

## 2016 VP candidates offer statements

The candidates for vice president/president-elect in the 2016 ANS national election are Robert N. Coward, a principal at MPR Associates; Margaret E. Harding, president of 4 Factor Consulting LLC; and James P. Malone, chief nuclear fuel development officer at Lightbridge Corporation. Coward and Malone were nominated by the ANS Nominating Committee, and Harding was nominated by petition. The candidates have issued the following statements.

Election ballots will be mailed on February 29 and must be returned by noon on Tuesday, April 12.

### Robert N. Coward

This is a time of tremendous change in the energy industry. Change is occurring on many fronts, including technology, policy, and availability of resources. Decisions and actions in the coming years will shape the energy industry for decades, and we have important opportunities to influence the use of nuclear technology, both in the United States and worldwide. I believe passionately that we owe it to ourselves and our children to ensure that U.S.-developed nuclear technologies are positioned to meet the world's energy needs.

After earning a bachelor's degree in mechanical engineering from Duke University in 1983, I began my career at MPR Associates. MPR was founded by Harry Mandil, Bob Panoff, and Ted Rockwell—senior technical leaders who had worked closely with Admiral Rickover to develop the Naval Nuclear Propulsion Program. In over three decades at MPR, I've personally worked on projects for 58 of 65 U.S. nuclear power stations, for a number of foreign nuclear power plants, for the Department of Energy's Office of Nuclear Energy and DOE labs, and all the major nuclear steam supply system vendors. I've learned much through my work, and as a result I've become an especially strong advocate for nuclear technology.

I've been fortunate to work in technical and management positions at all levels of the company, and I'm now principal officer, responsible for overall leadership and performance at MPR. Within the nuclear industry at large, I've participated in key committees and groups, which has broadened my knowledge of nuclear technologies and



Coward



Harding



Malone

expanded my network. I've established relationships with nuclear leaders and organizations, including ANS, the DOE, the Nuclear Energy Institute, the Electric Power Research Institute, and the Institute of Nuclear Power Operations, and I've developed an understanding of how these organizations work and how each contributes to the success of U.S. nuclear technology.

I want to become ANS vice president/president-elect because I believe in the ability of ANS to influence the future contributions of nuclear technologies throughout the world. The leadership of ANS must set a direction and vision to achieve that influence, and then work collaboratively within and outside of ANS to make it a reality. As we look forward to a thriving and sustainable nuclear industry and the expansion of nuclear technology worldwide,

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# ANS at COP21: Raising nuclear's visibility

BY TARI MARSHALL, ANS DIRECTOR OF COMMUNICATIONS AND OUTREACH

**A**fter more than a year of strategic planning for the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change, referred to as COP21, the American Nuclear Society and our Nuclear for Climate (N4C) partners agreed that our efforts to raise support for nuclear as a climate solution were a major success. Those who had attended previous COP meetings reported that nuclear had never before been so visible, due in no small part to our strong international collaborative effort.

Leading up to COP21, which was held November 30–December 11, 2015, in Paris, I served on the N4C Steering Committee with communications staff members from the Nuclear Energy Institute, the World Nuclear Association, the French Nuclear Energy Society, and FORATOM. The ANS communications staff was instrumental in editing the N4C position paper, raising the social media profile of nuclear energy messages before and during COP21, and obtaining media coverage ahead of the meeting, including an op-ed by ANS President Gene Grecheck in *The Hill* and an online [video interview](#) with ANS Vice



*ANS President Gene Grecheck (seated beneath the ANS logo) participated in a DOE plenary panel on advanced nuclear technology.*

President/President-Elect Andy Klein. During the conference, the N4C group produced more than 1,000 tweets that were viewed by 700,000 people. I regularly posted photos of our activities on Facebook and reported about nuclear-related activities in three articles that were posted on *ANS Nuclear Cafe*. I also provided updates during the event in the “What’s New” section on the [ans.org](http://ans.org) homepage. Among the highest-profile ANS activities in Paris was President Grecheck’s participation on a plenary panel about advanced nuclear technology, hosted by the U.S. Department of Energy and fea-

turing Energy Secretary Ernest Moniz as the keynote speaker. Nuclear for Climate had two booths, one in the restricted U.N. zone accessible only to delegates, and a larger one in the nearby Solutions Gallery, which was open to representatives from other nations and nongovernmental organizations (NGO) offering climate solutions. Gene and I spent time at the N4C booths talking to members of the U.N. delegations, NGO delegates, and government representatives, the majority of whom were genuinely interested in learning more about nuclear energy.

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P R E S I D E N T ' S C O L U M N

# To COP21 . . . and beyond!



*Grecheck*

In May, ANS joined with 41 other nuclear societies around the world to form the Nuclear for Climate (N4C) coalition, which declares, “Nuclear energy is a key part of the solution in the fight against climate change.” What made this particularly important was the upcoming Paris climate change conference—COP21—and the prohibitions included in the existing protocols of the United Nations Framework Convention on Climate Change against using nuclear as part of a strategy to reduce carbon dioxide emissions. Position papers from N4C and ANS stressed the need to allow every nation to choose how to construct their emission reduction strategies, and to not arbitrarily exclude nuclear power.

As the year went on, and N4C grew to include more than 140 organizations, our message was widely disseminated in a variety of media. Following some great discussions at the International Atomic Energy Agency’s General Conference in Vienna in September, particularly with representatives of the International Youth Nuclear Congress, a major push in social media was started. Even I learned how to use Twitter, and I sent out my first tweet after U.S. Secretary of Energy Ernest Moniz stated in the opening plenary session, “As we approach the upcoming Paris climate negotiations, the threat of climate change calls for expanded use of nuclear power. We are urging for a higher profile for nuclear power as a solution in that meeting.”

Fast forward to November 6, when at a White House summit on nuclear energy held the day before the start of the ANS Winter Meeting in Washington, D.C., we heard senior administration officials not only reiterating the need for nuclear, but also recognizing that technological advances in nuclear are important. New initiatives were announced to facilitate access to national laboratory resources by new technology developers. It has been a long time (if ever) since I heard such realism and support from administration officials.

Finally, the COP21 conference began in Paris in late November. I was there

to represent ANS and N4C along with Tari Marshall, ANS’s director of Communications and Outreach, and we contributed to what was probably the most proactive and visible presence of nuclear at any of the climate conferences to date. This was met with consternation by some attendees, but overall, we found receptivity to our message. The final agreement coming out of the conference is technology neutral, and it commits the nations of the world to some very ambitious targets. It is clear that nuclear must play an important role if these targets are to be achieved. That message was central to a statement and news conference held at COP21 by four prominent climate scientists, James Hansen, Ken Caldeira, Kerry Emanuel, and Tom Wigley.

While the Department of Energy had a nuclear exhibit at the COP21 Solutions Gallery, the main U.S. pavilion in the delegates’ area did not have a single nuclear message. Even France, the host country, which produces over 75 percent of its electricity from nuclear—a prime example of what can be accomplished quickly when the political will is present—did not mention nuclear in its national exhibit. Many presentations and attendees made it clear that there is a great deal of entrenched hostility to nuclear. Much of that hostility is embedded in a deep-seated opposition to “bigness” and an almost mystical belief or hope that wind and solar will save the day. I found in several discussions that facts didn’t seem to matter; we were dealing with faith, not facts. And, of course, there continues to be an irrational fear of radiation, particularly man-made radiation.

As the new year begins, many challenges remain. Market distortions and pricing mechanisms often don’t recognize the value that nuclear provides, and several operating reactors in the United States and around the world are facing premature shutdown, with others at risk. Many political leaders have become conditioned to believe that their constituents don’t want nuclear, and that happy talk of “renewables” is all that is needed.

