



Pressure Vessels and Piping Division Newsletter

G. E. Otto Widera, Editor

Spring 2000

Challenges of the New Millennium



R. F. Sammataro

Welcome to 2000 and the New Millennium on behalf of the ASME Pressure Vessels and Piping Division. As we progress into the new century, it is fitting to pause and to reflect on the

past as well as upon the future. Founded in 1966 with a vision to the needs of the future, the PVP Division has matured today to one of the largest ASME Technical Divisions with more than 3,500 primary members. It is with this maturity and vision that we look back to the past and look ahead to the future for the Pressure Vessels and Piping Division.

Foremost in the activities of the PVP Division is the annual PVP Conference held each July or August. This conference has truly attained international status and recognition as the premier conference on pressure vessel and piping technology. Some of the statistics from the very successful PVP Conference in Boston, MA in August 1999 tell the story. PVP99 attracted more than 700 individuals who registered for this Conference and occupied more than 2,300 room nights at the Conference hotel. There were 155 technical and panel sessions and 565 technical papers, together with four technical tutorials, a special tutorial titled *Preparing and*

Presenting Effective Engineering Presentations, an NDE Demonstration Forum, and a Software Demonstration Forum with corporate sponsorship. There was a very exciting social program as well topped off with a New England lobster/clambake on the shore of Boston Harbor and an exquisite piano concert by Myung-Hee Chung.

The first authors of the technical papers that were presented at PVP99 came from 35 of the 50 states in the United States and 36 countries outside of the United States. In fact, for this same group, 56% of the first authors were from outside of the United States. These include 4 from Australia, 42 from Canada, 113 from Asia, 3 from Africa, 5 from South America, and 152 from Europe. So we do indeed have a truly international conference.

Looking ahead, Jack Ware, the General Chair for PVP 2000 in Seattle, and Joe Sinnappan, the Technical Program Chair, have coordinated preparation of what assuredly will be another very successful conference. Even further ahead, we are excited that a new element will be included in the PVP Conference beginning in 2001 - the NRC/ASME Symposium on BPVC Section XI. As highlighted elsewhere in this Newsletter, this Symposium will enhance the visibility and awareness of the many activities of the ASME Section XI Subcommittee on Nuclear Inservice Inspection and the U.S. Nuclear Regulatory Commission. We welcome both Section XI and the USNRC as future participants in the PVP Conferences.

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2000 ASME Pressure Vessels and Piping Conference



A. G. Ware

Please join us for the 2000 ASME Pressure Vessels and Piping Conference at the Westin Hotel in Seattle during July 23-27, 2000. The Westin is located in the exciting down-

town area of the city, with walking distance or a free bus ride to many local attractions. The rooms in the hotel's twin towers feature breathtaking views of Puget Sound, the Cascade and Olympic Mountains, and the city itself. Seattle is also the gateway to many scenic destinations easily reachable by car or by ferry.

Each year our Conference is committed to developing an outstanding technical program with participants from around the globe. The truly international flavor of the conferences features leading researchers in the field from both industry and academic institutions who meet to exchange ideas and report on new technical developments. It's a great place to find out about the latest research and methods of problem solving, as well as personally meet and make friends with the outstanding men and women in our field of engineering.

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Challenges of the New Millennium

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The *Journal of Pressure Vessel Technology (JPVT)* can look back to its origin in 1974 under the sponsorship of the Pressure Vessels and Piping Division. The Division saw the need for a technical journal to serve as a voice for providing technical information to reflect the state of the art of pressure vessel technology. The Journal has grown with the PVP Division throughout the intervening years. It has fulfilled and even exceeded the PVP Division's expectations, and has become internationally recognized for both the quality of its content and the breadth of the subjects that it addresses. It has rightfully been recognized as a leader in its field.

As we look ahead to the future, congratulations are in order for the Journal Editor, Dr. Sam Y. Zamrik, and the Journal Associate Editors, for exceeding the expectations of the past. It is with confidence that we look ahead to the challenges of the future with the assurance that the *Journal of Pressure Vessel Technology* will continue to be the leader in technical publications related to pressure vessel technology.

The PVP Technical Committees are another area for reflection. The eight committees at the present time address technical areas ranging from Operations, Applications, and Components, to Computer Technology, Fluid-Structure Interaction, and High Pressure Technology. The committees also include Codes and Standards, Design and Analysis, Materials and Fabrication, and Seismic Engineering. They have served the PVP community well in the past, and most certainly will continue to do so in the future.

But, above all else, we must recognize the commitment and dedication of all of those individuals who have worked to make the PVP Division what it is today. We often think of the PVP Division as a family, one in which the members nurture each other for the benefit of all, and one in which opportunities abound for those who are ready to grasp them. We have a long history of past accomplishments on the shoulders of past Division chairs and Executive Committee members, who now serve as members of the PVP Senate and provide strength, continuity, and support to the present leadership and membership. We have prospered in the past and will continue to prosper in the future from the strength of our organization and from the commitment and dedication of those who join us and those who accept the responsibility to work hard for PVP.

As we move into the new century, Dr. M.K. Au-Yang has accepted the invitation to become a member of the PVP Executive Committee from 2000 to 2006, and to serve as the Chair of the Honors and Awards Committee from 2000 to

2004. He will become the PVP Division chair from 2005 to 2006. The following individuals have also accepted the invitation to serve as Technical Committee Chairs from 2000 to 2002: Dr. Barry T. Lubin, Codes and Standards; Allan B. Glickstein, Design and Analysis; Dr. Young W. Kwon, Fluid-Structure Interaction; and Leslie P. Antalffy, High Pressure Technology. We also welcome Dr. Greg Hulbert as the PVP Website Manager. Congratulations to all for your dedicated service to PVP in the past and most certainly in the future, as well.

