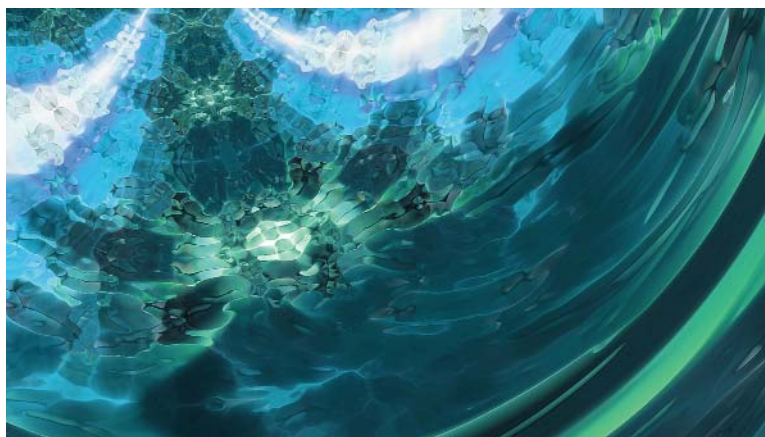


PVP 2010

2010 Pressure Vessels & Piping Conference

Pressure Vessel Technology for Energy Challenge



July 18 – 22, 2010
Hyatt Regency Bellevue

Bellevue
Washington, USA



Welcome to PVP 2010

Welcome to Bellevue, Washington of the USA for the 2010 Pressure Vessels and Piping Conference, cosponsored by the ASME Pressure Vessels and Piping (PVP) Division and Korean Society of Pressure Vessel and Piping (K-PVP). The ASME Nondestructive Evaluation (NDE) Engineering Division is also participating in the conference. The PVP Conference has been the premier international technical forum to the engineering and scientific communities to promote, share and disseminate state-of-the-art pressure technologies, relating to the power, petrochemical and process industries, and sustainable and alternative energies. This year conference contains more than 750 technical papers, organized into more than 200 technical sessions, workshops, tutorials, NDE and Software Demonstration Forums, and the Student Paper Competition and Symposium. Participants are from all over the world, including Europe, Africa, the Middle East, Asia, the Americas and the Oceania islands. Technical papers presented in this Conference are separated into tracks, in accordance with their technical areas, and published in the Conference proceedings in the form of a CD.

In addition to the technical program, social events have been developed, starting on Monday, with the **Seattle and Bellevue City Highlights Tour**, which provides an historical background of the cities, interesting landmarks, and tips on special shopping and sightseeing areas. The Conference-Wide Reception will be held on Monday evening in the Grand Ballroom of Bellevue Hyatt Hotel. On Tuesday, there is a tour visiting **Snoqualmie Waterfalls, Boehm's Candy Kitchen, and the Chateau St. Michelle Winery**, with lunch at Purple Café in Woodinville. The Wednesday evening social event will be the **Dinner Cruise on the Royal Argosy**. The Royal Argosy offers a unique experience on Elliott Bay, and is the first of its kind vessels in the United States.

PVP 2010 Program Layout

	Sunday July 18, 2010	Monday July 19, 2010	Tuesday July 20, 2010	Wednesday July 21, 2010	Thursday July 22, 2010
7:30 am 8:15 am	Arrival	Authors' Breakfast/Briefing Registration Open (7:30 am – 4:00 pm)	Authors' Breakfast/Briefing Registration Open (7:30 am – 4:00 pm)	Authors' Breakfast/Briefing Registration Open (7:30 am – noon)	Authors' Breakfast/Briefing Registration Open (7:30 am – 3:00 pm)
8:30 am 10:15 am	Technical Workshop: Quality in Nondestructive Testing (9:00 am – 11:30 am)	Block 1.1 Technical Sessions NDE Demo	Block 2.1 Technical Sessions Software Demo	Block 3.1 Technical Sessions	Block 4.1 Technical Sessions
10:30 am 12:15 pm	Open	Block 1.2 Plenary Session NDE Demo	Block 2.2 Technical Sessions Software Demo	Block 3.2 Technical Sessions	Block 4.2 Technical Sessions
12:15 pm 1:45 pm	Technical Workshop Quality in Nondestructive Testing (1:00 pm – 3:30 pm)	Lunch Technical Committee Meetings	Lunch Technical Committee Meetings	Honors & Awards Luncheon (12:30 pm – 2:15 pm)	Lunch
2:00 pm 3:45 pm	Registration Opens (3:00 pm – 6:00 pm)	Block 1.3 Technical Sessions NDE Demo	Block 2.3 Technical Sessions Software Demo	Block 3.3 Open	Block 4.3 Technical Sessions
4:00 pm 5:45 pm	Special Tutorial Developing Young Engineers (4:00pm – 6:00pm)	Block 1.4 Technical Sessions NDE Demo	Block 2.4 Technical Sessions Software Demo	Block 3.4 Open	Block 4.4 Technical Sessions Conference Evaluation
Evening	Open	Conference-Wide Reception (6:15 pm – 8:00 pm)	Open	Conference Social Event (5:45 pm – 9:45 pm)	Open

**The American Society of Mechanical Engineers
Pressure Vessels & Piping Division
Korean Society of Pressure Vessel and Piping**

PVP-2010 Conference Committees



Young W. Kwon
Conference Chair



Tae Eun Jin
Conference Co-Chair



Ronald S. Hafner
Technical Program Chair

PVP Technical Program Representatives

Codes and Standards	Kunio Hasegawa Young Hwan Choi
Computer Technology & Bolted Joints	John Martin/Hakim Bouzid Yoon Suk Chang
Design and Analysis	Robert A. Leishear Gap Heon Sohn
Fluid-Structure Interaction	Njuki Mureithi Jong Chull Jo
High-Pressure Technology	Darren L. Stang Song Chun Choi
Materials and Fabrication	Bruce J. Wiersma Whung Whoe Kim
Operations, Applications, and Components	Christopher S. Bajwa Ayman M. Cheta
Seismic Engineering	Eung Soo Jang Cheryl C. O'Brien
Construction and Licensing Experience of New Nuclear Power Plants	Chang Hun Hyun Hae Dong Chung Jin Young Moon

Student Paper Competition

ASME NDE Division

NDE Demonstration Forum

Software Demonstration Forum

PVP Division Executive Committee (2009 – 2010)

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Young W. Kwon	Vice Chair and Secretary
Ronald S. Hafner	Technical Program Chair
Michael E. Nitzel	Professional Development Chair
Dennis K. Williams	Honors Chair
Daniel T. Peters	Communications Chair

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Artin A. Dermenjian, Vice President (2009–10)	2008–09
James F. Cory, Jr, President (2009–10)	2007–08
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M. K. Au-Yang	2005–06
Ismail T. Kisisel	2004–05
William J. Bees	2003–04
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Joseph Sinnappan	2001–02
A. G. (Jack) Ware	2000–01
Robert F. Sammataro*	1999–00
Thou-Han Liu	1998–99
William E. Short, II	1997–98
Richard C. Gwaltney	1996–97
Shoei-Sheng Chen	1995–96
Greg L. Hollinger	1994–95
Carl E. Jaske	1993–94
Rudy J. Scavuzzo	1992–93
Sam Y. Zamrik	1991–92
G. E. Otto Widera	1990–91
Robert H. Mallett	1989–90
Robert W. Swindeman	1988–89
Alexander H. C. Marr	1987–88
Jeffrey T. Fong	1986–87
Don B. Van Fossen	1985–86
James R. Farr	1984–85
Charles F. Nash	1983–84
Donald S. Griffin	1982–83
Richard H. Gallagher*	1981–82
L. Eugene Hulbert	1980–81
Robert E. Nickell	1979–80
Roger F. Reedy	1978–79
David H. C. Pai	1977–78
Pedro V. Marcal	1976–77
Harold H. Waite	1975–76

Robert L. Cloud	1974–75
Charles V. Moore	1973–74
Irvin Berman*	1972–73
Danos Kallas*	1971–72
Robert J. Cepluch	1970–71
Charles F. Larson	1969–70
Gunther P. Eschenbrenner	1968–69
Vito Salerno*	1967–68
Dana Young*	1966–67
*Deceased	

PVP Division Technical Committee Chairs

Codes and Standards	Gora Chakrabarti
Computer Technology & Bolted Joints	Hakim A. Bouzid
Design and Analysis	Marina B. Ruggles-Wrenn
Fluid-Structure Interaction	Jong Chull Jo
High-Pressure Technology	Jan Keltjens
Materials and Fabrication	Doug Scarth
Operations, Applications, and Components	Dennis H. Martens
Seismic Engineering	Vernon Matzen

PVP Division Administrative Committee Chairs

Membership Development	Michiel P.H. Brongers
Publicity and PVPD Newsletter Editor	Daniel T. Peters
International Coordination	Maheer Y.A. Younan

ASME Journal of Pressure Vessel Technology

Editor G. E. O. (Otto) Widera

ASME President

Robert T. Simmons 2010–2011

ASME Staff

Executive Director	Thomas Laughlin
Meetings Manager	Melissa Torres
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OPENING CEREMONY and PLENARY SESSION

“Pressure Vessel Technology for Energy Challenge”

The Conference opens on Monday, July 19, at 10:30 am, in the Grand Ballroom (E through H), on the Second Floor of the Olympic Tower. Representatives of the American Society of Mechanical Engineers and Korean Society of Pressure Vessel Piping will welcome the attendees. The first presentation will be delivered by Dr. Leonard J. Bond, Laboratory Fellow of the Pacific Northwest National Laboratory. The second presentation will be delivered by Mr. Sun Koo Kang, Executive Vice President of the Korea Power Engineering Company (KPEEC), and Vice President of the Korean Society of Pressure Vessels and Piping (K-PVP).

Plenary Speaker



Leonard J. Bond

Laboratory Fellow, Pacific Northwest National Laboratory, Richland, Washington, USA

Moving beyond NDE to Proactive Management of Materials Degradation

There is growing interest in life extensions to enable longer term operation (LTO) for both existing nuclear power plants (NPPs) and proposed new NPPs. In order to justify an initial license extension for the 40–60 year period, new non-destructive examination (NDE) approaches have been developed and deployed by NPP operators in their Aging Management Programs (AMPs). However, to achieve the goals of even longer term operations, and specifically for the USA in looking at methodologies to support subsequent license renewal periods (i.e., 60–80 years, and beyond), it is necessary to understand the capabilities of current NDE methods to detect, monitor and trend degradation, and hence enable timely implementation of appropriate corrective actions. This lecture will review the state-of-the-art and current activities in the move towards providing a capacity for proactive management of materials degradation (PMMD) to support NPP LTO.

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New monitoring and prognostic methodologies have been developed and implemented for a wide variety of industrial uses, and particularly for aerospace applications. These new approaches, for both active and passive components, go beyond current condition-based maintenance (CBM) practices, and include on-line monitoring, which has the potential to give operators better plant situational awareness and data for reliable predictions of remaining service life. Implementation of such techniques can potentially move aging management and the response to degradation from being reactive to being proactive. This has the potential to improve safety and plant economics, reduce unplanned outages, and improve probabilistic risk assessments.

Operators need accurate and timely information to better manage power plant life. One challenge facing NPP operators is limited knowledge of material performance for operation beyond 60 years, with the corresponding potential need to address new and unexpected degradation processes reactively, which could impact both the safety and economic viability of the plant. For the current light water reactor (LWR) fleet, new degradation processes have historically appeared at a rate of one about every seven years, and there is no reason to believe this trend will not continue, which highlights the need for better monitoring and prognostic capabilities.

Although it can be assumed that periodic inspections will be adequate to support LTO from 60–80 years (and potentially beyond), on-line continuous monitoring provides additional capabilities and becomes advantageous. Advanced on-line monitoring with intelligent data prognostic and diagnostic tools offer new approaches that can be used with new models and data integration approaches to enhance safety and ensure high reliability. In moving the community forward to effectively support LTO, and maintain and potentially even improve safety through the deployment of such systems, it is necessary to demonstrate methodologies, understand stressors, sensors, communication, analysis, and quantify uncertainty in remaining life prediction (prognostics), all within a risk informed and probabilistic framework.

Dr. Leonard J. Bond graduated in 1974 with a B.Sc, Applied Physics, and in 1978 with a Ph.D., Physics, both from The City University, London. The characterization of aging and degradation is a theme in the work he has performed throughout his professional career.

His graduate work, preformed for British gas, contributed to the science base for the then emerging field of quantitative nondestructive evaluation (QNDE), and provided a science base for the first “Ultrasonic Pigs” being developed for pipeline inspection. With the support of the Ministry of Defense (UK) he analyzed ultrasonic inspection applied to aging solid rocket motors, and also an increasingly diverse range of elements in defense systems.

Dr. Bond became a member of faculty at University College London (UCL), University of London, and developed a research group focused on QNDE, including for nuclear power plant applications. He moved to the United States in 1990, and initially worked at NIST in Boulder, CO. He held Research Professorships with both the University of Colorado at Boulder and the University of Denver, and his work included a major project investigating aspects of system aging — the inspection of solid rocket motors and acoustic tomography applied to concrete dams with the Bureau of Reclamation.

Dr. Bond’s current research activities focus on advanced diagnostics/prognostics, and includes leading the Reactor Aging Focus Area, for PNNL’s Sustainable Nuclear Power Initiative, leading PNNL activities that support the NRC’s developing program in Proactive Management of Materials Degradation (PMMD), and he is also supporting DOE-NE’s LWR Sustainability program. He is a Chief Scientific Investigator on IAEA’s Coordinated Research Program (CRP) on Advanced, Surveillance, Diagnostics, and Prognostics Techniques, used for Health Monitoring of Systems, Structures and Components, and a US delegate to the International Electro technical Commission (IEC), Working Group 45 (Nuclear Instrumentation).

Dr. Bond is a Fellow of the Institute of Physics (UK), a Senior Member of the IEEE, a member of the IET, and a Chartered Electrical Engineer. He is the author or co-author of more than 250 publications, including book chapters, monographs and more than 55 articles in peer-reviewed scientific journals. He is also author of more than 60 major reports, and he holds 10 patents.