But the stage has been set. There is growing recognition throughout the world that climate goals cannot be met by wishful thinking, or magic, or—even worse—depriving people of energy. The world needs more energy, not less. We in the nuclear community must meet this challenge, both by continuing to engage with the facts at all levels and by meeting the challenge of innovation. Many of the persistent arguments used against nuclear (“What about the waste?”) can be addressed through technological innovation. The Nuclear Energy Institute and the U.S. commercial industry have just announced an ambitious program of rethinking the way business is done, with the goal of significantly reducing operating expenses. And plans made by markets and states to meet the Clean Power Plan can, and must, recognize that we will not meet our climate goals without nuclear.

Much remains to be done, but there is reason for optimism. We in ANS will continue to work to bring the benefits of nuclear technology to the world.—Gene Grecheck ([egrecheck@gmail.com](mailto:egrecheck@gmail.com))

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Of course, a small number of people stopped to argue that nuclear should not be there. One woman told me that she was “appalled” at the audacity of

our presence.

However, a measure of our success was apparent when antinuclear advocates vandalized our U.N. zone booth

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# University of Wisconsin student section hosts 2016 ANS Student Conference

**T**he ANS University of Wisconsin Student Section is preparing to host the 2016 ANS Student Conference, to be held March 31–April 3 in Madison, Wis. “Being a Critical Member of the Nuclear Industry” is the theme of the conference, which is being cochaired by Matthew Jasica, Kalin Kiesling, and A. J. Gross.

“This conference is about exploring different technical and nontechnical aspects of the nuclear field, thus helping students succeed professionally,” said Kiesling, who serves as the student director on the ANS Board of Directors. “With a variety of events available, such as the Ethics Workshop and the ‘Diversity in Nuclear Engineering’ panel, this conference will be an enriching experience for all attendees.”

Paper submissions in 25 technical tracks (including special sessions on

salt reactors and on public image) are welcome through February 8. The student with the best paper in the Human Factors, Instrumentation, and Controls track will be awarded \$500. A separate Innovation Competition will reward creative ideas about innovation and entrepreneurship in the nuclear sector.

The conference theme is inspired by the four-factor formula for reactor criticality:  $k = \eta f p \epsilon$ . “Our conference events are binned into four categories or ‘factors’:  $\eta$ —nuclear opportunities,  $f$ —forming our public image,  $p$ —professional development, and  $\epsilon$ —entrepreneurship,” Kiesling said. The organizers are designing conference content to put more emphasis on the last factor—entrepreneurship. “Events like the Innovation Competition and the ‘Thinking Beyond the Pressure Vessel’ panel will encourage more appreciation for this aspect of the



*A view of Madison, with the conference hotel visible near the Capitol and the UW campus at the upper left.*

nuclear industry,” Kiesling said.

Panel sessions are also being offered on nuclear policy and nonproliferation; bidding, planning, and hosting a student conference; medical physics and radiation technology; academia to startup; materials science; developing interdisciplinary cohesion; fusion and plasma; core thermal hydraulics verification and validation; and diversity in nuclear engineering.

Six workshops are being offered on topics from ethics to materials science instrumentation. “We want to highlight the PyNE [Python for Nuclear Engineers] Workshop,” Kiesling said. “PyNE is a suite of tools to aid in computational nuclear science and engineering. PyNE helps users be more productive by providing post-processing tools, input/output support for industry standard codes, and more.”

Ten tours are planned, including a tour of the closed Kewaunee nuclear power plant and a combined tour of SHINE and Phoenix Nuclear Labs, two Madison-area startups by UW alumni. Tours of UW technical facilities (including the 1-MW TRIGA reactor) and the state Capitol building are being offered, and students can also visit Fermilab in neighboring Illinois.

Social events are planned at Essen Haus, a Bavarian restaurant with live music, and the Great Dane Pub and Brewing Company, a local favorite. “We will also have an ice skating social for the more adventurous,” Kiesling said. Every event will be open to all students, including those under 21.

For more information about the conference, go to [www.ansstudentconference2016.com](http://www.ansstudentconference2016.com), or send an e-mail to [ansstudentconference2016@gmail.com](mailto:ansstudentconference2016@gmail.com).

## Apply online now for ANS scholarships

**T**o promote education in programs leading to careers in nuclear science and technology, ANS offers numerous scholarships for undergraduate and graduate student members with outstanding academic records or exceptional financial needs.

Students can now log in to their ANS account to complete the scholarship application process online. For information and qualification requirements, visit [www.ans.org/honors/](http://www.ans.org/honors/)

[scholarships/](#). Click “Scholarship Forms” to begin an application.

Applications for students in two-year associate degree programs and for the ANS Incoming Freshman Scholarship must be submitted by **April 1**. The deadline for all other scholarship applications is **February 1**. For more information, contact the ANS scholarship coordinator, Natalie Jones, by phone (708/579-8290) or e-mail ([njones@ans.org](mailto:njones@ans.org)).

CAPITOL CRITICAL

# How should the NRC license advanced reactors?

By CRAIG PIERCY,  
ANS WASHINGTON REPRESENTATIVE

In Washington, advanced reactors were the “good news” nuclear story of 2015. Policymakers across the ideological spectrum have expressed support for realigning federal nuclear research



Piercy  
Critical column in the May/June 2015 issue of *ANS News*.)

and development policy toward the “incubation” of privately funded advanced reactor concepts and prototypes. (For more on the policy of incubation, see my Capitol Critical column in the May/June 2015 issue of *ANS News*.)

In November, the White House, as part of its public embrace of nuclear energy, announced several programs designed to assist nuclear startups in accessing technical know-how from the

national laboratories. A week later, the House Science, Space, and Technology Committee, led by Rep. Randy Weber (R., Texas), introduced H.R. 4084, the Nuclear Energy Innovation Capabilities Act, which would greenlight a versatile reactor-based fast neutron source for testing advanced fuels and materials and a national reactor innovation center to facilitate the construction of privately funded experimental reactor prototypes on national laboratory soil. Looking ahead at 2016, I would not be surprised to see H.R. 4084 pass the House of Representatives with a strong bipartisan majority, and significant new funding for advanced reactor R&D included in the fiscal year 2017 budget and appropriations process.

Now comes the hard part. The United States must create a new paradigm for licensing and regulating advanced non-light-water reactor systems that is agile and adaptive enough to keep

pace with innovation, and rigorous enough to maintain the “gold standard” of safety. The policy discussion centers around two basic questions:

1. *Does the Nuclear Regulatory Commission need new statutory authority?* Some folks believe that Section 104(b) of the Atomic Energy Act must be restored to its pre-1970 state so that the commission can, with “the minimum amount of . . . regulations and terms of license,” approve advanced reactor prototypes that are “involved in the conduct of research and development activities leading to the demonstration of the practical value of such facilities for industrial or commercial purposes.” On the other hand, some longtime NRC insiders believe that by adapting the existing Part 50 licensing process to non-LWR technology, the commission can move forward with a staged licensing process without new

legislative authority.

2. *How will the NRC fund and support these activities?* On this question, there is growing agreement: Congress must repeal the so-called 90/10 Rule. Enacted as part of the Omnibus Budget Reconciliation Act of 1990, the provision requires the NRC to fund 90 percent of its budget from fees charged to licensees and license applicants. In reality, this provision limits the NRC’s ability to build its advanced reactor expertise without having to stick current fleet operators with the bill. Repealing this law would allow Congress to fund the NRC’s advanced reactor infrastructure—including both human and technical resources—through general appropriations.

My sense is that regardless of whether or not the NRC has the requisite statutory authority, Congress needs to send a clear signal that it wants the commission to move forward with alacrity and some measure of boldness.—[cpiercy@ans.org](mailto:cpiercy@ans.org)

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by taping a “No” sign next to the N4C logo. We found a blog post online with photos of the vandals holding antinuclear messages at our booth and that of the International Atomic Energy Agency. The group’s blog complained, “If you think you’ve been seeing a lot more pronuclear propaganda in the media than usual in the past couple of weeks, well, it’s not your imagination. The nuclear industry and its champions are out in force, publishing articles and appearing in the media wherever and whenever they can.”



