

NUCLEAR & PLASMA SCIENCES SOCIETY NEWS

A Publication of the Institute of Electrical & Electronics Engineers

Number 4, December 2010

CONFERENCES

Particle Accelerator Conference New York City, New York March 28–April 1, 2011



The 2011 Particle Accelerator Conference (PAC'11) will take place in New York City from March 28 to April 1, 2011. This conference is the latest in the highly successful series of Particle Accelerator Conferences and also the first regional North American PAC organized to attract accelerator scientists, engineers, students and industrial exhibitors interested in every aspect of the science and technology of particle accelerators.

PAC'11 complements the newly formed series of International Particle Accelerator Conferences (IPAC) in providing a venue in particular for junior accelerator scientists and engineers to present their work when IPAC is not held in North America. The program of PAC'11 is developed to address this changing focus by including several tutorials and giving many opportunities for poster presentation. Four one-hour tutorials are presently planned:

- Accelerator-Based Light Sources by Michael Borland (ANL)
- Plasma-Based Accelerators by Warren Mori (UCLA)
- Heavy-Ion-Driven Inertial Fusion by William Sharp (LLNL)
- High Brightness Photo-injectors by David Dowell (SLAC)

PAC'11 is hosted by Brookhaven National Laboratory, and jointly sponsored by the IEEE Nuclear & Plasma Sciences Society and the APS Division of Physics

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Publicity releases for forthcoming meetings, items of interest from local chapters, committee reports, announcements, awards, or other materials requiring society publicity or relevant to NPSS should be submitted to the Newsletter Editor by January 5, 2011 for publication in the March 2011 Newsletter.

CONTRIBUTED ARTICLES

News articles are actively solicited from contributing editors, particularly related to important R&D activities, significant industrial applications, early reports on technical breakthroughs, accomplishments at the big laboratories and similar subjects. The various Transactions, of course, deal with formal treatment in depth of technical subjects. News articles should have an element of general interest or contribute to a general understanding of technical problems or fields of technical interest or could be assessments of important ongoing technical endeavors.

Advice on possible authors or offers of such articles are invited by the editor.

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CONFERENCES

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of Beams. Vladimir Litvinenko (BNL) is chairing the conference's Scientific Program Committee (SPC) and a very exciting and stimulating program of over 50 invited talks has been assembled covering all of accelerator science and technology. In addition we expect that about 1000 papers will be presented at PAC'11 either as oral contributions or as posters.

Our host hotel, the New York Marriott Marquis, is located in the heart of Times Square and the Broadway theater district. It offers advanced facilities that will provide for stimulating talks, interesting poster sessions and productive interactions with the industrial exhibitors. We are certain that everybody will enjoy his or her time in New York City. With diverse neighborhoods citywide and a different experience waiting around every corner, New York City offers up a feeling of energy and excitement that is unmatched. Many of New York City's major monuments and attractions, including

the Statue of Liberty, the Empire State Building, and the Brooklyn Bridge, are among America's iconic landmarks. And attractions such as Central Park, Fifth Avenue, Carnegie Hall, and Radio City Music Hall are all just minutes away from our conference facilities.

ADDITIONAL INFORMATION

While the deadline for submitting abstracts is past, the deadline for early exhibitor registration remains open until late December and until 28 January for late exhibitor registration. Conference and hotel registration are open now. Hotel registration closes on March 7th, 2011.

For the latest information on the scientific program and registration please visit the conference website www.bnl.gov/pac11 or contact the conference secretary Anna Petway at +1 631 344-4776 or e-mail pac11@bnl.gov.

Thomas Roser, Chair of PAC'11, can be reached at Brookhaven National Laboratory, MS911B, Upton, NY 11973-5000; Phone: +1 631 344-7084; Fax: +1 631 344-5954; E-mail: roser@bnl.gov.



Thomas Roser
PAC'11 Chair



Vladimir Litvinenko
*PAC'11 Scientific Program
Committee Chair*

ICOPS/SOFE, June 26-30, 2011 Chicago, Illinois

The 38th International Conference on Plasma Science (ICOPS) will be held jointly with the 24th Symposium on Fusion Engineering (SOFE) in Chicago, Illinois, USA, June 26-30, 2011. Conference chairpersons are Ahmed Hassanein (Purdue University) for ICOPS and Charles Neumeyer (Princeton University Plasma Physics Laboratory) for SOFE.

The association of these two conferences follows a successful tradition of fostering the close interaction between the plasma science and fusion energy communities and provides a central gathering place for

the international community of leading researchers in basic plasma physics and plasma applications.

In addition to the conference, a mini-course on Plasma-Material Interaction will be offered which will be of interest to both plasma science and fusion energy researchers.

Selected papers from both ICOPS and SOFE will be published in special issues of the IEEE Nuclear and Plasma Sciences Society (NPSS) journal *Transactions on Plasma Science*.



Michael Sivertz
*PAC'11 Local Organizing
Committee Chair*

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CONFERENCES



Susan Pankowski
PAC'11 Conference Treasurer



Anna Petway
PAC'11 Conference Secretary



Ahmed Hassanein
ICOPS General Chair

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Chicago is the third most populous city in the United States, with over 2.8 million living within the city limits. The city is a major hub for industry, business, finance and commerce, with O'Hare International Airport being the second busiest airport in the world. Chicago is the home of unique cultural expression in art, architecture, and the performing arts including improvisational comedy, and music, such as Chicago blues and soul. The city is also known for various culinary dishes, notably the deep-dish pizza, the Chicago-style hot dog and the Chicago-style Italian beef sandwich.

The conference venue is the Hyatt Regency McCormick Place hotel, adjacent to the McCormick Place Convention Center and just outside the hustle and bustle of Downtown Chicago.

Nearby attractions include the Navy Pier, Millennium Park, Art Institute, Shedd Aquarium, Adler Planetarium, Soldier Field, Michigan Avenue and State Street shopping, and more. Transportation is available via taxi and public transportation including the METRA system.

The organizing committee as well as the IEEE NPSS encourage you and your companions to attend ICOPS/SOFE 2011 in Chicago for a valuable technical experience and an enjoyable visit to an exciting city.

CONFERENCE TOPICS

SOFE Conference Topics

- Experimental Devices
- Fusion Development—Pathways from science to practical fusion energy
- Plasma-Material Interface
- Neutronics, Blankets, and Shields
- Divertors, Plasma Fueling & Exhaust Processing

- Plasma Heating & Current Drive
- Magnets
- Power Supply Systems
- IFE: Drivers and Other Needed Technologies
- Diagnostics, Data Acquisition, Plasma Control and Protection
- Fabrication, Assembly, Remote Handling and Maintenance
- Safety & Environmental Engineering
- Systems Engineering, Project Management & Lessons Learned

ICOPS Conference Topics

- Basic Processes in Fully and Partially Ionized Plasmas
- Microwave Generation and Plasma Interaction
- Charged Particle Beams and Sources
- High Energy Density Plasmas and Their Interactions
- Industrial, Commercial and Medical Applications of Plasmas
- Plasma Diagnostics
- Pulsed Power and Other Plasma Applications

Registration and abstract submittal will open on January 3, 2011 at: <http://engineering.purdue.edu/ICOPS2011/>

For further information visit the web site or contact Dr. Ahmed Hassanein, ICOPS Chairman, Purdue University, Department of Nuclear Engineering, West Lafayette, IN 47907 USA; Phone: +1 765 496-9731; E-mail: hassanein@purdue.edu or Charles Neumeyer, SOFE Chair, at Princeton Plasma Physics Laboratory, MS37 C-site B334, PO Box 451, Princeton, NJ 08543-0451, USA; Phone: +1 609 243-2159; E-mail: Neumeyer@pppl.gov.

IEEE NSREC is Planning for Las Vegas, Nevada July 25–29, 2011

The 2011 IEEE Nuclear and Space Radiation Effects Conference will be held July 25–29, 2011, in Las Vegas, Nevada, at the JW Marriott Resort and Spa. The conference will feature a Technical Program consisting of nine sessions of contributed papers (both oral and poster) that describe the latest observations and research results in radiation effects, an up-to-date Short Course offered on July 25, a Radiation Effects Data Workshop, and an Industrial Exhibit.

The JW Marriott Las Vegas Resort & Spa, located less than a half hour from the Las Vegas International Airport, boasts over 50 acres of lushly landscaped grounds, including a resort pool with waterfalls and whirlpools. Indulge in the comfort of the oversized guest rooms, or delight in any of their 11 on-site restaurants and lounges. This resort is located in the heart of southern Nevada's most prestigious collection of golf courses, providing a gateway to the outstanding courses in the Vegas area. Nearby Red Rock Canyon provides hiking, climbing and biking for those seeking adventure, or try your luck at the resort's on-site casino. Relax at the 40,000 square foot world-class Aqueae Sulis Spa with 36 treatment rooms, full-service salon and fitness center, offering a full range of specialty services, including massages, facials, aromatherapy, body wraps and loofah scrubs. And, only 15 minutes away, is the world-famous Las Vegas strip, the entertainment capital of the world. Las Vegas offers something for everyone, including an eclectic array of museums and galleries, extensive shopping, fine dining, gambling and, of course, the world-famous Vegas shows.

Supporters of the conference include the Defense Threat Reduction Agency, Sandia National Laboratories, Air Force Research

Laboratory, NASA Electronic Parts and Packaging Program, Jet Propulsion Laboratory, Aeroflex, Atmel, Boeing, BAE Systems, Honeywell, Intersil, International Rectifier, Northrop Grumman, and Southwest Research Institute.

TECHNICAL PROGRAM

Chaired by Robert Reed, Vanderbilt University, papers to be presented at this meeting will describe the effects of space, terrestrial, or nuclear radiation on electronic or photonic devices, circuits, sensors, materials and systems, as well as semiconductor processing technology and techniques for producing radiation-tolerant devices and integrated circuits. The conference will be attended by engineers, scientists, and managers who are concerned with radiation effects. International participation in the conference is strongly encouraged.

The conference committee is soliciting papers describing significant new findings in the following or related areas:

- Basic Mechanisms of Radiation Effects in Electronic Materials and Devices
- Radiation Effects on Electronic and Photonic Devices and Circuits
- Space, Atmospheric and Terrestrial Radiation Effects
- Hardness Assurance Technology and Radiation Testing
- New Developments of Interest to the Radiation Effects Community

RADIATION EFFECTS DATA WORKSHOP

The Radiation Effects Data Workshop is a forum for papers on radiation effects data on electronic devices and systems. Workshop papers are intended to provide

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Charles Neumeyer
SOFE General Chair



Teresa Farris
NSREC Vice Chair for Publicity



Kay Chestnut
General Chair

CONFERENCES

But make us feel better

Good resolutions are useless attempts to interfere with scientific laws.

Oscar Wilde

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radiation response data to scientists and engineers who use electronic devices in a radiation environment, and for designers of radiation-hardened or radiation-tolerant systems. Papers describing new simulation facilities are also welcomed.