Plenary Speaker



Sun Koo Kang

Executive Vice President of KOPEC, Korea
Vice President of KPVP

Current Status and Future Prospect of Nuclear Power in Korea

Since the commercial operation of the first nuclear power plant in 1978, Korea has currently 20 nuclear power plants under operation, and eight (8) nuclear power plants under construction. Those nuclear power plants produce 35% of total electricity generation in Korea. In earlier days, the design and fabrication technologies for construction of nuclear power plants were imported from the USA, Canada, and France. Presently, Korea has its own design reactors, named OPR1000 and APR1400. Recently Korea was successful in making a contract for exporting four APR1400 reactors to the UAE.

In order to support the technical needs of the Korean Nuclear Industry, the KEPIC code was developed for the design and fabrication of pressure vessels and piping, and a technical society, namely the Korean Society of Pressure Vessels and Piping, or K-PVP, was formed in 2004. The organizational structure of K-PVP is similar to that of ASME-PVP, including technical committees for codes & standards, design & analysis, materials & fabrication, etc.

This presentation will briefly discuss an overview of nuclear power related to global paradigm shift. In addition, the current status of nuclear power in Korea, including OPR1000 and APR1400, is introduced in terms of both construction and operation. Finally, the vision and challenges of nuclear power, such as enhancing nuclear safety levels, promoting public acceptance and creating market by successful export, are discussed.

Mr. Sun Koo Kang received an undergraduate degree from Seoul National University. After joining Korea Power Engineering Company (KOPEC), the professional nuclear power plant design company, he worked as a senior research engineer, and participated in Korea NPP Standardization projects in the early 1980s. His pioneering efforts contributed to the development of OPR1000 and APR1400. Furthermore, he performed the research regarding probabilistic safety assessment (PSA), introducing PSA technology to Korea. He developed a series of software on the PSA, FORTE, with the fastest quantification engine, which has since been commercialized throughout the U.S., Canada, and Spain nuclear power plants. Furthermore, SAREX, the PSA software, and RIMS, the risk monitoring system, were developed during the study of PSA, and these systems have been used in all nuclear power plants in Korea. He was appointed as the general director of the KOPEC Power Engineering Research Institute, and was responsible for developing research activities on life time extension, structural integrity assessment, and thermal stratification analysis as well. He is currently in charge of the nuclear division of KOPEC as an executive vice president, a position he has held since 2008.

He has also served as the Vice President of Korean Society of Pressure Vessels and Piping (K-PVP) and as Auditor of Korea Nuclear Society (KNS). He has presented more than 100 presentations at various domestic and international conferences.

HONORS and AWARDS LUNCHEON

The ASME PVP Division Honors and Awards Luncheon, during which all Division and selected ASME Society awards are presented, will be held on Wednesday, July 21, at 12:30 pm, in the Grand Ballroom (E through H), on the Second Floor of the Olympic Tower. The top PVP Division award, the ASME S. Y. Zamrik PVP Medal, will be presented to Dr. Toshiyuki Sawa.

S. Y. Zamrik PVP Medal Recipient



Toshiyuki Sawa

Hiroshima University, Japan

Dr. Sawa took a job as Assistant Professor of Department of Mechanical Engineering, at University of Yamanashi, Japan, after obtaining a PhD degree from Tokyo Institute of Technology, in 1976. Then, he was promot-

ed to Lecturer, in 1980, and to Associate Professor, in 1983, at University of Yamanashi. In 2004, Dr. Sawa became Professor of Department of Mechanical Systems Engineering, Graduate School of Engineering, Hiroshima University. Concurrently, since 2009, he is the Director of the Collaborative Research Center, Hiroshima University. Since 1976, Dr. Sawa has been researching the stress analysis of mechanical structures, using axisymmetric theory of elasticity, computational and experimental mechanics, especially, stress analysis of adhesive joints under static and impact loadings. In addition, he has researched the stress analyses of gaskets and pipe flanges and bolts from strength and reliability design standpoint, and the sealing performance of pipe flange connections under internal pressure, as well as bending moments and thermal conduction conditions for preventing leakage accidents. Recently, he worked on the mechanical behavior of pipe flange connections with non-asbestos gaskets under elevated temperature and internal pressure, both experimentally and numerically. He has published more than 170 papers and 10 books related to the stress analyses of bolted flange connections and adhesive joints.

Dr. Sawa has been the chair/co-chair of session of analysis of bolted joints in PVP Conference since 1991. In addition, he was the developer/co-developer of international sessions on the analysis of bolted joints in PVP with European, North America and Japan collaborators. In addition, he received the PVP Conference award at the 2005 PVP Conference for his co-developing the outstanding Technical Session. At the 1989 PVP joint ASME/JSME Conference, Dr. Sawa was a Program Chair representing JSME, and at the 2004 PVP joint ASME/JSME Conference, he was the Conference Co-chair. Since 1995, Dr. Sawa has been the co-chair of sessions on adhesive joints and bolted joints. He served as the Committee Chair on Reliability, Stress Analysis and Failure Prevention of the Mechanical Design Engineering Division of ASME, from 2008 to 2009. In Japan, Dr. Sawa chairs the Sealing Technology Committee, as well as other technical committees, such as ISO TC5/SC10 and SC5 Committee, JIS (Japanese Industrial Standards) Committee JIS B 2220, and others in JSME. He convened ISO TC5/SC5 WG-3, and published ISO 4144.

WORKSHOPS and TUTORIALS

Tutorials and Workshops offer both the experienced and early career engineers excellent opportunities to refresh their knowledge and to venture into specific technical areas outside their expertise.

Special Tutorial: This is a two-hour conference session, held on Sunday afternoon. The session leader will make available the necessary presentation material.

Technical Tutorials: These tutorials are approximately four hours in length. Technical tutorials fill two consecutive conference session blocks and are integrated into the conference session schedule. Admission to the tutorials and workshops is free for Conference Registrants. At each technical tutorial, attendees may purchase a copy of the Tutorial Notes; the charge is set as low as possible based on the cost of production. For 2010, the notes for the Technical Tutorials may be purchased for \$30.00 each, at the tutorial sessions.

Each attendee will receive a *Certificate of Attendance*, as proof that the attendee has participated in the two-hour *Special Tutorial*, or the four-hour *Technical Tutorial*.

Goodfellow, British Energy, Barnwood, United Kingdom; M. C. Smith, British Energy, Gloucester, United Kingdom

SESSION 1.1.N (NDE-6-1)

Monday, July 19, 8:30 am – 10:15 am, Laurel

SPENCER H. BUSH LECTURE

Sponsored by: NDE Engineering Division and the Codes & Standards and Materials & Fabrication Technical Committees

Developed by: O. F. Hedden, Codes and Standards Consulting, Fort Worth, TX, USA; W. T. Springer, University of Arkansas, Fayetteville, AR, USA

Chair: O. F. Hedden, Codes and Standards Consulting, Fort Worth, TX, USA

Co-Chair: W. T. Springer, University of Arkansas, Fayetteville, AR, USA

PVP2010-26160: THE ROLE OF INSERVICE INSPECTION PROGRAMS AT NUCLEAR POWER PLANTS—PAST, PRESENT, AND FUTURE (Presentation Only)

A. Chockie, Chockie Group International, Inc., Seattle, WA, USA; L. J. Chockie, Chockie Consulting, Green Valley, AZ, USA

SESSION 1.1.O (OAC-1-1)

Monday, July 19, 8:30 am – 10:15 am, Juniper

SAFETY, RELIABILITY AND RISK ASSESSMENT I

Sponsored by: Operations, Applications & Components Technical Committee

Developed by: M. Sanwarwalla, Sargent & Lundy, LLC, Chicago, IL, USA; F. Cho, RiskSolver Communications, Irvine, CA, USA

Chair: I. T. Kisisel, Sargent & Lundy LLC, Chicago, IL, USA

Co-Chair: N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-25049: SAFETY ASSESSMENT OF REACTOR PRESSURE VESSEL INTEGRITY FOR LOSS OF COOLANT ACCIDENT CONDITIONS

D. Beukelmann, W. Guo, W. Holzer, R. Kauer, W. Münch, C. Reichel, P. M. Schöner, TÜV SÜD Industrie Service GmbH, München, Germany

PVP2010-25232: FAILURE FREQUENCY ESTIMATES FOR BOILING WATER REACTOR PRESSURE VESSELS

F. A. Simonen, S. R. Gosselin, Scandpower Risk Management, Inc., Richland, WA, USA; A.T. Chiang, J. E. Rhoads, Energy Northwest, Richland, WA, USA

PVP2010-25676: PROBABILISTIC LEAK-BEFORE-BREAK ASSESSMENT OF A MAIN COOLANT LINE

I. Varfolomeev, D. Ivanov, D. Siegele, Fraunhofer IWM, Freiburg, Germany; G. Nagel, EON Kernkraft GmbH, Hannover, Germany

SESSION 1.1.P (OAC-4-4)

Monday, July 19, 8:30 am – 10:15 am, Cottonwood

TESTING OF PACKAGINGS

Sponsored by: Operations, Applications & Components Technical Committee

Developed by: C. May, N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA

Chair: A. Smith, Savannah River National Laboratory, Aiken, SC, USA

Co-Chair: M. Greiner, University of Nevada, Reno, NV, USA

PVP2010-25449: DROP TESTS RESULTS OF REVISED CLOSURE BOLT CONFIGURATION OF THE STANDARD WASTE BOX, STANDARD LARGE BOX-2, AND TEN DRUM OVER PACK PACKAGINGS

C. May, Savannah River National Laboratory, Aiken, SC, USA; C. McKeel, E. K. Opperman, Savannah River Nuclear Solutions, Aiken, SC, USA

PVP2010-26067: EFFECTS OF PACKAGE CONTENT POSITION ON SLAP-DOWN ANGLE

C. McKeel, Savannah River Nuclear Solutions, Aiken, SC, USA

PVP2010-26048: A COMPARISON OF TWO DIFFERENT THERMAL INSULATION AND STRUCTURAL MATERIALS USED FOR A TYPE B PACKAGING: DESIGN AND REGULATORY PERFORMANCE TEST RESULTS

P. S. Blanton, K. Eberl, Savannah River National Laboratory, Aiken, SC, USA; P. Mann, U.S. Department Of Energy, Albuquerque, NM, USA

PVP2010-26095: PRESHIPMENT LEAK TESTING 9977 CONTAINMENT VESSELS WITH THE TM ELECTRONICS SOLUTION MODEL S1A-L2-V LEAK TESTER

D. J. Trapp, Savannah River National Laboratory, Aiken, SC, USA

SESSION 1.1.Q (SPC-1-1)

Monday, July 19, 8:30 am – 10:15 am, Madrona

STUDENT PAPER SYMPOSIUM AND COMPETITION I

Sponsored by: PVP Senate

Developed by: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA

Chair: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA

Co-Chair: A. Dermenjian, Sargent & Lundy LLC, Chicago, IL, USA; J. Todd, Penn State, University Park, PA, USA

PVP2010-26148: BUBBLE FORMATION AND BEHAVIOUR UNDER HYPERGRAVITY CONDITIONS

A. Eiden, University of Cambridge, Cambridge, United Kingdom; C. Giannopapa, A. Dowson, European Space Agency, Noordwijk, AG, The Netherlands; B. Toth, ESA, Noordwijk, The Netherlands

PVP2010-25590: NUMERICAL ANALYSIS OF THE HEAT TRANSFER IN A PRESSURIZER WATER REACTOR CORE

S. W. Jo, University of Michigan at Ann Arbor, Ann Arbor, MI, USA; Y. K. Lee, ANFLUX, Seoul, Korea (Republic); J. C. Jo, KINS, Daejeon, Korea (Republic)

PVP2010-25509: DATA MINING OF GENERAL AND LOCALIZED CORROSION OF STAINLESS STEEL ALLOYS USING KOHONEN MAPPING

K. Kirsch, M. Urquidi-Macdonald, Penn State, University Park, PA, USA

PVP2010-25570: EFFECTS OF OVERLOAD ON FATIGUE STRENGTH OF SUS316 HAVING A CRACK-LIKE SURFACE DEFECT

H. Osedo, K. Takahashi, K. Ando, Yokohama National University, Yokohama, Japan

SESSION 1.1.R (HP-1-1)

Monday, July 19, 8:30 am – 10:15 am, Larch

DESIGN, ANALYSIS AND LIFE PREDICTION OF HIGH-PRESSURE VESSELS

Sponsored by: High-Pressure Technology Technical Committee

PVP2010-25034: MEASUREMENTS OF RESIDUAL STRESSES IN 316 STAINLESS STEEL WELDMENTS

C. Davies, Imperial College London, London, United Kingdom; D. Hughes, ILL, Grenoble, France; R. Wimpory, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany; D. W. Dean, British Energy, Gloucester, United Kingdom; K. Nikbin, Imperial College London, London, United Kingdom

PVP2010-25736: SIMULATION AND MEASUREMENT OF THROUGH-WALL RESIDUAL STRESSES IN A STRUCTURAL WELD OVERLAID PRESSURIZER NOZZLE

S. Marlette, Westinghouse Electric Company LLC, Monroeville, PA, USA; P. Freyer, Westinghouse Electric Company LLC, Pittsburgh, PA, USA; M. C. Smith, British Energy, Gloucester, United Kingdom; A. Goodfellow, British Energy, Barnwood, United Kingdom; X. Pitoiset, Westinghouse Electric Belgium SA, Nivelles, Belgium; B. Voigt, WEC Welding & Machining LLC, Lake Bluff, IL, USA; R. Rishel, WesDyne International, Madison, PA, USA; E. Kingston, VEQTER Ltd., Bristol, United Kingdom

PVP2010-25431: RELATIONSHIP BETWEEN SINGULARITY STRENGTH FACTORS AND PRACTICAL BONDING STRENGTH OF CERAMIC TO METAL JOINT