The work of antinuclear vandals.

That work will continue as the N4C group determines its next steps in 2016.

## 2017 Congressional Fellow sought

ANS members are encouraged to apply for the 2017 ANS Glenn T. Seaborg Congressional Science and Engineering Fellowship. The Congressional Fellow serves as a resource on science and engineering matters in the Washington, D.C., office of a U.S. senator or representative or on the staff of a congressional committee.

The ANS member selected to serve as the 2017 Congressional Fellow will attend a two-week orientation session organized by the American Association for the Advancement of Science

in September 2016 and will serve a one-year fellowship term beginning in January 2017. The Fellow will receive a \$60,000 stipend and a travel allowance.

Applications must be submitted by **April 1**. Details about the criteria for consideration, the application process, the selection process, and the expectations of the Congressional Fellow are available on the ANS website at [www.ans.org/honors/cfellowship](http://www.ans.org/honors/cfellowship). For additional information, please contact [fellow@ans.org](mailto:fellow@ans.org).

## MEMBERS BEHIND THE SCENES

## A long career with a global perspective

**F**rom his undergraduate days at the University of Michigan to his early career in Iran and a stint at the International Atomic Energy Agency, Mehdi Sarram's career has been shaped by international politics,



Sarram

and it has been anything but typical. Through it all—for over 52 years—he has remained an ANS member.

A native of Iran, Sarram came to the United States in 1961 to study

at the University of Michigan, where he earned a post-graduate degree in nuclear engineering. He returned to Iran in 1967 and was hired as an assistant professor at Tehran University, where he developed a master's degree program in nuclear engineering.

Because he had received reactor operator and senior reactor operator licenses from the U.S. Atomic Energy Commission while at the University of Michigan, Sarram was asked to lead the commissioning of Tehran University's research reactor. The 5-MW reactor, supplied by the United States, went critical in November 1967.

Sarram taught at the university until 1974, when the Shah ordered the establishment of the Atomic Energy Organization of Iran (AEOI). "He essentially established the AEOI to embark on a massive nuclear power

program," Sarram said. "He had no desire to develop nuclear weapons." Sarram was named director of nuclear safeguards and security for the AEOI, and he also headed the agency's Operator Training School.

Iran was one of several nations in the market for nuclear power technology. "In early 1975," Sarram said, "Octave Du Temple [the executive director of ANS from 1958 to 1989] and I talked, and Octave suggested that since Iran was embarking on a massive nuclear power program, with plans for 20 large nuclear plants, I should organize the first International Conference on the Transfer of Nuclear Technology."

Sarram accepted the challenge, and serving as both technical and program chairman, he worked for two years to plan the conference, which was held in Persepolis, Iran, in April 1977 and was attended by more than 500 senior government officials and nuclear scientists from 42 nations. "I used telex to communicate with the world," Sarram said. "I was able to bring in the European Nuclear Society and the Japan Atomic Energy Society as our cosponsors."

"Octave, as expected, came with his old black briefcase and a small black book," Sarram said. "His black book had the names of every person he had met in his career. A few of us offered to buy him a new briefcase, but he did not accept. His old briefcase became the talk of the conference. Octave passed away last year, and the world knows he was behind the success of ANS."

While working in Iran, Sarram maintained his ANS membership and attended ANS national meetings at least once a year. "I have been a member of ANS since 1963," he said. "ANS has given me visibility and credibility. I tell my students to become a member of ANS and use its resources for finding a job. I've read *Nuclear News* cover to cover all these years." Sarram also served for several years on the ANS International Committee and the Standards Steering Committee.

Sarram remained at the AEOI until the Islamic Revolution put an end to Iran's nuclear program, and to his career ambitions in his native country. "My decision to emigrate to the United States was made the day the new regime took power in Iran in February 1979," he said. "I had a seven-year-old daughter and a four-year-old son. There would be no future for my wife and children in Iran."

Sarram was eventually able to leave Iran to go to work for the IAEA's Department of Safeguards. "When I was working in Vienna from 1981 to 1982, I applied to many U.S. companies, and Raytheon Nuclear, in Philadelphia, Pa., sponsored me and offered me a senior position," he said. Since taking that position, Sarram has not returned to Iran. He became a U.S. citizen in 1988 and obtained a high-level government clearance that same year.

Over the years, Sarram traveled to 38 countries while working for the AEOI and the U.S. nuclear industry in the areas of nuclear safeguards and

security, nuclear safety culture, the nuclear fuel cycle, and reactor operation. He retired from Areva NP in 2008, and since that time he has taken on short-term assignments as an independent consultant.

Always an active ANS local section participant—he established an ANS section in Tehran and worked to revitalize the ANS Delaware Valley Section in the early 1980s—Sarram joined the ANS San Diego Section after his retirement and has served on the executive and program committees. He also continues to speak to local and international audiences about his career and Iran's nuclear program.

Retirement has given Sarram time to reflect on his experiences and to put them in writing. In July 2015, after five years of work, he published *Nuclear Lies, Deceptions and Hypocrisies*, which includes his observations of international nuclear developments over the course of his career and focuses on seven countries: Iraq, Syria, Israel, Iran, Pakistan, India, and the United States. The discussions on Iran include detailed commentary on the negotiations between Iran and the P5+1 nations (China, France, Russia, the United Kingdom, and the United States, plus Germany) that resulted in an agreement on July 14, 2015. "The book has been endorsed by Hans Blix, the former director general of the IAEA, and 12 other senior nuclear experts," Sarram said.

While this article can provide only a glimpse into Sarram's career, the book—which is available for purchase from online retailers, including [Amazon.com](http://Amazon.com)—contains numerous photos, details, and observations.

## ANS revises decommissioning position statement

An updated position statement on the decommissioning of nuclear power reactors has been added to ANS's library of position statements that reflect the Society's perspectives on nuclear science and technology issues of public interest. Position Statement #13 was revised in October and was approved by the ANS Board of Directors during the 2015 ANS Winter Meeting in November.

The release of the statement coincided with the Nuclear Regulatory

Commission's issuance on November 19 of advance notice of a proposed rulemaking. The NRC is developing a new rule to provide an efficient decommissioning process, reduce the need for exemptions from existing regulations, and improve the openness, clarity, and reliability of the agency's work. The public comment deadline was January 4.

Position Statement #13 is published here and can also be found at [www.ans.org/pi/ps/docs/ps13.pdf](http://www.ans.org/pi/ps/docs/ps13.pdf).

## DECOMMISSIONING OF NUCLEAR POWER REACTORS

**Position Statement #13  
Revised October 2015**

The American Nuclear Society recognizes that decommissioning nuclear facilities at the end of their operational lives can be, and has been, performed safely while protecting the environment. The alternatives of prompt decommissioning or maintaining the facility in a safe storage condition while radioactive material decays can be, and have been, performed safely. ANS believes that the selection of the decommissioning alternative should be site-specific and should take into account facility and site characteristics, financial considerations, and even future site needs for power and land availability, among other factors.

The rules for decommissioning a nuclear power plant are set out in several Nuclear Regulatory Commission regulations (10 CFR, Part 20 Subpart E, and Parts 50.75, 50.82, 51.53, and 51.95). There are established regulations and regulatory guidance for terminating a nuclear reactor's license when decommissioning is complete (NUREG-1700 and NUREG-1757). However, clear guidance has not been fully developed for the time period between cessation of operation and completion of decommissioning. ANS supports the NRC's establishment of a consistent regulatory pathway for transition from rules applicable to an operating facility to those appropriate for a permanently shut down facility, rather than the current process of obtaining exemptions from operating plant regulatory requirements on a case-by-case basis.

As an example, emergency planning requirements should be commensurate with the nature of the risk during the decommissioning period. Off-site emergency

## ANS News reaches members by e-mail

You are reading the first issue of *ANS News* prepared to be sent to members by e-mail rather than postal mail. ANS members have been able to choose e-mail delivery of *ANS News* for several years, but now all members can look forward to receiving a full-color PDF of *ANS News* in their e-mail inbox six times a year.