The PVP Division should be proud of its past, and is well prepared to look ahead to the future with renewed enthusiasm to meet the challenges of the New Millennium!

R. F. Sammataro
PVP Division Chair

2000 PVP Conference

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Since 2000 is the special year of the turn of the Century and the Millennium, the conference organizing committee chose "A Century of Progress in PVP Technology" as the Conference theme. The theme objective will be to look back over the developments in pressure vessels and piping during the Twentieth Century, with several special highlight sessions and papers devoted to historical technical progress in the field. In addition, we plan to have a strong technical program with about 130 paper and panel sessions on current topics of engineering interest, a software and a nondestructive examination (NDE) demonstration with vendor participation, and two tutorials teaching engineering fundamentals. Our Division strongly encourages student participation and will include two student paper competition sessions, developed by the PVPD Senate, where students from institutions worldwide will be awarded cash prizes and other recognition.

Our social program will include an Opening Reception on Sunday, a Conference-wide Reception on Monday, and the Division Honors Luncheon on Wednesday. The Conference social event will begin and end with boat rides to and from Tillicum Village, located on an island in Puget Sound, which will offer magnificent views of Seattle and its waterfront, the nearby environs, and the surrounding mountains. At the Village, you will be treated to a traditional Northwest Native American meal highlight by baked salmon, accompanied by a program of Native American dances and music. On other days, we will have tours of the Seattle area and the Boeing Air and Space Museum.

The Conference Technical Program Chair Joe Sinnappan, ASME Meeting Manager Marisa Scalice, and I are looking forward to seeing you, and hoping that you will have a rewarding time at the conference. Make your room reservations

early to ensure your stay at the conference hotel. For more information visit our website at www.asme.org/conf/pvp00.

A. G. (Jack) Ware

NRC/ASME Symposium on BPVC Section XI to Become Part of PVP Conference

The Pressure Vessels and Piping Division and the Section XI Subcommittee on Nuclear Inservice Inspection of the ASME Boiler and Pressure Vessel Committee (BPVC), are pleased to announce an agreement for the NRC/ASME Symposium on BPVC Section XI to be a part of the 2001 PVP Conference in Atlanta Georgia. The Symposium will focus on U.S. Nuclear Regulatory Commission and ASME Section XI activities related to pressure boundary integrity of systems and components for operating nuclear plants. These include inservice inspection, acceptance standards, flaw evaluation methodology, and methods for repair, replacement, modification, and plant life extension (PLEX). Topics will also include design reconciliation, risk-informed activities for pressure boundary integrity, and U.S. Nuclear Regulatory Commission updates to Title 10, Part 50.55a of the U.S. Code of Federal Regulations that endorses Section XI.

In making the announcement, Bob Sammataro, PVP Division Chair, said that "making the Symposium a part of the PVP Conference emphasizes the synergy between the PVP Division and Section XI. Although numerous panel and technical sessions related to Section XI have been included in past PVP Conferences, this cooperative working relationship will increase the visibility and awareness of the many activities that come within the responsibility of Section XI." He further stated that the existing PVP Conference Committee infrastructure and organization will facilitate preparation of the Symposium. He also commended past Section XI Chair Owen F. Hedden and current chair Richard E. Gimple for their roles in fostering this cooperative effort between the NRC, Section XI, and the Pressure Vessels and Piping Division.

Commenting further, Richard Gimple, Chair of Section XI, said "The NRC and ASME have jointly sponsored symposiums on pump and valve testing in past years which have proven to be valuable to the nuclear industry. We believed that this NRC/ASME BPVC Section XI Symposium will also be valuable to the nuclear industry and will be of interest to many utility and nuclear industry personnel.

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NRC/ASME Symposium

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Conducting this Symposium in conjunction with the PVP Conference is a natural fit that should benefit both the Symposium and the PVP Conference." He continued that there will be co-Technical Program Representatives (TPR) for the Symposium, in recognition of the jointly sponsored nature of the Symposium. Bill Holston will be the co-TPR for Section XI with Ted Sullivan handling this job for the NRC.

Three Tutorial Sessions Planned for 2000 ASME PVP Conference



Ismail T. Kisisel

Three tutorials will be offered at the 2000 ASME PVP Conference. The first focuses on a special topic: *Technical Report Writing for Engineers*, and has open enrollment for any confer-

ence attendee. In order to accommodate the attendees, this tutorial is scheduled on Sunday afternoon from 4:00-6:00 p.m., prior to the Opening Reception. The purpose of the tutorial is to assist interested authors and engineers in strengthening their technical writing skills for publication in today's globally competitive environment, and in helping to improve manuscript quality for future conferences. The other two tutorials cover current technical topics: (a) *Practical Piping Vibration* and (b) *Plastic Analysis in Pressure Vessel Design - Part 2: Sizing of a Vessel by Limit Analysis, and Cyclic Loading*.

The objectives of the Tutorial Program include updating experienced engineers and introducing young engineers into specific areas of technology through half-day overview courses. Since admission is free for conference registrants, the tutorials present an excellent opportunity for attendees to further their professional development by broadening their education on diverse topics of interest at no additional cost. Notes for each of the technical tutorials may be purchased at the tutorial sessions. The notes from past tutorials can also be ordered.

Members and interested professionals with potential tutorial proposals in accordance with the Tutorial Program objectives are encouraged to contact the PVPD Professional Development Chair.

Technical Report Writing for Engineers will be presented by John H. White of TechWrite, Inc. The objectives are focused on (i) strengthening technical writing and editing skills, (ii) organizing

and developing effective technical reports, and (iii) producing professional-looking and functional technical reports. This tutorial will cover researching the topic; identifying writing objectives, determining target audience reading levels, selecting proper report format, using technical writing style and mechanics, editing, and publishing manuscripts. It will include group discussions, with the dissemination of handouts. As a special benefit, the instructor will critique participant technical reports for a period of up to three months following the tutorial.