M. Tateno, H. Morikawa, Kogakuin University, Hachioji, Tokyo, Japan

SESSION 1.3.N (NDE-4-1)

Monday, July 19, 2:00 pm – 3:45 pm, Laurel

NUCLEAR POWER PLANT LIFE EXTENSION ISSUES

Sponsored by: NDE Engineering Division, and the Codes & Standards, Materials & Fabrication, and Operations, Applications & Components Technical Committees

Developed by: S. Doctor, Pacific Northwest National Laboratory, Richland, WA, USA; W. T. Springer, University of Arkansas, Fayetteville, AR, USA

Chair: S. Doctor, Pacific Northwest National Laboratory, Richland, WA, USA

Co-Chair: W. T. Springer, University of Arkansas, Fayetteville, AR, USA

PVP2010-26063: USING TECHNOLOGY TO SUPPORT PROACTIVE MANAGEMENT OF MATERIALS DEGRADATION FOR THE U.S. NUCLEAR REGULATORY COMMISSION

W. B. Taylor, K. Knobbs, Pacific Northwest National Laboratory, Richland, WA, USA; G. Carpenter, S. Malik, U.S. Nuclear Regulatory Commission, Rockville, MD, USA

PVP2010-25678: RESEARCH ACTIVITIES IN THE EUROPEAN UNION ON AGEING MANAGEMENT FOR THE LONG TERM OPERATION OF NPPS

O. Martin, A. Ballesteros, C. Bruynooghe, M. Bieth, European Commission, JRC-Institute for Energy, Petten, North Holland, The Netherlands

PVP2010-26167: AGING-RELATED DEGRADATION (Presentation Only)

G. Carpenter, U.S. Nuclear Regulatory Commission, Rockville, MD, USA

PVP2010-25815: RBI IN THE ALKYLATION PLANTS (Presentation Only)

G. Alvarado, COMIMSA, Saltillo, Coahuila, Mexico

SESSION 1.3.O (OAC-1-2)

Monday, July 19, 2:00 pm – 3:45 pm, Juniper

SAFETY, RELIABILITY AND RISK ASSESSMENT II

Sponsored by: Operations, Applications & Components Technical Committee

Developed by: M. Sanwarwalla, Sargent & Lundy, LLC, Chicago, IL, USA; F. Cho, RiskSolver Communications, Irvine, CA, USA

Chair: M. Sanwarwalla, Sargent & Lundy, LLC, Chicago, IL, USA

Co-Chair: F. Cho, RiskSolver Communications, Irvine, CA, USA

PVP2010-25010: REVIEW OF PROPOSED METHODOLOGY FOR RISK-INFORMING RELAXATION TO ASME SECTION XI APPENDIX G

T. Dickson, Oak Ridge National Laboratory, Oak Ridge, TN, USA; E. Focht, M. Kirk, U.S. Nuclear Regulatory Commission, Rockville, MD, USA

PVP2010-25440: HYDRODYNAMIC FORCES, PRESSURE AND MASS FLUX IN TWO-PHASE AIR-WATER FLOW THROUGH TRANSPARENT SAFETY VALVE MODEL

V. Kourakos, von Karman Institute for Fluid Dynamics, Sint-Genesius-Rode, Brussels, Belgium; S. Chabane, Centre Technique des Industries Mecaniques, Nantes, France; P. Rambaud, J. M. Buchlin, von Karman Institute for Fluid Dynamics, Sint-Genesius-Rode, Brussels, Belgium

PVP2010-26146: TOWARDS AN IMPROVED UNDERSTANDING OF WATER-HAMMER COLUMN-SEPARATION DUE TO RAPID VALVE CLOSURE

H. Warda, Y. A. Elashry, Alexandria University, Alexandria, Egypt

SESSION 1.3.P (OAC-4-6)

Monday, July 19, 2:00 pm – 3:45 pm, Cottonwood

STRUCTURAL ASPECTS OF PACKAGINGS

Sponsored by: Operations, Applications & Components Technical Committee

Developed by: C. May, Savannah River National Laboratory, Aiken, SC, USA; N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA

Chair: G. Bjorkman, U.S. Nuclear Regulatory Commission, Rockville, MD, USA

Co-Chair: N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-25047: DYNAMIC STRUCTURAL ANALYSIS OF THE 9516 TRANSPORT PACKAGE

Z. Han, J. Abou-Hanna, V. Shah, Y. Y. Liu, Argonne National Laboratory, Argonne, IL, USA

PVP2010-25135: EVALUATION OF TORQUE VS CLOSURE BOLT PRELOAD FOR A TYPICAL CONTAINMENT VESSEL UNDER SERVICE CONDITIONS

A. Smith, G. Abramczyk, S. Nathan, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-26065: PREDICTION OF BOLT LOADS IN SMALL PRESSURE VESSELS, NUREG/CR-6007 VS DETAILED FEA

C. McKeel, Savannah River Nuclear Solutions, Aiken, SC, USA

PVP2010-25773: PACKAGE IMPACT MODELS AS A PRECURSOR TO CLADDING ANALYSIS

N. Klymyshyn, H. E. Adkins, Jr., Pacific Northwest National Laboratory, Richland, WA, USA; C. S. Bajwa, H. Piotter, U.S. Nuclear Regulatory

Commission, Rockville, MD, USA

SESSION 1.3.Q (SPC-1-2)

Monday, July 19, 2:00 pm – 3:45 pm, Madrona

STUDENT PAPER SYMPOSIUM AND COMPETITION II

Sponsored by: PVP Senate

Developed by: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA
Chair: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA
Co-Chair: A. Dermenjian, Sargent & Lundy LLC, Chicago, IL, USA;
J. Todd, Penn State, University Park, PA, USA

PVP2010-26001: ON THE USE OF THE THEORY OF RINGS ON NON-LINEAR ELASTIC FOUNDATION TO STUDY THE EFFECT OF BOLT SPACING IN BOLTED FLANGE JOINTS

T. D. Do, H. Bouzid, T.-M. Dao, Ecole de Technologie Superieure, Montreal, QC, Canada

PVP2010-25023: ASSESSMENT OF THE HODOGRAPH CONE METHOD (HCM) FOR THE EVALUATION OF THE COD OF OFF-CENTERED CRACK IN PIPES UNDER BENDING FOR LBB ASSESSMENT

G. Iannitti, University of Cassino, Cassino, Italy

PVP2010-25574: FORMATION MECHANISM AND MICRO-STRUCTURE OF EIGEN-LINE IN ELECTROFUSION JOINTS OF POLYETHYLENE PIPES

J. Shi, J. Zheng, Zhejiang University, Hangzhou, Zhejiang, China; W. Guo, Zhejiang Special Equipment Inspection and Research Institute, Hangzhou, Hangzhou, China

PVP2010-25338: ULTRASOUND IMAGING USING MULTILAYER SYNTHETIC APERTURE FOCUSING

M. H. Skjelvareid, Breivoll Inspection Technologies, Tromsø, Norway; Y. Birkelund, University of Tromsø, Tromsø, Norway

SESSION 1.3.R (TW-1-4)

Monday, July 19, 2:00 pm – 3:45 pm, Larch

TECHNICAL TUTORIAL: NUCLEAR COMPONENTS DESIGN-BY-ANALYSIS CONCEPTS, STRESS LIMITS, AND TECHNICAL BASIS PART I

Sponsored by: The PVP Division Conference Committee

Presented by: G. Slagis, G C Slagis Associates, Pleasant Hill, CA, USA

SESSION 1.3.S (MF-15-3)

Monday, July 19, 2:00 pm – 3:45 pm, PreFunction

NDE DEMONSTRATION FORUM III

Sponsored by: PVP Senate, PVP Materials & Fabrication Technical Committee, and the NDE Engineering Division

Developed by: C. Jaske, DNV Columbus, Inc., Dublin, OH, USA

Block 1.4 Monday, July 19 (4:00 pm – 5:45 PM)

SESSION 1.4.B (CS-4-1)

Monday, July 19, 4:00 pm – 5:45 pm, Grand Ballroom A

RATCHETING ISSUE IN PRESSURE VESSEL DESIGN

Sponsored by: Codes & Standards Technical Committee

Developed by: W. Reinhardt, Atomic Energy of Canada, Mississauga, ON, Canada; R. Adibi-Asl, AMEC NSS, Toronto, ON, Canada

Chair: Y. Garud, Garud Communications, San Jose, CA, USA

Co-Chair: D. Mackenzie, University of Strathclyde, Glasgow, United Kingdom

PVP2010-25415: RATCHETING ASSESSMENT OF A FIXED TUBE SHEET HEAT EXCHANGER SUBJECT TO IN PHASE PRESSURE AND TEMPERATURE CYCLES

D. Mackenzie, K. Behseta, R. Hamilton, University of Strathclyde, Glasgow, United Kingdom

PVP2010-25753: REVIEW AND ASSESSMENT OF RATCHETING CONSIDERATIONS FOR DESIGN AND ANALYSIS

Y. Garud, Garud Communications, San Jose, CA, USA

PVP2010-25761: EFFECT OF OVALITY ON SHAKEDOWN OF PIPE BENDS

A. Asadkarami, W. Reinhardt, N. Zobeiry, Atomic Energy of Canada Ltd., Mississauga, ON, Canada

PVP2010-25911: NON-CYCLIC SHAKEDOWN-RATCHETING BOUNDARY DETERMINATION: ANALYTICAL EXAMPLES

R. Adibi-Asl, AMEC NSS, Toronto, ON, Canada; W. Reinhardt, Atomic Energy of Canada Ltd., Mississauga, ON, Canada

PVP2010-26088: LOWER BOUND METHODS IN ELASTIC-PLASTIC SHAKEDOWN ANALYSIS

W. Reinhardt, Atomic Energy of Canada Ltd., Mississauga, ON, Canada; R. Adibi-Asl, AMEC NSS, Toronto, ON, Canada

SESSION 1.4.C (CS-13-1)

Monday, July 19, 4:00 pm – 5:45 pm, Grand Ballroom B

RECENT DEVELOPMENTS IN CHINESE CODES AND STANDARDS—RECENT DEVELOPMENTS IN NON-DESTRUCTIVE TEST OF POLYETHYLENE PIPES

Sponsored by: Codes & Standards Technical Committee

Developed by: J. Zheng, Institute of Process Equipment, Zhejiang University, Hangzhou, China

Chair: M. O'Rourke, Rensselaer Polytechnic Institute, Troy, NY, USA

Co-Chair: Z. Chen, Zhejiang University, Hangzhou, China

PVP2010-25576: CLASSIFICATION OF DEFECTS IN FUSION JOINTS OF POLYETHYLENE PIPES

J. Zheng, Y. Qin, J. Shi, Zhejiang University, Hangzhou, China; W. Guo, Zhejiang Special Equipment Inspection and Research Institute, Hangzhou, Hangzhou, China; H. Wang, G. Wang, Zhejiang University, Hangzhou, Hangzhou, China

PVP2010-25578: DEVELOPMENT OF NON-DESTRUCTIVE TEST AND SAFETY ASSESSMENT OF ELECTROFUSION JOINTS FOR CONNECTING POLYETHYLENE PIPES

J. Zheng, J. Shi, Zhejiang University, Hangzhou, China; W. Guo, Zhejiang Special Equipment Inspection and Research Institute, Hangzhou, Hangzhou, China

PVP2010-25581: EXPERIMENTAL INVESTIGATION ON COUPLING FOCUSING ULTRASONIC TECHNIQUE FOR INSPECTION OF POLYETHYLENE BUTT-FUSION JOINT

Japan; S. Sato, Hokkaido Electric Power Co., Inc., Sapporo, Japan; K. Matsumoto, Kyushu Electric Power Co., Inc., Hakata, Japan; K. Dozaki, The Japan Atomic Power Company, Tokyo, Japan

PVP2010-25388: THE FUNCTION TEST FOR THE RELIABILITY CONFIRMATION OF HIGH TEMPERATURE AND HIGH PRESSURE VESSEL FOR IRRADIATION

K.-N. Park, J.-M. Lee, S.-H. Ahn, S.-I. Wu, Y.-K. Kim, Korea Atomic Energy Research Institute, Daejeon, Korea (Republic)

SESSION 1.4.O (OAC-3-1)

Monday, July 19, 4:00 pm – 5:45 pm, Juniper

MONITORING, DIAGNOSTICS AND INSPECTION

Sponsored by: Operations, Applications & Components Technical Committee

Developed by: M. Brumovsky, Nuclear Research Institute Rez plc, Rez, Czech Republic

Chair: M. Brumovsky, Nuclear Research Institute Rez plc, Rez, Czech Republic

Co-Chair: I. Ezekoye, Westinghouse Electric Co., Pittsburgh, PA, USA

PVP2010-25067: LEAK LOCALIZATION IN PIPELINES VIA COMPUTATIONAL PIPELINE MONITORING

K. A. F. Moustafa, Y. Haik, S. Aldajah, F. Omar, United Arab Emirates University, Al Ain, United Arab Emir.

PVP2010-25172: INITIAL DEVELOPMENT OF A HIGH-SPEED THERMOCOUPLE DATA ACQUISITION SYSTEM

A. Reich, J. Nye, J. Shaw, Streamline Automation, LLC, Huntsville, AL, USA

PVP2010-25362: THE GEOMETRY OF STEAM GENERATOR TUBE AND ITS RELEVANCE TO THE OCCURRENCE OF STRESS CORROSION CRACKING IN OPERATING NUCLEAR POWER PLANTS

D. H. Lee, M. S. Choi, D. H. Hur, K. M. Kim, J. H. Han, Korea Atomic Energy Research Institute, Daejeon, Korea (Republic); M. H. Song, Korea Institute of Nuclear Safety, Daejeon, Korea (Republic)

PVP2010-25585: DEVELOPMENT OF ADVANCED FATIGUE EVALUATION METHODOLOGY FOR MONITORING MAJOR COMPONENTS IN NUCLEAR POWER PLANT

