



POWER

Power Division Newsletter
www.asme.org/divisions/power/

William G. Moore, P.E., Editor

Winter 2001

Message from the Chair



Larry Kielasa

I am honored to serve as the chair of your Division for the year 2001-2002. It is an opportunity to build on the foundation established by the many dedicated members whose volunteer efforts have

made the Power Division what it is today.

During my term, I would like to work with each and every one of you on the goal of increasing Power Division's presence and participation in the ASME. ASME is an international organization with 125,000 members. The interests of members and the variety of the work of the Society is truly staggering. The Power Division can be your springboard to a lot of activities sponsored by ASME.

Does anybody have a research project they would like to get funded? The ASME Center for Research and Technology Development (CRTD) can help. Check out their Web Site at www.asme.org/research.

Maybe you're interested in Energy Policy. ASME issues Position Papers on various subjects that you can see at asme.org/gric/position.html. Did you know that Divisions can issue their own position statements? Check out the ASME position on Energy. Does it meet your concerns? If you would be interest-

ed in issuing a position statement from the Power Division, please let me know. I have had an opportunity to talk to several of our representatives and their staffs in Washington and believe me; our position papers make a difference.

Does anybody have an idea for a Short Course they would like to develop or a book they would like to write. A great way to start is by sponsoring a Tutorial Session at the next Power Division sponsored International Joint Power Generation Conference (IJPGC). IJPGC is the conference for power professionals that know that job growth and corporate profits come from staying technically current and on top of industry trends. But please don't stop with these suggestions. If you have an idea or a vision of some activity you would like to do, bring it to the Power Division. You are sure to find people with like interests to help you get it going!

I invite all the Power Division members who have not been active in the Division to please get involved. It's easy! Just check out the Power Division web site and pick a committee you are interested in and give the Chair a call. I guarantee that there will be plenty to interest you. If you can't make the committee meetings, that's OK too. We can use help from members who have some time and can correspond by e-mail or letter. You could help by reviewing technical papers or organizing a technical session at IJPGC. If you would like to get involved but aren't sure in what committee, just give me a call. My number is 810-326-6102 and I'll be glad to talk to you.

I would especially like to see young engineers get involved in the Division. There are great opportunities for networking and professional development, but what I value most are the friends I have in the Division. They're a great bunch of people and we go to some great places. Professional development can be a lot of fun. If you're thinking about doing it some day, do it today!

It's not too early to start making your plans to attend the 2002 IJPGC. It will be from June 23 through 26 at the Hilton Tapio Cliffs Pointe Resort in Phoenix, Arizona. I look forward to seeing you there!

Larry Kielasa, Power Division Chair

Why I Love the ASME



Bill Moore

I joined the ASME while studying Mechanical Engineering at the University of Notre Dame. I, along with about 50 others in our M.E. class, were encouraged to do so by one of our M.E. professors, Dr. Jack

Lloyd. That was nearly 25 years ago and Dr. Lloyd and myself are still very active with ASME to this day. My membership lapsed for a few years, but I was again encouraged to join ASME by former

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Why I Love the ASME

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Power Division Chairman, John Stanton of FPL.

What has kept my interest and involvement in ASME for nearly 25 years?

Conferences and People

First of all, I love the conferences ASME sponsors and the people associated with these conferences. The Power Division of ASME, of which I am a member, sponsors the IJPGC (International Joint Power Generation Conference). These conferences are usually held in interesting cities such as New Orleans (2001), Phoenix (2002) and Atlanta (2003). I really enjoy meeting new ASME members from different countries around the world. A quick look at my business cards from the last few conferences include people from countries all over the world.

I also enjoy seeing the same people year after year - people that have been involved in the power industry for many, many years. People like Heinz Termuehlen and Dick Putnam. Both of these fellow engineers, have recently published a book through ASME Press (a review of each of these books is inside).

