Speaker: Charles R. (Chip) Martin, Ph.D., Defense Nuclear Facilities Safety Board

Topic: Sustainable Development and Nuclear Power – The Big Picture

When: Wednesday, March 15, 2006
Social Time 6:00 – 7:00 PM
Dinner 7:00 – 8:00 PM
Presentation 8:00 - 9:00 PM

Where: Far East Restaurant
5055 Nicholson Lane, Rockville, MD 301-881-5552, (see p. 3 for directions)

Cost: Members: $30.00
Non-Members: $35.00
Full-time Students: $12.50
Cash Bar for soft drinks & alcoholic beverages during Social Time

Menu: Spring Roll
Shrimp Toast
Steak on a Stick
Far East Shrimp
Chicken with Cashew Nuts
Asparagus Beef
Vegetable Delight
Vegetable Lo Mein
Steamed and Fried Rice
Dessert: Toffee Pineapple

RSVP: NO LATER THAN 12:00 NOON, March 13, 2006 to: ANS_DC_RSVP@yahoo.com or Chip Martin at 202-694-7132

Please RSVP EARLY! Please COME if you RSVP! The DC Section and BWCHPS may be charged for each reservation, whether everyone comes or not. Therefore, if you make a reservation but don’t cancel by COB on March 14, we may ask you to pay the dinner cost even if you don’t come.

ABOUT THE SPEAKER

Dr. Charles R. (Chip) Martin is a Senior Technical Specialist with the Defense Nuclear Facilities Safety Board (DNFSB). Principally, he reviews the safety bases for nuclear explosive operations at DOE’s Pantex Plant and for Stockpile Stewardship activities at Los Alamos National Laboratory. Dr. Martin is one of only a few recipients of the John W. Crawford, Jr. Award, presented for the most valuable individual contribution to the work of the DNFSB. Before joining the Board, Dr. Martin worked for the Assistant Secretary of the Air Force (Acquisition) as a Nuclear Weapon Development Officer where he led a joint research program under the guidance of Dr. Edward Teller of Lawrence Livermore National Laboratory. This program investigated specialized applications of high energy density materials. Also, he authored a seminal report for the Secretary of the Air Force on the long range plans for Air Force response to the proliferation of weapons of mass destruction, and he directed several joint DoD/DOE nuclear weapons studies. Earlier, Dr. Martin had served as the Program Manager for the Joint DoD/DOE Thermionic Space Reactor Program, as a Technical Director for several underground nuclear weapon tests, and as a Course Director in the Department of Mathematics at the Air Force Academy. Dr. Martin is involved with several standards development organizations: He is Chairman of a working group to revise ANSI/ANS 10.4, Verification and Validation of Scientific and Engineering Software and is a member of the ASME Nuclear Quality Assurance Committee. In addition, he is a Fellow of the Washington Academy of Science, Chairman Elect of the Nuclear Installation Safety Division of the American Nuclear Society, and a member of IEEE. He received his Ph.D. from the Air Force Institute of Technology in 1983.
FROM THE SECTION CHAIR
— Charles R. Martin, Ph.D.

I would like to appeal to the membership of the ANS DC Section to become more involved either in the business of the local section or as part of a larger effort to revitalize our industry.

We live in a geographic area that offers unique access to both national political leaders and key leaders within the federal government. This proximity can allow you, as a local ANS section member, to work with the national ANS leaders to influence the future of our industry. If you are interested in this important work, I urge you to contact the national ANS office to find out how you can help. In addition, please consider becoming locally active by becoming a public speaker to advance nuclear science and technology, getting involved in teacher workshops, or manning a booth at various public events in the greater Washington area. The local section will be holding elections in the near future for next year’s officers. There are many opportunities to chair or work on various ANS committees both locally and nationally. Please consider getting involved. If you are interested in becoming a local or national officer or working on a committee, email me with your interests at charlesm@dnfsb.gov.

Teacher Workshops are an excellent way to get involved. The ANS developed workshop titled “Detecting Radiation in Our Radioactive World” introduces elementary and high school teachers to concepts of radiation, nuclear science, and technology. Presented by the American Nuclear Society, ANS members, and related groups, Teacher Workshops assist teachers with ideas for classroom exercises and information about radioactive sources that can be safely used in the classroom. Teachers who complete the workshop learn how to use Geiger counters to detect radiation from background and manmade sources and, while supplies last, they receive a FREE CD-V700 analog Geiger counter. To learn more, contact Burt Koske, the ANS DC Section Education Chair, at kobur@cox.net.