W. Kim, J. Kwon, Korea Electric Power Research Institute, Daejeon, Korea (Republic); H. T. Kang, University of Michigan, Dearborn, MI, USA; G.-H. Koo, Korea Atomic Energy Research Institute, Daejeon, Korea (Republic); T.-R. Kim, Korea Electric Power Research Institute, Daejeon, Korea (Republic)

SESSION 1.4.P (OAC-4-1)

Monday, July 19, 4:00 pm – 5:45 pm, Cottonwood

PANEL SESSION: RECENT DEVELOPMENTS IN STRUCTURAL ANALYSIS OF RADIOACTIVE MATERIALS TRANSPORTATION PACKAGES

Sponsored by: Operations, Applications & Components Technical Committee

Developed by: A. Smith, Savannah River National Laboratory, Aiken, SC, USA

Chair: A. Smith, Savannah River National Laboratory, Aiken, SC, USA

Co-Chair: C. May, Savannah River National Laboratory, Aiken, SC, USA

Panelists:

D. R. Leduc, Savannah River National Laboratory, Aiken, SC, USA

C. A. McKeel, Savannah River National Laboratory, Aiken, SC, USA

G. S. Bjorkman, Jr., U.S. Nuclear Regulatory Commission, Rockville, MD, USA

G. C. Mok, Lawrence Livermore National Laboratory, Livermore, CA, USA

SESSION 1.4.Q (SPC-1-3)

Monday, July 19, 4:00 pm – 5:45 pm, Madrona

STUDENT PAPER SYMPOSIUM AND COMPETITION III

Sponsored by: PVP Senate

Developed by: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA

Chair: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA

Co-Chair: A. Dermenjian, Sargent & Lundy LLC, Chicago, IL, USA; J. Todd, Penn State, University Park, PA, USA

PVP2010-25886: THE APPLICATION OF HARMONIC FINITE ELEMENTS IN THE SEISMIC RESPONSE SPECTRUM ANALYSIS OF A SKIRT SUPPORTED VESSEL

B. Antaal, Y. Hari, University of North Carolina at Charlotte, Charlotte, NC, USA; D. Williams, Sharoden Engineering Consultants, Matthews, NC, USA

PVP2010-25806: THE COMPUTATION OF ACCURATE BUCKLING PRESSURES OF IMPERFECT THIN-WALLED CYLINDERS

C. de Paor, D. Kelliher, K. Cronin, W. M. D. Wright, University College Cork, Cork, Ireland

PVP2010-25687: FATIGUE LIFE IMPROVEMENT OF THREADED PIPE COUPLINGS

J. Van Wittenberghe, P. De Baets, W. De Waele, J. De Pauw, Ghent University, Ghent, Belgium

PVP2010-25588: FRACTURE TOUGHNESS ESTIMATION OF MINIATURE SPECIMENS BY CONSIDERING GEOMETRY EFFECTS

S. B. Choi, Y. J. Kim, Sungkyunkwan University, Suwon, Korea (Republic); Y. S. Chang, Kyung Hee University, Yongin, Korea (Republic)

SESSION 1.4.R (TW-1-5)

Monday, July 19, 4:00 pm – 5:45 pm, Larch

TECHNICAL TUTORIAL: NUCLEAR COMPONENTS DESIGN-BY-ANALYSIS CONCEPTS, STRESS LIMITS, AND TECHNICAL BASIS PART II

Sponsored by: The PVP Division Conference Committee

Presented by: G. Slagis, G C Slagis Associates, Pleasant Hill, CA, USA

SESSION 1.4.S (MF-15-4)

Monday, July 19, 4:00 pm – 5:45 pm, PreFunction

NDE DEMONSTRATION FORUM IV

Sponsored by: PVP Senate, PVP Materials & Fabrication Technical Committee, and the NDE Engineering Division

Developed by: C. Jaske, DNV Columbus, Inc., Dublin, OH, USA

PVP2010-25502: CORE DESIGN EXPERIENCE TO ADOPT LONG TERM (18-MONTH) CYCLE OPERATION STRATEGY FROM INITIAL CORE

D.-C. Jung, K. B. Seong, Korea Nuclear Fuel, Daejeon, Daejeon, Korea (Republic)

PVP2010-25586: NSSS DESIGN FEATURES OF ADVANCED POWER REACTOR PLUS (APR+)

H. Y. Choi, K. W. Lee, J. T. Seo, Korea Power Engineering Company, Inc., Daejeon, Daejeon, Korea (Republic)

SESSION 2.1.M (MF-23-1)

Tuesday, July 20, 8:30 am – 10:15 am, Regency Ballroom G

PVP FAILURE EVENT DATABASES AND RELIABILITY OF CRACK SIZING

Sponsored by: Materials & Fabrication Technical Committee

Developed by: J. Fong, National Institute of Standards & Technology, Gaithersburg, MD, USA; A. Chockie, Chockie Group International, Inc., Seattle, WA, USA; S. Doctor, Pacific Northwest National Laboratory, Richland, WA, USA; S. R. Gosselin, Scandpower Risk Management, Inc., Richland, WA, USA; O. F. Hedden, Codes and Standards Consulting, Fort Worth, TX, USA; P. V. Marcal, MPact Corp., Julian, CA, USA

Chair: J. Fong, National Institute of Standards & Technology, Gaithersburg, MD, USA

Co-Chair: A. Chockie, Chockie Group International, Inc., Seattle, WA, USA

PVP2010-26006: A PROFILE OF FREDRIC A. SIMONEN AND FOUR DECADES OF CONTRIBUTIONS TO ENGINEERING MECHANICS AND RISK-INFORMED INSERVICE INSPECTIONS (Presentation Only)

S. R. Gosselin, P.E., Scandpower Risk Management, Richland, WA, USA

PVP2010-25807: INSIGHTS & LESSONS LEARNED FROM COLLECTING DATA ON PIPE DEGRADATION AND FAILURE IN COMMERCIAL NUCLEAR POWER PLANTS (Presentation Only)

B. Lydell, Scandpower Risk Management, Inc., Houston, TX, USA

PVP2010-25798: UNCERTAINTIES IN NDE RELIABILITY AND IMPACT ON RI-ISI

S. Doctor, M. Anderson, Pacific Northwest National Laboratory, Richland, WA, USA

PVP2010-25224: A MULTI-LINGUAL AUTOMATIC NATURAL LANGUAGE ABSTRACTING PROCESSOR (MANLAP) FOR EXTRACTING STATISTICAL DATA FROM FAILURE EVENT REPORTS (Presentation Only)

P. V. Marcal, MPact Corp., Julian, CA, USA; J. Fong, National Institute of Standards & Technology, Gaithersburg, MD, USA

PVP2010-25566: ON-LINE MONITORING SYSTEM FOR HYDROGENATION EQUIPMENT IN PETROCHEMICAL PLANTS

Z. Wang, S.-T. Tu, F.-Z. Xuan, C. Liu, East China University of Science and Technology, Shanghai, China

SESSION 2.1.N (OAC-8-2)

Tuesday, July 20, 8:30 am – 10:15 am, Laurel

PLANT LIFE EXTENSION: AGING AND LIFE MANAGEMENT II

Sponsored by: Operations, Applications & Components Technical Committee and NDE Engineering Division

Developed by: M. Sanwarwalla, Sargent & Lundy, LLC, Chicago, IL, USA; G. Bezdikian, Georges Bezdikian Consulting, Le Vesinet, France

Chair: A. Martin, Electricité de France, Chatou, France

Co-Chair: B. Lisowyj, Omaha Public Power District, Blair, NE, USA

PVP2010-25620: LONG TERM OPERATION AND SURVEILLANCE SPECIMEN PROGRAMME OF RPV

M. Brumovsky, M. Kytka, Nuclear Research Institute Rez plc, Rez, Czech Republic

PVP2010-26046: U.S. LICENSE RENEWAL AND LONG TERM OPERATION IN THE 2010'S

G. G. Young, Entergy Nuclear, Jackson, MS, USA

PVP2010-26137: APPLICATION OF AGING MANAGEMENT STRATEGIES FOR REACTOR VESSEL INTERNALS AND CORE SUPPORT STRUCTURES

T. R. Liskai, M. Snyder, S. Fyfitich, H. Xu, H. Charkas, AREVA NP Inc., Lynchburg, VA, USA

PVP2010-26000: FLAMANVILLE 3 EPR: HOW TO DEFINE THE PRE-SERVICE NDE INSPECTION PROGRAMME

F. Champigny, P. Blin, EDF CEIDRE, Saint Denis, France; J. L. Guilloteau, EDF UTO, Noisy Le Grand, France

SESSION 2.1.O (MF-5-1)

Tuesday, July 20, 8:30 am – 10:15 am, Juniper

EUROPEAN PROGRAMS IN STRUCTURAL INTEGRITY I

Sponsored by: Materials & Fabrication Technical Committee

Developed by: D. Lidbury, Serco Technical & Assurance Services, Warrington, United Kingdom; E. Keim, AREVA NP GmbH, Erlangen, Germany; D. Moinereau, EDF R&D, Moret-sur-Loing, France

Chair: E. Keim, AREVA NP GmbH, Erlangen, Germany

Co-Chair: D. Moinereau, EDF R&D, Moret-sur-Loing, France

PVP2010-25389: STYLE: PROJECT OVERVIEW

E. Keim, T. Nicak, AREVA NP GmbH, Erlangen, Germany

PVP2010-25399: NESC VII: A EUROPEAN PROJECT FOR APPLICATION OF WPS IN RPV ASSESSMENT INCLUDING BIAxIAL LOADING

D. Moinereau, EDF R&D, Moret-sur-Loing, France; P. Gilles, AREVA, Colombes, France; S. Chapuliot, AREVA, Paris La Défense, France; S. Marie, CEA Saclay, Gif sur Yvette, France

PVP2010-25980: OVERVIEW OF RPV SUB-PROJECT OF PERFORM 60

D. Lidbury, Serco Technical & Assurance Services, Warrington, United Kingdom; E. Keim, AREVA NP GmbH, Erlangen, Germany; B. Marini, CEA, Saclay, France; L. Malerba, SCK-CEN, Mol, Belgium; A. Zeghadi, EDF R&D, Moret-sur-Loing, France

SESSION 2.1.P (OAC-9-1)

Tuesday, July 20, 8:30 am – 10:15 am, Cottonwood

REGULATIONS AND STANDARDS FOR TOXIC MATERIALS

Sponsored by: Operations, Applications & Components Technical Committee and NDE Engineering Division

Developed by: N. K. Gupta, Savannah River National Laboratory, Aiken,

SC, USA; M. R. Feldman, Oak Ridge National Laboratory, Oak Ridge, TN, USA

Chair: P. S. Blanton, Savannah River National Laboratory, Aiken, SC, USA

Co-Chair: N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-25142: REGULATORY ISSUES ASSOCIATED WITH SHIPMENT OF SMALL QUANTITIES OF RADIOACTIVE MATERIAL

A. Smith, G. Abramczyk, S. Nathan, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-25337: DEVELOPMENT OF BURN TEST SPECIFICATIONS FOR FIRE PROTECTION MATERIALS IN RAM PACKAGES

A. Smith, N. K. Gupta, P. S. Blanton, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-25437: AUTHORIZING THE DOT SPECIFICATION 6M PACKAGING FOR CONTINUED USE AT THE SAVANNAH RIVER SITE

R. Watkins, B. Loftin, D. Hoang, Savannah River National Laboratory, Aiken, SC, USA

SESSION 2.1.Q (SPC-1-4)

Tuesday, July 20, 8:30 am – 10:15 am, Madrona

STUDENT PAPER SYMPOSIUM AND COMPETITION IV

Sponsored by: PVP Senate

Developed by: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA

Chair: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA

Co-Chair: A. Dermenjian, Sargent & Lundy LLC, Chicago, IL, USA;

J. Todd, Penn State, University Park, PA, USA

PVP2010-25373: EFFECT OF CREEP MISMATCH FACTOR ON STRESS REDISTRIBUTION IN WELDED BRANCH PIPES

J.-J. Han, K.-H. Lee, Y.-J. Kim, Korea University, Seoul, Korea (Republic)

PVP2010-25658: DEVELOPMENT OF AN ALTERNATIVE APPROACH TO THE ACQUISITION OF FRACTURE TOUGHNESS IN LABORATORY SPECIMENS CONTAINING RESIDUAL STRESS

R. Hurlston, University of Manchester, Manchester, Lancs, United Kingdom; J. Sharples, Serco TAS, Warrington, United Kingdom; A. Sherry, University of Manchester, Manchester, United Kingdom

PVP2010-25633: INFLUENCE OF HYDROGEN-CHARGING ON OXIDATION OF SUSF316L IN SIMULATED BWR ENVIRONMENT

M. Nakajima, M. Hosokawa, T. Sugimura, S. Komazaki, Muroran Institute of Technology, Muroran, Japan

PVP2010-25272: PREDICTION OF TRANSIENT CREEP RESPONSE UNDER COMBINED PRIMARY AND SECONDARY LOADING

H. Y. Nezhad, N. O'Dowd, University of Limerick, Limerick, Ireland

SESSION 2.1.R (TW-1-6)

Tuesday, July 20, 8:30 am – 10:15 am, Larch

TECHNICAL TUTORIAL: INTRODUCTION TO THE PROCESS PIPING CODE, ASME B31.3 PART I

Sponsored by: The PVP Division Conference Committee

Presented by: C. Becht IV, Becht Engineering, Liberty Corner, NJ, USA

SESSION 2.1.S (CT-16-1)

Tuesday, July 20, 8:30 am – 10:15 am, PreFunction

SOFTWARE DEMONSTRATION FORUM I

Sponsored by: Computer Technology & Bolted Joints Technical Committee

Developed by: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA

Block 2.2 Tuesday, July 20 (10:30 am – 12:15 pm)

SESSION 2.2.B (CS-5-2)

Tuesday, July 20, 10:30 am – 12:15 pm, Grand Ballroom A

ENVIRONMENTAL FATIGUE ISSUES II

Sponsored by: Codes & Standards and Materials & Fabrication Technical Committees

Developed by: H. Mehta, GE-Hitachi Nuclear Energy, San Jose, CA, USA; M. Higuchi, IHI Technology Solutions, Yokohama, Japan