Getting Published

The second reason I love the ASME is that it provides an opportunity to "get published" as some people may say. I have written and had published over 40 technical papers in my career. Only a handful have been with the ASME, but these are the most treasured. These are the highest quality papers, reviewed by peers in the industry. I have also had the opportunity to chair individual technical paper sessions, where associates in my industry specialty (generator refurbishment) have come together and presented a series of papers. I have referred to papers from these sessions many times over the course of my career.

Giving Back

The third reason I love the ASME is that it provides an opportunity to "give back." Most people enjoy "giving back" to something, whether it is United Way, their local church or community organizations. ASME, as with most volunteer organizations, provides an opportunity to "give and get" at the same time.

Please consider giving of your time by joining one of the Power Divisions technical committees, or coming to one of our next conferences. Whether your interest is in the maintenance or operation activities of the entire power plant, or you specialize in an individual component, there is a committee for you. Each committee would like to have new members, and if you become involved, you'll have opportunities to chair sessions, write papers,

and become friends with associates involved in the same business you are. See page 6 for a listing of the chairs of each of the Power Division's technical committees. Give one of them a call and plan to meet them at the 2002 conference in Phoenix. Feel free to call me at 614-488-1151 or drop me an email at "bmoore@national-electric-coil.com."

William G. Moore, P.E. - Newsletter Editor

Global Warming

On June 5, at the 2001 International Joint Power Generation Conference (IJPGC), the ASME Power Division and Fuels and Combustion Technologies (FACT) Division co-sponsored a plenary session titled "Fossil Fuels in a Green World," co-chaired by Paul Woessner, past chair of FACT and Conrad Ladd, past chair of Power.

The Speakers

The highly qualified professional panelists were: Ned Leonard, Asst. Gen. Mgr., Western Fuels Assoc.; Dr. John Christy, Director, Earth System Science Center, Univ. Of Alabama in Huntsville (a Lead Author on the 2001 IPCC-U.N. report); Dr. Patrick Michaels, Senior Fellow in Environmental Studies, CATO Institute; and Dr. Margo Thorning, Sr. Vice President and Chief Economist, American Council for Capital Formation.

The Objective

The objective of this plenary session was to give ASME members and power generation engineers, factual information on the global warming issue to judge the relevance of this topic to future power generation policy making. All of our panelists gave us important information on the global warming issue.

Key Points

There was general agreement on these principal facts: 1. The global concentration of CO₂ in the atmosphere has increased in the last century. 2. CO₂ is not a pollutant, but an essential ingredient for plant growth on earth (more CO₂ enhances a green world). 3. It is difficult to identify a global warming trend in the last century attributable to man's influence. 4. Satellite and balloon temperature measurements in the lower troposphere track very closely since 1979, and show no warming trend. 5. Some land and sea surface temperature measurements indicate a slight global warming trend, probably at night and in northern latitudes. 6. None of the global temperature models represents the actual temperature record of the last century - or could correctly predict future temperature changes in this century. 7. Climate always changes,

regionally and globally, from year to year, and no trends are identifiable. 8. The global warming issue is primarily political, not based on science. 9. The Kyoto agreement was seriously flawed, and would not have significant impact on global temperature in the future. 10. If a significant global warming trend develops, we have two options: adapt to the change, or take corrective actions with huge economic impact on the U.S. and international economy and lifestyle over several decades. 11. Continuing atmospheric scientific research and analysis is prudent and advisable.

Quotes from the Panelists

The remainder of this article will quote widely from the information presented by each of the professional panelists. Ned Leonard represents an organization that supplies coal as a fuel for electric power generation to its member rural electric generation coops and municipal utilities in the U.S.