As far as public speaking is concerned, ANS can supply materials to help you. Many of these outreach tools can be found on the national ANS web site at http://www.ans.org/pi/resources/. Materials are free to members and larger quantities are available through the ANS store. ANS also has a formal Speakers Bureau. If you are interested in joining the Speakers Bureau, please contact Laura Hermann, ANS Communication Specialist, directly at 708-579-8224 and Buzz Savage, ANS DC Section Communications Chair, at buzz.savage@nuclear.energy.gov.

Here are some topics you might wish to consider for speaking opportunities: Sustainable Development; Disposition of Surplus Weapons Plutonium; Food Irradiation; Fusion Energy; Health Effects of Low-Level Radiation; Need for Deployment of the Next Generation Nuclear Plant Project; Nuclear Energy for Hydrogen Generation; Nuclear Fuel Recycling; Reducing Carbon Emissions; Reactor Safety; Safety of Transporting Radioactive Materials; Space Nuclear Technology; U.S. Medical Isotope Supply; and Use of Nuclear Energy for Desalination. Each of these topics is already summarized by an ANS public policy statement on the national ANS website at http://www.ans.org/.

In addition to these, there are numerous other ways to promote nuclear science and technology among your friends, neighbors, and local communities. Be creative, get involved. Just do it. .......................... Chip
MARCH DINNER MEETING
(cont. from p. 1)

DIRECTIONS to the FAR EAST RESTAURANT

Driving: The Far East Restaurant is located just east of White Flint Mall on Nicholson Lane. From I-495, take the MD-355/Rockville Pike exit toward Bethesda/Rockville - go 2.1 miles on MD-355/Rockville Pike. Turn right on Nicholson Lane - go 0.4 miles to 5055 Nicholson Lane. The Far East Restaurant is on the north side of the street and has onsite parking.

Metro: The Metro station nearest to the Far East Restaurant is the White Flint Station on the Red Line. The distance is about 0.7 miles, but unfortunately, the route is not very conducive for walking.

Looking Ahead

[NOTE: Our program schedule has changed several times since the January issue of NOTES & NEWS. PLEASE accept our apology for any confusion, and DON’T FORGET TO CHANGE YOUR CALENDARS!]

APRIL DINNER MEETING

SPEAKER: E. James Reinsch
ANS National President

DATE: April 11, 2006
PLACE: Far East Restaurant
Rockville, MD

MAY MEETING
(Tentative)

PICNIC near Calvert Cliffs Nuclear Plant
Speaker following the picnic will discuss the Nuclear Plant

DATE: To be determined (May 13 or 20, both of which are Saturday, has been requested)

JUNE DINNER MEETING

Election Results and Annual Awards will be announced

SPEAKER (Tentative): Bill Mitchell, Executive Director of Retired Scientists, Engineers & Technicians (ReSET)

TOPIC: To be determined

DATE & PLACE: To be determined

Quote from Tom Bacus, Technical Director, NASA Operations concerning the NASA budget: I have testified previously to the Congress, we will go as we can afford to pay, and will set priorities for our time, resources, and energy. For example, NASA’s exploration architecture cannot afford the robust space nuclear R&D program that was previously planned. Thus, rather than engaging in them halfway, we have cut back those efforts. But because it is important in the long run, we will seek to leverage the work of other nations which have developed small nuclear reactors that could be applied to space.

Lisa Gordon-Hagerty is currently president of LEG Inc, a private consulting firm. Until October 2005, she served as Executive Vice President and Chief Operating Officer of USEC Inc., the world's leading supplier of enriched uranium for commercial nuclear power plants. In that role, she was responsible for the day-to-day activities of USEC's operations, including oversight of production, regulatory affairs and advanced technology. Prior to her position with USEC, Lisa worked for more than five years on the White House National Security Council (NSC) staff, as the Director for Combating Terrorism. In that capacity, she oversaw the federal government's readiness and response to acts of terrorism both domestic and abroad and preparedness against nuclear, chemical, and biological terrorism. Before joining the White House NSC staff, Lisa served for six years at the U.S. Department of Energy (DOE) where she held positions overseeing several DOE programs including emergency management, operational emergency response and the safety of the country's nuclear weapons program. She also served as a professional staff member of the U.S. House of Representatives Energy and Commerce Committee. Lisa holds a master's degree in health physics and a Bachelor of Science degree, both from the University of Michigan.