Chair: H. Mehta, GE-Hitachi Nuclear Energy, San Jose, CA, USA

Co-Chair: M. Higuchi, IHI Technology Solutions, Yokohama, Japan

PVP2010-26027: EFFECT OF LOADING SIGNAL SHAPE AND OF SURFACE FINISH ON THE LOW CYCLE FATIGUE LIFE OF 304L STAINLESS STEEL IN PWR ENVIRONMENT

J. A. Le Duff, A. Lefrancois, AREVA NP, Paris La Defense, France; J. P. Vernot, D. Bossu, AREVA NP, Le Creusot, France

PVP2010-25564: THERMAL AGING EFFECT ON ENVIRONMENTAL FATIGUE LIFE OF CF8M CAST STAINLESS STEEL AT STRAIN RATE 0.04%/S UNDER PWR OPERATING CONDITION

I.-S. Jeong, W.-J. Kim, Korea Electric Power Research Institute, Daejeon, Korea (Republic); H.-I. Jeon, KLES, Daejeon, Korea (Republic)

PVP2010-25194: EFFECTS OF CONTINUOUS STRAIN RATE CHANGING ON ENVIRONMENTAL FATIGUE FOR STAINLESS STEELS IN PWR ENVIRONMENT

Y. Nomura, Mitsubishi Heavy Industries, Takasago, Hyogo, Japan; S. Asada, Mitsubishi Heavy Industries, Ltd., Kobe, Hyogo, Japan; T. Nakamura, Kansai Electric Power Co., Inc., Osaka, Osaka, Japan; M. Tanaka, The Kyusyu Electric Power Co., Inc., Fukuoka, Fukuoka, Japan

SESSION 2.2.C (CS-13-3)

Tuesday, July 20, 10:30 am – 12:15 pm, Grand Ballroom B

RECENT DEVELOPMENTS IN CHINESE REGULATIONS AND STANDARDS—PRESSURE EQUIPMENT AND TUBE SHEET

Sponsored by: Codes & Standards Technical Committee

Developed by: J. Zheng, Institute of Process Equipment, Zhejiang University, Hangzhou, China; B. Shou, China Special Equipment Inspection and Research Institute, Beijing, China

Chair: G. Shen, China Special Equipment Inspection and Research Institute, Beijing, China

Co-Chair: S. Zuo, China Special Equipment Inspection and Research Institute, Beijing, China

PVP2010-25306: THE SUMMARY OF TYPICAL STEELS OF PRESSURING EQUIPMENT IN CHINA

S. Zuo, B. Shou, China Special Equipment Inspection and Research Institute, Beijing, China; Y. Guoyi, China Standardization Committee on

Hanyang University, Ansan, Korea (Republic)

PVP2010-25968: A FRACTURE PROBABILITY INTEGRAL FOR PRESSURE VESSEL LIFE ESTIMATE AND ACCIDENT ANALYSIS

S.-J. Chang, Oak Ridge National Laboratory (Retired), San Jose, CA, USA

SESSION 2.2.N (OAC-8-3)

Tuesday, July 20, 10:30 am – 12:15 pm, Laurel

PLANT LIFE EXTENSION: AGING AND LIFE MANAGEMENT III

Sponsored by: Operations, Applications & Components Technical Committee and NDE Engineering Division

Developed by: G. G. Young, Entergy Nuclear, Jackson, MS, USA; A. Ballesteros, European Commission, JRC-Institute for Energy, Petten, North Holland, The Netherlands

Chair: G. Bezdikian, Georges Bezdikian Consulting, Le Vesinet, France

Co-Chair: S. Asada, Mitsubishi Heavy Industries. Ltd., Kobe, Japan

PVP2010-25875: HEAVY COMPONENTS REPLACEMENT IN NUCLEAR POWER PLANTS: GUIDELINES AND EXPERIENCES

K. S. Kang, IAEA, Vienna, Austria

PVP2010-25897: STEAM GENERATOR REPLACEMENT AT SAN ONOFRE NUCLEAR GENERATING STATION (SONGS) UNIT 2

J. Chan, D. Calhoun, Southern California Edison, San Clemente, CA, USA

PVP2010-25979: MANAGING ENVIRONMENTAL FATIGUE

H. Rothenhoefer, AMTEC Services GmbH, Lauffen, Germany; G. Koenig, EnBW Kernkraft, Neckarwestheim, Germany

PVP2010-25984: DETERMINING THE ONSET OF STRESS CORROSION CRACKING IN AUSTENITIC STAINLESS STEEL WITH PERMEABILITY CHANGE

B. Lisowyj, Omaha Public Power District, Blair, NE, USA; Z. Kuljis, Westinghouse, Windsor, CT, USA

SESSION 2.2.O (MF-5-2)

Tuesday, July 20, 10:30 am – 12:15 pm, Juniper

EUROPEAN PROGRAMS IN STRUCTURAL INTEGRITY II

Sponsored by: Materials & Fabrication Technical Committee

Developed by: D. Lidbury, Serco Technical & Assurance Services, Warrington, United Kingdom; E. Keim, AREVA NP GmbH, Erlangen, Germany; D. Moinereau, EDF R&D, Moret-sur-Loing, France

Chair: D. Lidbury, Serco Technical & Assurance Services, Warrington, United Kingdom

Co-Chair: P. James, Serco TAS, Warrington, Cheshire, United Kingdom

PVP2010-25312: ANALYSIS OF THE PARTIAL SAFETY FACTOR METHOD USING PROBABILISTIC TECHNIQUES

B. Lindley, P. James, Serco TAS, Warrington, Cheshire, United Kingdom

PVP2010-25390: STYLE: MOCK-UP3 DESIGN—FE SIMULATION OF CRACK GROWTH IN A CLADDED FERRITIC PIPE

T. Nicak, E. Keim, G. Meier, H. Schendzielorz, AREVA NP GmbH, Erlangen, Germany; D. Moinereau, EDF R&D, Moret-sur-Loing, France; P. Le Delliou, Electricité de France, Moret-sur-Loing, France

PVP2010-26029: LONG TERM IRRADIATION EMBRITTLEMENT EFFECTS IN REACTOR PRESSURE VESSEL STEELS THE

EUROPEAN PROJECT LONGLIFE (Presentation Only)

E. Altstadt, F. Bergner, Forschungszentrum Dresden-Rossendorf, Dresden, Germany; E. Keim, H. Hein, AREVA NP GmbH, Erlangen, Germany

SESSION 2.2.P (OAC-9-2)

Tuesday, July 20, 10:30 am – 12:15 pm, Cottonwood

PANEL SESSION: FLOW FORMING OF CONTAINMENT VESSELS FOR RAM TRANSPORTATION

Sponsored by: Operations, Applications & Components; Codes & Standards; and Materials & Fabrication Technical Committees

Developed by: C. S. Bajwa, U.S. Nuclear Regulatory Commission, Rockville, MD, USA

Chair: C. S. Bajwa, U.S. Nuclear Regulatory Commission, Rockville, MD, USA

Co-Chair: M. R. Feldman, Oak Ridge National Laboratory, Oak Ridge, TN, USA

Panelists:

A. Duncan, Savannah River National Laboratory, Aiken, SC, USA

G. Bjorkman, U.S. Nuclear Regulatory Commission, Rockville, MD, USA

G.C. Mok, Lawrence Livermore National Laboratory, Livermore, CA, USA

M. Rana, Praxair, Inc, East Amherst, NY, USA

SESSION 2.2.Q (SPC-1-5)

Tuesday, July 20, 10:30 am – 12:15 pm, Madrona

STUDENT PAPER SYMPOSIUM AND COMPETITION V

Sponsored by: PVP Senate; Design & Analysis and Seismic Engineering Technical Committees

Developed by: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA; P. Mertiny, University of Alberta, Edmonton, AB, Canada; S. Karamanos, University of Thessaly, Volos, Greece

Chair: P. Mertiny, University of Alberta, Edmonton, AB, Canada

Co-Chair: R. Leishear, Savannah River National Laboratory, Aiken, SC, USA; S. Karamanos, University of Thessaly, Volos, Greece

PVP2010-25024: THREE-DIMENSIONAL CFD ANALYSIS OF A SPRING LOADED PRESSURE SAFETY VALVE—FROM OPENING TO RE-CLOSURE

X. G. Song, L. Cui, Y. C. Park, Dong-A University, Busan, Korea (Republic)

PVP2010-25217: THE STRESS CORROSION CRACKING OF AUSTENITIC STAINLESS STEEL HEAT EXCHANGE TUBES: THREE CASES STUDY

S. Xu, Shandong University/The University of Iowa, Iowa City, IA, USA; W. Wang, H. Liu, Shandong University, Jinan, Shandong, China

PVP2010-25387: MODELLING DUCTILE TEARING FROM DIFFUSE PLASTICITY TO CRACK PROPAGATION

A. Simatos, CEA Saclay, Gif sur Yvette, France; F. Cazes, Université de Lyon, CNRS, Villeurbanne, France; S. Marie, CEA Saclay, Gif sur Yvette, France; A. Combescure, Université de Lyon, CNRS, Villeurbanne, France

PVP2010-25296: AN ANALYSIS OF THERMO-MECHANICAL BEHAVIOR IN A MULTI-LAYER COMPOSITE PIPE UNDER TEMPERATURE VARIATION

W. Yang, J. Wang, Texas A&M University, College Station, TX, USA

PVP2010-25419: METHOD BASED ON DAMPER REACTION WALL

W. Payten, K. U. Snowden, ANSTO, Sydney, Australia; D. W. Dean, British Energy, Gloucester, United Kingdom; S. Humphries, UTS, Sydney, Australia; L. Edwards, ANSTO, Sydney, Australia

PVP2010-25727: CREEP BEHAVIOR OF THE NEWLY DEVELOPED ADVANCED HEAT RESISTANT AUSTENITIC STAINLESS STEEL GRADE UNS S31035

J. Högberg, G. Chai, P. Kjellström, M. Boström, U. Forsberg, Sandvik Materials Technology, Sandviken, Sweden

PVP2010-25071: THE EFFECT OF A STARTER NOTCH ON THE ISOTHERMAL AND THERMOMECHANICAL FATIGUE LIFE OF A NICKEL-BASED SUPERALLOY

C. J. Hyde, A. Becker, W. Sun, T. Hyde, The University of Nottingham, Nottingham, United Kingdom

SESSION 2.3.P (OAC-4-2)

Tuesday, July 20, 2:00 pm – 3:45 pm, Cottonwood

THERMAL ASPECTS OF PACKAGINGS I

Sponsored by: Operations, Applications & Components Technical Committee

Developed by: C. May, Savannah River National Laboratory, Aiken, SC, USA; N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA

Chair: M. Greiner, University of Nevada, Reno, NV, USA

Co-Chair: J. A. Fort, Pacific Northwest National Laboratory, Richland, WA, USA

PVP2010-25017: THERMAL PERFORMANCE OF RADIOACTIVE MATERIAL (RAM) PACKAGES IN TRANSPORT CONFIGURATION

N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-25752: MODELING HEAT TRANSFER IN SPENT FUEL TRANSFER CASK NEUTRON SHIELDS—A CHALLENGING PROBLEM IN NATURAL CONVECTION

J. A. Fort, J. M. Cuta, Pacific Northwest National Laboratory, Richland, WA, USA; C. S. Bajwa, U.S. Nuclear Regulatory Commission, Rockville, MD, USA; E. Baglietto, CD-adapco, Melville, NY, USA

PVP2010-25956: A METHOD FOR THE COUPLED THERMAL-STRUCTURAL ANALYSIS OF RADIOACTIVE MATERIAL SHIPPING PACKAGES IN HYPOTHETICAL ACCIDENT CONDITIONS—PART 1. NCT THERMAL LOAD AND SOME HAC MECHANICAL LOADS

A. Wu, N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA; A. Smith, Savannah River National Laboratory, Aiken, SC, USA; P. S. Blanton, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-25958: A METHOD FOR THE COUPLED THERMAL-STRUCTURAL ANALYSIS OF RADIOACTIVE MATERIAL SHIPPING PACKAGES IN HYPOTHETICAL ACCIDENT CONDITIONS PART 2. HAC MECHANICAL LOADS AND FIRE ACCIDENT (Presentation Only)

A. Wu, N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA; A. Smith, Savannah River National Laboratory, Aiken, SC, USA; P. S. Blanton, Savannah River National Laboratory, Aiken, SC, USA

SESSION 2.3.Q (SPC-1-6)

Tuesday, July 20, 2:00 pm – 3:45 pm, Madrona

STUDENT PAPER SYMPOSIUM AND COMPETITION VI

Sponsored by: PVP Senate; Design & Analysis; Operations, Applications & Components; and Fluid-Structure Interaction

Technical Committees

Developed by: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA; P. Mertiny, University of Alberta, Edmonton, AB, Canada; A. M. Cheta, Shell, Paris La Defense, France; C. Giannopapa, European Space Agency, Noordwijk, AG, The Netherlands

Chair: P. Mertiny, University of Alberta, Edmonton, AB, Canada

Co-Chair: A. M. Cheta, Shell, Paris La Defense, France; C. Giannopapa, European Space Agency, Noordwijk, AG, The Netherlands

PVP2010-25149: FAILURE CRITERION FOR VARYING STRAIN RATES
K. S. Tan, Y. Kwon, Naval Postgraduate School, Monterey, CA, USA

PVP2010-25545: RESEARCH OF WELD ON AXIAL BUCKLING STRESS OF MULTILAYER COMBINED CYLINDRICAL SHELLS

C. Yu, Z. Chen, L. Yang, Zhejiang University, Hangzhou, China

PVP2010-25571: INFLUENCES OF INTERNAL PRESSURE AND OVERLOAD ON LOW CYCLE FATIGUE BEHAVIORS OF ELBOW PIPE WITH LOCAL WALL THINNING

