Final Program

PVP 2017

2017 Pressure Vessels & Piping Conference

A New Era of Service to the Pressure Vessels and Piping Industry

July 16–20, 2017
Hilton Waikoloa Village
Waikoloa, Hawaii, USA

ASME
SETTING THE STANDARD

WELCOME TO PVP 2017

Welcome to Waikoloa, Hawaii, USA for a new era of the ASME Pressure Vessels & Piping Conference (PVP). After helping to advance the Pressure Vessels and Piping Industry for the last 50 years, the ASME-PVP is starting a new era of service to the industry and academia. The **ASME 2017 PVP Conference** promises to be the outstanding international technical forum for participants to further their knowledgebase by being exposed to diverse topics, and exchange opinions and ideas both from industry and academia in a variety of topics related to Pressure Vessels and Piping technologies for the power and process industries. The PVP Conference is a great place to exchange ideas and to meet colleagues as we all work to create and advance Pressure Vessels and Piping technologies for our global community of practice. The PVP Conference is a recognized forum for fruitful exchange of ideas with participants from over 40 countries in Europe, Africa, the Middle East, Asia, the Americas, and the Oceania islands.

The ASME Pressure Vessels & Piping Division is the primary sponsor of this Conference, with additional participation by the ASME Nondestructive Evaluation, Diagnosis and Prognosis Division (NDPD). This year, the Conference Technical Program contains approximately 750 technical papers and presentations organized into approximately 200 technical and panel discussion sessions, four technical tutorials, two special tutorials, an EPRI Dissimilar Welds in High Temperature Applications Workshop, a special presentation for Early Career Engineers, and our outstanding Rudy Scavuzzo Student Paper Symposium and 25th Annual Student Paper Competition. The Technology Demonstration Forum is also organized as part of our Technical Program.

Technical papers presented in this Conference are separated into tracks, according to their technical areas, and are available at the Conference in the form of a CD-ROM. The program is published on the ASME Event Connect app.

A key component of every PVP Conference is the opportunity to socialize and make new friends—this year's Conference offers several great possibilities in beautiful Hawaii. Enjoy the **Pu'uhonua O Hōnaunau National Historical Park & Kona Joes Coffee Tour** on Monday—this tour will let you explore some of the most significant traditional Hawaiian sites on the Hawaiian archipelago. One of the most prominent features of the park is the Pu'uhonua or place of refuge, which is enclosed by the Great Wall, a massive 965 foot long masonry wall. Monday evening we all meet at the **Conference-Wide Reception,** which will be held on the Grand Promenade of our conference resort, the Hilton Waikoloa Village. The **Hamakua, Macadamia Nut Co., Shopping in Hawi, and Visit King Kamehameha Statue Tour** on Tuesday features a variety of cultural, educational and outdoor activities. Additional details regarding these tours can be found later in this program.