Practical Piping Vibration will be presented on Tuesday morning by Charles (Chuck) Becht IV, Becht Engineering Company, providing an overview of vibration causes in piping and screening methods for evaluating piping vibration in operating plants. Causes include pulsations from reciprocating pumps and compressors, acoustic fatigue from high-pressure letdown, acoustic resonance, slug flow, pressure wave water hammer (e.g., rapid valve closure), two phase flow, and vortex shedding. Where possible, the causes of vibration are discussed with respect to very basic energy and momentum principles enabling the participant to understand what is happening within and to the piping system. Case studies of plant piping vibration evaluation are discussed. Simple screening rules based on piping velocity measurements are also presented.

Plastic Analysis in Pressure Vessel Design - Part 2: Sizing of a Vessel by Limit Analysis, and Cyclic Loading will be presented on Wednesday morning by Professor Arturs Kalnins, Mechanical Engineering and Mechanics, Lehigh University. The tutorial PVPD-30, which was presented at the 1999 ASME PVP conference in Boston, covered the basic ideas for the application of plastic finite element analysis to the design of pressure vessels. Procedures for plastic finite element analysis (FEA) were discussed for cases when a design-by-analysis is specified. This tutorial is a continuation of the application of plastic analysis to pressure vessel design consisting of two segments. The first segment will focus on limit analysis as a design tool for sizing of a vessel. The acceptability of its gross dimensions will be demonstrated on the basis of limit analysis using closed-form formulas, equilibrium relations of free bodies, or by plastic finite element analysis. The second segment will focus on the use of plastic FEA to calculate the maximum strain range upon cyclic loading. The purpose of calculating the maximum strain range will be to determine the fatigue stress amplitude parameter (pseudo-stress) for comparison with fatigue allowables of an S-N diagram. Various approaches of calculating fatigue stress amplitude parameters for multi-axial strain states will also be discussed.

Ismail T. Kisisel

PVPD Professional Development Chair

Message from PVPD Membership Chair

The PVPD looks forward to welcoming new members at the 2000 PVP Conference in Seattle. Remember that if you register at the non-member rate and meet ASME's enrollment criteria, you will be entitled to one year's free membership in ASME. We encourage you to become active in the PVPD Technical Committees and invite you to attend a Technical Committee meeting at PVP 2000. For ASME PVPD and Technical Committee membership information, please contact Judy Todd at 312 567 8867/8875 FAX, e-mail: jtodd@iit.edu

Judy Todd
Membership Chair

PVP Programs Report



Bill Bees

The 2000 ASME Pressure Vessels & Piping Conference will be held in scenic Washington at the Westin Hotel in Seattle, Washington during July 23-27, 2000. The Conference General

Chair is A. G. (Jack) Ware and the Conference Technical Chair is Joe Sinnappan. See article on page 1 for details.

The 2001 ASME Pressure Vessels & Piping Conference will be held in Atlanta, Georgia on July 22-26, 2001 at the Hyatt Regency Atlanta, Atlanta, GA. The Conference General Chairman will be Joseph Sinnappan and the Technical Program Chairman will be Howard Chung. See the Call for Papers in this Newsletter or in the ASME magazine for more information.

As this release is being made, plans are rapidly coming together for the 2002 ASME Pressure Vessels & Piping Conference. A Call for Papers will be issued when the city and hotel arrangements have been finalized.

Training sessions for Technical Program Representatives and Session Developers will continue to be held at the Conferences on Thursday. All upcoming TPR's and SD's should plan on attending to make your tasks easier.

Bill Bees
PVP Program Chair

1999 PVPD Awards Presented at Honors and Awards Luncheon in Boston



Joe Sinnappan

The 1999 Pressure Vessels and Piping Division awards were presented to 59 members at the annual Honors and Awards Luncheon during the 1999 PVP Conference in Boston in August,

1999. The Awards were given to recognize contributions to the ASME, the Division, and the PVP industry.

The ASME Pressure Vessels and Piping Medal was presented to Dr. Frederick J. Moody, of GE. Dr. Moody is an active member of Fluid Structure Interaction Technical Committee. The presentation included the medal, a certificate, and an honorarium in recognition of his substantial contributions in the pressure vessels and piping field.

Additional Society awards included the ASME Dedicated Service Award presented to Kamran Mokhtarian and the Board of Governors Award presented to T. H. Liu in recognition of his service as the PVPD Chairman. The ASME Dedicated Service Awards are presented for long and dedicated voluntary service to the ASME marked by outstanding performance demonstrated effective leadership, prolonged and committed service, devotion, enthusiasm, and faithfulness.

Jerry L. Gordon received the PVP Division Outstanding Service Award. This award was established in 1994 to recognize outstanding voluntary service to the PVPD marked by outstanding performance, prolonged and committed service, devotion, enthusiasm, and faithfulness. Certificates of Appreciation were award-

ed to Ismail T. Kisisel, Luc H. Geraets, Prof. Arturs Kalnins, Andrew H. Sherry, David P. G. Lidbury, Andrew Pineau, Claudio Ruggieri, M. K. Au-Yang, Gerry C. Slagis, Prof. Karl Kusssmaul.

Fourteen Certificates of Recognition were awarded at the Technical Committee Meetings to Gregory L. Hulbert, Kenneth K. Yoon, Wing L. Chen, Eric D. Roll, Jwo Pan, Ronald S. Hafner, Michael N. Nitzel, Randall K. Lewis, Susan E. Cunningham, Jian-Chu Chen, Steven C. Lu, Steve Gosselin, Arturs Kalnins and Bill Cho. Certificates of Recognition for the Plenary Session speakers were awarded to Dominic A. Canonico, Francis Osweiler, Yasuhide Asada and Richard E. Feigel.