*ANS News* is now sent to all members in a landscape format for easier electronic viewing. Those who prefer to read on paper may wish to download and print the vertical edition of this issue from the *ANS News* archive at [www.ans.org/members/ansnews](http://www.ans.org/members/ansnews), where back issues dating to 1999 can also be accessed.

Switching to electronic delivery of *ANS News* for all members will eliminate printing and mailing costs and provide significant savings for the Society. Additional savings are being realized in 2016 by the decision to provide all ANS student members with electronic access to *Nuclear News* in lieu of a printed copy of the magazine.

To ensure that you receive *ANS News* as soon as it is released, update your e-mail address online at <https://account.ans.org>. If you do not have an e-mail address associated with your ANS membership, please contact Member Services at [members@ans.org](mailto:members@ans.org), or call 800/323-3044.

## Members surveyed on surplus Pu policy

In October, the ANS Public Policy Committee prepared a survey on the disposition of surplus plutonium that was sent by e-mail to ANS members to establish an understanding of

members' views on the subject. While ANS positions are based largely on technical inputs, surveys can help align the Society's policy positions with

See **Surplus Pu** on page 13

planning requirements, which apply to operating plants, are different from on-site emergency planning requirements for decommissioning facilities. After the fuel has been removed from the reactor and sufficient time has elapsed, the consequences of postulated accidents are not large enough to merit formal off-site emergency preparedness plan requirements. On-site emergency planning actions, including those for industrial safety, are still appropriate during decommissioning.

Further, the option for reactor restart should be allowed after permanent shutdown if economics or the other factors change after shutdown but before decommissioning operations commence. Any reactor restart would necessarily be contingent upon a thorough regulatory review that finds the facility in good physical condition for operations and acceptance by the NRC that the reactor meets safety requirements.

All current ANS position statements are available at [www.ans.org/pi/ps/](http://www.ans.org/pi/ps/). A searchable list of the position statements in descending chronological order can be found at [www.ans.org/pi/ps/search.php](http://www.ans.org/pi/ps/search.php).

**Statements**, *continued from page 1*

ANS needs to:

- Be a forum and driver for the development of nuclear professionals who make the industry successful today, and who will lead it in the future;
- Create a “pull” that attracts nuclear technology professionals seeking growth opportunities and greater influence, thereby expanding Society membership;
- Advocate for research and investment from both private and government organizations to expand and strengthen the use of nuclear technologies; and
- Seamlessly integrate with other nuclear-related organizations to optimize the message and contributions of each toward the successful application and expansion of nuclear technologies worldwide.

I am committed to ensuring that U.S.-developed nuclear technologies are positioned to meet the world’s energy needs and that ANS is positioned to influence this outcome.

**Margaret E. Harding**

It has been my lifelong passion to make a difference in this world, and my work as an active ANS member has moved me closer to achieving that goal. As ANS vice president/president-elect, I’ll lead the Society to help make the difference that our world needs—the positive difference that only nuclear technology can bring.

The time for nuclear technology is now. The world needs nuclear to bring light and heat and hope to every human, provide medical technologies to save lives, keep our food safe, and enhance our lives in every way possible. ANS moved boldly into the 21st century, determined to make a differ-

ence for members and the world by educating the public and encouraging the responsible use of nuclear technology. We can do so much more.

As vice president/president-elect, I’ll work to:

- Build support for robust research and development budgets that advance technology for national laboratories, universities, and industry;
- Make ANS a more influential voice in national and global discussions about energy and nuclear technology;
- Highlight the potential of advanced nuclear technologies and the necessity of maintaining our existing fleet;
- Support the next generation of nuclear professionals by expanding scholarships, grants, and professional development opportunities; and
- Build respect for our members and the industry.

For these missions to succeed, ANS members must be engaged and excited about the opportunities before us. The meaning of membership in professional societies is changing, and ANS must change with it. ANS must provide all members with educational, professional development, and networking opportunities. ANS must seek out new ways to communicate with members, and our publications must keep pace with evolving expectations of content, delivery, and access.

Growing up in small-town Iowa, I remember oil embargoes, skyrocketing energy prices, and concerns about pollution. As an active member of the ANS Iowa State University Student Section, I cochaired the ANS Midwest Student Conference in 1981. After I went to work for General Electric, I attended ANS conferences and participated in my local section.

In 2011, when the earthquake struck off the coast of Japan, all of that training and experience came together, and I became the voice of ANS, doing hundreds of interviews with print, digital, and broadcast journalists and forming strong positive relationships with many of them. I’ve been deeply engaged in ANS activities, serving on many committees, speaking at ANS conferences, serving as treasurer, and helping in any way I can to move ANS’s missions forward. I received an ANS Presidential Citation in 2011 in recognition of my contributions and the ANS Special Award in 2012 for my communication representing ANS during the aftermath of the Fukushima Daiichi accident. In 2015, I received ANS’s Landis Public Communication and Education Award.

As vice president/president-elect, I will provide the strong vision and leadership that can take ANS to the next level. My experience in the corporate world, the work I’ve done with national labs and universities, and my years as an advocate and spokesperson for ANS and nuclear technology provide the foundation for real progress, and my passion will provide the drive.

Come with me into the future!

**James P. Malone**

In 2016, ANS will elect the vice president/president-elect who will be in office when our country elects a new House of Representatives, one-third of the Senate, and a new president. The Obama administration’s White House Summit on Nuclear Energy, held on November 6, 2015, began a process that will call on all sectors of the nuclear industry to join forces in the fight against climate change. ANS will play a pivotal

role in this effort because our members work in all industry sectors: universities, national laboratories, suppliers, utilities, and the Nuclear Regulatory Commission.

Nuclear’s role in the fight against climate change will require innovation at all levels of the industry. Innovation can emerge at any level, but it will require facilities not yet designed or built to gather the data required to support technology development. Innovative reactor designs and fuel types will have characteristics that will likely require updates or substantive changes to the NRC’s licensing process. The industry will have to work together, and ANS can be the focal point of a coordinated effort among industry sectors to define, build, and operate the additional research infrastructure that will enable innovation to become reality.

Technical innovation will be at the heart of the fight against climate change, and ANS members can lead a coordinated effort to win the fight by providing accurate technical communication. There will be newcomers in Washington as the administration changes and Congress reconvenes with some new members and new staff.

ANS should be at the ready to assist in communicating about required updates to research facilities. ANS must always remember that while it is not a lobbying organization, its expertise is required to develop policy positions that are scientifically correct.

While the prospect of new research infrastructure to support innovative technologies is exciting, there is sobering news with regard to ANS’s financial condition. ANS is currently spending more than it is bringing in.

See **Statements** on next page

## A reminder from the H&A Committee chair

The ANS Honors and Awards program celebrates outstanding contributions to nuclear science and technology. Our newest award, the Dwight D. Eisenhower Award, allows us to recognize ANS members or nonmembers working in the area of nuclear nonproliferation. The inaugural Eisenhower Award was presented to George Shultz and Sidney Drell during the opening plenary session of the 2015 ANS Winter Meeting in Washington, D.C.

ANS currently offers 45 awards, nearly all of which have been consolidated into two nomination deadlines, March 1 and August 1, for presentation at the Annual and Winter Meetings, respectively. In a few cases, division-administered awards that are not presented at the Annual or Winter Meetings have a nonstandard nomination deadline in order to allow sufficient time to review the nomina-

tions before the presentation.

There are many deserving candidates for these awards, but they must be nominated by members of the Society in order to be recognized. At recent national meetings, some awards have not been presented due to a lack of highly qualified nominations. For example, the ANS Fellow continues to be among the most selective Fellow designations of any professional society, largely due to a shortage in the number of nominations of highly qualified candidates. Although the ANS bylaws allow up to 3 percent of members to be recognized as Fellows, currently only about 1 percent of ANS members are Fellows, and only a handful of new Fellows, about 0.05–0.1 percent of the membership, have been named during each of the past five years.