PAPER SUBMITTAL

Information on the submission of summaries to the 2011 NSREC for either the Technical Sessions or the Data Workshop can be found at www.nsrec.com. The deadline for submitting summaries is February 4, 2011.

SHORT COURSE

Attendees will have the opportunity to participate in a one-day Short Course on Monday, July 25. The theme for the 2011 short course is: "Space Radiation Environments and Their Effects on Devices and Systems: Back to the Basics," and is being organized by Steve McClure, Jet Propulsion Laboratory. The course will be of interest both to radiation effects specialists and newcomers to the field alike.

INDUSTRIAL EXHIBIT

An Industrial Exhibit will be included as an integral part of the conference and chaired by Mike Fitzpatrick, Northrop Grumman. The exhibit will be held on Tuesday and Wednesday. It will include exhibits from 35-40 exhibitors that

represent companies or agencies involved in manufacturing electronic devices or systems for applications in space or nuclear environments, modeling and analysis of radiation effects at the device and system level, and radiation testing.

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Not according to most

You have reached the pinnacle of success as soon as you become uninterested in money, compliments or publicity.

O.A. Battista

ANIMMA, June 6-9, 2011 Ghent, Belgium

The Second International Conference on Advancements in Nuclear Instrumentation, Measurement Methods and their Applications—**ANIMMA 2011** is being organized by SCK-CEN, the Belgian Nuclear Research Center, and technically cosponsored by IEEE/NPSS. It will take place from **June 6-9, 2011**, at Congress Center in the city of Ghent, in the heart of Belgium. Ghent is located approximately 50 km from Brussels and can be reached easily by air, train or car.

The conference topics include instrumentation and measurements for:

- Fundamental physics
- Nuclear Research Reactors
- Nuclear Power Reactors
- Nuclear Fuel Cycles
- Safeguards, Homeland Security
- Environmental and Medical Sciences
- Education and Training Activities

Do not miss this important international scientific and technological event.

KEY DATES:

January 10, 2011

Opening of Registration

January 21, 2011

Abstract Submission Deadline

March 15, 2011

Notification of Acceptance to Authors

May 20, 2011

Final Paper Submission Deadline

Visit the conference Web Site: <http://www.animma.org>

Questions regarding the technical program should be addressed by e-mail to animma@medicongress.com.

You can also contact the Local Organizing Committee Chairs:

Abdallah Lyoussi, 2009
abdallah.lyoussi@cea.fr

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mschyns@sckcen.be

A BRIEF HISTORY OF ANIMMA

The first international ANIMMA conference “**Advancements in Nuclear Instrumentation Measurement Methods and their Applications,**” was held from June 7-10, 2009 at the Palais des Congrès in Marseille, France. About 430 participants from 35 countries and five continents participated; almost 90 oral presentations and over 150 posters were presented.

This conference was initiated and organized by the CEA, Atomic Energy Commission (F), in close partnership with the University of Provence and the Belgian Nuclear Research Centre SCK-CEN (Be), all aware of the importance of instrumentation and measurement at the heart of nuclear activities and aware of the considerable impact of these sciences on many other fields of activity.

The conference received the active support of the NPSS, the ENS (European Nuclear Society), and the SFEN (French Nuclear Energy Society), and the support of the Provence-Alpes Cote d’Azur Region, the city of Marseille and over 30 industrial partners. The proceedings have been made accessible on IEEE Xplore and some selected papers were submitted for special issues of TNS and TPS.

The opening of the ANIMMA conference was honored with the presence of Dr. Catherine Cesarsky, High Commissioner for Atomic Energy



Jean-Luc Leray
Chair, NPSS Transnational Committee



Patrick Le Dü
NPSS International
Conferences Liaison

I’ve noticed this too

Of late I have searched diligently to discover the advantages of age, and there is, I have concluded, only one. It is that lovely women treat your approaches with understanding rather than disdain.

John Kenneth Galbraith

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CONFERENCES

Hey! I'm here...

*A beauty is a woman you notice;
a charmer is one who notices you.*

Adlai Stevenson

There's a lot of them out there

*Not to know what happened before
one was born is always to be a child.*

Cicero

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Commission, Pr Jean-Paul Caverni President of the University of Provence, Dr. Loïck Martin-Deidier, Deputy Director of the Nuclear Energy, Pr Franck Deconinck, President of the Centre de Recherche Nucléaire in Belgium, and Mr. Jorgen Kjems, Chairman of the ESFRI "Physical Science and Engineering Working Group" (European Strategy Forum on Research Infrastructures), who together opened this special conference.

The ultimate goal was to provide a meeting place for instrumentation and measurement scientists and engineers. Here innovative collaborations can be established among attendees and effective partnerships formed with industrial firms.

Given that instrumentation cuts across disciplines, the ANIMMA conferences are intended to respond to three objectives:

- To be an international conference at a high scientific level oriented towards innovation.
- To be an interdisciplinary forum for experts in nuclear physics, reactor systems, fuel cycle, safeguards, health, environment, safety and education/training.
- To bring together researchers, industrialists and academics as well as Ph.D. students or, in other terms, developers and users of instrumentation technologies.

These objectives were met during the conference: According to the organizers, the Conference attendance was distributed as follows: 20% scientists from universities, 30% industrialists, and 50% researchers from research institutes.

- Many provisions were made to interest young scientists and students.

Thus, about 50 students took part in ANIMMA 2009. This enabled them to meet researchers and industrial firms. A session focused on education and training activities was held on June 10th.

- A conference-long exhibition was presented by twenty-five research laboratories, industrial partners, and many specialized companies making specific, high-performance instrumentation and frequently contributing to innovation.

A technical visit to the CEA/Cadarache Nuclear Research Centre was organized on 11 June. It enabled ANIMMA participants to visit the CEA facilities particularly devoted to the development or implementation of instrumentation and advanced measurement methods, and to have an overview of the large facilities in Cadarache, the "Research Reactors Valley," where a series of historical reactors and loops were built and the future JULES-HOROWITZ fission and the ITER fusion experimental reactors are under construction.

The success of ANIMMA 2009 has confirmed the real interest in this conference and the justification for its objectives which make it unique; thus, ANIMMA is becoming a permanent biennial conference.

For further information about ANIMMA or about international conferences sponsored or technically cosponsored by IEEE NPSS contact Jean-Luc Leray, our Transnational Committee chairman, at CEA, Bat 447, 91191 Gif-sur-Yvette cedex, France; Phone +33 1 64 50 20 41; E-mail: jean-luc.leray@cea.fr, or Patrick Le Dù, our International Conferences liaison, at 8 ALL Capitainerie des Chasses, 94800 Villejuif cedex, France; Phone: +1 33 6 81 20 12 08; E-mail: p.ledu@ipnl.in2p3.fr.

President's Report

Time certainly flies. It's been two years since I became President of NPSS and this is now my last President's Report. Looking back, I can say it has certainly been a deeply rewarding experience for me, and one that I hope has benefited the Society and its membership. It also gave me an opportunity to see our Society from a different perspective. Coming from the Radiation Instrumentation Technical Committee, I was not previously aware of all of the activities and excellent science that is done by our other technical communities. I've now met and interacted with our leaders from plasma science, fusion, pulsed power, radiation effects, particle accelerators, and many others, and I have developed a much greater appreciation of how broad and diverse our Society really is. Yet, at the same time, there is a common thread that holds us all together in the science that we do. In addition, I've also met other Society Presidents and seen some of the remarkable achievements that are made in other parts of IEEE, and also how IEEE as a whole works to bring all of these groups together. My experience during the last two years has really shown me how valuable IEEE and NPSS are to our community and to the friends and colleagues with whom we work, and I hope that I have been able to convey some of that same sense of value to you, our members.

Starting in January of 2011, Robert Reinovsky will be taking over as President of NPSS. Bob is a distinguished scientist and IEEE Fellow from the plasma science and pulsed power side of NPSS. He works at Los Alamos National Laboratory as Program Manager for Primary Assessment Technology, which is part of the US weapons program. Bob's scientific and leadership skills make him eminently qualified to lead NPSS during

the next two years, and I'm sure we all wish him well in that role.

It is with great sorrow that I report on the passing of Roger Sudbury, who served as our Division IV Director until his passing on August 22, 2010. Roger was a long-time and extremely active member of IEEE who served on numerous IEEE committees, and also, in 2000, as President of the Microwave Theory and Techniques Society. He was a former executive officer of the MIT Lincoln Laboratory where he had a 41-year career, and was a nationally recognized leader in the development of gallium arsenide monolithic circuits for advanced radar systems. Those who knew him admired and respected him for his deep dedication and commitment to IEEE and to serving our community. Roger is succeeded by Peter Clout, who we all know is from NPSS and was due to take over as our new Division IV Director starting in January of 2011. We wish Peter all the best in this new position and offer him our support.

I would also like to announce that Jim Schwank is now our new co-liaison for RADECS, which he will be sharing with our other co-liaison, Hal Flescher. Jim replaces Ron Schrimpf who stepped down as RADECS co-liaison during the summer due to other obligations and commitments. We thank Ron for his service in this and other AdCom roles.

As I mentioned in our previous Newsletter, we have been working on revising the Constitution and Bylaws of the Nuclear and Plasma Sciences Society in order to bring it in line with the latest requirements by IEEE and to incorporate new features to better serve our membership. This has been a long process that was carried out by a committee chaired by our current Vice President Bob

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Craig Woody
NPSS President

More selfish than altruistic

Some men covet knowledge out of a natural curiosity and inquisitive temper; some to entertain the mind with variety and delight; some for ornament and reputation; some for victory and contention; many for lucre and livelihood; and but few for employing the Divine gift of reason to the use and benefit of mankind.

Francis Bacon

We worrywarts

We go on multiplying our conveniences only to multiply our cares. We increase our possessions only to the enlargement of our cares.

Anna Blackett

Doesn't always work

Moderation has been declared a virtue so as to curb the ambition of the great and to console lesser folk for their lack of fortune and merit.

François de La Rochefoucauld

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Reinovsky and involved a lot of work by a number of people, but I would like to particularly thank committee member Steve Gold for his careful scrutiny of the entire document and painstaking care in getting the wording right.

Most of the changes were fairly minor, but one substantial change was in our field of interest (FOI) statement. Currently our FOI statement is rather lengthy and lists many specific topics with which NPSS is involved. Our new FOI statement is much shorter and simply lists the areas of interest of our eight Technical Committees, along with our long-standing interest in nuclear power system instrumentation and controls. This was done not only to simplify our FOI, and comply with a new rule from TAB that all FOIs be less than 75 words, but also to allow for more overlap with the areas of interest of other Societies and provide more opportunities for cooperation in these areas. Another important change was the formation of a new appointive Functional Committee for Graduates of the Last Decade (GOLD). This committee has actually existed for the last two years, chaired by Christoph Ilgner, and has held several very successful events at some of our meetings. These events are a great opportunity for many of our younger members to get together at our conferences and meet some of the senior members of our Society, and we hope to see more GOLD activities in the future.