Ned Leonard

"The issue of climate change has little to do with science insofar as it is an issue in the international community. This issue concerns the ability of the European Union and other trade competitors to compete with the U.S. If, in the context of the Kyoto Protocol, they can convince the U.S. Congress to impose inflationary costs on our economy through imposition of energy taxes, then they will be more competitive with us. The Kyoto Protocol enables France to claim compliance using nuclear power. The U.S. Coops are 80% reliant upon coal for electricity generation. The U.S., in total, is over 51% reliant on coal for electricity. 'Doing something' about carbon dioxide means the economy's primary source of energy within the industrial, commercial and residential sectors is going to increase in cost. The full implementation of Kyoto does not significantly reduce the potential for global warming fifty or one hundred years from now. The costs are significant. For all of these reasons U.S. opposition to implementation of the Kyoto Protocol is a reasonable response to an issue for which the scientific underpinnings are uncertain, at best."

Dr. Christy

He recently served as one of the Lead Authors of the IPCC report. He frequently gives testimony before committees of Congress. The following quotations are from his written testimony before the Senate Committee on Environment and Public Works, May 5, 2001. "CO₂ is increasing in the atmosphere due primarily to the combustion of fossil fuels. Fortunately CO₂ is not a pollutant. It is the life blood of the biosphere. The green world plants largely evolved at a time when the atmospheric CO₂ concentration was many

times what it is today. The present biosphere is being invigorated by human-induced rise of CO₂. CO₂ does not pose a toxic risk to the planet. Climate models attempt to describe the ocean/atmospheric system. No model is perfect. A common feature of climate model projections of global average temperature changes due to enhanced greenhouse gases is a rise in the temperature of the atmosphere from the surface to 30,000 feet - the true bulk of the atmosphere. This temperature rise is projected to be significant at the surface, with increasing magnitude as one rises through the troposphere. Over the past 22 years, surface temperature shows a rise of +0.52 to 0.63°F; in the troposphere a warming between 0.00 and 0.15°F. There is a remarkable consistency between independent measurements of upper air temperatures. Several climate model runs attempt to reproduce Alabama's temperature from 1860 to the present. They did not do so especially well, with none predicting the actual cooling we have seen in Alabama over the last century. Be suspicious of media reports in which weather extremes are given as proof of human-induced climate changes. The U.S. experienced the coldest combined November and December, 2000 in 106 years. In Alabama, the 19 hottest summers of the past 108 years occurred prior to 1955. The intensity and frequency of hurricanes have not increased. Temperature trends for summers in Texas are actually slightly downward. It is difficult to conclude that climate change is occurring in the U.S. Sea level has been rising naturally for thousands of years, about 2 inches per century in the past 6,000 years. The sea level rise, which will continue, will be very slow. Regional climate change is essentially impossible to predict at this point. The climate is always changing. Doomsday prophecies grabbed headlines, but have proven to be completely false."

Dr. Michaels

Dr. Patrick J. Michaels is a Senior Fellow in Environmental Studies, CATO Institute. He is a research professor of environmental sciences at the Univ. of Virginia. He is a past president of the American Assoc. of State Climatologists. He holds a Ph.D. in ecological climatology from Univ. of Wisconsin - Madison. Dr. Michaels is a contributing author and reviewer of the IPCC. He is a co-author of the comprehensive book, "The Satanic Gases" (Clearing the Air about Global Warming), published by the CATO Institute in 2000. The following quotations are extracted from this book with Dr. Michaels' permission. I strongly recommend the book as a reference source. "The climate models that initially fired up the concern about global warming were incorrect. Something may be very, very

wrong with the glib projections of climate catastrophe that form the backdrop for the current political theater. Has the earth warmed? - when and where. In the broadest perspective, global warming is a very real thing, undeniable from surface temperature readings taken over much of the planet in the last 100 years. Now, it is the most frigid air that is warming. In the winter, the strongest warming is confined to air masses over northwest North America and Siberia. For the last quarter of this century, 80 percent of the lower atmosphere has not warmed at all (except for the El Nino of 1998), as three independent measures of global temperature show. Satellite-based global temperatures reveal warmings of 0.09°F per decade in the Northern Hemisphere - near surface air temperatures warmed 0.27°F per decade. The slight warming trend is purely driven by the heat of the 1998 El Nino working its way out to space. Take that year away and there is no trend. Temperatures measured by weather balloons between 5,000 and 30,000 feet line up perfectly with the temperatures sensed by satellites."