PVP 2017 PROGRAM LAYOUT

	Sunday July 16, 2017	**Monday July 17, 2017**	**Tuesday July 18, 2017**	**Wednesday July 19, 2017**	**Thursday July 20, 2017**	**Friday July 21, 2017**
7:30 am 8:15 am	Arrival Registration Opens **(8:00 am – 6:00 pm)**	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 – 3:00 pm)**	Authors' Breakfast/Briefing Registration Open **(7:30 am – 3:00 pm)**	Open
8:30 am 10:15 am	Open	**Block 1.1** Technical Sessions Technology Demonstration Forum	**Block 2.1** Technical Sessions Technical Tutorial Technology Demonstration Forum	**Block 3.1** Technical Sessions Technical Tutorial	**Block 4.1** Technical Sessions EPRI Workshop on High Temperature Dissimilar Metal Welds	**Block 5.1** EPRI Workshop on High Temperature Dissimilar Metal Welds
10:30 am 12:15 pm	Open	**Block 1.2** Plenary Session Technology Demonstration Forum	**Block 2.2** Technical Sessions Technical Tutorial Technology Demonstration Forum	**Block 3.2** Technical Sessions Technical Tutorial	**Block 4.2** Technical Sessions EPRI Workshop on High Temperature Dissimilar Metal Welds	**Block 5.2** EPRI Workshop on High Temperature Dissimilar Metal Welds
12:15 pm 1:45 pm	Open	Technical Committee Meetings	Technical Committee Meetings	Open	Open	Open
2:00 pm 3:45 pm	Two Special Tutorials **(1:00 pm – 3:00 pm)**	**Block 1.3** Technical Sessions Technical Tutorial Technology Demonstration Forum	**Block 2.3** Technical Sessions Technical Tutorial Technology Demonstration Forum	**Block 3.3** Technical Sessions	**Block 4.3** Technical Sessions EPRI Workshop on High Temperature Dissimilar Metal Welds	Open
4:00 pm 5:45 pm	Early Career Engineers Forum **(3:30 pm – 4:30 pm)** Student Paper Competition Orientation **(4:30 pm – 4:45 pm)** Women Engineers/Early Career Engineers Event/Students Social Event **(4:30 pm – 5:30 pm)**	**Block 1.4** Technical Sessions Technical Tutorial Technology Demonstration Forum	**Block 2.4** Technical Sessions Technical Tutorial Technology Demonstration Forum	**Block 3.4** PVP Division Honors and Awards Assembly and Dinner **(5:00 pm – 10:00 pm)**	**Block 4.4** Technical Sessions Conference Evaluation EPRI Workshop on High Temperature Dissimilar Metal Welds	Open
Evening	Open	Conference-Wide Reception **(6:15 pm – 8:00 pm)**	Open		Open	Open

PVP DIVISION

As the Pressure Vessels and Piping Division celebrates its 51st Anniversary in Hawaii, one may wonder how did it start? The Pressure Vessel Research Committee (PVRC), which was the research arm of ASME, had the most experienced members in designing and manufacturing Pressure Vessels, Valves and Pumps, sponsored research programs on thin and thick shells theory with cooperation of the Atomic Energy Commission (AEC) and other organizations as early as 1958. A number of institutions participated in the program, among them was Pennsylvania State University dealing with stress analysis of pressure vessels with nozzle inserts with different types of reinforcement pads under combined loading with results published in WRC bulletins of 1963 and 1964 by D. Hardenberg and S.Y. Zamrik. Contributions to this work were also made by C. Taylor at Illinois University using photoelasticity stress analysis, and E.O. Waters at Yale University using computational analysis. In view of the growing interest in Pressure Vessel technology and research results, F. Williams, who was with Taylor Forge and a very active member, spearheaded an organizational meeting at the 1965 ASME Winter Annual Meeting (WAM) in Chicago to form a Pressure Vessels and Piping Division within ASME to encompass all technical aspects. F. Williams and D. Young introduced recommendations to ASME to create a Division, called Pressure Vessels and Piping (PVP). The recommendation passed unanimously and D. Young was named the first Division Chair on April 13, 1966. Thus, the Pressure Vessels and Piping Division (PVPD) was born.

The PVP division evolved over the years from a small division with four Technical Committees to what is today eight committees with a strong, vital membership. The Division leadership in those years had a global vision to be an international body and to have international experts involved in the division growth. The leadership of the division established a Mission and Core Values to build on:

- **The Mission** is to provide a 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.
- **The Core Values** are to embrace integrity and ethical conduct and a welcoming climate for a diverse global community of students and engineers to foster creativity, innovation, and intellectual growth.

To disseminate its mission, global conferences were organized to bring the technical community together and to exchange the technology development in the Pressure Vessels industry. PVP conferences continue to be successful due to the dedication of our volunteers who are, in turn, supported by their companies.

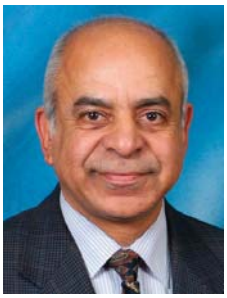
ASME is truly international, and the PVP Division does quite well in this area. From 1991 to 2000, the number of contributors from outside of North America grew from about one-third to more than two-thirds, and our Conference continually hosts attendees from 35-42 different countries representing all regions of the globe. Needless to say, the technical content and the quality of PVP Conference sessions have benefited considerably from overseas participation.