The new revised Constitution and Bylaws was just approved by AdCom at our November meeting, and it is now open for comments from the entire membership. The Constitution requires that the new revision be publicized in the Society Newsletter and open for comment for a period of 60 days. You will now find

a copy listed in this issue, as well as on our website. If there are no strong objections from a significant percentage of the membership during this time, the revised Constitution and Bylaws will be submitted to TAB for approval. I would therefore ask anyone who is interested to please have a look at the new version and submit any comments you have to our secretary, Albe Larsen, whose contact information is at the end of the Secretary's Report and on our website.

At its last meeting in July, AdCom voted that NPSS withdraw from the IEEE Biometrics Council. This decision was made after a rather long debate, and a period where we maintained representation on the Council. However, in the end it was felt that there was not sufficient overlap of interests between the Biometrics Council and NPSS to justify our remaining a member. We do, of course, have a great deal of interest and activity in medical imaging, mainly through the activities of our Nuclear Medical and Imaging Sciences Technical Committee, and also through activities within our Plasma Sciences Technical Committee on terahertz technology. Related to this, a new IEEE journal was recently approved entitled *IEEE Transactions on Terahertz Science and Technology*, sponsored by the Microwave Society. This is a new journal that is aimed at collecting papers from many areas that utilize terahertz technology, including those for biological applications, and we would encourage any of our members working in this field to consider this journal for their future publications

In other news from TAB, there was a report issued recently by the TAB Structural Ad Hoc Committee, which is looking into ways to make the Organizational Units that make up TAB, namely the Societies and Councils, more

effective in the long term. One of the main issues addressed was the need to recognize and integrate new technologies within IEEE, and particularly those that may not fit well within the current fields of interests of any existing Society or Council. Therefore, the idea of a New Technical Community (NTC) was developed, which is designed to build an interrelated community in a technical area that may span the fields of interest of several Societies, and provide a mechanism for the advancement of the technical scope in these areas through intersociety cooperation. It is therefore similar to a Technical Council, but is aimed more at capturing new technologies and providing a means for integrating them into existing Societies or Councils, or possibly even forming new ones. The proposal is to have the possibility to form New Technical Communities starting in January of 2011, and that these new Organizational Units could receive some small startup funds from TAB. However, none of the existing Societies or Technical Councils would be affected by this new procedure or by the formation of any new NTC.

I would also like to mention one other important activity that is taking place within IEEE with which NPSS is involved. A plan is being developed by the Community Solutions Initiative (CSI), part of the IEEE Power and Energy Society and involving NPSS and the Sirona Cares Foundation, to provide electricity for rural areas of Haiti, including many areas devastated by the earthquake of January 12, 2010. The work originally began under the IEEE Humanitarian Technical Challenge started by the UN, the IEEE Foundation and the Vodaphone Corporation. This is a pilot program that would bring modest, low-cost electricity to remote areas of Haiti that have no electricity, and would provide enough power for

lighting (principally LED lighting), operating small DC appliances, charging cell phones, etc. It involves a business plan that would eventually lead to profitable commercial investment in the area that would ultimately provide electricity for up to one million people within the first five years. This project is being spearheaded by Ray Larsen of NPSS and Robin Podmore from PES, along with Paul Lacourciere from Sirona Cares. Please read more about this project in Ray's article in this Newsletter. This initiative shows what IEEE and NPSS members can do when they get involved in community service and are willing to put forth their own time and effort for a worthy cause.

I would also like to remind our members that IEEE offers an electronic "e-membership" to individuals living in developing countries. These are countries where the per capita Gross Domestic Product is less than \$15,000 per year. This membership offers many of the benefits of normal membership that are provided in electronic form. Qualifying countries are listed on the IEEE membership website, and I would encourage any of our members who qualify to take advantage of this offer.

So, with this final report, I would like to say a sincere thank you to all of the members of NPSS for giving me the opportunity to serve as your President over the past two years. It has been an honor and a privilege, and a most rewarding experience. I now look forward to serving as your Past President for the next two years and for other ways of helping our Society in the future.

Craig Woody, NPSS President, can be reached at the Physics Dept., Bldg. 510C, Brookhaven National Lab., Upton, NY 11973; Phone: 631-344-2752; Fax: 631-344-3253; E-mail: woody@bnl.gov.

Just a minute!

There are two kinds of people in one's life: people whom one keeps waiting and the people for whom one waits.

S.N. Berman

Geodesic

Reason only discovers the shortest way: it does not discover the destination.

George Bernard Shaw



Albe Larsen
NPSS Secretary and Newsletter Editor

Secretary's Report

The AdCom will have met in Knoxville, TN by the time this Newsletter is published. The meeting, to be held on Nov. 6, 2010 following NSS/MIC/RTSD, will be reported on in the March 2011 Newsletter. The AdCom retreat and meeting following this will be held on March 25 and 26 in New York City, the weekend preceding PAC'11.

Later in this Newsletter, under Functional Committees, you will find the report of the Constitution and Bylaws Committee followed by the revised Society Constitution and Bylaws. These have been approved by AdCom and will be submitted to TAB for approval at their February Board Series. It is important that you review these revised bylaws and send me any comments you may have. The C&BLs regulate how our Society is governed. Every member should, therefore, be familiar with them. The cutoff to receive your input is January 31, 2011.

2010 is also the year for electing a new Vice President/President-elect and voting members of AdCom are submitting their ballots. The results will be announced on November 6th, 2010 in Knoxville and published in the March 2011 Newsletter, along with the names and biographies of

our Class of 2014 AdCom members. On January 1, 2011 Bob Reinovsky of Los Alamos National Lab. will assume the role of NPSS President.

On another topic, many of you have suggested that having a series of articles representing the work of our various communities would be welcome and of interest. These should be written for nonspecialists but have good technical content and high quality graphics. Please submit your articles with time to have the appropriate reviews. Thank you.

And a final note, our Division Director, Dr. Roger Sudbury, passed away in August. His memorial service in Winchester, MA was well attended by IEEE representatives and Lincoln Laboratory (MIT) staff. Roger wasn't well known in our community, but those of us who did know him appreciated all he brought to IEEE. Peter Clout, of our own Society, has assumed the role of Division IV Director.

Albe Larsen, NPSS Secretary and Newsletter Editor, can be reached at SLAC National Accelerator Laboratory, MS17, 2575 Sand Hill Road, Menlo Park, CA 94025; Phone +1 650 926-2748; Fax: +1 650 926-3570; E-mail: amlarsen@slac.stanford.edu.

Why we have rules

To rule is easy; to govern difficult.

Goethe

Nuclear Medical and Imaging Sciences

Greetings! As I write this it is early October and we are all in the midst of preparing for this year's MIC conference. However, by the time the newsletter is published the meeting will be over and we will have all enjoyed participating in another great MIC meeting. I would like to thank Ron Keyser (General Chair), David Townsend (MIC Chair), Charles Watson (MIC Deputy Chair) and all the other NSS/MIC committee members for all their dedication and hard work in organizing the meeting. This includes establishing an outstanding scientific program; offering an excellent array of short courses and educational workshops; inviting plenary speakers to discuss topics that expand our horizons; providing an excellent industrial program; and creating an environment that promotes scientific exchange and discussion. In addition, I would like to thank the organizers of the conference for the commitment they made to our student trainees through student travel awards.

In summary, for the 2010 MIC, 603 abstracts were submitted and 538 accepted. There were 88 MIC oral presentations; 10 MIC/NSS joint session oral presentations; and 440 MIC posters. This year abstracts were received from 34 countries making this truly an international meeting. Invited plenary speakers included Professor Gregory Sorensen of Harvard Medical School/Massachusetts General Hospital and Professor Anthony Campbell from the Department of Infection, Immunity and Biochemistry, Cardiff University. Professor Sorensen spoke on "Mechanistic Imaging and MR-PET." In his talk he introduced the concept of "mechanistic neuroimaging" and how MR-PET will be particularly relevant in understanding neurological disease pathways and therapeutic interventions. Professor

Campbell spoke on "Life that Sparkles," and the impact that bioluminescence has had and will have on biomedical research and clinical practice.

In addition to coming together to present our latest scientific findings, the MIC meeting is also a time when we honor some of our colleagues for the excellence of their research. This year's honorees for the Hoffman Medical Imaging Scientist and Hasegawa Young Investigator award were Dr. Richard Leahy from the University of Southern California and Dr. Xin He from Johns Hopkins University. The citation for Dr. Leahy's award is "For significant and sustained contributions to inverse problems in medical imaging and for dedication to graduate training." The citation for Dr. He's award reads "For contributions to evaluation of image quality for 3-class tasks." Congratulations to Drs. Leahy and He. In addition, this year we were proud to recognize Drs. David Townsend and Ron Nutt as the first recipients of the IEEE Medal for Innovations in Healthcare Technology award for the invention of the PET/CT scanner. This is an IEEE-wide award and we are very proud to have Drs. Townsend and Nutt, who have been long-time members of our community, as the first recipients of the award.

With the 2010 meeting in our rear-view mirrors, we now look forward to the 2011 meeting in Valencia, Spain. And with no disrespect to Knoxville, I know that many of the membership are looking forward to visiting Valencia. David Townsend is the General Chair, Alberto Del Guerra will serve as MIC Chair and Juan José Vaquero will serve as MIC Deputy Chair. Valencia is Spain's third largest city, situated on the eastern Mediterranean coast, with many cultural and recreational

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Robert Miyaoka
NMIS Technical Committee Chair

Lesson for our times

...sometimes insistence on 100 percent security actually impairs our security, while the bold decision—though at the time seems to involve some risk—will give us more security in the long run.

Hans Bethe

TECHNICAL COMMITTEES

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attractions. The meeting will be held in the Valencia Conference Center and the neighboring Sorollo and Hilton Hotels. Plans for this meeting are progressing well. The last two pending important contracts (i.e., local services contract and contract for providing the web tools for registration) have been signed. The local staff is working on the Companion Program and a preliminary proposal will have been distributed in November 2010.

In 2012, the IEEE NSS/MIC meeting will be held in Anaheim, California. Tom Lewellen is the General Chair, Vesna Sossi will serve as MIC Chair and Alex Converse will serve as MIC Deputy Chair. The meeting will be held at the Disneyland Hotel. Along with having excellent facilities to host the meeting, the Disneyland Hotel will be undergoing a major renovation that will be complete for the 2012 meeting. Planning for this meeting is progressing smoothly. The budget has been approved and the main conference planning committee has been formed.

In 2013, the IEEE NSS/MIC meeting will be held in Asia for the first time. Host city for the meeting will be Seoul, Korea. The meeting will be held at the Coex Convention Center within the Coex Mall. This site will provide us with plenty of space to host the meeting as well as offering many tourism opportunities. The General Chair for the meeting will be Hee-Joung Kim and the MIC Chair will be Jae Sung Lee.

By the time this newsletter is published site selection for the 2014 IEEE NSS/MIC should be finalized. The three finalists are Albuquerque, New Mexico; Denver, Colorado; and Seattle, Washington. The front-runner at this point is Seattle, Washington.