Although I know from personal experience that it takes a significant

ANS's measures to create revenue are reasonable in light of the associated effort. Is ANS maximizing its revenue from all sources? Are there things that could be done at a lower cost? How can ANS create more value for its members? Value creation will attract more scientists and engineers to ANS.

ANS members and staff are dedicated to nuclear science and the nuclear industry. They are the professionals who work, day after day, to improve the lives of all Americans through the application of nuclear technology.

amount of time to prepare a high-quality nomination, there is substantial gratification in honoring a well-deserving colleague. Ultimately, we belong to the American Nuclear Society not only for the technical programming and publication advantages offered to members, but also because of the valuable professional networking and collegial connections. A wonderful way to recognize an outstanding colleague for their “above and beyond” contributions to nuclear science and technology is to nominate them for one of ANS's numerous awards.

A list of all ANS awards and their

deadlines begins on page 10 of this issue of *ANS News*. To nominate a candidate for an award or ANS Fellow status, please visit [www.ans.org/honors](http://www.ans.org/honors). There you can access award criteria, nomination forms, and instructions.

Do not hesitate to contact the Honors and Awards staff liaison at ANS headquarters, Natalie Jones ([njones@ans.org](mailto:njones@ans.org)), or me ([szinkle@utk.edu](mailto:szinkle@utk.edu)) if you have questions about the nomination process.

Steven J. Zinkle  
Chair, Honors and  
Awards Committee

### Statements, continued from previous page

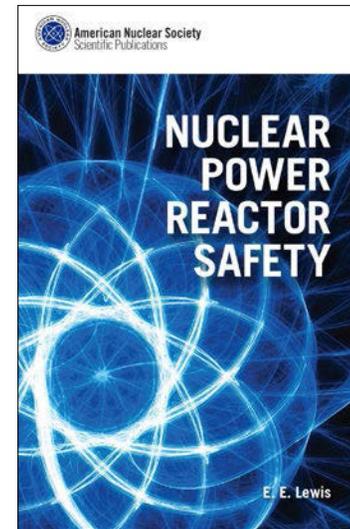
This situation is not sustainable, and it must be managed. Too often, the first response is draconian cuts on the expense side. The cuts may alleviate the pressure for a short time, but they are not a long-term solution. The long-term solution is to increase the income side of the ledger. One way is to increase the ANS membership, which has been and should always be a key objective. Another step I recommend is to review all existing sources of revenue, focusing on whether

## Reprint of a classic: *Nuclear Power Reactor Safety*

Hailed by ANS past president William Burchill as “the most comprehensive textbook available in its subject area,” E. E. Lewis's *Nuclear Power Reactor Safety* is now available as a reprint from ANS. While much has transpired since its initial publication in 1977, this single-volume book retains its relevance by providing an integrated treatment of the fundamental aspects of reactor safety. Focusing on accidents leading to the release of radioactive

materials in the environment, the text emphasizes the more acute situations that may result in serious public health problems. Featuring a new foreword and errata, this book is a timely classic that is still in use by universities as a reference textbook.

The 630-page book is available in paperback (\$40), as a PDF (\$15), or as a paperback/PDF bundle (\$50). As always, ANS members receive a 10 percent discount. Purchase from the ANS Store at [www.ans.org/store/item-690094/](http://www.ans.org/store/item-690094/).



## 2016 ANS HONORS AND AWARDS SCHEDULE

Through its honors and awards program, ANS recognizes the exceptional accomplishments of nuclear science and technology professionals. ANS members are encouraged to nominate outstanding colleagues for 2016 ANS honors and awards.

### WALTER LEE CISLER MEDAL

This award recognizes individuals for sustained outstanding achievements related to fast reactor technologies. Nominations are due by **March 1**.

### ARTHUR HOLLY COMPTON AWARD IN EDUCATION

This award recognizes individuals for outstanding contributions to nuclear science and engineering education. Nominations are due by **March 1**.

### E. GAIL DE PLANQUE NATIONAL AWARD

This award, established in honor of the late ANS President E. Gail de Planque (1988–1989), recognizes exemplary accomplishments by a woman in the fields of nuclear science and engineering. Nominations are due by **August 1**.

### DISTINGUISHED PUBLIC SERVICE AWARD

This award recognizes individuals for significant leadership contributions in energy policy creation and public enlightenment. Nominations are due by **March 1** for presentation at the Annual Meeting or **August 1** for presentation at the Winter Meeting.

### DISTINGUISHED SERVICE AWARD

This award recognizes ANS mem-

bers for outstanding contributions to ANS policies and goals or to nontechnical aspects of nuclear science and engineering. Nominations are due by **March 1** for presentation at the Annual Meeting or **August 1** for presentation at the Winter Meeting.

### DWIGHT D. EISENHOWER AWARD

This award recognizes ANS members for outstanding contributions to the advancement of the field of nuclear nonproliferation. Nominations are due by **April 30** for presentation at the Winter Meeting or other meetings deemed appropriate by the Nuclear Nonproliferation Policy Division's Honors and Awards Committee.

### FELLOW OF ANS

This designation, the highest grade of ANS membership, recognizes ANS members for significant contributions related to nuclear science and engineering. Nominations are due by **March 1** for presentation at the Annual Meeting or **August 1** for presentation at the Winter Meeting.

### SAMUEL GLASSTONE AWARD

This award recognizes ANS student sections for notable achievements in public service and nuclear science and engineering. Applications are due by **March 1**.

### RAY GOERTZ AWARD

This award recognizes members of the ANS Robotics and Remote Systems Division for outstanding contributions related to remote technology in the nuclear industry. Nominations are due by **March 1**.

### LANDIS PUBLIC COMMUNICATION AND EDUCATION AWARD

This award recognizes individuals for outstanding dedication to public education regarding peaceful applications of nuclear technology. Nominations are due by **August 1**.

### LANDIS YOUNG MEMBER ENGINEERING ACHIEVEMENT AWARD

This award recognizes ANS members younger than 40 for outstanding technical achievements in nuclear engineering applications. Nominations are due by **March 1**.

### GEORGE C. LAURENCE PIONEERING AWARD

This award recognizes individuals for outstanding pioneering contributions related to nuclear reactor safety. Nominations are due by **December 1**.

### LEADERSHIP AWARD

This award recognizes ANS members for substantial, sustained contributions to ANS leadership or governance. Nominations are due by **March 1**.

### W. BENNETT LEWIS AWARD

This award recognizes individuals for major lifetime contributions in the application of nuclear science and engineering to protect the environment and attain global sustainable energy. Nominations are due by **January 31**.

### LIFETIME ACHIEVEMENT AWARD

This award was established by the Fuel Cycle and Waste Management Division to recognize longtime ANS

members who have made lifetime contributions to scientific, engineering, societal, or regulatory aspects of the nuclear fuel cycle and/or nuclear waste management. Nominations are due by **March 1**.

### LOCAL SECTIONS MERITORIOUS AWARD

This award recognizes ANS local sections for success in areas such as management, membership growth, public information efforts, and meetings and programs. Nominations are due by **August 1**.

### ROBERT L. LONG TRAINING EXCELLENCE AWARD

This award recognizes an individual or group for sustained excellence in nuclear training. Nominations are due by **August 1**.

### MERITORIOUS PERFORMANCE IN OPERATIONS AWARD

This award recognizes individuals or teams for outstanding achievements related to nuclear reactor operations. Nominations are due by **March 1**.

### DON MILLER AWARD

This award recognizes individuals or teams for contributions related to nuclear instrumentation and control or human-machine interface. Nominations are due by **March 1**.

### MARK MILLS AWARD

This award recognizes a graduate student for an original technical paper contributing to the advancement of nuclear science and engineering. Nominations are due by **August 1**.