Dr. Thorning

Dr. Margo Thorning is Senior Vice President and Chief Economist, American Council for Capital Formation. She also serves as Senior Vice Pres. and Director of Research for the ACCF Center for Policy Research. She writes and lectures on tax and economic policy, and is frequently quoted in the Wall Street Journal, Fortune and the Washington Post. She has testified before various Congressional committees, including the Senate Energy and Natural Resource Comm., the House Commerce Comm. She has addressed international forums in London, Paris and Brussels and the Senate of Canada. She is co-editor of numerous books, including Kyoto and Climate Change subjects. The following quotations are from a Special Report, New Directions for U.S. Climate Change Policy and Energy Security, June 2001, by Margo Thorning, Ph.D.: "In 1999, U.S. greenhouse gas emissions were 22% above the Kyoto Target. By 2010, the EIA project U.S. will be 43% above, and 58% by 2020. The Kyoto emissions cap would ration energy in the U.S. and require very large taxes to restrain demand for energy, and would impose a heavy burden on U.S. households, industry and agriculture by reducing economic growth. A wide range of economic forecasting model results show that complying with Kyoto would reduce U.S. GDP by 2% to 4% annually. In 1997, Tim Wirth testified for the Clinton Admin. that carbon emissions would need to be cut by up to 10 times the Kyoto targets. U.S. households would face much higher energy prices under the present Kyoto target with gasoline up 30% to 50%, electricity up 50% to 80%. Near term

emission reductions would result in the migration of U.S. energy-intensive industry. U.S. agriculture would also lose competitiveness under Kyoto, meaning higher consumer food prices, declining food exports and rising imports. Adopting a thoughtfully timed climate change policy - based on accurate science, improved climate models, global participation is essential to U.S. and global economic growth and to eventual stabilization of carbon concentration in the atmosphere, if growing scientific understanding indicates such a policy is needed."

Conrad Ladd, P.E. ASME Fellow

Comments from the Past Chair



Brian King (left) receives award from chair, Larry Kielasa (right).

As outgoing Chair of the Power Division, the last year has been an exciting and very challenging experience. The division's EXCOM (Executive Committee) has worked hard to change the Power Division direction and build for the future with some encouraging results. The Division membership is on the increase as is the attendance at our single sponsored conference, the IJPGC (International Joint Power Generation Conference). We have added two new technical chapters (Latin America & Hawaii) and have restructured the division by adding and promoting the Combined Cycle Committee and combining it for the short term with the Steam Generator and Related Auxiliaries Committee.

The work completed this year by the Division was extensive. Much of what was accomplished could not have been as focused and successful without the participation of many of our members. I would like to personally thank all that participated in the Division's activities this year with my special thanks to a few individuals that went that extra mile. Our web page is updated, and I want to provide a special thanks to the efforts of Jane Hutt in accomplishing this task. Without her dedication the task of getting the web page updated would not have been completed. Some of you may also have noticed the Power Division did some advertising in 2000 - 2001 for new membership. Once again, Jane Hutt provided the expertise and assistance

to the EXCOM in preparing and focusing the content of the advertising towards our new and ever changing market of potential members. Two other Power Division individuals I would like to recognize that provided needed assistance and expertise in keeping the EXCOM on track and the Division functioning are Bob Hayes and Conrad Ladd. Bob worked with Jane Connelly (EXCOM Member & Division Representative to the Sponsor's Committee) and the Technical Sessions Coordinators in setting up, arranging & maintaining the Divisions paper input to the IJPGC. A job well done. Conrad Ladd took a very active role in supporting the Division this past year. He has written articles for the ASME magazine; is currently the Power Division's voting representative on the Energy Committee and he took an active role in the IJPGC by lining up speakers and setting up a Plenary Session for the conference on issues of Global Warming (see article on page 2). All of these special efforts by these individuals were in addition to their normal committee activities and work load. My personal thanks to these individuals along with all of the committee chairs for your assistance and support to the Power Division over the last year.