To encourage students in Conference participation, the Rudy Scavuzzo Student Paper Symposium and Competition is held every year. The PVP Division encourages students and early career engineers to get involved with the Conference and the Division. PVP Conference attendees are encouraged to be accompanied by their spouses; this provides and promotes a welcoming atmosphere that further develops friendship, broadens relationships and extends interaction and networking. Another unique strength that the PVP Division utilizes is the commitment and active participation of our PVPD Senate Operations Committee and spouses who work with us to create and maintain the “PVP Family” atmosphere that makes our social events successful.

Index to Program

The American Society of Mechanical Engineers
Pressure Vessels & Piping Division

PVP 2017 Conference Committees



Maher Y. A. Younan
Conference Chair

Pierre Mertiny
Technical Program Chair

Sam Y. Zamrik
Conference Advisor

PVP Technical Program Representatives

Codes & Standards	Ryan L. Crane, Kiminobu Hojo
Computer Technology & Bolted Joints	Robert Noble, Bijan Azadi_Borujeni
Design & Analysis	Bing Li
Fluid-Structure Interaction	Lambros Kaitsis, Victor Janzen
High-Pressure Technology	Kannan Subramanian, Kumarswamy Karpanan,
Materials & Fabrication	Xian-Kui Zhu
Operations, Applications & Components	Yasumasa Shoji, Alton Reich
Seismic Engineering	Fabrizio Paolacci, Osamu Furuya
Student Paper Competition	Daniel T. Peters, Marina B. Ruggles-Wrenn
ASME NDPD Division	Sandra Dugan
EPRI Dissimilar Welds in High Temperature Applications Workshop	Jonathan Parker, Elizabeth Benton
Technology Demonstration Forum	Carl E. Jaske, James F. Cory, Jr.

Student Paper Competition Session Developers

Codes & Standards	Peter James, Andrew Wasylyk, Jianfeng Shi
Computer Technology & Bolted Joints	Yasumasa Shoji
Design & Analysis	Kannan Subramanian, Bing Li
Fluid-Structure Interaction	Victor Janzen, Christina Giannopapa, Lambros Kiaktsis, George Papadakis
High-Pressure Technology	Mahesh Aggarwal
Materials & Fabrication	Noel O'Dowd, Haiyang Qian
Operations, Applications & Components	Yasumasa Shoji, Steve Hensel
Seismic Engineering	Fabrizio Paolacci, Tasmin Hassan
PVP Senate	Daniel T. Peters, Marina B. Ruggles-Wrenn

PVP Division Executive Committee (2016–2017)

Douglas A. Scarth	Chair
Maher Y. A. Younan	Vice Chair
Pierre Mertiny	Programs Chair
Hakim A. Bouzid	Communications Chair
Trevor G. Seipp	Honors and Awards Chair
Darren Stang	Professional Development Chair

PVP Senate of Past Division Chairs

Marina B. Ruggles-Wrenn, Historian, (2016-2017)	2015–16
Daniel T. Peters, President, (2016-2017)	2014–15
Michael E. Nitzel,	2012–14
Ronald S. Hafner	2011–12
Young W. Kwon	2010–11
Luc H. Geraets*	2009–10
Artin A. Dermenjian	2008–09
James F. Cory, Jr.,	2007–08
Judith A. Todd	2006–07
M. K. Au-Yang*	2005–06
Ismail T. Kisisel	2004–05
William J. Bees	2003–04
Howard H. Chung	2002–03
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
Irwin Berwin*	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 & Standards	Russell C. Cipolla
Computer Technology & Bolted Joints	Wolf Reinhardt
Design & Analysis	Ravi Baliga
Fluid-Structure Interaction	Christina Giannopapa
High-Pressure Technology	Karl Simpson
Materials & Fabrication	Michiel Brongers
Operations, Applications & Components	Matthew R. Feldman
Seismic Engineering	Tomoyo Taniguchi

PVP Division Administrative Committee Chairs

Membership Chair	Darren L. Stang
Website & PVPD Newsletter Editor	Hakim A. Bouzid
International Coordination	Xian-Kui Zhu