#### **MISHIMA AWARD**

This award recognizes individuals for outstanding achievements related to nuclear fuels and materials development. Nominations are due by **March 1**.

#### **NUCLEAR HISTORIC LANDMARK AWARD**

This award recognizes nuclear sites or facilities where outstanding accomplishments have advanced the peaceful applications of nuclear energy and technology. Nominations are due by **August 1**.

#### **MARY JANE OESTMANN PROFESSIONAL WOMEN'S ACHIEVEMENT AWARD**

This award recognizes women for outstanding dedication and technical achievements in nuclear science, engineering, research, or education. Nominations are due by **August 1**.

#### **GERALD C. POMRANING MEMORIAL AWARD**

This award recognizes individuals for outstanding nuclear-related contributions in mathematics or computation. Nominations are due by **January 15** (odd years only).

#### **RADIATION SCIENCE AND TECHNOLOGY AWARD**

This award recognizes individuals for outstanding, creative applications of radiation science and engineering principles. Nominations are due by **August 1**.

#### **REACTOR TECHNOLOGY AWARD**

This award recognizes individuals or teams for original contributions related to reactor design and safety. Nominations are due by **August 1**.

#### **ROCKWELL LIFETIME ACHIEVEMENT AWARD**

This award recognizes longtime ANS members for long-term achievements related to radiation protection, shielding, or dosimetry. Nominations are accepted at **any time**.

#### **SEABORG MEDAL**

This award recognizes individuals for outstanding research contributions to peaceful applications of nuclear energy. Nominations are due by **August 1**.

#### **SIGNIFICANT CONTRIBUTION AWARD**

This award was established by the Fuel Cycle and Waste Management Division to recognize individuals or teams for an accomplishment that has significantly advanced the scientific, engineering, societal, or regulatory aspects of the nuclear fuel cycle and/or nuclear waste management. Nominations are due by **March 1**.

#### **HENRY DEWOLF SMYTH NUCLEAR STATESMAN AWARD**

This award recognizes internationally respected nuclear professionals for outstanding, statesmanlike contributions to peaceful uses of nuclear energy. Nominations are due by **February 28**.

#### **SPECIAL AWARD**

This award recognizes individuals or small teams for outstanding contributions in a particular area of nuclear science and technology. The topic for the 2016 Special Award was still to be determined at this writing. Nominations are due by **March 1**.

#### **STANDARDS SERVICE AWARD**

This award recognizes current or past ANS Standards Committee members

for outstanding achievements in the development and use of ANS standards. Nominations are due by **March 1**.

#### **STUDENT DESIGN COMPETITION**

This competition recognizes undergraduate and graduate students for the development of solutions to nuclear engineering design problems. Nominations are due by **June 12**.

#### **TECHNICAL ACHIEVEMENT AWARD**

This award, sponsored by the Thermal Hydraulics Division, recognizes ANS members for major or sustained technical achievements related to thermal hydraulics. Nominations are due by **July 1**.

#### **EDWARD TELLER AWARD**

This award recognizes individuals for pioneering research related to laser and ion-particle beams to produce unique matter for controlled thermonuclear fusion. Nominations are due by **March 1**.

#### **THEOS J. "TOMMY" THOMPSON AWARD FOR REACTOR SAFETY**

This award recognizes individuals for outstanding contributions related to nuclear reactor safety. Nominations are due by **August 1**.

#### **SAMUEL UNTERMYER II AWARD**

This award recognizes individuals for pioneering work in the development of safe water-cooled nuclear reactors. Nominations are due by **March 1**.

#### **UTILITY ACHIEVEMENT AWARD**

This award recognizes commercial nuclear power plants for sustained outstanding performance or improvements in performance. Nominations are due by **March 1**.

#### **UTILITY LEADERSHIP AWARD**

This award recognizes individuals for outstanding leadership in the nuclear power industry and significant contributions to its success. Nominations are due by **March 1**.

#### **ALVIN M. WEINBERG MEDAL**

This award recognizes individuals for outstanding international technical and policy leadership in nuclear science and sustained contributions to the understanding of its human dimensions. Nominations are due by **August 1**.

#### **EUGENE P. WIGNER REACTOR PHYSICIST AWARD**

This award recognizes individuals for outstanding contributions related to reactor physics. Nominations are due by **April 1**.

#### **YOUNG MEMBER EXCELLENCE AWARD**

This award recognizes members of the ANS Young Members Group for outstanding skills and positive contributions to the goals of YMG and the public's perception of nuclear. Nominations are due by **August 1**.

#### **YOUNG MEMBERS ADVANCEMENT AWARD**

This award recognizes individuals or teams for significant contributions to the integration of young members into ANS. Nominations are due by **August 1**.

#### **WALTER H. ZINN AWARD**

This award recognizes individuals for notable, sustained, yet under-recognized technical or leadership contributions to the nuclear power industry. Nominations are due by **March 1**.

## Inspired communication

By LAURA HERMANN,  
COMMUNICATIONS COMMITTEE CHAIR

The end of the year gives many people a chance to clear out their desks and start the new year fresh after the holidays. For me, that entails rummaging through electronic bookmarks and hyperlinks containing various creative notions that I couldn't pursue when they first caught my eye. The annual aggregation generates an interesting picture of my obsessions over the past year. This year, all my clutter seems to relate to new ideas about communicating science.

Former NASA roboticist Randall Munroe and I share this scrappy approach to inspiration. The difference is that Munroe has done something with his notebooks and has launched a new career at [www.xkcd.com](http://www.xkcd.com). Munroe's website is a source of amusement on math, science, and language, and it features an award-winning webcomic. His latest creation, *Thing Explainer*, a meticulously illustrated book, brilliantly describes complicated things with only 1,000 commonly used words. If we want to successfully communicate the benefits of nuclear energy, we should study his approach

and get people enthused about the benefits of what he terms "heavy metal power buildings."

I must admit, though, that Munroe's premise of limiting expression to just "10 hundred" words challenges me to my core. Etymology and the origin of language served as the basis for my liberal arts education. Perhaps this is why another alternative for science communication caught my attention.

In late November, the American Association for the Advancement of Science announced the winner of its eighth annual "Dance Your Ph.D." contest. As ridiculous as it sounds, the country's largest general scientific society and publisher of *Science* mag-

azine challenges scientists to explain their research not with words, but through interpretive dance. The results are surprisingly refreshing, and there are now thousands of videos on YouTube by young professionals (find them at [www.youtube.com](http://www.youtube.com) by searching for "Dance your Ph.D."). They are light-hearted, informative, and—most significantly—popular.

These science stunts stay faithful to the evidence but inject creativity into the presentation of results. Adding interest is common sense. We all recognize the need to communicate science more effectively, but to get results, we must also recognize the need to try new ways of communicating.—[lhermann@pcgpr.com](mailto:lhermann@pcgpr.com)

## New student section at Florida International University

The newly formed ANS student section at Florida International University (FIU) was approved by the Board of Directors during the 2015 ANS Winter Meeting in Washington, D.C.

"We embarked on the journey to begin an ANS student section at FIU late in the spring semester of 2015," said interim section president Ryan Sheffield, who is working with five other interim officers to plan section meetings. "We have recruited 41 students through our initial recruiting effort and will expand recruitment for the spring semester," he said. Elections will take place at the end of the semester.

FIU boasts new nuclear-related degree programs. A multidisciplinary Nuclear Research Group was formed at the university in 2012, and the

Applied Radiological Science Program was established in 2015. The ARSP has launched a radiochemistry Ph.D. track in FIU's Chemistry Department and a health physics bachelor's degree track in the Physics Department.