The addition of the Latin American and Hawaiian Technical Chapters to the Power Division demonstrates the interest as well as the need for the Power Division to expand into the Caribbean and Pacific Rim as well as South American countries. Expanding the Power Division into these two areas adds an important benefit to our membership of an ever-expanding network of engineering contacts in new and expanding markets. Carlos Lasarte (clasarte@telcel.net.ve) is the Chairman of the Latin American Chapter and he is currently in the process of building membership. From my most recent correspondence with him the Latin American Technical Chapter currently has 60 members in Columbia, 20 in Chile and 20 in Ecuador. In addition, Carlos is planning on visiting Jamaica, Argentina, Panama, Dominican Republic, Trinidad, Tobago, Brazil and Peru over the next year in attempts to grow the membership. Carlos and members of the Latin America Technical Chapter are very interested in increasing their communication with Power Division individuals with interests in the Boiler and related auxiliary area of power. If anyone would like to get in touch with Carlos I have included his e-mail address. Bill Moore of the EXCOM is the liaison for the EXCOM with the Latin American Technical Chapter. The Hawaiian Technical Chapter is also off to a good start. The current Chairman is Edmond Chang (echang@hei.com) and the current Vice Chair is James Grogan (jfgrogan@worldnet.att.net). The Chapter has about 28 members at this point and is growing. We will look forward to progress from the chairs of our new Technical Chapters.

Power Division and the International Joint Power Generation Conference

Changes are on the horizon for the International Joint Power Generation Conference (IJPGC). IJPGC has been restructured for 2002. The conference is going to be in a Track format. This will allow attendees to better follow a particular topic through the entire conference. The five Tracks for IJPGC 2002 are:

Track 1 - Components, Plant Systems and Design Engineering

Track 2 - Operations, Maintenance, Reliability, Availability & Maintainability

Track 3 - Combined Cycles, Combustion Turbines, Steam Turbines and Generators

Track 4 - Fuels, Combustion & Emission Issues

Track 5 - Advanced Energy Systems

Also, this year the abstract and paper handling process for IJPGC will be fully electronic. That includes abstract, paper submissions and paper reviews. It will all be done via the IJPGC web page (www.asmeconferences.org/ijpgc/). For those of you submitting abstracts and papers for IJPGC 2002 make sure you review the due dates and the overall process on the IJPGC web page.

For 2003, the Power Division has committed to do another co-located conference with the International Gas Turbine Institute (IGTI) and other ASME Divisions in Atlanta. The first co-location in 2001 was well received by attendees, especially the large joint exposition. Keep your eye on the Power Division and IJPGC web pages for future developments. The Power Division web page address is: <http://www.asme.org/divisions/power/>.

Continually improving IJPGC ensures the conference meets the needs of the attendees. Larry Kielasa, the division Chairman, and the Executive Committee will continue to work diligently on making sure the Power Division meets its members needs. Keep your eye on the Power Division web page for developments. Also I would suggest that if you have not updated your Internet address in the Power Division roster or ASME roster please do so. Division committee members should send your updated contact information to Jane Hutt at necoil@qwest.net or to ASME Engineering Programs Manager, John Bendo at bendoj@asme.org. More and more of our communication with the Division in the future will be electronic. Electronic communication costs are a significant saving over printed and mailed material costs. As an ASME Power division member, you can update your contact information on the ASME web site at <https://www.asmeny.org/memberaddr/html/security.htm>.