K. Sato, K. Ogino, K. Takahashi, K. Ando, Yokohama National University, Yokohama, Japan; Y. Urabe, Japan Nuclear Technology Institute, Minatoku, Tokyo, Japan

PVP2010-26016: DEVELOPMENT OF A WEB-BASED LNG PLANT MANAGEMENT SYSTEM FOR RELIABILITY ASSESSMENT COVERING FROM DESIGN STAGE TO MAINTENANCE

Y.-G. Kim, J. Kim, J.-B. Choi, Sungkyunkwan University, Suwon, Korea (Republic)

PVP2010-25547: RESEARCH ON PRODUCING THE ELECTRODE FOR GENERATING UNDERWATER SHOCK WAVE

N. Matsuo, S. Tanaka, Kumamoto University, Kumamoto City, Kumamoto, Japan; S. Itoh, Okinawa National College of Technology, Nago City, Okinawa, Japan

SESSION 2.3.R (HP-1-3)

Tuesday, July 20, 2:00 pm – 3:45 pm, Larch

ADVANCEMENTS IN POLYETHYLENE PRODUCTION I

Sponsored by: High-Pressure Technology Technical Committee

Developed by: J. Keltjens, SABIC Europe, Geleen, The Netherlands; C. Morgan, ExxonMobil Chemical Company, Baton Rouge, LA, USA

Chair: J. Keltjens, SABIC Europe, Geleen, The Netherlands

Co-Chair: C. Morgan, ExxonMobil Chemical Company, Baton Rouge, LA, USA

PVP2010-25250: PLUNGER FAILURE ON A SECOND STAGE OF A HYPER COMPRESSOR

B. Megens, SABIC, Geleen, The Netherlands; B. Colaris, SABIC Europe, Geleen, Limburg, The Netherlands

PVP2010-25473: HYPER COMPRESSOR PLUNGER FAILURE (Presentation Only)

K. Simpson, ExxonMobil Baton Rouge Plastics Plant, Baton Rouge, LA, USA; P. Cornelissen, ExxonMobil Chemical Company, Zwiindrecht, Belgium

PVP2010-25424: METHODS FOR LIFE ASSESSMENT OF HYPERCOMPRESSOR POPPET VALVES

PVP2010-25313: LONG-TERM CREEP MODELING OF MODIFIED 9CR-1MO STEEL FOR A SODIUM COOLED FAST REACTOR

W. G. Kim, Korea Atomic Energy Research Institute, Daejeon, Daejeon, Korea (Republic)

PVP2010-25699: PREDICTION OF WELDING RESIDUAL STRESSES, REHEAT CRACKING AND CRACK DRIVING FORCES C(T) WITHIN A FINITE ELEMENT SOLUTION

D. Bray, R. Dennis, Frazer-Nash Consultancy Ltd., Bristol, Avon, United Kingdom; M. C. Smith, British Energy, Gloucester, United Kingdom

PVP2010-25702: MODELLING THE COMPLEX MANUFACTURING HISTORY OF A PIPEWORK JOINT AND ASSESSMENT OF ITS THROUGH LIFE CREEP-FATIGUE DAMAGE USING FINITE ELEMENT BASED METHODS

D. Bray, R. Dennis, Frazer-Nash Consultancy Ltd., Bristol, Avon, United Kingdom; R. Bradford, British-Energy, Gloucester, United Kingdom

SESSION 2.4.P (OAC-4-3)

Tuesday, July 20, 4:00 pm – 5:45 pm, Cottonwood

THERMAL ASPECTS OF PACKAGINGS II

Sponsored by: Operations, Applications & Components Technical Committee

Developed by: C. May, N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA

Chair: A. Smith, Savannah River National Laboratory, Aiken, SC, USA

Co-Chair: C. May, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-25991: GEOMETRICALLY-ACCURATE AND HOMOGENIZED FUEL REGION MODELS TO PREDICT CLADDING TEMPERATURES WITHIN A TRUCK CASK UNDER NORMAL AND FIRE ACCIDENT CONDITIONS

K. K. Kamichetty, M. Greiner, University of Nevada, Reno, NV, USA

PVP2010-26138: THERMAL ANALYSIS OF A PROPOSED TRANSPORT CASK FOR THREE ADVANCED BURNER REACTOR USED FUEL ASSEMBLIES

T. Bullard, M. Greiner, University of Nevada, Reno, NV, USA; M. Dennis, Sandia National Laboratories, Albuquerque, NM, USA; S. Bays, Idaho National Laboratory, Idaho Falls, ID, USA; R. Weiner, Sandia National Laboratories, Albuquerque, NM, USA

PVP2010-25105: THERMAL ANALYSIS OF GEOLOGIC HIGH LEVEL RADIOACTIVE WASTE PACKAGES

S. Lee, Savannah River Nuclear Solutions, Aiken, SC, USA; S. Hensel, Savannah River National Laboratory, Aiken, SC, USA; C. De Bock, ONDAF/NIRAS, Brussels, Belgium

SESSION 2.4.Q (SPC-1-7)

Tuesday, July 20, 4:00 pm – 5:45 pm, Madrona

STUDENT PAPER SYMPOSIUM AND COMPETITION VII

Sponsored by: PVP Senate and Materials & Fabrication Technical Committee

Developed by: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA; P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA; S. Leen, National University of Ireland, Galway,

Galway, Ireland; A. Chakraborty, Structural Integrity Associates, San Jose, CA, USA; K. Nikbin, Imperial College London, London, United Kingdom; D. A. Scarth, Kinectrics, Toronto, ON, Canada; J. Fong, National Institute of Standards & Technology, Gaithersburg, MD, USA

Chair: P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA

Co-Chair: B. Dogan, EPRI—Electric Power Research Institute, Charlotte, NC, USA

PVP2010-25281: VALIDATION OF THE K AND J PARAMETERS IN A COMPACT TENSION SPECIMEN CONTAINING INTERGRANULAR AND STRAIGHT CRACK PATHS

A. N. Mehmanparast, C. Davies, K. Nikbin, Imperial College London, London, United Kingdom

PVP2010-25169: INFLUENCE OF WELD RESIDUAL STRESS AND STRENGTH MISMATCH ON FATIGUE CRACK GROWTH BEHAVIOR FOR PIPELINE STEEL WELDS INCLUDING CLOSURE EFFECTS

D. F. S. Burgos, C. Ruggieri, University of Sao Paulo, Sao Paulo, Sao Paulo, Brazil

PVP2010-25364: EFFECTS OF RESIDUAL STRESSES ON THE HIGH CYCLE FATIGUE BEHAVIOR OF TI-6AL-4V

Y.-J. Li, F.-Z. Xuan, Z. Wang, S.-T. Tu, East China University of Science and Technology, Shanghai, China

PVP2010-25518: RESEARCH OF FATIGUE CRACK GROWTH BEHAVIOR OF X70 PIPELINE STEEL IN CORROSIVE ENVIRONMENT AND EVALUATION OF DEFECT

J. Wang, X. Li, Beijing University of Technology, Beijing, Beijing, China; S. Li, Wuhan Iron and Steel (Group) Corp, Wuhan, Hubei, China

PVP2010-26034: ON THE CREEP RUPTURE PREDICTION OF COMPOSITE PRESSURE VESSELS

M. Schulz, Federal Institute for Materials Research and Testing, Berlin, Berlin, Germany

SESSION 2.4.R (HP-1-4)

Tuesday, July 20, 4:00 pm – 5:45 pm, Larch

ADVANCEMENTS IN POLYETHYLENE PRODUCTION II

Sponsored by: High-Pressure Technology Technical Committee

Developed by: J. Keltjens, SABIC Europe, Geleen, The Netherlands; C. Morgan, ExxonMobil Chemical Company, Baton Rouge, LA, USA

Chair: J. Keltjens, SABIC Europe, Geleen, The Netherlands

Co-Chair: C. Morgan, ExxonMobil Chemical Company, Baton Rouge, LA, USA

PVP2010-25040: CONSIDERATIONS ON DESIGN, OPERATION AND PERFORMANCE OF HYPERCOMPRESSORS

E. Giacomelli, Enzo Giacomelli, Montespertoli, Italy; J. X. Shi, Zhong Kai Univ. of Agriculture and Technology, Guangzhou, China; F. Manfrone, Mario Cozzani Srl, Arcola (SP), Italy

PVP2010-25021: TUBULAR LDPE HIGH PRESSURE BUNKER DESIGN TO BLAST

L. Paris, Technip, Courbevoie, France; C. Catala, M. Moine, A. Cedric, Technip, Lyon, France; N. Salaun, O. Iddir, Technip, Paris, France

I. Ezekoye, Westinghouse Electric Co., Pittsburgh, PA, USA; D. Ristau, Process Equipment - SPX, McKean, PA, USA; G. A. Riegel, Westinghouse Electric Co., Cranberry Township, PA, USA; R. Way, Process Equipment - SPX, McKean, PA, USA

PVP2010-25282: CONTROLLING VALVE FLUID JET ENERGY TO ELIMINATE VIBRATION (Presentation Only)

H. Miller, J. Faramarzi, M. A. Hollerbach, Control Components Inc. (CCI), Rancho Santa Margarita, CA, USA

PVP2010-26157: ANALYSIS OF CONTACT PRESSURE DISTRIBUTION ON A PASS PARTITION GASKET IN CONJUNCTION WITH A DOUBLE-TAPERED SEAL IN A HIGH PRESSURE HEAT EXCHANGER CLOSURE

C. Gardner, R. Madazhy, E. Howard, Taper-Lok Corporation, Houston, TX, USA

SESSION 3.1.P (OAC-4-7)

Wednesday, July 21, 8:30 am – 10:15 am, Cottonwood

PACKAGING & TRANSPORTATION ISSUES

Sponsored by: Operations, Applications & Components Technical Committee

Developed by: C. May, Savannah River National Laboratory, Aiken, SC, USA; N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA

Chair: M. R. Feldman, Oak Ridge National Laboratory, Oak Ridge, TN, USA

Co-Chair: N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-25445: HISTORICAL RAIL ACCIDENT ANALYSES IDENTIFYING ACCIDENT PARAMETERS THAT COULD IMPACT TRANSPORTATION OF SPENT NUCLEAR FUEL

T. Mintz, G. Adams, M. Necsoiu, J. Mancillas, Southwest Research Institute, San Antonio, TX, USA; C. S. Bajwa, E. Easton, U.S. Nuclear Regulatory Commission, Rockville, MD, USA

PVP2010-25852: THE POTENTIAL IMPACTS OF RECENT TRANSPORTATION ACCIDENTS INVOLVING SEVERE FIRES ON THE SAFE SHIPMENT OF SPENT NUCLEAR FUEL

C. S. Bajwa, E. Easton, U.S. Nuclear Regulatory Commission, Rockville, MD, USA

PVP2010-26074: NUCLEAR WASTE TRANSPORTATION PACKAGE RESPONSE TO CALDECOTT TUNNEL FIRE (Presentation Only)

N. R. Chalasani, University of Nevada, Reno, NV, USA; A. Suo-Anttila, Computational Engineering Analysis, Albuquerque, NM, USA; M. Greiner, University of Nevada, Reno, NV, USA

PVP2010-26075: VALIDATION OF CONTAINER ANALYSIS FIRE ENVIRONMENT (CAFE) CODE FOR MEMORIAL TUNNEL FIRE VENTILATION PROGRAM

N. R. Chalasani, University of Nevada, Reno, NV, USA; A. Suo-Anttila, Computational Engineering Analysis, Albuquerque, NM, USA; M. Greiner, University of Nevada, Reno, NV, USA

SESSION 3.1.Q (SPC-1-8)

Wednesday, July 21, 8:30 am – 10:15 am, Madrona

STUDENT PAPER SYMPOSIUM AND COMPETITION VIII

Sponsored by: PVP Senate and Codes & Standards Technical Committee

Developed by: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA; B. Bezensek, Hunting Energy Services Ltd., Aberdeen, United Kingdom

Chair: B. Bezensek, Hunting Energy Services Ltd., Aberdeen, United Kingdom

Co-Chair: D. A. Scarth, Kinectrics, Toronto, ON, Canada

PVP2010-25372: AN ESTIMATION OF C(T) OF TRANSIENT CREEP UNDER COMBINED MECHANICAL AND THERMAL STRESSES

C.-Y. Oh, T.-K. Song, Y.-J. Kim, Korea University, Seoul, Korea (Republic)

PVP2010-25674: EVOLUTION OF PLASTICITY IN RELATION TO DUCTILE TEARING IN 304(L) STAINLESS STEEL

A. Wasylyk, A. Sherry, University of Manchester, Manchester, United Kingdom

PVP2010-26010: THE MODEL OF FATIGUE CRACK GROWTH IN HIGH PRESSURE CYLINDER WALL

J. Brumek, B. Strnad, VSB - TU Ostrava, Ostrava, Czech Republic; I. Dlouhy, Academy of Science of the Czech Republic, Brno, Czech Republic

PVP2010-26020: MODIFICATION OF THE CRITERION LEAK BEFORE BREAK WITH FOCUS ON THE RESIDUAL STRESS

K. Macurova, VSB - Technical University of Ostrava, Centre for Advanced Innovation Technology, Ostrava, Czech Republic

SESSION 3.1.R (HP-1-6)

Wednesday, July 21, 8:30 am – 10:15 am, Larch

ADVANCEMENTS IN ABRASIVE WATERJET APPLICATIONS & TECHNOLOGY

Sponsored by: High-Pressure Technology and Design & Analysis Technical Committees

Developed by: C. Morgan, ExxonMobil Chemical Company, Baton Rouge, LA, USA; D. Stang, OMAX Corporation, Kent, WA, USA