She began the program with the question: "Is Nuclear Energy a Practical Component of the Global Energy Portfolio?" To answer this, she first reviewed the elements of the nuclear fuel cycle beginning at the uranium mine, where ore is removed from the earth, crushed, and concentrated into "yellowcake" (U₃O₈). The majority of yellowcake currently comes from Canada and Australia. Next, the U₃O₈ is combined with fluorine to make UF₆, which is solid at room temperature but changes to gas when slightly heated. UF₆ gas is used in the enrichment process, during which the concentration of U-235 is increased from its natural value of less than 1% to between 4% and 5%, which is the concentration needed by today’s nuclear power plants. Following enrichment, UF₆ is converted into uranium oxide form and fabricated into ceramic fuel pellets, which are packed into fuel rods. The fuel rods are then configured into bundles called fuel elements, which are shipped to utility customers and loaded into power plants. Power plants refuel their reactors about every 12 to 24 months, replacing about one-third of the fuel bundles in the reactor core. Each refueling represents on average $12 million worth of enriched uranium fuel.

Lisa went on to describe the consumption of nuclear energy around the world. Worldwide, there is a total of 441 nuclear power plants generating 375,000 MWe, or which is 16% of the world’s total electricity production. The fraction of electricity generation in some...
countries is very high: France - 78%, Lithuania - 74%, Belgium - 56%, Slovakia - 55%, and Ukraine - 47%. Elsewhere, the percentages are lower, but still significant. Korea - 41%, Japan - 34%, Germany - 31%, UK - 23%, US - 20%, and Russia - 15%.

While 2003 cost data are not yet available, it is expected that the 2003 average busbar cost will be roughly in line with 2002 - or approximately $23 per megawatt-hour. Even a small increase in costs would obviously not affect the competitive position of the average nuclear power plant.

In 2003, the around-the-clock prices for a number of major hubs all fell well above the nuclear busbar cost of $23 per megawatt-hour: $46 in the Northeast, $42 in California, $35 for gas-fired plants, and $34 for the Mid-Atlantic region. The cost of electricity from a gas-fired combined cycle plant assumes a delivered gas price of $4.48 per million Btu - the approximate average from last year. That's just the cost of fuel, and does not include O&M or capital recovery. The nuclear cost includes all the going-forward costs - fuel, O&M, incremental capital additions, and taxes.

Lisa also noted the impact of rising gas prices on the cost of electricity from combined-cycle gas-fired power plants. She went on to note the following additional facts:

- The average electricity production cost in 2004 (per kW/hr) was 1.68 cents for nuclear energy, 1.90 cents for coal-fired plants, 5.39 cents for oil, and 5.87 cents for gas.
- Of all energy sources, nuclear energy has perhaps the lowest impact on the environment, including water, land, habitat, species and air resources.
- Nuclear energy is the most efficient of all energy sources because it produces the most electricity in relation to its minimal environmental impact. Nuclear energy is the world's largest source of air-emission-free energy. Nuclear power plants produce no controlled air pollutants, such as sulfur and particulates, or greenhouse gases.

With all of these benefits, Lisa wondered, "how did the anti-nuclear attitudes form and how can they be changed?" She cites the following factors: Scientific arrogance since the '40s, Godzilla, public/special interest groups, TMI and Chernobyl, and easy access to other forms of energy. One particularly interesting fact is that when the US population views nuclear issues collectively, the reaction is negative, but when they view nuclear issues individually, the reaction is positive. For example, 67% support nuclear energy when that question is posed.

Lisa Gordon-Hagerty

Can the public perception of nuclear energy be changed? Lisa believes so, through public education. The key is communicating with members of the public, special interest groups, and the media. She sees a positive nuclear message for the public in several recent events. First, three consortia that have placed bids with the Department of Energy to license and construct a new nuclear plant at Bellefonte, which would be the first new U.S. nuclear plant since 1979. Second, there now
January Meeting Highlights (cont.)

are 103 operating nuclear plants in the U.S., and their performance continues to improve. Finally, President Bush’s "National Energy Strategy" is strongly favorable to nuclear power in light of ever-present concerns about the possible greenhouse effects of fossil fuel combustion gas emissions and the rising price of oil. These events are compelling evidence of the viability of nuclear power, but the nuclear industry needs to more strongly make the case for the importance of nuclear energy.