Future Power Division and the Executive Committee

Larry Keilasa is the 2001-2002 Division Chairman. You can find his plans for the

Division as part of this newsletter. Larry has been very active on the Executive Committee (EXCOM) working for the Division for the past 4 years and was extremely helpful to me during my tenure. I think he will be a real asset to the Division and I wish him the best. Our new member for the EXCOM is Douglas Reed of Dominion Generation, Fossil and Hydro



Doug Reed

Support Group.

Doug has agreed to serve on the Committee for the next 5 years and his employer has agreed to support his activities. We welcome Doug to the Committee and look forward to his input.

Doug is a veteran of the Turbine Committee and the Power Division and has been active in the Division for many years.

The one area that needs additional effort from all our members is participation. Realizing that over the past few years the Power and Utility market has been going through a major restructuring and this has caused a significant upset in the methods of operations and budgeting activities of most of our members. A result of that change has been a reduction in member participation in Committee activities, including committee meetings and technical paper presentations. The most recent data indicates that this downward trend may be reversing. Our Division membership is on the increase as was the attendance at the IJPGC in New Orleans this year. We need to build on these recent successes and keep moving forward. We cannot do this without member participation.

The EXCOM will be increasing the number of newsletters to improve the communication within the Division for this year and the future. We are looking into other areas to advance the Division communication processes and plan on taking advantage of the electronic as well as the printed media. It will be important to the future of the Division that those of you interested in working with the Division to improve your networking as well as advance the Power Division into the 21st Century to get active and participate more in the Division Committees. Our next two Division meetings of all committees will be at Power-Gen in Las Vegas, Nevada (December) and IJPGC (June 24-26, 2002). We hope you will plan on attending. Those of you that are new to the Power Division please make your plans to attend. You are more than welcome to sit in on any of the Committee Meetings to familiarize yourself with the members as well as the process. I am looking forward to seeing you all in the fall.

Brian King, Outgoing Power Division Chair

New Book Release from ASME Press!

"100 Years of Power Plant Development"

Authored by Heinz Termuehlen



Heinz Termuehlen

"100 Years of Power Plant Development" presents the evolution of power plant concepts. The author provides thermodynamic concepts of a large variety of power plants, with comparisons, based on realistic performance levels. The historical overview extends to plant concepts for the future and considers the latest advances with improved thermodynamic performance and emissions/CO₂ discharge.

Key topic areas include:

- Fossil steam turbine power plants
- Nuclear power plants
- Co-generation plants
- Gas turbine peaking power plants
- Combined-cycle power plants
- Re-powering steam turbine plants with gas turbines
- Coal gasification and other advanced combined-cycle plants

In addition, the author examines issues such as available fuel sources and developing and applying the best technology for converting the fuel into electric power with the lowest adverse effect on the environment."

Heinz studied mechanical engineering in Berlin. After graduating in 1958, he began employment with AEG, in the Turbine Proposal and Project Department. In 1970, Mr. Termuehlen became Manager of Application Engineering with Utility Power Corporation in Bradenton, Florida. In 1994, he became Chief Engineer and Director of Product Planning for Siemens Power Corporation in Milwaukee, Wisconsin.

Heinz has authored over 100 papers. In 1980 and 1988, he was honored with the ASME Prime Movers Award for best publication of the year. He is a member of the ASME Power Division Turbines, Generators & Auxiliaries Committee and the Combined Cycle Power Plant Committee. In 1996 he chaired the Turbine Committee. In 1997 he initiated the formation of the Power Division Committee on Combined-Cycle Plants.

In 1988 he was honored by being awarded the ASME Life Fellowship. Recently he received two U.S. patents on re-powering concepts of steam turbine plants with gas turbines. This book may be purchased online at InfoCentral at www.asme.org/pubs or by calling 1-800-843-2763.