Awards for the Outstanding Conference Session at the 1998 PVP Conference were presented to Vladimir V. Kudriavtsev, C. R. Kleijn, and S. Kawano, for the session titled "International Symposium on Computational Technologies For Fluid/Thermal/Chemical Systems with Industrial Applications-II: Fluid-Structure Interaction-I", sponsored by the FSI Technical Committee.

Kamran Nikbin was presented the Outstanding Paper Award at the 1998 PVP Conference. His paper was titled "Comparison Between Crack Growth in Fracture Mechanics Specimens and Feature Component Tests Carried Out in a Low Alloy Steel".

The Robert J. McGrattan Award for the Outstanding Paper in the *Journal of Pressure Vessel Technology*-1998 was awarded to Frederick A. Simonen and M. A. Khaleel for their paper titled "Effect of Flaw Sizing Errors on the Reliability of Piping". Certificates of Appreciation were

given to the following for publishing distinguished Papers in the *Journal*: Gerry C. Slagis, for his paper on "Experimental Data on Seismic Response of Piping Component Tests" and Vincent Koundy, S. Renevey, B. Marini and A. Combescure for the paper titled "Effect of Torsional Buckling on the Cleavage Failure of Low Alloy Steel Tension Pipe Specimens". Certificate of Appreciation were given to Messers Surender K. Bhandari, Martin Prager, Thou-Han Liu, and Erich Tenckhoff for serving as associate editors of *Journal of Pressure Vessel Technology*.

Those recognized for being selected to present papers in the Student Paper Competition were: S. Marie: CE-Saclay, France; Li Weihua: School of MPE, Singapore; Michael D. Smith: Saint Martin's College, Washington; Glenn R. Guadette: T19-080 Health Science Center, New York; Irene Somerville: University of Strathclyde, Scotland; Shannon Bybee: Idaho State University, Idaho; Jean L. Smith: Rensselaer Polytechnic Institute, New York; Jorge Penso: The Ohio State University, Ohio and Khalid Al-Nadabi-. Sultan Qaboos University, Sultanate of Oman.

ASME Fellow awards were presented Robert N. Pangborn, Shih-Jung Chang, Hardayal S. Mehta, Fumio Hara, Howard H. Chung and David J. Burns.

It should be noted that starting with PVP2000, Best Paper awards will be given to one paper from each PVPD Technical Committee. Also, the Robert J. McGrattan Award is being replaced by two awards, namely 1. the Otto Widera Literature Award, and 2. the Journal Editor Award.

Joe Sinnappan
PVPD Honors Chair



Richard Gwaltney awarding a Certificate of Recognition to PVP student paper participant, Jean L. Smith



Fredrick J. Moody (center), receiving the PVP Medal from Sam Y. Zamrik (L) and John H. Fernandes (R)

1999 Pressure Vessels and Piping Conference— A Summary

The Pressure Vessels and Piping Division's annual Conference was held from August 1 - 5, 1999 at the Sheraton Hotel, Prudential Center, in Boston, MA. It included 155 technical sessions, an opening Plenary Session, Software and NDE Demonstration Forums, two Student Paper Competition sessions, seven tutorial sessions, twelve panel sessions, 134 paper sessions, and a total of 572 technical papers. All of the sessions, including the tutorials, were well attended. One tutorial, "Preparing and Presenting Effective Engineering Presentations," was held on Sunday afternoon with more than 150 in attendance.

Total attendance, including students, retired, and non-revenue was 781. A total of 438 of the conference attendees came from 42 states in the United States with the largest number from Pennsylvania (45) followed closely by California (42). The remaining 343, or 43.9%, were from a total of 36 foreign countries. These ranged from the largest delegation from Japan (85) to the smallest from countries such as Slovakia (1) and Oman (1).

Outside of the technical program, the Conference social program included an Opening Reception on Sunday evening, an All-Conference Reception and a piano concert by Prof. Myung Hee Chung on Monday evening, the Honors Luncheon on Wednesday afternoon at which Dr. Fred Moody received the 1999 PVP Award and Medal, an off-site lobster/clambake on Wednesday evening, and guest tours and hospitality throughout the week.



Prof. Myung Hee Chung at her piano recital.



T. H. Liu retiring PVP Chair being inducted in to the PVP Senate by former Division Chairs.

PVP Senate News

The PVPD Senate consists of past ASME PVPD Chairs who serve as an advisory group for the PVPD Executive Committee.

To encourage student interest in pressure vessels and piping technology and foster student participation in the PVPD, the Senate held the 1st Annual PVPD Student Paper Competition at the 1993 PVP Conference in Denver, Colorado.

This successful program held its 7th Annual Student Paper Competition at the 1999 Boston PVP Conference (PVP99). Six student papers were presented in the 1999 Competition.

Each student who presented his or her paper at PVP99 was given a \$500 award for being accepted in the Student Paper Competition. Three additional awards were presented at the Competition: First Place Graduate Student, First Place Undergraduate Student, and Best Paper Presentation.

For PVP99, the First Place Graduate Student Paper Award went to Glen R. Gaudette (Dept. of Mechanical Engineering, CT Surgery, SUNY-Stony Brook) for his paper "Using Computer Aided Speckle Interferometry to Measure Pressure Effects on the Heart"; the First Place Undergraduate Student Paper Award went to S. Marie (CE-Saclay, FRANCE) for his paper "A New Energetic Approach to Model Ductile Tearing for Real Components"; and the Best Paper Presentation Award went to Jean L. Smith (Materials Science and Engineering Department, Rensselaer Polytechnic Institute) for her paper "Crack Initiation in Smooth Fatigue Specimens of Austenitic Stainless Steel in Light Water Reactor Environments."