ASME Journal of Pressure Vessel Technology

Editor	Young W. Kwon

ASME President

C. Wise	2017–2018

ASME Staff

Executive Director	Thomas G. Loughlin
Program Manager	Jamie Hart
ASME Staff	Javanni Kiezer, Danielle Rojas

OPENING CEREMONY and PLENARY SESSION

A New Era of Service to the Pressure Vessels and Piping Industry

The Conference opens on Monday, July 17, at 10:30 am, in the *Monarchy Ballroom.* Representatives of the American Society of Mechanical Engineers will welcome the attendees. The first presentation will be delivered by Dr. Stewart Williams, Director of the Welding Engineering, and Laser Processing Center, Professor of Welding Science and Engineering, School of Aerospace, Transport and Manufacturing, Cranfield University. The second presentation will be delivered by Dr. Thomas R. Kurfess, P.E., Professor, George W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology.

Plenary Speaker

Dr. Stewart Willams
Welding Engineering and Laser Processing Center
Cranfield University, Cranfield, UK

Large Scale Metal Wire + Arc Additive Manufacture for Pipes and Pressure Vessels

Additive manufacture of large engineering structural parts is currently of great interest to industry in general. The only realistic processes for this are those based on wire feed technology and their status will be briefly reviewed. Wire + Arc Additive Manufacture (WAAM) shows the highest level business benefit, and examples of systems, capabilities and associated material properties will be given. There are many potential applications of WAAM for production of pressure vessels and pipe structures which will be highlighted. Developments required for WAAM to allow industrial application including the approach towards qualification will be discussed. The presentation will conclude with two case studies of building steel pipe elbow structures and a titanium pressure vessel.

Plenary Speaker

Dr. Thomas R. Kurfess, Ph.D., P.E.
George W. Woodruff School of Mechanical Engineering
Georgia Institute of Technology, Atlanta, Georgia USA

High Performance Computing and Big Data the Parents of the Digital Twin

Sensors are ubiquitous in modern manufacturing operations, and they generate significant quantities of data. With the advent of low cost, readily available broad band communication and virtually infinite cloud storage, many of the old stigmatisms related to taking data from a plant are no longer of concern. However, the question still remains as to what to do with the data. This lecture will discuss the use of large scale data sets from production operations and how they can be leveraged to better understand not only traditional operations, but untapped opportunities from data that are readily available today. Such opportunities provide an improved platform for classical analytic techniques as well as more modern, data intensive approaches to process and operations modeling. The talk will then focus on a specific next generation digital representations and their application to pressure vessels and piping. Examples will be given for both manufacturing operations (additive and subtractive) and validation/verification, as well as how this capability is extensible to cloud computing operations, and next generation technology and business models such as Desktop as a Service (DAAS). The talk will conclude with a discussion of the technology, workforce and infrastructural directions and needs to fully enable the next generation digital twin, and where such a capability will drive the future of manufacturing.

HONORS and AWARDS ASSEMBLY

The ASME PVP Division Honors and Awards Assembly, during which Division and selected ASME Society awards are presented, will be held on Wednesday, July 19, from 5:00 pm until 10:00 pm, in the *Monarchy Ballroom.* The top PVP Division award, the ASME S. Y. Zamrik PVP Medal, will be presented to Mr. Mahendra Rana.

ASME S. Y. Zamrik PVP Medal Recipient

Mr. Mahendra D. Rana
Niantic, CT

Mahendra D. Rana received his B.E. in Mechanical Engineering from the Maharaja Sayajirao University of Baroda in India in 1967. He subsequently received a Masters in Mechanical Engineering from the Illinois Institute of Technology in 1970. He started his career in the aircraft industry focusing on fatigue evaluation and mechanical design of jet engine components. In 1974 he joined the Linde Division of Union Carbide Corp, which subsequently became Praxair. Over his career at Praxair, he was responsible for the design of cryogenic storage tanks, development of weight-efficient portable high pressure gas storage cylinders, as

Coffee Breaks and Refreshments

Coffee and refreshments are available throughout the week on the *Grand Promenade of the Conference Center.* This hub of activity features the *Technology Demonstration Forum,* exhibit booths, coffee breaks, guest activity information area, and registration.

well as structural integrity assessments and fracture control programs for all pressure vessels used at Praxair. Additionally, he provided pressure vessel consulting to all Praxair groups. Mr. Rana retired from Praxair in June 2016.