Finally, I would like to thank all the individuals who ran for NMISC Committee positions and for AdCom. The success of our community is highly dependent upon volunteers and their dedication to make sure that the MIC is an outstanding meeting each year and that our interests are represented within NPSS and IEEE. This year's candidates for five NMISC Committee positions were: Adam Alessio, Freek Beekman, Jennifer Huber, Jinhun Joung, Andrew Reader, Andres Santos, and Arkadiusz Sitek. This year's candidates for one AdCom position were Alberto Del Guerra and Georges El Fakhri. If you are interested in becoming more involved in the oversight of the MIC meeting please consider running for an NMISC council position. Five individuals are elected each year for 3-year terms. For more information please go to the NMISC webpage (<http://ewh.ieee.org/soc/nps/nmisc/>).

Robert Miyaoka can be reached at the University of Washington, Department of Radiology, Box 357987, Seattle, WA, 98195-7987 USA; Phone: +1 206-543-2084; Fax: +1 206-543-8356; E-mail: rmiyaoka@u.washington.edu.

Whoa!

*Everything that frees our spirit
without giving us control of
ourselves is ruinous.*

Goethe

Plasma Science and Applications Technical Committee

INTRODUCING THE PSAC BLOG

The IEEE NPSS Plasma Science and Applications Committee (PSAC) has established a blog to publicize its activities and to help members and other interested plasma researchers stay informed. Anticipated topics include upcoming plasma conferences, award opportunities, PSAC elections, significant ExCom actions, and other useful information. To avoid cluttering subscriber mailboxes, new entries will be posted no more often than once per month. In its brief

existence, the blog has presented short articles introducing itself and presenting the minutes of the most recent PSAC open business meeting (held last June at ICOPS 2010 in Norfolk, VA).

PSAC invites interested readers to visit its blog at <http://iee-npss-psac.blogspot.com/> and then to subscribe to its monthly updates either by email or by RSS feed.

Brendan Godfrey can be reached by E-mail at Brendan.Godfrey@ieee.org.



Brendan B. Godfrey

Pulsed Power Science and Technology Technical Committee

The IEEE NPSS, through its PPS&T committee, technically cosponsored the 15th International Symposium on Electromagnetic Launch (EML) Technology, which was held at the Royal Military Academy in Brussels, Belgium, May 17-20, 2010. This biennial symposium is the primary forum for presentation and discussion of research on critical technologies for the acceleration of macroscopic objects using electromagnetic (EM) or electrothermochemical (ETC) launchers. The symposium was attended by 125 scientists and engineers from 16 countries. Dr. Scott Fish from the Institute for Advanced Technology (UT Austin) and Mr. Johan Gallant from the Royal Military Academy were the symposium co-chairs. There were 37 oral and 108 poster presentations. The symposium attendees selected a presentation by Dr. Jun Li (Beijing Institute of Special Electromechanical Technology) entitled “Design and Testing of a 10 MJ Electromagnetic

Launch Facility” as the Best Oral Presentation, and one by Dr. Weiqun Yuan (Chinese Academy of Sciences) entitled “Design and Testing of a Two-turn Electromagnetic Launcher,” as the Best Poster Presentation. The response to the Call for Abstracts was outstanding, resulting in 283 abstracts being submitted. Of the 182 draft papers submitted, 145 papers were selected for presentation at the Symposium. As of October 7th 99 full manuscripts have been accepted for publication in the January 2011 Special Issue of the *IEEE Transactions on Plasma Science* derived from this Symposium, and an additional 18 manuscripts are still in review. The next EML Symposium will be held in Beijing, China in 2012.

Abstracts are now being accepted for the 18th IEEE International Pulsed Power Conference, which will be held in Chicago, IL, June 19-24, 2011.

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Edl Schamiloglu
PPST Technical Committees Chair

TECHNICAL COMMITTEES

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The website is <http://ppc.missouri.edu/index.html>. Suggestions for invited and plenary talks should be sent to the technical program chair: Dr. Bryan Oliver, Sandia National Laboratories—bvolve@sandia.gov.

Nominations are now being accepted for the Pulsed Power Science and Technology

Committee Awards for 2011—<http://ewh.ieee.org/soc/nps/tc-ppst.html>.

Edl Schamiloglu, Chair of the Pulsed Power Science and Technology TC, can be reached at the Department of Electrical and Computer Engineering, MSC01 1100, Univ. of New Mexico, Albuquerque, NM 87131-0001 USA; Phone: +1 505 277-4423; Fax: +1 505 277-1439; E-mail: edl@ece.unm.edu.

FUNCTIONAL COMMITTEES

Awards



Bill Moses
NPSS Awards Committee Chair

January 31, which is the submission deadline for the NPSS Society level awards, is almost upon us. This is an excellent opportunity to recognize the contributions of a mentor, a colleague, or a student by nominating them for one of these prestigious awards—surely you know *somebody* who deserves one! These NPSS Society level awards are given annually and all NPSS members are eligible for them. The awards are the Merit Award (\$5000), which is for scientific and technical achievement; the Early Achievement Award (\$3000), which is for scientific and technical achievement within the first decade of the career; the Richard F. Shea Award (\$5000), which is for service to the NPSS, and four Graduate Scholarship Awards (\$1500 each).

We are also soliciting nominations for the *IEEE Marie Skłodowska-Curie Award*, which is an annual IEEE Technical Field Award (TFA) that recognizes outstanding contributions to the field of Nuclear and Plasma Sciences and Engineering. This covers a fairly broad scope of activities, but the unifying themes are ionizing radiation and ionized gases, especially their behavior, measurement and effects. This is one of the highest awards in the IEEE hierarchy, and the

recipient will receive a US \$10,000 honorarium, a bronze medal, and a certificate. The “Curie Award” is an IEEE award, i.e., an Institute-level award, and so is not restricted to NPSS members.

Nominations for all of these are due on or before January 31, 2011 and the decisions will be announced in March. We will present the awards during the appropriate 2011 NPSS conference.

There are also a larger number of Technical Committee Awards given each year. Nominations for these are generally due later in the year (typically in the spring).

Please think about enabling a colleague or a mentor to receive the recognition that they deserve by nominating them for an award. More information on these and other relevant Awards, including submission information and tips for writing a successful award nomination, is available at <http://ewh.ieee.org/soc/nps/awards.htm>.

Bill Moses, the NPSS Awards Committee chair, can be reached at the Lawrence Berkeley National Laboratory, Mailstop 55-121, 1 Cyclotron Road, Berkeley, CA 94720; Phone: +1 510 486-4432; Fax: +1 510 486-4768; E-mail: wvmoses@lbl.gov.

Friendship asymmetry

We always like those who admire us, but not always those we admire.

François de La Rochefoucauld

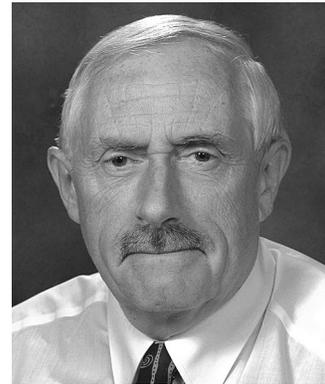
FUNCTIONAL COMMITTEES

CLIVE DYER RECEIVES THE 2010 NSREC RADIATION EFFECTS AWARD

Clive Dyer received his BA, University of Cambridge (1st Class Honors in Natural Sciences) and his Ph.D. (Physics) from the University of London. His professional history began as a Research Associate at NASA/Goddard Space Flight Center followed by the Ministry of Defence (MoD) and Senior Lecturer in the Nuclear Department at the Royal Naval College. He then transferred to RAE to work on space defense issues including the Strategic Defense Initiative (SDI). Clive founded the Spacecraft Environment and Effects team at Royal Aerospace Establishment (RAE,

which later became QinetiQ). He was appointed a QinetiQ Senior Fellow for exceptional achievements in the fields of space and aircraft radiation environment, measurement and radiation effects and has remained as a consultant with QinetiQ after his 2008 retirement. Clive has been an NSREC reviewer, session chair, awards chair and recipient of Best Oral Paper at RADECS 1997. He has authored over 200 papers.

Citation: *“For outstanding contributions to the measurement and understanding of space and atmospheric radiation, for the development of new international radiation standards and for technical leadership over more than three decades.”*



Clive Dyer
2010 NSREC Award Recipient

PHELPS GRANTS

The 2010 Paul Phelps Continuing Education Grant was awarded to two student members from the radiation effects community. At the opening of the NSREC technical sessions (July 2010), Dan Fleetwood, Chairman of the Radiation Effects Steering Group, announced both grant awards. The grants included tuition for the 2010 NSREC Short Course and a check for \$500.

The purpose of the Phelps Grant is to promote continuing education and encourage membership in the Nuclear and Plasma Sciences Society (NPSS). The bases for judging are exceptional promise as a graduate student working in the fields of the NPSS, “exceptionally good work” in those fields, and an expectation that attendance at an NPSS-sponsored short course will result in an improved possibility of obtaining a job within the radiation effects community. The two recipients for the 2010 Paul Phelps Continuing Education Grant were Alessio Grifoni, University of Padova, and Matthew Gadlage, Vanderbilt University.

Alessio Griffoni received the B.S. degree in Information Engineering, the M.S.

degree (summa cum laude) in Electrical Engineering, and the Ph.D. degree (with the distinction of Doctor Europaeus) in Information Science and Technology from the University of Padova in September 2004, July 2006 and February 2010, respectively.

From January 2008 until May 2009 he was guest researcher at the Interuniversity Microelectronics Center (imec), Leuven, Belgium, working on the electrostatic design and discharge characteristics of multigate FinFET devices, supporting the APROTHIN project of the European Community. Since March 2010 he has been with imec and the Electrical Engineering Department, Katholieke Universiteit, Leuven as a postdoctoral research fellow.

He has published over 35 conference and journal papers. He received the Best Student Paper award at the 2008 EOS/ESD Symposium. He is a member of the IEEE and the ESD Association. He has served on the technical program committee of the 2010 EOS/ESD Symposium and is a peer reviewer for *Solid State Electronics*.

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Alessio Grifoni
2010 Phelps Grant Recipient

FUNCTIONAL COMMITTEES



Mathew Gadlidge
2010 Phelps Grant Recipient

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Professor Alessandro Paccagnella of the Department of Information Engineering, University of Padova, nominated him for the Phelps Grant.

Matthew Gadlage received his B.S. in electrical engineering (summa cum laude) from the University of Evansville and his M.S. in electrical engineering from Vanderbilt University. Since 2002, he has been a member of the Radiation Sciences Branch at Crane Naval Surface Warfare Center. In 2007, he joined the Radiation Effects and Reliability Research Group

at Vanderbilt University to pursue his Ph.D. in electrical engineering. Matthew recently completed his Ph.D. in May of 2010. His Ph.D. dissertation dealt with the impact of temperature on single-event transients (SETs) in deep submicron bulk and SOI technologies. He has authored or co-authored over 30 papers including the best paper at the 2007 RADECS. Matthew has also been an author or co-author of 20 papers presented at NSREC from 2003 to 2010. He was nominated by his Ph.D. research advisor, Dr. Ronald Schrimpf.