For the 8th Annual Student Paper Competition, to be held during the 2000 Seattle PVP Conference, eight student papers have been accepted for the Competition.

The 9th Annual Student Paper Competition will be held during the 2001 PVP Conference in Atlanta, Georgia. To submit a paper, contact T. H. Liu at: Liuth@westinghouse.com.

*Richard C. Gwaltney and W. E. Short II
For the PVPD Senate*

News from the Technical Committees

Materials and Fabrication (M&F) Committee

The M&F Committee promotes the development and sharing of technical information related to material properties/development as well as fabrication technologies for pipes, pipe supports, components, and vessels. The material efforts have primarily focused on subcritical crack growth and fracture in recent years. Fabrication efforts have recently been very strong in the welding and residual stress area. The M&F Committee has several subcommittees dealing with different aspects of pressure vessels and piping. The subcommittees are:

- Materials
- Fabrication
- Fracture
- Subcritical crack growth
- Fitness for service (for nuclear, petrochemical, and fossil industries)

In the 1999 PVP Conference, M&F organized 30 sessions comprising of 125 papers contained in four conference proceedings. Because of the multidisciplinary nature of the committee, several sessions are frequently organized in collaboration with the Codes and Standards, Computer Technology, and Design and Analysis Committees. For 2000, M&F will have about 30% more sessions than in 1999 due to the growth of its membership.

Membership in the committee is open to people with different disciplines interested in fostering technical developments in the areas mentioned above, as well as any other aspects related to materials and fabrication in pressure vessels and piping. We have a large international participation in the membership and offer a mentoring program for those interested in developing sessions in the future.

Gery M. Wilkowski
Chair, Materials and Fabrication Committee

Computer Technology (CT) Committee



Jerry Gordon

algorithms and emerging computer related developments that affect PVP analysis,

The Computer Technology Committee traditionally provides a focal point for expertise in computer technology within the PVPD. The Committee addresses issues relating to software, hardware,

design and engineering process capabilities. Modern developments in linear and non-linear mechanics, including all aspects of finite element and boundary element development, are of particular interest to this committee.

Committee officers for 1999-2000 are Jerry Gordon, Chair; Greg Hulbert, Vice Chair and CTC Associate Editor; T. Wei Lee, Secretary; and K. H. Hsu, Honors Chair.

The technical sessions for the 2000 PVP Conference are being coordinated by Bill Cho (217-785-9901) and Jun Tang (319-335-3365). Session topics include: Non-Linear FEA Applications, Bolted Joints, Reliability and Safety, Meshless Methods and Perforated Material Analysis. The CTC Software Demonstration Forum will be held for an eleventh consecutive year and provides PVP engineers the opportunity to view state-of-the-art design, modeling, and engineering analysis software.

Don Metzger (905-525-9140) and T. Wei Lee (408-289-4865) will serve as TPRs, coordinating CT technical sessions at the 2001 PVP conference in Atlanta, GA.

Individuals who are interested in joining the CT Committee, developing technical paper and panel sessions, and contributing papers should contact the CT Chair for more information about our Committee and future meetings.

Jerry Gordon
Chair, Computer Technology Committee

High Pressure Technology (HPT) Committee



E. H. Perez

and the Netherlands.

One of the primary thrusts of the Committee is to promote and publicize the art and science of high pressure technology. This committee has provided technical support to the Codes and Standards Division in the efforts to develop new codes for high pressure systems and components. These include the High Pressure Piping Code in B31.3, the High Pressure Systems Code, and the new Division 3 of Section VIII of the B and PV Code, which was issued on May 1997.

HPT contributed 5 sessions to the PVPD

Conference. Special thanks are due to the efforts of Eric Roll and Leo Picqueur who were the HPT Technical Program Representatives (TPRs) for the conference.

Development of the High Pressure Technology sessions for the 2000 ASME PVP Conference in Seattle is proceeding under the direction of Sig Mordre for U.S. papers and Leo Picqueur for European papers. Sig is planning 5 sessions for this meeting. Some of the topics will deal with new developments on High Pressure Technology in Europe: one session will be on High Pressure Piping; several sessions will be on food processing at high pressure. Other sessions will deal with design and analysis, materials evaluation, barricade design and in-service inspections of high pressure components.

Looking ahead to future conferences, Les Antalffy will be the TPR in 2001 for the Conference in Atlanta.

We are pleased to announce that the Fellow Grade was awarded to Dr. David Burns for his numerous contributions to the field of High Pressure Technology.

The next HPT Committee meeting will be held in conjunction with the 2000 PVPD Conference in Seattle. All are welcome. Check the Conference Final Program for time and location.

E. H. Perez
Chair, High Pressure Technology Committee

Fluid-Structure Interaction Committee

Year 1999 was a very productive year for the FSI Committee. The committee sponsored 47 sessions with more than 200 papers at the 1999 PVP Conference held in Boston. Wing Cheng worked hard as TPR for the conference and received the Certificate of Recognition. Fred Moody received the 1999 PVP Medal; Vladimir Kudriavtsev, Chris Kleijn, and Satoyuki Kawano received the best session award; and Fumio Hara and Young Kwon were elected ASME Fellows. M. K. Au-Yang gave an excellent tutorial on the topic of Flow-Induced Vibration and was elected incoming PVP Executive Committee member. Six new members (Satoyuki Kawano, David Jerome, Mhamed Souli, Shigeru Itoh, Tomomichi Nakamura, and Chris Kleijn) formally joined the committee.