Starting in 1993, Mr. Rana became active in the ASME PVP Division, starting in the Codes and Standards Technical Committee. He has actively developed technical sessions from 1993 to 2009. He served as Technical Program Representative (TPR) for the Codes and Standards Technical Committee multiple times, a role that required substantial work each year. From 2000-2002 he served as Vice-Chair of the Codes and Standards Technical Committee, and from 2002-2006 he served as Chair. Over his tenure as Vice-Chair and then Chair, he completely revitalized the Technical Committee, laying the foundation for its continued success. Today, ten years after his term as Chair, this Technical Committee continues to be a strong and substantial contributor to the PVP Division and the PVP Conference.

Mr. Rana has also been very active in ASME Codes and Standards development, for which he was awarded the J. Hall Taylor Medal in 2011. Significantly for the PVP Division, much of the Codes and Standards development work that he was involved in was first published and presented at PVP Conferences. Mr. Rana has received numerous other awards over the years for his significant contributions to ASME, including the ASME Dedicated Service Award in 2009. He was elected to the grade of ASME Fellow in 2004.

Mr. Rana has two patents, and many publications in the PVP conference and ASME-Journal of Pressure Vessel Technology. He has contributed to many ASME Code committees and ISO standards. Some of his major projects include:

- Development of high-strength (200-250 ksi) cryoformed, welded stainless steel gas cylinder including fracture mechanics based R&D work.
- Structural support design of a Praxair jet piercing machine.
- Development of a high-strength (155-175 ksi UTS) seamless steel cylinder for high pressure gases.
- Design of several cryogenic storage ASME Coded tanks with sizes ranging from 1,000 to 65,000 gallons.
- Determination of fracture critical-flaw sizes of acoustic emission tested DOT regulated high pressure gas storage vessel.
- Fracture testing and evaluation of new steels for cryogenic pressure vessel application.

In summary, Mr. Rana has provided outstanding service to ASME, ASME Codes and Standards, and particularly the PVP Division.

TUTORIALS

Tutorials offer both the experienced and early career engineers excellent opportunities to refresh their knowledge and to venture into specific technical areas outside their expertise. Admission to the tutorials is free for Conference Registrants.

Special Tutorial: This is a one-hour or 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. The Technical Tutorial notes will be available in electronic format.

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

PVP Division will not assign Continuing Education Units (CEUs) on these certificates. However, attendees may negotiate CEU credits with their respective licensing boards.

An outline of the tutorial sessions for the 2017 PVP Conference is presented in the following.

SPECIAL TUTORIALS

Business Planning for Engineers

Alton Reich, MS, PE Streamline Automation, LLC / Vital Metrix, Inc.

Sunday, July 16, 1:00 pm – 3:00 pm
Kohala 3, Conference Center

Many engineers feel the entrepreneurial itch, and some of us are insane enough to act on it. This tutorial will discuss some tools and techniques that can be used to evaluate business ideas, the potential market for them, and help to focus thinking and effort on the things you don't know before making a decision to go forward. These tools can also be used within larger organizations (i.e. the company you still work for) to evaluate new business opportunities. We will discuss the lean canvas as a tool for business planning, which distills a business plan down to one page that is easily modified as an entrepreneur learns new things, and serves as the nucleus of a written business plan. We will also discuss customer discovery, the value of low fidelity prototypes, and the importance of finding out that you're wrong quickly. This session is developed by an engineer who worked at successively smaller companies until starting his own (with a couple of partners). In 2015 he spun out a medical device company that required attracting investors and being able to answer their questions. He hopes to impart some hard-earned knowledge to tutorial attendees.

Process and Benefits of ASME Pressure Technology Codes & Standards Development

William (Bill) Bees, Consulting Engineer, and Clay Rodery, Mechanical Integrity, BP p.l.c; and Mahendra Rana, Consultant, Niantic, Inc.