Pascale Gouker
Radiation Effects Technical Committee
member-at-large

RADIATION EFFECTS TECHNICAL COMMITTEE

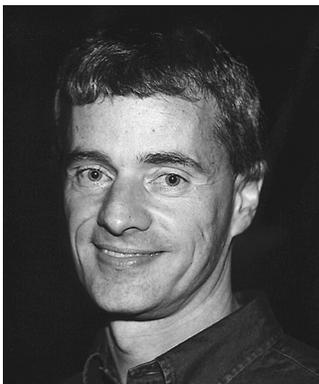
CALL FOR NOMINATIONS

Nominations are due January 31, 2011 for awards presented at the IEEE NSREC 2011 conference July 25-29 in Las Vegas, Nevada.

RADIATION EFFECTS AWARD NOMINATIONS

Nominations are currently being accepted for the 2011 IEEE Nuclear and Plasma Sciences Society (NPSS) Radiation Effects Award. The purpose of the award is to recognize individuals who have had a sustained history of outstanding and innovative technical and/or leadership contributions to the radiation effects community. The \$3000 cash award and plaque will be presented at NSREC in Las Vegas. Nomination forms are available electronically at <http://www.nsrec.com/nominate.htm> and must be submitted by January 31, 2011.

Additional information can be obtained from Michael Xapsos, Member-at-Large for the Radiation Effects Steering Group. Michael can be reached at 301-286-2263 or at Michael.a.xapsos@nasa.gov



Michael Xapsos
Radiation Effects Technical Committee
member-at-large

PAUL PHELPS STUDENT GRANT NOMINATIONS

Nominations are currently being accepted for the 2011 Paul Phelps Continuing Education Grant. The purpose of the grant is to promote continuing education (attendance at the 2011 NSREC Short Course) and encourage membership in NPSS. University professors may nominate outstanding student members of NPSS. Unemployed members of NPSS who need assistance in changing careers can also be nominated for the award. The \$500 cash award will be distributed before the 2011 NSREC in Las Vegas, so that the award recipient can apply the funds towards covering tuition and/or travel costs to the short course.

Nomination forms are available electronically at <http://www.nsrec.com/steering.htm> and must be submitted by January 31, 2011.

Additional information can be obtained from Pascale Gouker, Member-at-Large for the Radiation Effects Steering Group. Pascale can be reached at 781-981-0460 or at pgouker@ll.mit.edu.

Constitution and Bylaws Committee

The mandated five-year review of the NPSS Constitution and Bylaws has been completed, and the revisions are scheduled to be approved by AdCom at its Annual Meeting on Nov. 6 in Knoxville, TN. These revisions are intended to update the NPSS governing documents to amend or clarify some provisions and to reflect changes that have occurred since the previous revision was ratified in 2007.

The NPSS Fields of Interest statement was shortened and simplified, in order to comply with a TAB directive that the FOI statement is limited to 75 words. A Graduates of the Last Decade (GOLD) Committee was added to the list of NPSS Functional Committees,

and the duties of the Conferences Committee (previously called the Conference Policy Committee) were redefined to give it additional responsibility over the management of NPSS-sponsored conferences. The requirement that ballots must be sent in sealed envelopes was eliminated to permit the use of electronic ballots in Society elections. One significant change allows Appointive Standing Technical Committees to have their Bylaws approved by AdCom. Such approved Bylaws can contain a provision designating voting alternates who may attend AdCom meetings in place of the Chair of the Technical Committee. Previously, this privilege was only

available to Elective Committees. Also, the distribution of AdCom memberships among the eight Technical Committees is currently determined by a periodic survey of member interest. The frequency of the survey will now be explicitly stated as every five years. In addition, a number of minor housekeeping changes were made, in order to clarify administrative practices. For instance, it is now stated that the responsible officers of a conference can be members either of the NPSS or of another cosponsoring IEEE Society. Also, the provisions dealing with the removal of AdCom members from office for nonattendance at meetings, and with amendments to the Constitution or Bylaws by petition, have been rewritten to clarify these procedures.

IEEE Nuclear & Plasma Sciences Society Constitution and Bylaws November 2010

CONSTITUTION

Article I—Name and Object

Section 1. This organization shall be known as the IEEE Nuclear and Plasma Sciences Society.

Section 2. The Society's purpose shall be scientific and educational in character. The Society shall strive for the advancement of the theory and practice of electrical and electronic engineering and of the allied arts and sciences and for the maintenance of high scientific and technical standards among its members, all in consonance with the Constitution and Bylaws of the IEEE and with special attention to such aims within the field of interest of the Society, as hereinafter defined.

Section 3. The Society shall aid in promoting close cooperation and exchange of technical information among its members and affiliates, and, to this end, shall hold meetings for the presentation and discussion of original contributions, shall publish transactions reporting advances within the scope of the Society, and, through its committees, shall study and

otherwise provide for the needs of its members and affiliates.

Article II—Field of Interest

Section 1. The fields of interest of the Society are the nuclear and plasma sciences and related emerging technologies. Areas of technical activity include: computer applications in nuclear and plasma sciences; fusion technology; nuclear medical and imaging sciences; radiation instrumentation; radiation effects; particle accelerator science and technology; plasma science and applications; pulsed power science and technology; and nuclear power instrumentation and control systems.

Section 2. The Society shall devote itself to publication or other dissemination of original contributions to the theory, simulation, experiments, educational methods and applications of these fields, and to the development of standards. The process for modifying the Field of Interest shall be in accordance with the procedures in the TAB Operations Manual and the procedure defined in Article VIII of this Constitution.

Article III—Membership

Section 1. Membership in the Society shall be available to all members of the IEEE having an interest in the nuclear or plasma sciences.

Section 2. Affiliates may participate in the activities of the Society as provided by the IEEE Bylaws and subject to the applicable IEEE rules and regulations and to any additional limitations imposed by the Society Bylaws.

Article IV—Finances

Section 1. The Society shall collect from each member and affiliate an assessment or fee in accordance with IEEE Bylaws and applicable rules and regulations. The amount of the fees shall be established by the NPSS AdCom.

Section 2. The Society may make registration charges at its technical meetings, symposia, conferences, and conventions. The registration fee for non-members of the IEEE shall normally be higher than for members.

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FUNCTIONAL COMMITTEES

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Section 3. The Society may raise revenues by other means such as, but not limited to, advertising, shows, requests for contributions, and charges for sending out notices to non-Society members, and by publishing transactions, conference proceedings and other technical documents provided such means are consistent with applicable IEEE rules and regulations.

Section 4. The fiscal year of the society shall be the same as for the IEEE.

Article V—Administration

Section 1. The Society shall be managed by an Administrative Committee (AdCom) consisting of 16 directly elected members, plus certain ex officio members, including the Chairpersons of each Standing Technical Committee, as specified herein and in the Bylaws. The number of directly elected members shall always exceed the number of ex officio members with voting rights.

Section 2. The terms of office of the directly elected members shall be four years. Elections of members shall be held annually to fill vacancies for the coming year. The terms of office of the ex officio members shall be specified in the Bylaws.

Section 3.

(a) The affairs of the Society shall be managed by the President, as directed by the AdCom and in accordance with the powers and duties as defined hereunder and in the Bylaws. In the event of the President's prolonged absence or incapacity, the Vice-President shall take over the presidential duties until the President is able to resume his responsibilities. In the event the Vice-President is unable, then the most recent Past-President shall perform the presidential duties, until either the President or the Vice-President is able to take the presidential duties.

(b) The President shall appoint a Secretary and a Treasurer for the Society, and persons to fill other roles as called for in the Bylaws or as needed.

Section 4.

(a) The President and Vice-President shall be elected for coincident two-year terms by the voting members of the AdCom from among the eligible members of the AdCom. These elections of President and Vice-President shall be held as defined in the Bylaws.

(b) All directly elected AdCom members are eligible for election as President or Vice-President. In addition, the Vice-President is eligible for election as President. No individual

may be elected to two successive terms as President.

(c) In the event the Vice-President is required to complete the term of the President, the Vice-President will be eligible to run for President in the next full-term election.

(d) In the event that neither the President nor Vice-President is able to take office as prescribed in the Bylaws, or if both are incapacitated, or if both offices become vacant for a period greater than 60 days, the AdCom (under the direction of the most recent Past President) shall promptly elect an Acting President from among the eligible elected members to assume the duties of President until either the President or Vice-President takes or resumes office, or until the next election.

(e) The NPSS Vice-President will, except under circumstances deemed unusual by a majority of the voting members of AdCom, become the sole nominee for the succeeding NPSS Presidential election.

Section 5. The AdCom shall utilize the services of IEEE Headquarters as bursar for Society funds as provided by the IEEE Bylaws, rules, and regulations. If any part of the Society funds are received and deposited separately, the terms and conditions shall be in accordance with IEEE policies and subject to the provisions of Society Bylaws and to any special limitations that may be imposed by the AdCom.

Section 6. The President shall be an ex-officio member of all committees of the Society. As a member of the IEEE Technical Activities Board (TAB), the President shall ensure appropriate representation of the Society at IEEE and TAB meetings by personal attendance, or by ensuring that one of the alternates defined in Section 3(a) attends TAB meetings. Failing this, the President should designate a representative from the ExCom, as described in the Bylaws.

Section 7. The work of the Society shall be conducted through the AdCom and through both standing and ad hoc committees as provided herein and in the Bylaws.

Section 8. The President shall appoint the Chairs of the standing Functional Committees provided in the Bylaws. Other special or ad hoc committees may be authorized and appointed by the President.

Section 9.

(a) Standing Technical Committees may be administered by either elected or appointed

committee officers as specified herein and in the Bylaws.

(b) Each Appointive Standing Technical Committee shall be directed by a Chair who shall be appointed or reappointed annually by the President of the Society as specified in the NPSS Bylaws. Appointive Standing Technical Committees are encouraged to prepare a Constitution and Bylaws, which shall be reviewed and approved by the AdCom upon request.

(c) Each Elective Standing Technical Committee shall consist of at least 15 members and shall be governed according to a written Constitution and Bylaws approved by the committee and by the AdCom which shall include the following:

- (1) Provision for periodic election of officers;
- (2) Provision for amendment of their Constitution and Bylaws subject to the approval of the AdCom;
- (3) A statement of criteria for membership.

Section 10.

Any AdCom member may be removed from office if he fails to perform his duties in a manner that is consistent with the best interests of the IEEE and NPSS. This prerogative of AdCom should be exercised after due circumspection and only in extreme cases and always with great caution.

(a) Appointed AdCom Members: All Presidential appointees, including Chairpersons of Appointive Technical Committees, serve at the pleasure of the President, and as such can be removed from office by the President. An appointed member of AdCom can also be removed, for cause, by affirmative vote of two thirds of the voting members of AdCom present at an AdCom meeting, provided a quorum is present.