Young Kwon
Fluid-Structure Interaction Committee

Codes & Standards (C&S) Committee



K. R. Rao

The C & S Committee provides a forum for the presentation and publication of technical information on pertinent topics relating to codes and standards for pressure vessels and piping.

As such, it provides a continuing association with Committees associated with ASME Pressure Technology and Nuclear Codes and with domestic and international codes and standards organizations. The ASME Pressure Vessels and Piping Conference is the primary link for communicating this information to the end user. As the PVDP prepares for this decade and the century, Codes and Standards activities are having an ever-increasing impact in the international arena. As the complexity of our international society grows in the 21st century, so does the need for comprehensive and consistent systems of Codes and Standards for the safe and reliable design, construction, operation, and maintenance of pressure vessels and piping systems.

The 2000 ASME Pressure Vessels and Piping Conference at Seattle has 14 sessions sponsored by Codes & Standards Technical Committee, of which three will be panel sessions and eleven technical sessions. For this year's Conference C&S has three technical sessions co-sponsored by Computer Technology Technical Committee. C&S panel and technical sessions tend to have interdisciplinary flavor with focus on the current applications and international author representation from a wide range of interesting and pertinent topics.

The C&S Technical sessions in addition to varied topics address "Progress in Piping Codes", "FEA Applications", "Plastic Analysis in Pressure Vessel Design", "Developments in Section XI", and "Piping Seismic Design Analysis". Panel sessions will be addressing "A Century of Progress in Codes and Standards", "Current Developments and Issues in Codes and Standards", "Section III, Division 3 Waste Storage/Transport Code", with panelists discussing up-to-date Code Committee activities.

Special thanks are to Art Deardorff, Technical Program Representative, for his diligent coordination of the C&S Sessions.

C & S Committee meetings are open to all interested parties. The next C & S Committee meeting is scheduled to be held during the 2000 PVP Conference in Seattle, Washington. For participation and information contact the Chair at (601) 368 5413, Fax (601) 368 5394, or Internet address: krao@entergy.com.

K. R. Rao

Chair, Codes and Standards Committee

Operations, Applications & Components (OAC) Committee

The OAC Committee promotes the development and sharing of technical information related to design, operation, application and maintenance of pipes, pipe supports, components and vessels. OAC has several subcommittees dealing with different aspects of pressure vessels and piping. The subcommittees are reliability and safety, monitoring and diagnostics, qualification and testing, piping and pipe supports, code component analysis and evaluation dealing with valves, heat exchangers, pumps and compressors, toxic substances dealing with hazardous material handling and transportation, high temperature technology, pressure vessels and structures, and plant life extension.

In the 1999 PVP Conference, OAC organized 18 sessions comprising of 58 papers contained in two conference proceedings. Because of the multidisciplinary nature of the committee, several sessions are organized in collaboration with FSI, Computer Technology, and Seismic Engineering.

OAC enjoys good international participation. Membership in the committee is open to people with different disciplines, which provide the committee the unique opportunity to always renew itself by developing new subcommittees as issues arise.

L. Ike Ezekoye

Chair, Operations, Application and Components Committee

Design and Analysis (D&A) Committee



Allan B. Glickstein

The D&A Technical Committee is one of the original committees of the ASME PVP Division. The aim of this committee is to provide a forum to promote the development and application of design

and analysis methods for use by the pressure vessels and piping industry, both in power and/or process plants. Traditional as well as new analysis methods are addressed by the committee in the areas of: Pressure Vessel Integrity Assessment, Dynamic Response of Components Systems and Structures (CSS), Design and Analysis of Piping and Components, Pipeline Dynamics, Fluid Dynamics, Fatigue and Fracture in Pressure Retaining Components, Plant Life Extension, Elevated Temperature Design, Condition Monitoring of Plant Components, Composite Material Structures, Stress Classification, Severe

Accident Analysis and Robust Design Methods.

D&A maintains an active membership. Our meetings are open to all interested individuals who would like to participate in Committee activities. I look forward to meeting with all of you, who are interested in publishing technical papers and/or developing technical sessions, at the 2000 PVP conference in Seattle.

Allan B. Glickstein

Chair, Design and Analysis Committee

The International Council on Pressure Vessel Technology (ICPVT)



Greg L. Hollinger

The International Council on Pressure Vessel Technology held its Ninth Conference (ICPVT-9) in Sydney Australia the week of April 9, 2000. The Americas Regional Committee (AmRC)

of the council participates through its link to the PVP Division and the ASME Council on Engineering. Approximately thirty papers were sponsored by AmRC, and several key PVP Division and ASME Codes & Standards persons attended and participated in various sessions, including the AmRC Plenary Session and the Closing Panel Session on Internationalization of Codes & Standards. PVP Senator and ASME President Dr. Robert E. Nickel delivered the Robert D. Wylie Memorial Lecture on Monday, April 10, 2000. PVP member and ASME Board of Governor, Dr. R. E. (Gene) Feigel delivered the AmRC Plenary talk, also on Monday April 10, 2000. PVP Member and Vice President of ASME's Board on Pressure Technology Codes & Standards, Mr. J. Robert Sims and PVP Member and Chair of the Pressure Vessel Research Council (PVRC) Mr. Guido G. Karcher participated in the Closing Panel. Mr. Karcher also represented AmRC at the ICPVT Council Meeting, on behalf of the AmRC Chair and PVP Senator, Prof. G. E. O. Widera.

Plans for the Tenth ICPVT Conference were discussed. A globally focused Conference will be held in Vienna in 2003.