Sunday, July 16, 1:00 pm – 3:00 pm
Kohala 4, Conference Center

Have you wondered how the Codes & Standards (C&S) that ASME produces happens? In addition to the benefits gained from membership in the PVP Division and attendance/participation in the ASME PVP Conference, ASME offers benefits to those interested in C&S development. This tutorial explains the:

- Process used in development of ASME C&S; specifically in the area of Pressure Technology Codes & Standards;
- Consensus process used in C&S/ANSI development;
- Benefits to participants in ASME C&S development activities;
- Types of participation in the C&S Committees, qualifications, and the expectations of participants;
- Relationship between the ASME Pressure Vessels & Piping Division and ASME C&S;
- Committee Structure under the Board on Pressure Technology C&S and areas of responsibilities;
- Emerging areas in Pressure Technology including those currently seeking participants; and
- Number of Standards and Codes under ASME and areas affected.

One of ASME's most valuable assets are the relationships with the volunteers who serve on C&S committees. ASME's policy is to afford all interested persons an opportunity to participate in the ASME C&S development process. Membership on a committee normally represents you as an individual, rather than as a representative of your employer or another organization. The Tutorial concludes with an open question and answer session.

Early Career Engineers Forum (Forum Session)

Artin Dermenjian, AAD Independent Operations (PVPD Senator)

Sunday, July 16, 3:30 pm – 4:30 pm
Kohala 4, Conference Center

The first half of the forum will provide a brief history and background of ASME-PVP Division activities and how involvement in ASME-PVP will create and facilitate networking and mentoring opportunities. The second half of the forum will be an interactive workshop dealing with issues that new career engineers may face in the work place.

Social Event for Women/Early Career Engineers and Students
Sunday, July 16, 4:30 pm – 5:30 pm

Grand Staircase, Hilton Waikoloa Village

A special social event will be held on Sunday for women engineers, early career engineers (five years or less from time of graduation), and students. This event is an opportunity for these individuals to meet the PVP Division leadership team and to learn how to get more involved in activities of the PVP Conference. The PVP Division leadership team will be pleased to answer any questions you may have regarding the Conference, and provide guidance on how to navigate through the Conference Program during the week. All women engineers, early career engineers and students are welcome and encouraged to attend this event.

TECHNICAL TUTORIALS

The Use of Computational Fluid Dynamics in Design

Sean M. McGuffie, and Mike Porter, Porter McGuffie Inc.

Monday, July 17, 2:00 pm – 3:45 pm (Part 1); and Monday, July 17, 4:00 pm – 5:45 pm (Part 2)
Kohala 4, Conference Center

Computational fluid dynamics (CFD) is a methodology for solving the Navier-Stokes (NS) equations—the complete and perfect equations of fluid motion. The NS equations are nonlinear, coupled partial differential equations for which no direct solution exists, except in the most simplified cases. "Correct" solution of the equations requires a technique known as direct numerical simulation; where, due to the demands of the technique, only fundamental research on small geometric domains is conducted, using some of the largest supercomputers in the world. Given this fact, what can CFD be used for in an engineering environment? With the proper validation, a design basis calculation for a nuclear facility serves as an example of how far the technology can be pushed. It should be understood by the prospective attendee that CFD is an extremely broad topic that can only be explored around the periphery in a four-hour time-frame. Therefore, the goal of the tutorial is to provide a fundamental understanding of what CFD is, and how it can be used to support engineering design decisions. This will be accomplished through a 75 minute block devoted to theory/implementation. During this portion of the tutorial, the solution of the three fundamentals associated with every engineering problem—continuity, momentum and turbulence—will be discussed. The tutorial will cover the implications that the underlying mathematics have on problem formation and solution, not the actual mathematics. The primary goal is to promote the informed use of this powerful technique and inform the attendee on how to avoid some of the most common pitfalls associated with CFD analyses.

Fitness-For-Service (FFS) Procedures for Evaluation of Damage or Defects in Pressurized Equipment using API 579-1/ASME FFS-1

Phillip Prueter and Brian Macejko, Equity Engineering Group, Inc.