(b) Elected AdCom members: A petition signed by a minimum of five voting AdCom members is necessary to initiate the removal process and the petition must include the name of the member to be removed, the position in question, and a description of the grounds for removal. Upon receipt of the petition, the Secretary will notify all AdCom members that such a petition has been received, notify the member in question, and give that member 30 days to provide a written response. After this period, the Secretary will send a ballot that includes the statement of the grounds for removal and its rebuttal to each voting AdCom member. The ballots will be returned to the Secretary who will tally the votes 30 days after the ballots were sent.

FUNCTIONAL COMMITTEES

Should a minimum of two-thirds (2/3) of the eligible voting AdCom members vote in favor of removal, then the member in question will be removed from office immediately. In the event that the Secretary is the member in question, the President will designate an alternate AdCom member to perform the duties assigned to the Secretary in this Section.

Article VI—Nomination and Election of Administrative Committee Members

Section 1. Nominating procedures shall be as prescribed in the Bylaws and shall include provision for nomination by petition of Society members. Those nominated by petition shall be included on the ballot and shall be so identified. To be considered as part of the slate of candidates for any position, a petition must contain the original signatures of a minimum of 2% of the eligible Society members. The number of signatures required on a petition shall depend on the number of eligible society voters as listed in the official IEEE membership records at the end of the year. Signatures can be submitted by signing and mailing a paper petition or electronically through the official IEEE annual election website. The name of each member signing the petition shall be clearly printed or typed. For identification purposes, signatures on paper petitions shall be accompanied by membership numbers or addresses as listed in the official IEEE membership records. Only signatures submitted electronically through the IEEE annual elections website or original signatures on paper petitions shall be accepted. Facsimiles or other copies of the original signature shall not be accepted.

Section 2. The election process of the members of the AdCom shall be as prescribed in the Bylaws.

Section 3. If a member of the AdCom does not complete a term, the vacancy shall be filled at the next AdCom election if more than one year remains in the term. Otherwise, the President will appoint a replacement for the remainder of the term. When an AdCom member is elected or appointed for a partial term, that person is eligible to run for the next full-term election for the same position.

Article VII—Meetings

Section 1. The Society may hold meetings, conferences, symposia or conventions either alone, with other IEEE organizational units, or in cooperation with other organizations subject to applicable IEEE rules and regulations.

Section 2. Technical meetings, conferences, symposia, and conventions of the Society shall be open on an equal basis to all members of the IEEE. The Society may not sponsor or cosponsor a meeting that is in any way subject to limitations on attendance by members for reasons other than availability of space.

Section 3. A majority of the voting members of AdCom or any committee thereof shall constitute a quorum.

Section 4. The vote of a majority of the members present and entitled to vote, at the time of a vote, provided a quorum is present, shall be the act of the AdCom, or any committee thereof, except when the Constitution or Bylaws requires a greater majority.

Section 5. The AdCom or any committee thereof may meet, vote, and take action by any means of concurrent telecommunication. The normal voting requirements for quorum and majority shall apply when action is taken by any means of telecommunications equipment allowing all the persons participating in the meeting to hear each other at the same time.

Section 6. The AdCom or any committee thereof may take action using non-concurrent means of telecommunication (e.g. by email), provided that relevant information is made available to all members and all members have an opportunity to participate. An affirmative vote of a majority of all the voting members of the AdCom or any committee thereof shall be required to approve the action. The results of the vote shall be confirmed promptly in writing or by electronic transmission. The writings and/or electronic transmissions shall be filed with the minutes of the next meeting of the AdCom or any committee thereof. “Electronic transmission” means any form of electronic communication, such as email, not directly involving the physical transmission of paper, that creates a record that may be retained, retrieved, and reviewed by a recipient thereof, and that may be directly reproduced in paper form by such a recipient.

Section 7. The AdCom shall meet as required to conduct business and in accordance with the Bylaws. Meetings of the AdCom shall generally follow Robert’s Rules of Order, except where superceded by the NPSS Constitution or Bylaws.

Section 8. Proxy voting is not allowed.

Section 9. Individuals holding more than one position on the AdCom, or any committee thereof, shall be limited to one vote on each

matter being considered by the AdCom or committee.

Article VIII—Amendments

Section 1. Amendments to the Constitution may be initiated by approval by a two-thirds (2/3) vote of the AdCom at an AdCom meeting provided that notice of the proposed amendment to the Constitution has been sent to each member of the AdCom at least three weeks prior to such meeting. After such approval, the proposed amendment shall be publicized in the Society Newsletter, with notice that it will be submitted to the Technical Activities Board and to the Executive Committee of the IEEE for final approval unless 25 Society members object within 60 days of the date of mailing of the notice. If such objections are received, the AdCom may reconsider its recommendation, or a copy of the proposed amendment shall be mailed with a ballot to all members of the Society at least 45 days before the date set for the return of the ballots; the ballots shall carry a statement of the postmark deadline for their return to the IEEE office. Voting by electronic ballot may be conducted. When a vote, as prescribed by IEEE procedures, of the entire Society membership is made necessary, approval of the amendment by at least two-thirds (2/3) of the ballots returned shall be necessary for its enactment. If approved by Society members, the proposed amendment will be submitted to the Technical Activities Board and to the Executive Committee of the IEEE for final approval. The amendment shall take effect immediately after approval by the IEEE Technical Activities Board. If the amendment changes the membership of AdCom, the then current AdCom members will continue to serve until their terms expire.

Section 2. Amendments to the Constitution and Bylaws may also be initiated by a petition submitted by twenty-five members of the Society to the President or Secretary of the Society who shall immediately notify the AdCom of the proposed amendments and these shall be considered at the next AdCom meeting held at least three weeks following the notice to the AdCom members. Should the AdCom approve the amendments by at least a two-thirds (2/3) vote, the amendments will be implemented as in Section 1. In the event that the necessary majority is not attained, then the amendments, together with any supporting material from the members proposing the amendments and a

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FUNCTIONAL COMMITTEES

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summary of the AdCom position prepared by the President or designee, shall be published in the next Society Newsletter. Following publication, a ballot of all Society members shall be held, as described in Section 1, and the subsequent steps outlined there shall be followed.

Section 3. Society Bylaws and amendments thereto may be adopted by a two-thirds (2/3) vote of the AdCom, provided that notice of the proposed Bylaw or amendment has been sent to each member of the AdCom at least three weeks prior to the meeting at which the vote is held; or a Society Bylaw, or amendment, may be adopted by a two-thirds written vote of the eligible voting members of the AdCom, provided a two week period is provided for such responses. In either event, the proposed Bylaw or amendment shall be published in the Society Newsletter. The revision to the bylaws will take effect following Society AdCom approval, publication in the Society Newsletter and filing with, and acknowledgment by the Secretary of the Technical Activities Board.

Article IX—Publications

Section 1. The Society shall support a program by which Transactions, Conference Proceedings, newsletters, and other forms of publication appropriate to the Society's activities and fields of interest are published and distributed. Publications undertaken by the Society shall be subject to IEEE policies and to further guidance and controls prescribed by the AdCom or its duly appointed committees.

Section 2. All publications of the Society shall have unrestricted circulation, subject only to the payment of appropriate fees. Circulation of Society publications to non-members shall be subject only to the payment of appropriate fees or charges.

Section 3. The President with the advice of the AdCom shall appoint a Publications Chair to oversee the publication program and to assure financial soundness and maintenance of schedules and format standards. The responsibility for the technical content of any Transactions shall be controlled by that Transactions' Editor-in-Chief, who shall be nominated by the Publication Committee Chair or by the Society President and approved by the AdCom.

Article X—Periodic Review

Section 1. The President shall appoint 5 members of the AdCom every five years beginning in 2005

to evaluate the effectiveness and currency of this Constitution and Bylaws, to study the rules and governance required by the activities of the Society at that time, and to define the changes appropriate to the existing and anticipated needs of the Society. The committee will be chaired by the Vice-President, and will submit a report on proposed revisions to the Constitution and Bylaws in time for action by AdCom no later than the last AdCom meeting of the year.

BYLAWS

1. Membership: There shall be two grades of Society membership: Student Members and Higher Grade Members. Student Members of the IEEE may become Student Members in the Society upon payment of the fee specified in Bylaw 3. Student members shall have all the rights and privileges of Society membership with the exception of the right to vote and to hold office. Members of the IEEE in all grades may become members of the Society upon payment of the fee specified in Bylaw 3. Life members dues are waived as provided in IEEE Bylaws.

2. Affiliates: Non-members of the IEEE who are members of certain other organizations accredited by the IEEE as provided in IEEE Rules and Regulations may become affiliates of the Society upon payment of the fees specified in Bylaw 4. The rights of Affiliates shall be as specified by IEEE rules, regulations, and policies.

3. Membership Fees: The assessment or fee for membership in the Society shall be established by the AdCom. It will include the NPSS Newsletter.

4. Affiliate Fees: Affiliates shall pay the fee or assessment specified in IEEE rules and regulations.

5. Administrative Committee: Article V of the Constitution provides that the AdCom shall consist of 16 directly elected members, plus certain ex-officio members. The ex-officio members of the AdCom shall be the President, Vice-President, most recent Past President, the Chairs of the Standing Technical Committees, the Chairs of Standing Functional Committees, Secretary, Treasurer, Liaison Representatives for Standards and IEEE-USA, Editors-in-Chief of the Transactions, Editor of the Newsletter, Publications Chair and other ex-officio members as provided for in the IEEE Constitution.

5.1. The voting members of the AdCom shall be the elected members, President, Vice-President, most recent Past-President, and the Chairs of the Technical Committees. The presiding officer of the AdCom meeting shall not cast a vote unless

(1) the vote is by secret ballot or (2) his or her vote can change the outcome of the vote.

5.2. The AdCom shall meet at least three times per year, upon dates proposed by the President and approved by the AdCom, at least three weeks in advance of the meetings. Additional meetings may be called at the discretion of the President or upon request of at least twelve (12) voting members of the AdCom with at least three weeks notice.

5.3. AdCom meetings are open to visitors. Visitors to AdCom meetings may be granted the privilege of the floor at the discretion of the meeting's presiding officer or by action of the AdCom. Visitors can be removed from AdCom meetings at the discretion of the meeting's presiding officer.

5.4. The final regularly scheduled meeting in the calendar year is designated the Annual Meeting. Each standing committee shall provide a written report of its activities at the annual meeting and at additional times as appropriate.

5.5. Any directly elected member who misses three successive meetings shall be automatically dropped from AdCom, unless AdCom votes at that third meeting to waive this provision for good cause. At AdCom's discretion, such waiver can also apply to additional missed meetings.

6. Nomination and Election of the

Administrative Committee: The Nominating Committee shall be chaired by the most recent Past President and shall nominate candidates for all directly elected positions on the AdCom. In the event of the incapacity or conflict of interest of the Chair, the most recent Past Chair of the Nominating Committee available shall be the Chair of the Nominating Committee. With extenuating circumstances, a different individual may be appointed to this position.