Another New Book from Power Division Steam Surface Condensers

Basic Principles, Performance Monitoring and Maintenance

By Richard E. Putman



George Saxon (left) and author Dick Putman (right) at the 2001 IJPGC

Steam Surface Condensers is a comprehensive presentation of analytical theory and real-world practical solutions. It clearly illustrates updated approaches that managers and performance engineers can use in judging condenser performance and in making maintenance decisions.

The author examines current methods for modeling, diagnosing, and improving condenser performance. He describes how to calculate heat transfer coefficients, provides details of the new ASME Performance Test Code PTC 12.2-1998, and explains the significance of heat transfer coefficients in measuring the overall performance of an operating condenser.

Further discussion includes condenser cleaning schedules that save money and reduce CO₂ emissions, diagnostic methods that help unit operators pinpoint problem areas, monitoring techniques that help predict the onset of tube fouling and deposit accumulation, and proper methods of tube plugging. Relatively new topics are also explored, including: assigning a dollar amount and excess car-

bon emissions to condenser fouling; methods for estimating cooling water flow rate; and performance analysis for multi-compartment condensers.

Contents include:

- Basic Principles
- Condenser Performance Monitoring & Modeling
- Estimation of Condenser Duty
- Optimization of Condenser Cleaning Schedules
- Importance of Managed Condenser Maintenance
- Unit Operator Diagnostics
- Fouling, Corrosion and Water Contamination
- Mechanical Cleaning
- Air in Leakage Detection
- Eddy Current Testing
- Performance Monitoring

This book may be purchased online at www.asme.org/pubs or by calling InfoCentral at 1-800-843-2763.

CURRICULUM VITAE

Richard E. J. Putman, C.Eng., M.I.Mech.E.

Since 1990, Dick has been a Consulting Technical Director for Conco Systems, Inc. Prior to that he worked as a Manager and Consulting Engineer for Westinghouse Electric Corporation. He holds 38 U.S. patents, 6 British patents and one Canadian patent, and has published over 80 papers on energy-related and process control topics in the U.S., Canada, Sweden, China and South America. Dick is fluent in French, German, and Swedish. He graduated in Mechanical Engineering from Paddington Engineering College, London.

ASME Courses for the Power Professional

In today's cost conscious power industry, employees need to perform at peak efficiency. Training is a key factor. As the premiere organization addressing the ever-changing field of engineering, ASME International offers customized professional training on topics relevant to your company. ASME International's continuing education programs are designed to provide the most up to date information regarding complex engineering and technological issues a company faces on a daily basis.

Here are examples of just two of the courses for power industry professionals:

- ASME Course PD013: ASME B31.1 Power Piping Design and Fabrication - This course explores the background, rules and trends in piping design, analysis, and fabrication within the context of meeting the requirements and intent of ASME B31.1 and its appendices.
- ASME Course PD186: ASME Boiler & Pressure Vessel Code: Section VIII, Division I, Design and Fabrication of Pressure Vessels - This course is a comprehensive introduction to Code requirements including background, organization, design, materials, fabrication, inspection, and testing of pressure vessels.

ASME In-Company Training Programs and course material can be catered to meet the individual company's needs. For more information on ASME courses please contact Elite Rubin at 212-591-7752 or via e-mail at rubine@asme.org. You may also visit the continuing education web site at www.asme.org/pro_dev

CALL FOR PAPERS

INTERNATIONAL JOINT POWER GENERATION CONFERENCE & EXPOSITION IJPGC-2002

June 23-26, 2002, Hilton Pointe Tapio Resort, Phoenix, Arizona, USA

IJPGC IS SPONSORED BY: AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
POWER, FUELS AND COMBUSTION TECHNOLOGIES & NUCLEAR DIVISIONS
Participating Divisions: Plant Engineering & Maintenance and Process Industries

Submission of Abstracts: Authors should submit a 400-word text only abstract with return address, phone, fax, and E-mail information.