The International Council on Pressure Vessel Technology was founded in 1969 in parallel with the PVP Conference that year in Delft. Since then, conferences have been held worldwide, including some in conjunction with PVP Conferences. The Eighth Conference (ICPVT-8) was held in conjunction with the 1996 PVP Conference in Montreal. With PVP's increasing international participation in its conferences

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International Council on Pressure Vessel Technology

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since the early 1990s, it is likely that PVP will continue its participation on ICPVT beyond the ICPVT-10 Conference, but in a limited capacity, compared to that since ICPVT began in 1969. Efforts to coordinate conference content between PVP and ICPVT will be heightened to prevent competition for authors and attendees for future conferences.

Greg L. Hollinger, US Delegate to ICPVT and Secretary, AmRC

Seismic Engineering Committee



Kohei Suzuki

The Seismic Engineering (SE) Committee provides a forum for discussion and exchange of information related to various PVP seismic areas: characterization of earthquake events, seismic test-

ing; seismic evaluation of systems, structures and components; high level seismic response, structural response and interaction effects, fluid-structure interaction and sloshing, seismic isolation and response control, appropriate criteria and methods for design of PVP related structures and so on. Topics of structural damages due to current destructive earthquakes, Northridge, Kobe, Turkey and Taiwan are also under discussion. The SE actively collaborates with the similar committees, around the globe and thus has a strong international flavor.

Kohei Suzuki
Chair, Seismic Engineering Committee

PVP Website



G. Hulbert

The best place to keep current with the PVP Division is at the PVP Website. You can reach the Website by navigating through the ASME Website: go to www.asme.org; click on the **Centers** field;

click on **Technical Divisions** field, then click on the **Pressure Vessels and Piping Division** field. The Website has undergone an upgrade, so be sure and visit the new and improved PVP Website to stay current with the Divisions activities.

Greg Hulbert
PVP Webmaster

JPVT to Publish Millennium Issue



Sam Zamrik

Since its inception in 1974, the *Journal of Pressure Vessel Technology* has become internationally recognized as a leader among technical publications, offering an unmatched quality of content

and breadth of subjects reflecting state of the art in its field. Key to maintaining the high technical quality and pre-eminent role of the journal is the leadership of the Technical Editors and efforts of Associate Editors contributing from diverse fields of expertise.

In celebration of this success, a special Millennium Issue of the journal will be offered. Invited experts will contribute articles reflecting upon the history, development and future challenges in the field of pressure vessel technology. The issue, to be published in August 2000, will be available at the PVP Conference 2000 in Seattle, WA.

The *Journal* Editor welcomes S. Rahman and C. E. Jaske, who will join the Editorial Board.

S. Y. Zamrik
Technical Editor

PVPD Publications



Howard H. Chung

The PVPD publications include (1) Technical Paper publications, (2) Annual Conference Announcement and Brochures, and (3) Division Newsletters, and (4) Division Internet

Web pages.

Technical papers are published in the *ASME Journal of Pressure Vessel Technology (JPVT)*, annual PVP Conference symposium volumes, and special publications such as the Decade of Progress series. The high technical quality of these publications is maintained through the peer review process. During 1999, four issues JPVT were published, and 18 special PVP Division publications volumes were published; 17 volumes at the 1999 PVP Conference in Boston, Massachusetts and one at the 1999 International Mechanical Engineering Congress and Exposition in Nashville, Tennessee, respectively. For the 2000 ASME PVP Conference in Seattle, Washington, more than 18 special volumes will be published. During the year 2000, a special JPVT volume will be published commemorating the start of the new mil-

lennium. The Division web pages contains up-to-date information on forthcoming annual PVP conferences and the Division personnel and can be accessed through the ASME web address (www.asme.org).

Anyone interested in knowing more about the Division publications may contact the PVPD Publications Chair.

Howard H. Chung
PVPD Publications Chair

New Executive Committee Member



M. K. Au-Yang

M.K. Au-Yang received his MS and Ph.D. from the University of California at Berkeley. After spending 6 years working in the aerospace sector he joined the Nuclear

Power Generation Division of Babcock & Wilcox in 1974. He is presently an advisory engineer in the Steam Generator Unit of Framatome Technologies at Lynchburg, Virginia. Throughout his tenure at B&W/Framatome, M.K. has been working in the area of flow-induced vibration, fluid-structure interaction, vibration, acoustics and digital signal analysis techniques as applied to power plant component design, diagnosis and trouble shooting.

M.K.'s first involvement with the ASME PVP Division dated back to 1978, when he developed the very first technical sessions in fluid-structure interaction at a PVP Conference. In 1981 he formed the Subcommittee on Fluid-Structure Interaction within the OAC Committee, and recruited such well known persons as Chen, Paidoussis, Moody, Pettigrew, Weaver, Lin, Shin to be its members. He was later vice-chairman of the OAC Committee and then Chairman of the Technical Committee on Fluid-Structure Interaction from 1995-1998. In addition, he served as an associate editor of the *Journal of Pressure Vessel Technology* for 9 years. A devoted member of the PVP Division, M.K. has in the past 22 years organized over 20 symposia, including the annual Flow-Induced Vibration Symposium, for the PVP Conference and has edited over two dozen ASME Special Publications, including "Technology for the 90s." He was elevated to Fellow of ASME in 1988 and received the PVP Division Outstanding Service Award in 1995.

In addition to ASME activities, M.K. is also a Founders' Fellow of the British Institution of Diagnostic Engineers and is listed in the Millennium Issue of Marquis Who's Who in Science and Engineering.