6.1. At least two thirds of the voting members of the Nominating Committee shall be voting members of the AdCom. Apart from the Chair, the Nominating Committee shall include all the Technical Committee Chairs. A Technical Committee Chair may, in consultation with the relevant Technical Committee and the President, name a replacement to serve on the Nominating Committee.

6.2. The number of vacancies for elected members to the AdCom shall be the difference between the number authorized in Article V, Section 1, of the Constitution and the number with continuing terms. The Transnational Functional Committee will be allocated one

FUNCTIONAL COMMITTEES

directly elected AdCom member. The vacancies shall be allocated into categories corresponding to the Standing Technical Committees with the number of vacancies per category chosen to maintain representation among AdCom membership in proportion to the NPSS membership technical interests as determined by periodic surveys to be conducted at least every five years. The Nominating Committee shall submit a slate of at least two names for each vacancy to be filled.

6.3. The Chair of the Nominating Committee shall assure that, before April 1, a call for nominations is conveyed to the whole membership either through the Newsletter or through a separate mailing. Nominations must be submitted to the Chair of the Nominating Committee on a nomination form that includes a statement of the willingness and ability of the nominee to serve if elected, the membership status of the nominee in IEEE and NPSS, a short biography and a statement of the issues that the candidate wishes to address as an AdCom member. Additional nominations for the available category vacancies may be submitted to the Society President using the same nomination form, before June 1 upon petition signed by a **minimum of 2% of the Society members in good standing or by 5 members of the AdCom.** Only written signatures can be accepted on the petition.

6.4. The Chair of the Nominating Committee shall ensure that the committee determines the slate of nominees by July 1.

6.5. Current elected members of the AdCom and current Nominating Committee members are ineligible for nomination by the Nominating Committee or by petition. Per IEEE requirements, Associates may not be nominated for Society offices, though they may vote in society-wide elections.

6.6. All nominees and petition candidates must be members in good standing of the Nuclear and Plasma Sciences Society and the IEEE.

6.7. The Chair of the Nominating Committee shall annually arrange for the distribution (through IEEE Headquarters) to the members of the Society, on or about July 31, of a ballot to elect the candidates to fill vacancies on the AdCom. The names on the ballot shall be followed by an indication of the method of nomination, whether by committee nomination or by petition. The names of the nominees shall be labeled by categories corresponding to the

Standing Technical Committees. The ballot shall be accompanied by a short biographical sketch and position statement prepared by each nominee or petition candidate.

6.8. Six weeks after distribution of the ballots, the IEEE Headquarters shall count and tabulate the votes received and report the results to the AdCom. The candidate with the most votes in each category shall be elected.

6.9. Election of the President of AdCom: An election for President will be held by written ballot before the final AdCom meeting of the even-numbered years. The ballot for election of the President will indicate two choices: 1) the current Vice-President and 2) an indication that an open election is desirable. The ballots shall be distributed by the Chair of the Nominating Committee to all voting members of AdCom for return to the Secretary of AdCom 30 days prior to the final AdCom meeting of the year. The Secretary of AdCom is responsible for counting the ballots and the Chair of the Nominating Committee will independently count the ballots and verify the tally. The Secretary of the AdCom will announce the results of the election. Should the Vice-President fail to receive a majority of the votes on the returned ballots, then AdCom will itself determine a slate of candidates for President and vote at the final AdCom meeting.

6.10. Nomination and Election of the Vice-President of AdCom: The Nominating Committee shall determine a slate of candidates for Vice-President according to the guidelines set forth in Article V, Section 4 of the Constitution. In selecting candidates for the NPSS Vice-President, the Nominating Committee will ensure that those candidates shall be eligible for and will, barring unforeseen circumstances, be willing to serve for the full terms of all succeeding positions (two years as Vice-President, two years as President, and two years as the most recent Past President). The slate of candidates for Vice-President will appear on the same ballot as the election for President (specified in Bylaw 6.9) and will be subject to the same election schedule. In the event that there are more than two candidates for Vice President, the election shall be carried out using an instant runoff voting procedure, in which each voter shall rank the candidates numerically on the ballot, beginning with the number one for the first choice, and runoff counts of the candidates shall be conducted in rounds. If, in any round, no candidate receives a majority of the votes cast, the candidate (or candidates, if there is a tie) with the fewest number of votes

shall be eliminated and the remaining candidates shall advance to the next round. In each round, a voter shall be considered to have cast one vote for the candidate the voter ranked highest on the ballot who has not been eliminated in a previous round. In the event that this procedure does not produce a clear majority for any candidate, AdCom will choose the winner by a majority vote at the AdCom meeting.

6.11. Executive Committee (ExCom): An executive committee consisting of the President, Vice-President, Past President, Secretary, Treasurer and any other current members of AdCom, whether voting members or not, who have held the position of President, shall form the ExCom.

6.12. The ExCom shall advise the President on issues that the President or other members of the ExCom choose to raise between meetings of the AdCom. Business shall generally be conducted by telephone, e-mail, or similar means of communication. In exceptional circumstances, the President can call a meeting of the ExCom. ExCom meetings are closed to visitors and communications of the ExCom are private.

7. Standing Technical Committees: The Standing Technical Committees of the Society shall be:

The Computer Applications in Nuclear and Plasma Sciences Committee

The Fusion Technology Committee

The Nuclear Medical and Imaging Sciences Committee

The Particle Accelerator Science and Technology Committee

The Plasma Sciences and Applications Committee

The Pulsed Power Science and Technology Committee

The Radiation Effects Committee

The Radiation Instrumentation Technical Committee

7.1. Standing Technical Committees may be of either of two forms, elective or appointive, in accordance with Article V, Section 9, of the Constitution of the Society.

7.2. The Chairs of Standing Technical Committees shall be members in good standing of the Nuclear and Plasma Sciences Society and the IEEE.

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7.3. The terms of office of the Chairs of elective Standing Technical Committees shall be in accordance with the rules of each committee except that no Chair shall serve consecutively for more than three years or for two conferences when the technical committee has conferences every two years.

7.4. The President of the Society shall, in consultation with the Technical Committee, appoint the Chairs of the appointive Standing Technical Committees for a term of one year. A Chair may not serve consecutively for more than three years except in the case where a conference is held less frequently than annually and the appointive Standing Technical Committee requests to have their Chair serve for two of the conferences. In such cases, a fourth year is permissible.

7.5. The Chairs and the Vice-Chairs of elective Standing Technical Committees shall be elected by the respective committees. The name of the Chair and the Vice-Chair so elected shall be transmitted along with a notification of the length of term of office to the Secretary of the AdCom by the outgoing Chair of each elective Technical Committee as soon as is expedient after election.

7.6. An Appointive Standing Technical Committee shall gain elective status by presenting a petition requesting such status signed by at least 15 members of the Committee, which shall demonstrate that the requirements of Article V, Section 9 of the Constitution have been met. Approval of the elective status of a Standing Technical Committee shall be processed as an amendment to the Bylaws in accordance with Article VIII of the Constitution.

7.7. Standing Technical Committees may be created or changed by amending the Bylaws in accordance with Article VIII of the Constitution.

7.8. The Standing Technical Committee shall take the initiative in their respective fields of interest on behalf of the Society.

7.9. Each of the Standing Technical Committees shall as a minimum submit a written report of its activities to the AdCom prior to the final meeting of each year. The membership and activities of the Standing Technical Committees will be publicized to the membership of the Society via the Newsletter, Transactions or on the Society website, and suggestions for committee

membership will be invited from Society members and chapters.

7.10. Status and Fields of Interest of Standing Technical Committees:

7.10.1. The field of interest of the Appointive Computer Applications in Nuclear and Plasma Sciences Committee shall include real-time and off-line computer systems, including hardware and software aspects of data acquisition, data analysis, data storage, and control, in any and all of the technical disciplines covered by the Society.

7.10.2. The field of interest of the Appointive Fusion Technology Committee shall include the engineering aspects of controlled fusion research and fusion reactor technology.

7.10.3. The field of interest of the Elective Nuclear Medical and Imaging Sciences Committee shall include radiation sources and detectors, radiation standards and monitoring, scanning and imaging systems, including image reconstruction and analysis.

7.10.4. The field of interest of the Appointive Particle Accelerator Science and Technology Committee shall include the theory, design, construction and operation of nuclear particle accelerators, their beam diagnostics, and their applications in high energy particle physics, low energy nuclear physics, radiation sources and general technology.

7.10.5. The field of interest of the Elective Plasma Science and Applications Committee shall include plasma science and engineering, including: magnetofluid dynamics and thermionics; plasma dynamics; gaseous electronics and arc technology; controlled thermonuclear fusion; electron, ion, and plasma sources; space plasmas; high current relativistic electron beams; laser-plasma interactions; diagnostics; plasma chemistry, plasma processing and colloidal and solid state plasmas.

7.10.6. The field of interest of the Appointive Pulsed Power Science and Technology Committee shall include the understanding, development and applications of pulsed power to plasma physics, nuclear science and related fields.

7.10.7. The field of interest of the Elective Radiation Effects Committee shall include the effects of radiation on materials, components and systems.

7.10.8. The fields of interest of the Elective Radiation Instrumentation Technical Committee shall include sensors, electronic instrumentation, and systems for the measurement of ionizing

radiation and high-energy particles with the emphasis on the tools, not the results of experiments using these tools.

8. Functional Committees: The President of the Society shall appoint the Chairs of the following Standing Functional Committees:

- Awards Committee
- Chapters and Local Activities Committee
- Communications Committee
- Fellow Committee
- Finance Committee
- Conferences Committee
- Membership Committee
- Standards Committee
- Graduates of the Last Decade (GOLD) Committee

The remaining Functional Committees have their Chairs' functions defined elsewhere in the Constitution or Bylaws:

- Nominating Committee
- Publications Committee
- Transnational Committee

8.1. Except where otherwise specified in the Bylaws, each committee Chair shall appoint the members of the committee.

8.2. The terms of office of Chairs of Standing Functional Committees shall be one year.

8.3. The Chairs of Standing Functional Committees shall be members in good standing of the Nuclear and Plasma Sciences Society and the IEEE.

8.4. Awards Committee: Solicits nominations for the various awards made by the Society, evaluates the nominees and selects those to whom the awards will be made. The Chair of the Awards Committee serves as the NPSS liaison to the TAB Awards and Recognition Committee.

8.5. Chapters and Local Activities Committee: Provides organization and program assistance, especially with respect to conferences, educational activities and the Speakers Bureau, to support and motivate existing Chapters. Promotes and assists in the creation of new Chapters in collaboration with the appropriate IEEE Section or Council Chairs.

8.6. Communications Committee: Prepares and maintains promotional material for membership recruitment and other purposes as required. The Communications Committee is responsible

FUNCTIONAL COMMITTEES

for the maintenance of the web site for both membership promotion and to publicize NPSS activities either directly or through links to conference, publication, and other web sites.

8.7. Fellow Committee: Evaluates the credentials of and ranks the IEEE Fellow Candidates referred to the NPSS for evaluation. The committee shall follow the procedures and guidelines established by the IEEE Fellow Committee.