Since 1995, Sheffield explained, the Applied Research Center at FIU has provided critical support to the Department of Energy's Office of Environmental Management (EM) under a DOE-FIU cooperative agreement and a STEM workforce development program known as the DOE Fellows program. ARC supports EM's mission to clean up the environmental legacy of the nation's nuclear weapons program in four areas: radioactive waste processing, facility decontamination and decommissioning, soil and groundwater remediation, and information technology development. "The program

also offers technical internships across the DOE complex and professional and career opportunities to FIU STEM minority students," said Sheffield, a DOE Fellow.

"We have various activities planned for the student section," Sheffield said, "such as a lecture series by professionals in the nuclear industry, outreach activities to local high schools, a club project, nuclear conference attendance, and various community service activities. We are very excited to be a part of the ANS

community and are anxious to begin making notable contributions to the nuclear community."



Pictured, from left, are Awmna Rana, communication officer; Carolina Padron, secretary; Ryan Sheffield, president; Maximiliano Edrei, vice president; Janesler Gonzalez, special programs officer; Jesse Viera, treasurer; and Leo Lagos, faculty advisor.

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| Yoon I. Chang       | Joseph K. Gasper    | Jay F. Kunze           | Toshio Morita         | Sandra M. Sloan      | Paul P. Wilson        |
| Hankwon Choi        | Dealis W. Gwyn      | Richard H. Lagdon Jr.  | K. Linga Murty        | David H. Smith       | Mark R. Winsor        |
| Steven D. Clement   | James W. Hagan      | James A. Lake          | Kaichiro Odajima      | C. Thomas Snow       | Arthur E. Wright      |
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Through their generous contributions, ANS Patrons and Benefactors show their commitment to furthering the mission of the American Nuclear Society. To join in supporting the Society's goals, elect to renew your membership as a Benefactor (\$250) or Patron (\$500) when submitting your renewal application, or contact the ANS Membership Department at 800/323-3044 or [members@ans.org](mailto:members@ans.org).

**Surplus Pu**, continued from page 7  
the views of its members.

In order to meet the terms of the U.S.-Russia Plutonium Management and Disposition Agreement, the United States plans to dispose of 34 metric tons of surplus weapons-grade plutonium by converting it into mixed-oxide (MOX) fuel at the Mixed Oxide Fuel Fabrication Facility (MFFF) now under construction at the Department of Energy's Savannah River Site in South Carolina. With the MFFF expected to cost much more than originally projected, the DOE is considering terminating the project and disposing of the plutonium at the Waste Isolation Pilot Plant (WIPP) in New Mexico. Other plutonium disposition methods have been considered by the DOE in the past.

The survey consisted of the following questions:  
1. Should the United States continue its policy of disposing of surplus weapons plutonium while Russia does likewise,  
*See Surplus Pu on page 14*

### Correction

In the November/December 2015 issue of *ANS News*, newly named Fellow and ANS past president Andrew Kadak was incorrectly described as having served as chief executive officer of Vermont Yankee. His eight years of service as CEO were actually spent with Yankee Atomic Electric Company. After leaving Yankee Atomic, Kadak taught nuclear engineering for 12 years at the Massachusetts Institute of Technology.

**Surplus Pu**, *continued from page 13*  
 or discontinue plutonium disposition and store the surplus weapons plutonium indefinitely?

2. Presuming the policy of disposing of surplus weapons plutonium continues, should the United States continue with the MOX fuel project for plutonium disposition or pursue a different approach?

3. If the United States pursues a different approach to plutonium disposition, which one would you advocate?

Of the 743 members who responded, a majority (597) said that the United States should continue its policy of disposing of surplus weapons plutonium, while 123 said that the surplus plutonium should be stored, and 23 offered no opinion. A total of

544 respondents said that the MOX fuel project should be continued, while 172 said they would support a different approach, and 27 had no opinion. The majority of respondents (594) said that if the United States pursues a different approach, they would advocate the construction of one or more advanced reactors to burn the plutonium. Only 32 re-

spondents favored burying surplus plutonium at WIPP, while 73 offered other suggestions, and 44 registered no opinion.

The poll results are consistent with ANS Position Statement #47, *Utilization of Surplus Weapons Plutonium as Mixed Oxide Fuel*, which can be found on the ANS website at [www.ans.org/pi/ps/](http://www.ans.org/pi/ps/).

## NEW MEMBERS

The ANS members and student members listed below joined the Society in October and November 2015.

### A

Aguirre, Brandon A., Sandia National Laboratories  
 Ahn, Woo S., Gangneung Asan Hospital (South Korea)  
 Amiri, Benjamin W., Westinghouse Electric Co.  
 Andre, Matthieu, George Washington University  
 Ang, Caen K., Oak Ridge National Laboratory

### B

Balou, Ornela, consultant  
 Barron, Brian, Georgia Tech Research Institute  
 Bender, Sara E., Remote Sensing Laboratory  
 Berg, Lawrence J., U.S. Department of Energy  
 Berke, Ryan B., Utah State University  
 Bernstein, Lee A., University of California–Berkeley  
 Bird, William B., Tennessee Valley Authority  
 Birdwell, Kevin R., Oak Ridge National Laboratory  
 Browne, Gilbert G., consultant  
 Bullock, Steven, Areva Inc.  
 Buster, Stefani, Consortium for Nonproliferation Enabling Capabilities

### C

Carvajal, Jorge V., Westinghouse Electric Co.  
 Casillas, Robert, consultant  
 Chambers, Angela, National Nuclear Security

### Administration

Chapman, Bryan S., Los Alamos National Laboratory  
 Clark, Jim, Los Alamos National Laboratory  
 Clemenson, David O., Wallflower Design  
 Coleman, Shann D., Duke Energy

### D

Degtiarenko, Pavel V., Jefferson Lab  
 Driscoll, Mark S., SUNY College of Environmental Science and Forestry

### F

Fang, Ruixian, University of South Carolina  
 Ferrar, Anthony M., University of Florida  
 Frazier, Robert, Cutting Technologies

### G

Galeriu, Dan, National Institute of Physics and Nuclear Engineering (Romania)  
 Garcia, Michael D., U.S. Navy  
 Guler, Cenk, Westinghouse Electric Co.

### H

Harter, Roy L., Jr., consultant  
 Hayes, Matthew R., Elysium Industries  
 Hayes, Michael, Duke Energy  
 He, Heming, State Nuclear Power Research Institute (China)  
 Helton, Laurel, MS Technology Inc.  
 Holston, Mauro S., U.S. Army Nuclear and Countering WMD Agency  
 Huffman, Nathan, Duke Energy  
 Hwang, Minjeong, Environment & Energy Technology (South Korea)

### I

Ibikunle, Kola, Ahmadu Bello University (Nigeria)

### J

Johnson, Amber, University of Maryland  
 Jorgensen, Lars M., ThorCon Power

### K

Kharashvili, George, Jefferson Lab  
 Kim, SeungHyun, Virginia Commonwealth University  
 Koltick, David, Purdue University  
 Kurkiewicz, Derek, FirstEnergy

### L

LaGraffe, David A., National Nuclear Security Administration  
 Levesque, Mark A., Elysium Industries  
 Licht, Jeremy R., Argonne National Laboratory  
 Loudermilk, Kyle, GSE Systems  
 Luetzow, Jacob E., Bechtel Marine Propulsion Corporation

### M

MacCaughey, Matthew W., The Breakthrough Institute  
 Mahan, Blake C., Bechtel Marine Propulsion Corporation  
 Maidana, Carlos O., Maidana Research  
 Marigomen, Ralph B., Environment & Energy Technology (South Korea)  
 McAuliff, John C., EarthYear Inc.  
 Miller, James C., Los Alamos National Laboratory  
 Minjun, Peng, Harbin Engineering University (China)

Mitschelen, Gretchen, Savannah River National Laboratory  
 Mongold, Richard D., consultant  
 Monti, Kim S., iRobot Corporation  
 Moore, Glenn A., Idaho National Laboratory