Chair: D. Stang, OMAX Corporation, Kent, WA, USA

Co-Chair: C. Morgan, ExxonMobil Chemical Company, Baton Rouge, LA, USA

PVP2010-25063: MACHINING OF AIRCRAFT TITANIUM WITH ABRASIVE-WATERJETS FOR FATIGUE CRITICAL APPLICATIONS

P. Liu, OMAX Corporation, Kent, WA, USA; Y. Hovanski, M. Dahl, Pacific Northwest National Laboratory, Richland, WA, USA

PVP2010-25789: EFFICIENCY OF HIGH PERFORMANCE ABRASIVE WATERJET CUTTING

A. Henning, C. Olsen, P. Liu, OMAX Corporation, Kent, WA, USA

PVP2010-25896: EFFECTS OF POWER AND PRESSURE ON WATERJET CUTTING (Presentation Only)

M. Hashish, Flow International Corporation, Kent, WA, USA

Block 3.2 Wednesday, July 21 (10:30 am – 12:15 pm)

SESSION 3.2.B (CS-7-2)

Wednesday, July 21, 10:30 am – 12:15 pm, Grand Ballroom A

EMERGING CODES AND STANDARDS II

Sponsored by: Codes & Standards Technical Committee

Developed by: M. Rana, Praxair, Inc, East Amherst, NY, USA; J. Zheng,

Y. R. Lee, Korea Power Engineering Company, Inc., Yongin, Gyeonggi-do, Korea (Republic)

PVP2010-25245: ESTABLISHMENT OF THE ADVANCED STARTUP SYSTEM TURNOVER PROCESS FOR THE NEW NUCLEAR POWER PLANTS

I. H. Kim, S.-C. Park, Korea Hydro & Nuclear Power Co., Ltd., Gyunju-si, Korea (Republic)

SESSION 3.2.M (MF-4-5)

Wednesday, July 21, 10:30 am – 12:15 pm, Regency Ballroom G

WELDING RESIDUAL STRESS AND DISTORTION SIMULATION AND MEASUREMENT V

Sponsored by: Materials & Fabrication Technical Committee

Developed by: P. Gilles, AREVA, Colombes, France; M. Mochizuki, Osaka University, Suita, Japan

Chair: P. Gilles, AREVA, Colombes, France

Co-Chair: M. Mochizuki, Osaka University, Suita, Japan

PVP2010-25315: MEASUREMENT OF RESIDUAL STRESSES IN STAINLESS STEEL CLADDED SPECIMENS

E. Kingston, VEQTER Ltd., Bristol, United Kingdom; M. Udagawa, K. Onizawa, Japan Atomic Energy Agency, Tokaimura, Ibarakiken, Japan; D. J. Smith, University of Bristol, Bristol, United Kingdom; J. Katsuyama, Japan Atomic Energy Agency (JAEA), Tokaimura, Ibaraki Pref., Japan

PVP2010-25541: ASSESSMENTS OF RESIDUAL STRESS DUE TO WELD-OVERLAY CLADDING AND STRUCTURAL INTEGRITY OF REACTOR PRESSURE VESSEL

J. Katsuyama, Japan Atomic Energy Agency (JAEA), Tokaimura, Ibaraki Pref., Japan; H. Nishikawa, Mizuho Information & Research Institute, Tokyo, Japan; M. Udagawa, Japan Atomic Energy Agency (JAEA), Tokaimura, Ibaraki Pref., Japan; M. Nakamura, Research Organization for Information Science & Technology, Tokaimura, Ibaraki Pref., Japan; K. Onizawa, Japan Atomic Energy Agency, Tokaimura, Ibarakiken, Japan

PVP2010-25922: RESIDUAL STRESS EVALUATION USING INSTRUMENTED INDENTATION TECHNOLOGY (IIT) IN NUCLEAR POWER PLANT NOZZLE WELD

D. Ro, H. J. Haw, FRONTICS, Inc., Seoul, Korea (Republic); K. Lee, Korea Electric Power Company, Daejeon, Korea (Republic); L. Jeong-keun, Korea Electric Power Research Institute, Daejeon, Korea (Republic); D. Kwon, Seoul National University, Seoul, Korea (Republic)

SESSION 3.2.N (NDE-3-1)

Wednesday, July 21, 10:30 am – 12:15 pm, Laurel

PANEL SESSION: CODE CASE 2235 IN THE PETROCHEMICAL AND NUCLEAR POWER INDUSTRIES

Sponsored by: NDE Engineering Division, and the Codes & Standards, Materials & Fabrication, and Operations, Applications & Components Technical Committees

Developed by: B. Wright, Stress Engineering Services, Inc., Houston, TX, USA; O. F. Hedden, Codes and Standards Consulting, Fort Worth, TX, USA

Chair: B. Wright, Stress Engineering Services, Inc., Houston, TX, USA

Co-Chair: O. F. Hedden, Codes and Standards Consulting, Fort Worth, TX, USA

Panelists:

M. Carte, Olympus NDT, Houston, TX, USA

M. Wechsler, Mistras Group Services, Pasadena, TX, USA

D. Bajula, Acuren Inspection, La Porte, TX, USA

O. F. Hedden, Codes and Standards Consulting, Fort Worth, TX, USA

T. Moran, Pacific Northwest National Laboratory, Richland, WA, USA

SESSION 3.2.O (OAC-6-1)

Wednesday, July 21, 10:30 am – 12:15 pm, Juniper

INSTALLATION AND MAINTENANCE

Sponsored by: Operations, Applications & Components Technical Committee

Developed by: Y. Shoji, Chiyoda Advanced Solutions Corp., Yokohama, Japan; T. Tahara, Petroleum Association of Japan, Tokyo, Japan; A. M. Cheta, Shell, Paris La Defense, France

Chair: Y. Shoji, Chiyoda Advanced Solutions Corp., Yokohama, Japan

Co-Chair: T. Tahara, Petroleum Association of Japan, Tokyo, Japan

PVP2010-25220: GUIDE FOR APPLYING CODES AND STANDARDS FOR SAFE OPERATION AND MAINTENANCE OF PRESSURE EQUIPMENT IN REFINERY AND PETROCHEMICAL SERVICES

J. T. Reynolds, Pro-Inspect, Inc., Steamboat Springs, CO, USA

PVP2010-25685: INSTALLATION OF SERRATED METAL GASKET WITHOUT FULL DISASSEMBLY OF A HEAT EXCHANGER

R. Currie, Flexitallic Ltd., Cleckheaton, United Kingdom; R. Davis, Flexitallic, Deer Park, TX, USA

PVP2010-25971: WELD REPAIR FOR PRESSURE VESSELS MADE FROM CR-MO STEELS

R. Kayano, Japan Steel Works, Muroran, Japan; E. Yamamoto, Eishin Techno Co., Fujisawa-shi, Japan; T. Tahara, Petroleum Association of Japan, Tokyo, Japan

PVP2010-26168: AN ANALYSIS OF A COMPLETED TEMPER BEAD WELD REPAIR PERFORMED ON AN AMINE TOWER

W. C. Mohr, M. A. Boring, Y.-P. Yang, Edison Welding Institute, Columbus, OH, USA

SESSION 3.2.P (OAC-4-5)

Wednesday, July 21, 10:30 am – 12:15 pm, Cottonwood

STUDIES OF PACKAGING MATERIALS

Sponsored by: Operations, Applications & Components Technical Committee

Developed by: C. May, N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA

Chair: C. S. Bajwa, U.S. Nuclear Regulatory Commission, Rockville, MD, USA

Co-Chair: C. May, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-25087: EFFECTS OF MOISTURE IN THE 9975 SHIPPING PACKAGE FIBERBOARD ASSEMBLY

W. L. Daugherty, K. A. Dunn, J. L. Murphy, E. R. Hackney, Savannah River Nuclear Solutions, Aiken, SC, USA

PVP2010-25106: LONG-TERM LEAK TIGHTNESS OF O-RING SEALS IN THE 9975 SHIPPING PACKAGE

E. Hoffman, E. Skidmore, Savannah River National Laboratory, Aiken, SC, USA; W. L. Daugherty, Savannah River Nuclear Solutions, Aiken, SC, USA

PVP2010-25118: AGING MODEL FOR CANE FIBERBOARD OVERPACK IN THE 9975 SHIPPING PACKAGE

W. L. Daugherty, S. P. Harris, Jr., Savannah River Nuclear Solutions, Aiken, SC, USA

PVP2010-25279: 9975 SHIPPING PACKAGE PERFORMANCE OF ALTERNATE MATERIALS FOR LONG-TERM STORAGE

E. Skidmore, Savannah River National Laboratory, Aiken, SC, USA; W. L. Daugherty, Savannah River Nuclear Solutions, Aiken, SC, USA; E. Hoffman, Savannah River National Laboratory, Aiken, SC, USA

SESSION 3.2.Q (SPC-1-9)

Wednesday, July 21, 10:30 am – 12:15 pm, Madrona

STUDENT PAPER SYMPOSIUM AND COMPETITION IX

Sponsored by: PVP Senate; Operations, Applications & Components; Computer Technology & Bolted Joints; and Fluid-Structure Interaction Technical Committees

Developed by: J. F. Cory, Jr., Siemens PLM Software, Milford, OH, USA; A. M. Cheta, Shell, Paris La Defense, France; C. Giannopapa, European Space Agency, Noordwijk, AG, The Netherlands; T. Sawa, Hiroshima University, Higashihiroshima, Hiroshima, Japan

Chair: A. M. Cheta, Shell, Paris La Defense, France

Co-Chair: S. Hensel, Savannah River National Laboratory, Aiken, SC, USA; C. Giannopapa, European Space Agency, Noordwijk, AG, The Netherlands; T. Sawa, Hiroshima University, Higashihiroshima, Hiroshima, Japan

PVP2010-26004: LIQUID LEAK PREDICTIONS IN MICRO AND NANOPOROUS GASKETS

L. Grine, H. Bouzid, Ecole de Technologie Superieure, Montreal, QC, Canada

PVP2010-25352: A NOVEL APPROACH TO ENERGY BASED EVALUATIONS OF ULTRA HIGH-PRESSURE WATERJETS

A. Chillman, University of Washington, Seattle, WA, USA; M. Hashish, Flow International Corporation, Kent, WA, USA; M. Ramulu, University of Washington, Seattle, WA, USA

PVP2010-25803: BENCHMARK OF COMPUTATIONAL FLUID DYNAMICS SIMULATIONS USING TEMPERATURES MEASURED WITHIN ENCLOSED VERTICAL AND HORIZONTAL ARRAYS OF HEATED RODS

N. R. Chalasani, M. Greiner, University of Nevada, Reno, NV, USA

PVP2010-25710: A COMPUTER SIMULATION MODEL FOR THE STRETCH BLOW MOULDING PROCESS OF POLYMER CONTAINERS

H. Groot, B. Mattheij, C. Giannopapa, Eindhoven University of Technology, Eindhoven, The Netherlands

SESSION 3.2.R (HP-1-7)

Wednesday, July 21, 10:30 am – 12:15 pm, Larch

STRUCTURAL RESPONSE OF VESSELS AND PIPING TO HIGH-EXPLOSIVE OR GASEOUS DETONATIONS

Sponsored by: High-Pressure Technology and Design & Analysis

Technical Committees

Developed by: E. Rodriguez, Global Nuclear Network Analysis, LLC, Los Alamos, NM, USA; J. Minichiello, Bechtel National, Inc., Richland, WA, USA; R. Leishear, Savannah River National Laboratory, Aiken, SC, USA

Chair: E. Rodriguez, Global Nuclear Network Analysis, LLC, Los Alamos, NM, USA

Co-Chair: J. Minichiello, Bechtel National, Inc., Richland, WA, USA; R. Leishear, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-25230: PLASTIC INSTABILITIES IN STATICALLY AND DYNAMICALLY LOADED SPHERICAL SHELLS

T. Duffey, TA Duffey, Consulting Engineer, Tijeras, NM, USA; E. Rodriguez, Global Nuclear Network Analysis, LLC, Los Alamos, NM, USA

PVP2010-25442: EXPERIMENTAL TEST OF A HIGH PRESSURE TESTING ENCLOSURE

M. Edel, D. Ketchum, Baker Engineering and Risk Consultants, San Antonio, TX, USA

PVP2010-25592: ANALYSIS OF THE DYNAMIC RESPONSE OF A CONTROLLED DETONATION CHAMBER

B. Simoons, M. H. Lefebvre, Royal Military Academy, Brussels, Belgium; F. Minami, University of Osaka, Osaka, Japan; J. K. Asahina, Kobe Steel Ltd., Kobe, Japan; R. Nickell, Applied Science & Technology, San Diego, CA, USA

PVP2010-26036: LIFE ASSESSMENT OF FULL-SCALE EDS VESSEL UNDER IMPULSIVE LOADINGS

M. Yip, B. Haroldsen, Sandia National Laboratories, Livermore, CA, USA

THURSDAY, JULY 22

Block 4.1 Thursday, July 22 (8:30 am – 10:15 am)

SESSION 4.1.B (CS-9-1)

Thursday, July 22, 8:30 am – 10:15 am, Grand Ballroom A

ASME CODE SECTION XI ACTIVITIES

Sponsored by: Codes & Standards Technical Committee

Developed by: D. A. Scarth, Kinectrics, Toronto, ON, Canada; R. Crane, ASME, New York, NY, USA

Chair: R. C. Cipolla, Intertek-APTECH, Sunnyvale, CA, USA

Co-Chair: D. A. Scarth, Kinectrics, Toronto, ON, Canada

PVP2010-25145: TECHNICAL BASIS FOR A FLAW TOLERANCE OPTION FOR CODE CASE N-770 FOR LARGE DIAMETER COLD LEG PIPING TO MAIN COOLANT PUMP WELDS, WITH OBSTRUCTIONS

W. Bamford, Westinghouse Electric, Pittsburgh, PA, USA; R. Ganta, G. Hall, Westinghouse Electric, Windsor, CT, USA; M. Kelley, Westinghouse Electric, Pittsburgh, PA, USA

PVP2010-26164: TECHNICAL BASIS FOR CASE N-766 NICKEL ALLOY REACTOR COOLANT INLAY AND ONLAY FOR MITIGATION OF PWR FULL PENETRATION CIRCUMFERENTIAL NICKEL ALLOY WELDS IN CLASS 1 ITEMS

