Services Corporation and had been with the company since 1995. Jerry's vast experience in nuclear engineering, design and licensing includes service in the U.S. Navy, construction design interface, and consulting.

Jerry was Chairman of ISA Standard S67.04 "Setpoints for Nuclear Safety-Related Instrumentation" and he was an instructor for several other important ISA Standards.

Jerry—thank you for being a wonderful colleague and friend. You will be missed and remembered!