PUBLICATIONS

1999 ASME PVP Conference

PVP-Vol. 382	Analysis of Bolted Joints
PVP-Vol. 383	Pressure Vessel and Piping Codes and Standards
PVP-Vol. 384	High Pressure Technology
PVP-Vol. 385	Computer Technology 1999: Risk Analysis, Stress Analysis, Nonlinear Finite Element Analysis and Analysis of Perforate Structures
PVP-Vol. 386	Probabilistic and Environmental Aspects of Fracture and Fatigue
PVP-Vol. 387	Seismic Engineering
PVP-Vol. 388	Fracture, Design Analysis of Pressure Vessels, Heat Exchangers, Piping Components, and Fitness for Service
PVP-Vol. 389	Flow-Induced Vibration
PVP-Vol. 390	Transportation, Storage, and Disposal of Radioactive Materials
PVP-Vol. 390	Transportation, Storage, and Disposal of Radioactive Materials
PVP-Vol. 391	Advances in Life Prediction Methodology
PVP-Vol. 392	Service Experience in Fossil and Nuclear Power Plants
PVP-Vol. 393	Fracture, Fatigue and Weld Residual Stress
PVP-Vol. 394	Structures Under Extreme Loading Conditions, Fluid Structure Interaction, Structural Mechanics Problems in Reactor Safety Operations, Applications, and Components
PVP-Vol. 395	Emerging Technologies in Fluids, Structures, and Fluid/Structure Interactions
PVP-Vol. 396	Computational Technologies for Fluid/Thermal/Chemical Systems With Industrial Applications, Volume 1
PVP-Vol. 397-1	Computational Technologies For Fluid/Thermal/Structural/Chemical Systems With Industrial Applications, Volume 2

1999 International Mechanical Engineering Congress

PVP-Vol. 398	Advances in Solids and Structures
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1998 ASME PVP Conference

PVP-Vol. 360	Pressure Vessel and Piping Codes and Standards
PVP-Vol. 361	Structures Under Extreme Loading Conditions
PVP-Vol. 362	Severe Accidents and Topics in the NESC Project
PVP-Vol. 363	Flow-Induced Vibration and Transient Thermal-Hydraulics
PVP-Vol. 364	Seismic Engineering
PVP-Vol. 365	Fatigue, Fracture, and High Temperature Design Methods in Pressure Vessels and Piping
PVP-Vol. 366	Technologies in Reactor Safety, Fluid-Structure Interaction, Sloshing and Natural Hazards Engineering
PVP-Vol. 367	Analysis Of Bolted Joints
PVP-Vol. 368	Analysis and Design of Composite, Process, and Power Piping and Vessels
PVP-Vol. 370	Finite Element Applications: Linear, Non-Linear, Optimization and Fatigue and Fracture
PVP-Vol. 371	High Pressure Technology
PVP-Vol. 373	Fatigue, Fracture, and Residual Stresses
PVP-Vol. 374	Fatigue, Environmental Factors, and New Materials
PVP-Vol. 375	Integrity of Structures and Components; Nondestructive Evaluations
PVP-Vol. 376	Component Analysis and Evaluation, Aging and Maintenance, and Pipe Supports
PVP-Vol. 377-1	Computational Technologies for Fluid/Thermal/Structural/Chemical Systems With Industrial Applications, Volume I
PVP-Vol. 377-2	Computational Technologies for Fluid/Thermal/Structural/Chemical Systems With Industrial Applications, Volume II
PVP-Vol. 378	Risk Assessment Technologies, and Transportation, Storage, and Disposal of Radioactive Materials
PVP-Vol. 379	Seismic Shock, and Vibration Isolation
PVP-Vol. 380	Fitness-For-Service Evaluations in Petroleum and Fossil Power Plants

1998 International Mechanical Engineering Congress

PVP-Vol. 381	Recent Advances in Solids and Structures
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American Society of Mechanical Engineers

PVP 2001

CALL FOR PAPERS

2001 ASME PRESSURE VESSELS AND PIPING CONFERENCE
 HYATT REGENCY ATLANTA
 ATLANTA, GEORGIA
 JULY 22-26, 2001

"PRESSURE VESSEL TECHNOLOGY IN THE NEW MILLENNIUM"

PVP 2001— Join us in Atlanta, Georgia for the 2001 ASME Pressure Vessel and Piping Conference! More than 150 paper and panel sessions are planned, as well as tutorials, NDE and Software demonstrations, and the Student Paper competition. The Conference is a great place to present your ideas and to meet colleagues as we look ahead to PVP technology in the 21st Century. The ASME Pressure Vessels and Piping Division will sponsor this Conference with participation by the ASME NDE Division.

This **CALL FOR PAPERS** Brochure provides guidance for submitting abstracts for proposed technical papers for the 2001 ASME PVP Conference. This first page provides information for submitting abstracts based on general topics, and the subsequent pages provide information for more specific topics and Guidelines for Authors.

GENERAL TOPICS: (1) Codes & Standards; (2) Computer Technology; (3) Design & Analysis; (4) Fluid-Structure Interaction; (5) High Pressure Technology; (6) Materials & Fabrication; (7) Operations, Applications, & Components; (8) Seismic Engineering; (9) Nondestructive Examination; (10) NRC / ASME Symposium on BPVC Section XI and (11) Student Paper Competition.

SCHEDULE: Abstracts are to be submitted by **September 30, 2000**. Authors will be notified of abstract acceptance by **October 15, 2000**. Draft papers are to be submitted by **November 30, 2000**. Paper peer review comments will be returned by **January 31, 2001**. Final papers for publication must be submitted by **March 1, 2001**. All accepted papers will be published in Conference Volumes.

CONFERENCE INFORMATION: Updated Conference and paper publication instructions and information are available on the internet at the ASME Home Page, <http://www.asme.org>.

ABSTRACT SUBMITTAL: Mail, fax, or e-mail a 200-word abstract and the contact author's complete affiliation, address, telephone and fax numbers, and e-mail address on the same page as the abstract for each proposed paper to any of the contacts listed in this brochure, or to either of the following by **September 30, 2000**:

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