### N

Nhili, Regis, EDF  
 Niedzielski-Eichner, Phillip A., Governmental Dynamics

### P

Paik, Chan Y., Fauske & Associates LLC  
 Pendlebury, Celeste, Cameco Fuel Manufacturing  
 Perez, Carl I., Elysium Industries  
 Peterson, Clinton D., II, Los Alamos National Laboratory  
 Pheil, Edward C., Elysium Industries  
 Pingel, Alexander J., Westinghouse Electric Co.  
 Poggemeyer, Sy K., U.S. Marine Corps  
 Porter, Douglas K., Latham & Watkins LLC  
 Posid, Daniel M., Aerofin

### R

Rasmussen, Eric, RSCC Wire and Cable  
 Rester, Joshua O., consultant  
 Richard, Kathryn E., Areva Inc.  
 Richet, Sebastien, IAEA Library (Austria)  
 Rogers, Kari K., Sofix Corporation  
 Romano, Catherine E., Oak Ridge National Laboratory  
 Rosenberg, Nina D., Los Alamos National Laboratory  
 Ruffner, Dennis L., State Technical College of Missouri

**S**

Sadasivan, Pratap, Los Alamos National Laboratory  
 Sarsour, Hisham N., Western Services Corp.  
 Schwei, G., Tote Services  
 Selliken, Joseph H., Jr., The Osler Institute  
 Shih, Chien-Liang, Institute of Nuclear Energy Research (Taiwan)  
 Shipley, Howard N., Gordon & Rees LLP  
 Simonson, Stephen A., 3SPACE Inc.  
 Smith, Barton L., Utah State University  
 Smith, Travis A., Areva Inc.  
 Snyder, Britnay, General Dynamics

**T**

Electric Boat  
 Soliman, Abdelfattah Y., King Abdulaziz University (Saudi Arabia)  
 Squires, Leah, Idaho National Laboratory  
 Stefanovic, Peter, Holtec International  
 Stephens, Una D., Savannah River Nuclear Solutions  
 Swaney, Aaron W. D., Omaha Public Power District  
 Syfuhs, Steve, consultant  
 Taylor, Zach, BHI Energy  
 Tehrani, Nazila H., Areva

**V**

Valerio, Domenico, consultant

**W**

Welsch, James M., Pacific Gas & Electric Co.  
 Wilson, Matthew A., Paschal Solutions  
 Wright, James F., University of Texas–Permian Basin  
 Wu, Jyi-Lan, Institute of Nuclear Energy Research (Taiwan)

**X**

Xiao, Xin, Savannah River National

**Y**

Laboratory  
 Yi, Sung-Jae, Korea Atomic Energy Research Institute  
 Yoon, Ji Sup, Korea Atomic Energy Research Institute

**Z**

Zess, James A., Zess Industries  
 Zhu, Haishan, College of Nuclear Science and Technology (China)

**STUDENT MEMBERS**

*Air Force Institute of Technology*

Brickey, James  
 Chalaopak, Kasidit V.  
 Schulmeister, Taylor R.  
 Shelby, Clinton A.

*Arizona State University*

Tahir, Fraaz  
 Colwell, Kevin

*Boise State University*

Casper, Trevor  
 Lillywhite, Trevor  
 Ruesch, Michael A.

*College of Southern Nevada–West Charleston*

Guerra, Brandon  
 Bigler, Heather M.  
 Deen-Gonzales, Amanda  
 Savage, Aimee L.  
 Ward, Carl O.  
 Wilson, Ryan E.

*Florida State University*

Sandoval, Richard V.

*George Washington University*

Button, Michael C.

Chubenko, Oksana  
 McCleney, Amy B.

*Georgia Institute of Technology*

Avigni, Pietro

*Harbin Engineering University (China)*

Sun, Lin  
 Wang, Hang  
 Xu, Anqi

*Kings University (South Korea)*

Mbazor, Jeremiah C.  
 Hong, SeongHee

*Massachusetts Institute of Technology*

Daines, Gregory  
 Guenoun, Pierre  
 Magolan, Benjamin L.  
 Park, Yongsoo

*Missouri University of Science and Technology*

Eversman, Max T.  
 Zhang, Zheng

*North Carolina State University*

Ghassemi, Pedram  
 Langelotti, Stephen  
 Sit, Logan J.

Willis, Travis

*Ohio State University*

Brown, Curtis  
 Chaiken, Max  
 Lin, Hsun-Chia

*Pennsylvania State University*

Bates, Randy  
 Denisiuk, John  
 Green, Tyler

*Purdue University*

Wang, Haoyu  
 Zhang, Tengfei

*Rensselaer Polytechnic Institute*

Wendorff, Carl R.

*Sheffield Hallam University (U.K.)*

Vanderloot, Sidney

*Texas A&M University*

Alkhudhiri, Bandar A.  
 Cavazos, Omar  
 Childs, Mason P.  
 Harahsheh, Talal  
 Hawila, Mohammad  
 Kumar, Akansha  
 Mulloy, John P., Jr.  
 Smith, Joshua P.  
 Yang, Se Ro

*Texas A&M University–Kingsville*

Adame, Diego  
 Weiss, Abdullah

*Three Rivers Community College*

McNeil, Nicholas A.  
 Napier, John  
 Perkins, Tara M.  
 Shield, Katherine

*University of Arkansas*

Sandefur, Heather

*University of California–Berkeley*

Bae, JungHyun  
 Chow, Jessica  
 Farias, Carlos A. R.  
 Labrum, Joseph  
 Shrier, Alex  
 Yin, Chao

*University of California–Los Angeles*

Mohammed, Mahmoud L.  
 Hughes, Caroline L.

*University of Colorado–Boulder*

Allen, Nathan B.

Behar, Lucienne  
 Busse, Nikolas L.  
 Espinoza, Sebastian I.  
 Jeong, Kookhyun  
 Li, Zhangbo  
 Moneghan, Daniel  
 Smola, Tommy  
 Williamson, Andrew J.

*University of Illinois–Urbana-Champaign*

Mattingly, Gavin E.

*University of Michigan*

Diaz, Julio  
 Guerrero, Lauren  
 Monterrosa, Anthony  
 Raiman, Stephen S.

*University of Nevada–Las Vegas*

Kobayashi, Jessica M.

*University of New Hampshire*

Zargar, Shokoufeh

*University of New Mexico*

Yang, Paul Chu-En

*University of Pittsburgh*

Hoffman, Jacob O.  
 Murray, James, IV

*University of South Carolina*

Howden, Stephen H.

*University of Tennessee–Knoxville*

Castellanos, Luis A.  
 Dahunsi, Stephen  
 Greek, Victoria C.  
 Haseler, Christopher  
 Nair, Anjali M.  
 O'Connor, Austin C.  
 Petersen, Gordon M.  
 Schappel, David  
 Shoman, Nathan T.  
 Stewart, Ian  
 Volkovitskiy, Andrew V.

*University of Texas–Arlington*

Teran, Santiago

*University of Utah*

Craynor, Elliott W.  
 Gee, Winnie  
 Martinez, Alberto  
 Nguyen, William M.  
 Peraza, Sergio F.  
 Rappleye, Devin  
 Tuttle, Jacob F.

*University of Vermont*

Grav, Johan J.

*Virginia Commonwealth University*

Bishop, Jessica L.  
 Morgan, Garon L.  
 Rodrigues, Brian  
 Scott, Jason  
 Taylor, Caleb  
 Umanzor, Manuel E.

*Virginia Polytechnic Institute and State University*

Fu, Yucheng  
 Mascolino, Valerio  
 Song, Kyle  
 Wang, Meng-Jen

*Western Carolina University*

Shutayfi, Mohammed K.  
 James C. White Company

**ORGANIZATION MEMBERS**

The organization listed below recently joined the ANS Organization Membership program. Information about joining the program is available online at [www.ans.org/orgmembers](http://www.ans.org/orgmembers), or by contacting Mary Vitas at ANS headquarters by phone (708/579-8217) or e-mail ([organization@ans.org](mailto:organization@ans.org)).

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