Columbus, Columbus, OH, USA; S. Ranganath, XGEN Engineering, San Jose, CA, USA; L. H. Wang, Industrial Technology Research Institute, Chutung, Hsinchu, Taiwan; Y.-L. Tsai, National Chiao Tung University, Chutung, Hsinchu, Taiwan; C.-C. Huang, R.-F. Liu, Institute of Nuclear Energy Research, Taoyuan County, Taiwan

PVP2010-26100: DESIGN OF A WELD OVERLAY FOR A LARGE BORE PIPE NOZZLE TO OPTIMIZE RESIDUAL STRESS

D. Killian, AREVA NP Inc., Lynchburg, VA, USA

PVP2010-25703: 3D SIMULATION OF A PERIPHERAL ADAPTER J-GROOVE ATTACHMENT WELD IN A VESSEL HEAD

D. Lhachemi, AREVA NP, Lyon, France; P. Gilles, AREVA, Colombes, France; V. Robin, AREVA NP, Lyon, France; P. Mourgue, M. Zemouri, ESI Group, Lyon, France

PVP2010-25943: A FUNDAMENTAL STUDY OF THE INTERACTION OF RESIDUAL STRESS AND APPLIED LOADING ON FRACTURE

C. Aird, M. Pavier, D. J. Smith, University of Bristol, Bristol, United Kingdom

SESSION 4.1.N (NDE-2-1)

Thursday, July 22, 8:30 am – 10:15 am, Laurel

RECENT TECHNOLOGIES OF DAMAGE EVALUATION I

Sponsored by: NDE Engineering Division; Materials & Fabrication; and Operations, Applications & Components Technical Committees

Developed by: N. Tada, Okayama University, Okayama, Japan; S. Hamada, Tokyo Electric Power, Tokyo, Japan; S.-S. Kang, Korea Institute of Nuclear Safety, Daejeon, Korea (Republic); H.-J. Kim, Sungkyunkwan University, Suwon, Korea (Republic)

Chair: N. Tada, Okayama University, Okayama, Japan

Co-Chair: S. Hamada, Tokyo Electric Power, Tokyo, Japan

PVP2010-25075: EDDY CURRENT NON-DESTRUCTIVE TESTING FOR CARBON FIBER-REINFORCED COMPOSITES (CFRP)

K. Koyama, Nihon University, Narashino, Japan

PVP2010-25286: POTENTIAL DIFFERENCE AROUND SEMI-ELLIPTICAL CRACK ON THE OUTER SURFACE OF PIPE FOR NON-DESTRUCTIVE EVALUATION OF CRACK BY DC-PDM

N. Tada, M. Uchida, H. Maeda, Okayama University, Okayama, Japan

PVP2010-25410: ACCURACY COMPARISON OF THE ELECTRICAL POTENTIAL DROP TECHNIQUE AND ULTRASONIC TESTING FOR THE PIPE WALL THINNING IN THE THERMAL POWER PLANT

S. Yoshino, Tokyo Electric Power Company, Yokohama, Kanagawa, Japan; S. Hamada, Tokyo Electric Power, Tokyo, Japan; Y. Kaieda, Tokyo Electric Power Company, Yokohama, Japan

PVP2010-25877: PARAMETRIC STUDY ON DETERMINING OPTIMAL EDDY CURRENT TESTING METHOD FOR INSPECTION OF STEAM GENERATOR TUBES IN SMART PLANT

D. Kim, S.-J. Han, H.-J. Kim, S.-Jin Song, Sungkyunkwan University, Suwon, Korea (Republic); Y. Choung, Korea Atomic Energy Research Institute, Daejeon, Korea (Republic)

SESSION 4.1.O (MF-22-1)

Thursday, July 22, 8:30 am – 10:15 am, Juniper

ADVANCED MATERIALS PROCESSING I

Sponsored by: Materials & Fabrication Technical Committee

Developed by: B. Burdett, Rolls-Royce, Derby, United Kingdom; A. Duncan, Savannah River National Laboratory, Aiken, SC, USA

Chair: B. Burdett, Rolls-Royce, Derby, United Kingdom

Co-Chair: A. Duncan, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-25064: DEGRADATION OF MECHANICAL PROPERTIES IN AUSTENITIC STAINLESS STEEL PIPE AND FITTINGS FOR CORROSIVE REFINERY APPLICATIONS

R. Colwell, Bechtel Corp, Houston, TX, USA; B. Messer, J. Hu, Fluor Canada Ltd., Calgary, AB, Canada

PVP2010-25165: PERFORMANCE IMPLICATIONS OF HIGH ENERGY DENSITY WELDING OF CORROSION RESISTANT ALLOY HEAT EXCHANGER TUBING

D. O'Donnell, C. Kettermann, N. Karlen, RathGibson, Janesville, WI, USA

PVP2010-25274: POTENTIAL DETRIMENTAL CONSEQUENCES OF EXCESSIVE PWHT ON PRESSURE VESSEL STEEL PROPERTIES

C. Chauvy, L. Coudreuse, Industeel Arcelormittal, Rive de Gier, France; P. Toussaint, Industeel Arcelormittal, Charleroi, Belgium

SESSION 4.1.P (OAC-4-8)

Thursday, July 22, 8:30 am – 10:15 am, Cottonwood

PACKAGING GENERAL TOPICS

Sponsored by: Operations, Applications & Components Technical Committee

Developed by: C. May, Savannah River National Laboratory, Aiken, SC, USA; N. K. Gupta, Savannah River National Laboratory, Aiken, SC, USA

Chair: T. Mintz, Southwest Research Institute, San Antonio, TX, USA

Co-Chair: K. Eberl, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-25438: PACKAGING AND TRANSPORTATION OF ADDITIONAL NEPTUNIUM OXIDE

R. Watkins, J. Jordan, Savannah River National Laboratory, Aiken, SC, USA; S. Hensel, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-26038: A CONTAINMENT VESSEL CLOSURE DESIGNED TO LIMIT HYDROGEN ISOTOPE PERMEATION (Presentation Only)

K. Eberl, P. S. Blanton, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-26059: APPLICATION OF FLOW FORMING AS AN IMPROVED DESIGN AND FABRICATION METHOD FOR CONTAINMENT VESSELS OF RADIOACTIVE MATERIAL PACKAGES DESIGNED FOR ASME CODE COMPLIANCE (Presentation Only)

P. S. Blanton, Savannah River National Laboratory, Aiken, SC, USA

PVP2010-26139: PACKAGE TRACKING 2.0 (Presentation Only)

M. R. Feldman, Oak Ridge National Laboratory, Oak Ridge, TN, USA

SESSION 4.1.Q (MF-14-1)

Thursday, July 22, 8:30 am – 10:15 am, Madrona

GENERAL ASPECTS OF LEAK-BEFORE-BREAK

Sponsored by: Materials & Fabrication Technical Committee

Developed by: J. Sharples, Serco TAS, Warrington, United Kingdom; B.

Bezensek, Hunting Energy Services, Aberdeen, United Kingdom

Chair: J. Sharples, Serco TAS, Warrington, United Kingdom

Co-Chair: B. Bezensek, Hunting Energy Services, Aberdeen, United Kingdom

PVP2010-25249: DEVELOPMENT OF LBB ASSESSMENT METHOD FOR JAPANESE SODIUM COOLED FAST REACTOR (JSFR) PIPES (2) CRACK OPENING DISPLACEMENT ASSESSMENT OF THIN WALL PIPES MADE OF MODIFIED 9CR-1MO STEEL

T. Wakai, Japan Atomic Energy Agency, O-arai, Ibaraki, Japan; H. Machida, Manabu Arakawa, Tepco Systems Corporation, Tokyo, Japan; Y. Enuma, Mitsubishi FBR Systems, Inc., Tokyo, Japan; T. Asayama, Japan Atomic Energy Agency, Higashi-Ibaraki-gun, Ibarakiken, Japan

PVP2010-25243: DEVELOPMENT OF LBB ASSESSMENT METHOD FOR JAPANESE SODIUM COOLED FAST REACTOR (JSFR) PIPES (1) STUDY ON THE PREMISE FOR THE STANDARDIZATION OF ASSESSMENT PROCEDURE

T. Wakai, Japan Atomic Energy Agency, O-arai, Ibaraki, Japan; H. Machida, Tepco Systems Corporation, Tokyo, Japan; Y. Enuma, Mitsubishi FBR Systems, Inc., Tokyo, Japan; T. Asayama, Japan Atomic Energy Agency, Higashi-Ibaraki-gun, Ibarakiken, Japan

PVP2010-25244: DEVELOPMENT OF LBB ASSESSMENT METHOD FOR JAPANESE SODIUM COOLED FAST REACTOR (JSFR) PIPES (3) ASSESSMENT CONSIDERING CHANGE OF COMPLIANCE AT A CRACK PART

T. Wakai, Japan Atomic Energy Agency, O-arai, Ibaraki, Japan; H. Machida, S. Yoshida, Tepco Systems Corporation, Tokyo, Japan; Y. Enuma, Mitsubishi FBR Systems, Inc., Tokyo, Japan; T. Asayama, Japan Atomic Energy Agency, Higashi-Ibaraki-gun, Ibarakiken, Japan

PVP2010-25973: GERMAN ENGINEERING METHODS FOR CRITICAL CRACK SIZE ASSESSMENT IN DUCTILE REGIME

S. Blasset, AREVA, Erlangen, Bavaria, Germany; R. Tiete, E. Keim, AREVA NP GmbH, Erlangen, Bavaria, Germany

SESSION 4.1.R (OAC-7-1)

Thursday, July 22, 8:30 am – 10:15 am, Larch

CONTINUED SAFE OPERATION OF PIPING AND PIPE SUPPORTS

Sponsored by: Operations, Applications & Components Technical Committee

Developed by: A. M. Cheta, Shell, Paris La Defense, France; T. Tahara, Petroleum Association of Japan; Tokyo, Japan

Chair: A. M. Cheta, Shell, Paris La Defense, France

Co-Chair: T. Tahara, Petroleum Association of Japan; Tokyo, Japan

PVP2010-25028: OECD/NEA OPDE PROJECT: PROGRESS WITH THE DEVELOPMENT OF A WEB-BASED PIPE FAILURE DATABASE

B. Lydell, Scandpower Risk Management, Inc., Houston, TX, USA; A. Huerta, OECD Nuclear Energy Agency, Issy-les-Moulineaux, France; K. Gott, Swedish Radiation Safety Authority, Stockholm, Sweden

PVP2010-25603: ADVANCED METHODS FOR VIBRATION REDUCTION AT A CHEMICAL PIPING REACTOR

K. Kerkhof, University of Stuttgart, Stuttgart, Germany; J. Schwenkkros, Dow Chemical, Stade, Germany; F. Barutzki, GERB Schwingungsisolierungen, Berlin, Germany; C. Gurr-Beyer, Büro für

Baudynamik, Stuttgart, Germany

PVP2010-25613: DESIGN FOR SAFE OPERATION OF PIPING AND PRESSURE VESSELS IN OIL FPSOS (Presentation Only)

A. M. Cheta, Shell, Paris La Defense, France

Block 4.2 Thursday, July 22 (10:30 am – 12:15 pm)

SESSION 4.2.B (CS-10-1)

Thursday, July 22, 10:30 am – 12:15 pm, Grand Ballroom A

PANEL SESSION: WHAT'S NEW IN ASME SECTION XI

Sponsored by: Codes & Standards Technical Committee

Developed by: M. Rana, Praxair, Inc, East Amherst, NY, USA

Chair: G. Park, NextEra Energy LLC Duane Arnold, Palo, IA, USA

Co-Chair: M. Rana, Praxair, Inc, East Amherst, NY, USA

Panelists:

J. Spanner, EPRI, Charlotte, NC, USA

D. A. Scarth, Kinectrics, Toronto, ON, Canada

G. Park, NextEra Energy LLC Duane Arnold, Palo, IA, USA

SESSION 4.2.C (CS-12-4)

Thursday, July 22, 10:30 am – 12:15 pm, Grand Ballroom B

RECENT DEVELOPMENTS IN JAPANESE CODES AND STANDARDS FAILURE ASSESSMENT OF NI-BASED ALLOY FOR JAPANESE CODES

Sponsored by: Codes & Standards Technical Committee

Developed by: K. Onizawa, Japan Atomic Energy Agency, Tokaimura, Ibarakiken, Japan; Y. Li, Japan Nuclear Energy Safety Organization (JNES), Tokyo, Japan

Chair: S. Xu, Kinectrics, Toronto, ON, Canada

Co-Chair: Zhanpeng Lu, Tohoku University, Sendai, Miyagi-ken, Japan

PVP2010-25645: FRACTURE ASSESSMENT FOR WELDED PLATE OF NI-BASE ALLOY

M. Itatani, T. Ogawa, T. Saito, C. Narazaki, Toshiba Corporation, Yokohama, Japan; K. Ogawa, Japan Nuclear Energy Safety Organization, Tokyo, Japan

PVP2010-26120: DUCTILE FRACTURE STRENGTH OF NI-BASED ALLOY PLATES WITH AN INCH THICKNESS

K. Miyazaki, Hitachi, Ltd., Hitachi-shi, Japan; K. Saito, Hitachi GE, Hitachi-shi, Japan

PVP2010-25558: DUCTILE FRACTURE STRENGTH OF BUTT WELDED FLAT PLATES OF NI-BASED ALLOY (Presentation Only)

K. Miyazaki, Hitachi, Ltd., Hitachi-shi, Japan; K. Saito, Hitachi GE, Hitachi-shi, Japan; K. Ogawa, Japan Nuclear Energy Safety Organization, Tokyo, Japan

PVP2010-26114: FRACTURE EVALUATION USING LIMIT LOAD ANALYSIS FOR COMPLEX STRUCTURE

K. Hojo, M. Ochi, Mitsubishi Heavy Industries, Ltd., Takasago, Japan; K. Ogawa, Japan Nuclear Energy Safety Organization, Tokyo, Japan; N. Ogawa, Mitsubishi Heavy Industries, Ltd., Takasago, Japan