Online submittal of abstracts and full-length papers is preferred: **Online:** <http://www.asmeconferences.org/ijpgc02/>

If online submittal is not possible, please mail or email your abstract to: Bob Hayes, FPE Ltd., 364 Point Bluff Dr., Decatur, IL 62521. E-mail: fp hayes@worldnet.att.net. Phone: 217-424-0738.

For up to date information, please check the IJPGC website.

Visit the IJPGC 2002 web site for current information: <http://www.asmeconferences.org/ijpgc02/>

Widely regarded as the power industry's most technically acclaimed event, the INTERNATIONAL JOINT POWER GENERATION CONFERENCE is a forum for power generation professionals who know that growth and profits come from staying technically current and on top of industry trends.

Technical Areas Covered at IJPGC Include:

TRACK 1 - COMPONENTS, PLANT SYSTEMS AND DESIGN ENGINEERING—This area covers design and construction of power plant components, systems and thermal cycles, including: heat exchangers (feedwater heaters, condensers, cooling towers, etc.), pumps, valves, pressure vessels, piping (including repair & replacement), AOV & MOV issues, cooling water systems, water treatment, air & gas treatment issues, cryogenics, compressor application, design & QA issues, human factors, and fire safety, strategic planning and codes & standards.

TRACK 2 - OPERATIONS, MAINTENANCE, RELIABILITY, AVAILABILITY & MAINTAINABILITY—This area covers all aspects of facilities management of electric power generation equipment and systems, including: plant systems maintenance and reliability improvements (including training), O&M costs, life cycle management, risk based maintenance, operational experiences, fouling/slagging issues, water wall corrosion, plant power up-rating experiences, control system upgrades, outage planning, component lifetime, environment qualification, cable and equipment evaluation testing, economic analysis, base load vs. peaking operations, budget control, lifetime projections, licensing, regulatory compliance, in service testing and performance test codes.

TRACK 3 - COMBINED CYCLES, COMBUSTION TURBINES, STEAM TURBINES AND GENERATORS—This area covers combined cycle power plants, merchant plants, combustion turbines (combined cycle and peaking), steam turbines, heat recovery steam generators (HRSGs), large rotating equipment, combined cycle plant construction, startup and commissioning issues.

TRACK 4 - FUELS, COMBUSTION & EMISSION ISSUES—This area covers the fuels and combustion systems in the modern utility and industrial power plant. Some of the specific areas covered are: basic research in fuels and combustion; properties and characteristics; handling, transportation and storage; process and alternate fuels; orimulsion; gasification; biomass fuels; pet coke; combustion systems; low NOx burners; reburn technology; combustion air and gas; flue gas recirculation; advanced energy conversion systems; high temperature air combustion, pollution control, SCRs, flue gas scrubbers (SO2); particulate collection equipment (electrostatic precipitators, bag houses, etc.); continuous emissions monitoring; global warming issues, combustion modeling, waste to energy.

TRACK 5 - ADVANCED ENERGY SYSTEMS—Advanced power plant designs (Vision 21, hybrid, etc.), fuel cells, micro turbines, mini turbines, diesel generators, wind power, solar power, next generation and Generation IV nuclear reactors, and distributed generation.

Technical Program Coordinators:

Power Division Doug Reed Dominion Generation Tel: (804) 273-2435 douglas_reed@dom.com	Nuclear Engineering Div. Peter L. Tirinzoni Northeast Generation Svcs. Tel: (860) 665-3361 tirinpl@nu.com	Fuels & Combustion Tech. Alan E. Paschedag, P.E. Burns & Roe Tel: (201) 986-4282 alan.paschedag@mail.roe.com	Plant Eng. & Maintenance Jingyuan Liu ASME International Tel: (212) 591-7284 liuj@asme.org	Process Industries Division Arun Muley Honeywell International Tel: (310) 512-1827 arun.muley@honeywell.com
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POWER DIVISION

EXECUTIVE COMMITTEE

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