In conclusion, Lisa noted another important milestone—the U.S.-Russian Highly Enriched Uranium (HEU) Purchase Agreement, which is designed to convert "Megatons to Megawatts." This is a unique program under which uranium from dismantled Russian warheads is recycled into nuclear fuel for U.S. nuclear power plants. So far, the HEU from 9000 warheads has been recycled. In addition to producing a non-proliferation benefit at essentially no cost to US taxpayers, the energy that results from the HEU Purchase Agreement can power a large American city for about 300 years.

Lisa's viewgraphs will be available soon on a new ANS Washington, DC Section web page. If you would like to obtain a copy before they are posted to our web site, email Chip Martin at charlesm@dnfsb.gov.

On February 6, 2006 the Global Nuclear Energy Partnership (GNEP), was launched by Secretary of Energy Bodman in the FY 2007 DOE Budget Rollout. GNEP is a comprehensive initiative to expand nuclear power in the United States and abroad in a way that serves nuclear nonproliferation goals, increases energy security, promotes clean development, abates pollution, and avoids greenhouse gas emissions.

GNEP would develop a closed nuclear fuel cycle that prevents proliferation but permits expansion of carbon-free nuclear energy to meet growing world electricity demand. It would enable advanced nuclear nations to provide fuel services – fuel and return of spent fuel – to nations that agree to have only reactors. These reactor nations would get the energy benefit of nuclear power without building fuel cycle facilities – such as those that can be used for enrichment or reprocessing – that would be economically unjustified and that could abet or mask proliferation.

To accomplish its goals, GNEP proposes a technology pathway that reduces nuclear waste, dramatically increases the energy extracted from spent fuel in repeated cycles through advanced burner reactors, and consumes – rather than separates – plutonium.

GNEP would recast U.S. nuclear waste strategy from direct disposal of spent nuclear fuel to one of interim storage, recycle of spent fuel and disposition of residual high level waste. Advanced recycling of spent fuel – by reducing the amount, heat load, and radiotoxicity of the waste required to go into the repository – would forestall the need for additional repositories that would otherwise be required for existing or new U.S. reactors.

A key goal of GNEP is to bring the benefits of nuclear power to the developing world.

THE GLOBAL NUCLEAR ENERGY PARTNERSHIP—AN OVERVIEW

by Carter D. (Buzz) Savage

In his State of the Union speech on January 31, 2006, President Bush clearly stated that clean, safe nuclear energy will be a key component of our future energy security.
through an international framework that will (1) eliminate the need for reactor nations to build enrichment and reprocessing capacity and (2) lead to the phase-out of old reprocessing technologies. The United States will work to put in place mechanisms, such as a fuel reserve, to provide assurances to reactor nations and to implement a cradle-to-grave spent fuel-leasing program made feasible by demonstrating the GNEP technology pathway. In cooperation with other leading fuel cycle nations, the United States would lead the way toward a fuel cycle that doesn’t separate plutonium or spread nuclear weapons technology, yet provides safe and cost-effective access to nuclear energy.

The FY 2007 budget request contains $250 million to begin implementation of the GNEP initiative. More detailed information can be found on the DOE web site at http://www.gnep.energy.gov.

NRC Issues License to PFS for Spent Nuclear Fuel Storage Facility in Utah – 02/22/2006 – The Nuclear Regulatory Commission has issued a license to Private Fuel Storage, LLC, to construct and operate an independent spent nuclear fuel storage facility in Skull Valley, Utah. The license, issued Feb. 21, conditions construction authorization on the company first arranging for adequate funding. In addition, PFS must obtain necessary approvals from other agencies, including the Bureau of Land Management, the Bureau of Indian Affairs, and the Surface Transportation Board. ….. http://www.nrc.gov/reading-rm/doc-collections/news/2006/06-028.html