8.8. Finance Committee: Monitors the financial status of the Society and reports any developing trends along with recommended actions, conducts financial studies and analyses on any Society or IEEE issues having financial implications for the Society, and reports on these matters regularly at AdCom meetings.

8.9. Conferences Committee: Responsible for recommending policies and procedures to AdCom for all conferences and symposia for which the NPSS takes either full or partial responsibility and for ensuring compliance with IEEE conference policies as stated in the IEEE Conference Organizers Manual. In addition, provides assistance in the planning, operation and closeout of sponsored or technically cosponsored conferences as needed, and serves as a liaison between conference organizers and IEEE Meetings and Conference Management.

8.10. Membership Committee: Responsible for encouraging and recruiting new Society members and Society affiliation by inviting IEEE members who have an interest in NPSS activities, by generating interest among non-IEEE members, and by making application forms available and soliciting memberships at appropriate meetings and symposia.

8.11. The Nominating Committee: The Nominating Committee shall be formed and administered according to the Bylaws pertaining to nominations. The Nominating Committee develops a slate of nominees for the directly elected member positions on the AdCom that become vacant each year and recommends candidates for Vice-President of the Nuclear and Plasma Sciences Society.

8.12. Publications Committee: Reports to AdCom on all publications activities sponsored by the NPSS. In particular, proposes an annual budget for each publication and brings to AdCom's attention any proposed new initiatives for discussion and possible approval. Also keeps AdCom apprised of IEEE publications policies and procedures and is responsible for ensuring

that NPSS publications follow these policies and procedures. The Publications Committee shall be chaired by the Publications Chair, and include the Editor-in-Chief of the Transactions on Nuclear Science, the Editor-in-Chief of the Transactions on Plasma Science, the Editor of the Newsletter, and the Treasurer of the Society.

8.13. Standards Committee: Responsible for all activities related to standards for the technical areas associated with this Society. This includes proposing, developing, and maintaining standards for measurement techniques and tests of devices of general interest to manufacturers, developers, and users.

8.14. Transnational Committee: The purpose of this committee is to foster the involvement in NPSS activities of people from countries other than the United States and Canada. The directly elected member representing the Transnational Committee is the Chair for this committee. Candidates for this position may not be from the United States or Canada.

8.15. Graduates of the Last Decade (GOLD): The purpose of the GOLD committee shall be to advocate for the needs, interests and professional development of members who have entered the profession within the last 10 years.

9. Disbursements: Disbursement from Society funds shall be on the authority of the treasurer as directed by the AdCom, and in accordance with established procedures and policies of the IEEE. The President and AdCom may authorize the Treasurer to disburse funds to defray legitimate expenses incurred by the Chairs and members of the Standing Technical and Functional Committees and others in connection with required attendance at official Society, IEEE or other meetings and the costs of publications. Such expenditures must be approved by the President before being incurred.

9.1. The compensation and expense allowance of the Publications Chair and the Editors-in-Chief of the Transactions and Editor of the Newsletter shall be reviewed annually as a part of the preparation of the annual budget by the Treasurer and shall be approved by the AdCom as part of the budget approval.

10. Ballots: All ballots, for purposes of election of members of AdCom or changes in the Constitution, shall be issued to all voting members of the NPSS on instructions of the Chair of the Nominating Committee pursuant to action by the AdCom. Ballots for directly elected AdCom members will direct Society members to

only vote for candidates of Standing Technical Committees of which they are members or in which they are active. No ballot shall be counted unless unambiguously marked by a qualified voter to indicate a choice and received on or before the specified deadline date. This specified deadline date shall be at least six weeks subsequent to the date of mailing of the ballots. The counting of the ballots shall be entrusted to IEEE Headquarters. The Chair of the Nominating Committee shall report the results to the AdCom.

11. Beginning of Terms of Office: All terms of office of elected members of the AdCom shall begin January 1 of the year immediately following their election, except in the case where an elected member of AdCom does not complete a term of office. In this special case, the term of office of the replacement will begin immediately after the results of the election are known.

12. Meetings: The Society may not organize or sponsor a meeting, conference, symposium, or session thereof without consulting the Chair of the Conferences Committee. Conference officers with fiduciary responsibility must be members in good standing of the IEEE NPSS or of another cosponsoring IEEE society of that conference.

13. Alternates:

13.1. The Chair of a Standing Technical Committee may designate any member in good standing of the Society to represent the Standing Technical Committee at AdCom meeting. The representative shall have the privilege of the floor, but may not vote on any matters coming before AdCom.

13.2. The Constitution and Bylaws of an Elective Standing Technical Committee, or the Constitution and Bylaws of an Appointive Standing Technical Committee that has been approved by AdCom, may include a provision that a specified Committee officer can, when needed, serve as an alternate for the Chair at AdCom meetings. This alternate has the privilege of the floor and may vote on all matters coming before AdCom.

13.3. The Transnational Committee Chair may nominate a Vice-Chair to be appointed by the President, and approved by AdCom. The Vice-Chair may serve as an alternate for the Chair at AdCom meetings. In the capacity of alternate, the Vice-Chair has the privilege of the floor and may vote on all matters coming before AdCom.



Ray Larsen
Co-chair Community
Solutions Initiative

Reliable Electricity Humanitarian Group Prepares for Construction, Deployment of Mobile Generators

Employment, not Charity

The Humanitarian Technology Challenge subgroup for Reliable Electricity has developed a Community Solutions model that will directly benefit people around the world who have never had access to grid electricity in their homes. Most depend on kerosene lamps and candles for lighting. The group, now called Community Solutions Initiative (CSI), has a new home under the Power and Energy Society of IEEE, and a website, <http://www.communitysolutionsinitiative.org/>. The website was formally announced at the July 2010 PES General Meeting in Minneapolis where CSI had a booth and a special session at the conference to discuss its goals and progress. The key organizer was CSI co-chair Robin Podmore, an IEEE Fellow and PES member. The talks at that meeting are posted on the website.

A number of CSI technical initiatives are being pursued in parallel, such as low-cost wind turbines, Scheffler Reflector cookers, pedal-powered generators and Stirling engines to generate energy from a concentrated heat source. Engineers Without Borders (EWB) is an active partner in several of these projects. This report reviews the plans for a community-scale solution to basic electrical lighting, charging hand-tools, coolers and communications loads, all based on a battery-charging model that is well established on an individual basis in Haiti. The model is scalable to many kilowatts and can cooperate with a grid if one becomes available. In Haiti, the first test case, 75-80% of the population has never had access to electricity.

The CSI concept is a mobile solar station on a trailer that outputs 1kW peak on the lowest productivity days in Haiti. The base station has enough battery to store a day's output, but at the same time customers' home batteries are charged during the day and the loading smoothed by use of the base station batteries. For the initial deployment in Haiti, CSI has teamed with Sirona Cares, a San Francisco-based Non-Profit working in Haiti since early 2009, which is associated with Sirona Fuels, a biofuel company that has started independently-owned biofuel-producing Jatropha plant farms. Sirona has on-the-ground entrepreneurial partners who are eager to take on the electricity generation business model. The model requires that franchised owners make equipment payments as well as turn a profit for themselves. Generation loads are typically home lighting, small appliances and phone charging; but we also envisage larger Base Loads such as a community center, school, coffee-washing station or clinic.

The current status is that a complete electrical model is designed, the first mobile trailer is being built, and funding is being sought for both the two-stage Pilot program as well as venture capital for full deployment to produce 100 units per month. The 5-year goal is to bring electricity into the homes of at least 1 million Haitians, as well as provide employment and prosperity for the community. Hopefully IEEE will take a strong lead in the seed funding to establish and test the business model, and socially minded venture capitalists and foundations will provide the needed investment funds that total approximately

Missing ingredient today

Perhaps the most central characteristic of authentic leadership is the relinquishing of the impulse to dominate others.

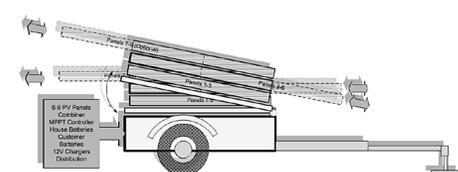
David Cooper

LIAISON REPORTS

\$40M over 5 years. All profits will be reinvested in the community. As the Haitian model achieves success, parallel efforts will be started through partners in Africa, South America and Asia. The CSI collaboration has about 50 members from around the world, two-thirds of whom are IEEE members. Funding applications have been made to the Interim Committee for Reconstruction in Haiti and other venture and foundation sources are being contacted.

The Community Solutions Initiative has a new home under the Power and Energy Society of IEEE, and a website, <http://www.communisolutionsinitiative.org/>; for further details on the Community Solutions Initiative, see the CSI web site.

Ray Larsen, co-chair of the Community Solutions Initiative and an IEEE NPSS life fellow, can be reached at SLAC National Accelerator Laboratory, MS17, 2575 Sand Hill Road, Menlo Park, CA 94025; Phone: +1 650 926-4907; Fax: +1 650 926-3570; E-mail: larsen@slac.stanford.edu.



Mobile Generator Station Concepts

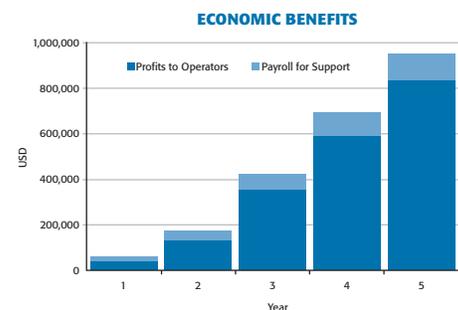
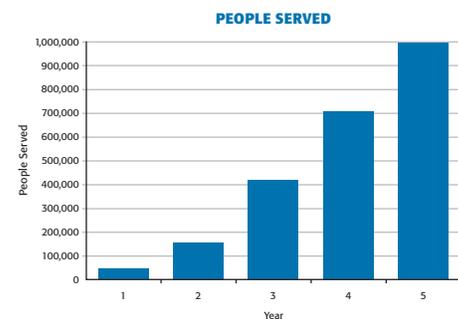


Haitian Partner Group: "We are like dry soil waiting for rain."

Parts and Deployment Cost of Single 1kW Station

Expense Description	Expense Amount (US\$)
Solar panels (9 x 220W)	\$3,600.00
Battery bank 4x200Ah	\$1,200.00
Customer batteries (40) & sub-chargers (20)	\$2,400.00
Customer home lighting kits (40)	\$1,600.00
Combiner & MPPT charge controller	\$1,500.00
Trailer, equipment bay & panel assemblies	\$2,000.00
Shipping, duties, transport	\$3,500.00
Volunteer travel 4x 6 days @ 2000 (setup)/3	\$2,700.00
Volunteer travel (2x 6 days @ 2000 (3 mo. support)/3	\$1,300.00
Total Expense	\$19,800.00

Typical installation will grow to 5kW but scalable to much larger systems for industrial applications.



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