Comments Due March 6, 2006 on Protective Action Guides for RDD and IND Incidents – 01/03/2006 – On January 3, 2006, the Department of Homeland Security (DHS) posted in the Federal Register the proposed “Application of Protective Action Guides for Radiological Dispersal Device (RDD) and Improvised Nuclear Device (IND) Incidents.” The public and interested stakeholders have until March 6, 2006 to submit comments. The Protective Action Guides outline the projected dose of radiation to an individual, from an accidental or deliberate release of radioactive material, at which a specific protective action to reduce or avoid such a dose of radiation is recommended. They are intended as guidance to ensure that federal, state, local and tribal decision makers and first responders can address issues or circumstances that may arise as a result of the effects of radiation following a radiological dispersion device or improvised nuclear device incident. When approved, the Protective Action Guides will extend guidance in EPA 400-R-92-001, which local and state officials have used since the 1970s to respond to incidents caused by the accidental release of radioactive material from a nuclear power plant or other similar nuclear or radiological accident. ….. http://www.dhs.gov/dhspublic/display?content=5327


The difference between the right word and the almost right word is the difference between a lightning bolt and a lightning bug......................... Mark Twain
Colleagues,

You are invited to the March meeting of the Virginia section of the American Nuclear Society (VA-ANS) that will take place on Thursday, March 16, 2006 at Monte Carlo Restaurant in Lynchburg, Virginia. Our speaker will be Dr. Ann Bisconti, President of Bisconti Research, Inc., a public opinion and communications research company that provides research and communications advice to many companies and organizations in the U.S. and abroad. In particular Dr. Bisconti will focus on how to communicate on nuclear issues and will provide useful tips on how to choose messages. Don't miss this interesting meeting!! For more details, including meeting schedule, and driving directions, please visit our website http://local.ans.org/virginia/meetings/2006/bisconti.html

Reservations for the meeting must be made by noon, Monday March 13, 2006 by filling out this short form in our website. Please address any questions to Peggy Hobbs [Peggy.Hobbs@Framatome-anp.com].

http://local.ans.org/virginia/meetings/2006/bisconti.html

Sama

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NOMINATIONS ARE IN ORDER FOR 2006-2007 ANS DC SECTION OFFICERS.

Please contact Yue Guan at 703 744-1070 or guan@astminc.com if you would like to run for an office, or you would like to nominate someone else.
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All Committee Chairs welcome members to help organize and run committee and Section activities! Please contact any of the above Executive Committee members if you are interested in promoting our Section and its activities.

Orhan Suleiman (Program Chair, BWC-HPS) Introduces Lisa Gordon-Hagerty at the January Joint Dinner Meeting

BWC-HPS and DC ANS members mingle at the January Joint Dinner Meeting

Karl Fisher, BWC-HPS Newsletter Editor, at the January Joint Dinner Meeting
Membership Form

AMERICAN NUCLEAR SOCIETY (ANS)
WASHINGTON, D.C., LOCAL SECTION
Business Year: July 1, 2005 to June 30, 2006

Note: Please include your e-mail address because we have moved to an electronic distribution of newsletters/announcements/information. Membership fee is $10 per year. Please make your check out to: ANS Washington D.C. Section.

Name: __________________________________________________________
Mailing Address: __________________________________________________________
________________________________________________________________________
________________________________________________________________________
Place of Employment: __________________________________________________________
Telephone Number: _____________________
E-mail Address: __________________________________________________________

Do you need to receive announcements/information via regular mail because you do not have access to electronically sent information in a timely manner? _____ Yes _____ No

Mark which of the following activities (if any) you are interested in assisting us with:
_____ Education  _____ Public Information  _____ Programs
_____ Newsletter Editor  _____ Webmaster  _____ Other (describe below)
____________________________________________________________________________
____________________________________________________________________________

Are you a new member to this Local Section? _____ Yes _____ No
Were you recruited by a current Member? _____ Yes _____ No  Name ________________
Are you a National ANS Member? _____ Yes _____ No

Please provide us with any ideas/potential programs you would like us to consider:
____________________________________________________________________________
____________________________________________________________________________

To join the Local Section, fill-out this form and bring it with a check to one of our meetings, or send them both to:
American Nuclear Society, Washington D.C. Section
Kevin Witt, Membership Chair
PO Box 2475
Kensington, MD 20891

To register for membership in ANS National, go to the following web site: http://www.ans.org
If you have questions, please contact Kevin Witt at kevin_witt@yahoo.com.