Tuesday, July 18, 8:30 am – 10:15 am (Part 1); and Tuesday, July 18, 10:30 am – 12:15 pm (Part 2)
Kohala 4, Conference Center

The objective of this technical tutorial is to describe a subset of the API 579 1/ASME FFS-1 Fitness-For-Service (FFS) procedures for evaluation of damage or defects in pressurized equipment. Lectures will be concentrated mostly on Level 1 and Level 2 evaluation procedures (including limitations, applicability, and acceptance criteria). This half-day technical tutorial will be broken into two (2) parts: Part 1, API 579 FFS Procedures - Volumetric Damage Focus, will include an overview of evaluation procedures for General Metal Loss and Local Metal Loss. Part 2, API 579 FFS Procedures - Fracture Focus, will include an overview of Brittle Fracture evaluation procedures and an introduction to Crack-Like Flaw evaluation procedures. Both Part 1 and Part 2 of the technical tutorial will include a lecture summarizing recent changes to the 2016 Edition of API 579 1/ASME FFS 1.

Fatigue Assessment of Weldments

Pingsha Dong, University of Michigan, and Matthew Doré, TWI Ltd.

Tuesday, July 18, 2:00 pm – 3:45 pm (Part 1); and Tuesday, July 18, 4:00 pm – 5:45 pm (Part 2)
Kohala 4, Conference Center

In the 2007 major rewrite of the ASME BPVC Section VIII Division 2, a new welded joint fatigue method was introduced using a mesh-insensitive structural stress and master S-N curve approach. This tutorial will provide discussion on the basis of the method, and its applications in design by analysis evaluation of a number of examples on pressure vessel and piping components involving both finite element based calculations as well as simple cases that only involve manual calculations for solving fatigue problems. Specific topics include:

- Overview of conventional fatigue assessment methods and limitations.
- Basis of mesh-insensitive traction structural stress method and calculation examples.
- Formulation of master S-N curve and validation.
- Treatment of low cycle fatigue and non-proportional multiaxial fatigue.
- Application examples: Fatigue life evaluation of pressure vessels and fatigue life evaluation of girth welded pipe components.
- New developments that are considered for adoption by API 579: Structural strain method and cycle counting procedure for non-proportional multiaxial fatigue loading and master S-N curve based assessment.

In March 2014, BS 7608 was updated to include new assessment guidance incorporating the finite element based 'hot spot' stress methodology, amendments to the allowance for bending, as well as updating the recommendations on weld improvement techniques and the addition of new environmental test data. This tutorial will provide discussion on the basis of the revision to the guidance document, its application in fatigue design, as well as simple worked examples using the methods prescribed. Specific topics include:

- Introduction—Effect of welding on fatigue,
- Overview of TWI's contribution to fatigue design and the development of BS7608,
- Review of recent developments:
  - Design curves in air and marine environment,
  - Plate thickness and bending effects,
  - Classification for bolt threads under direct stress,
- Stress analysis—Hot spot stress approach,
  - Classification of weld details,
  - Quality and Workmanship,
  - Assessment of cumulative damage under variable amplitude loading,
  - Fatigue life improvement techniques,
  - Use of test data to define design stresses.
- Fatigue assessment examples:
  - Fatigue assessment of girth welded pipe using S-N approach.
  - Fatigue assessment of welded vessels using fracture mechanics approach.

ASME Section VIII, Division 3 Alternative Rules for Construction of High Pressure Vessels

Daniel Peters, PE, Structural Integrity Associates

Wednesday, July 19, 8:30 am – 10:15 am (Part 1); and Wednesday, July 19, 10:30 am – 12:15 pm (Part 2)
Kohala 4, Conference Center

The purpose of this tutorial is to provide an overview of the design methodology and philosophy of ASME Section VIII Division 3, Alternative Rules for High Pressure Vessels. This will include an overview of the analysis methods used, including the application of FEA in meeting the requirements of the Code. This will include examples of practical applications for many of the techniques to demonstrate the philosophy of the Code criteria. This will include an overview of some of the problems in ASME PTB 5 2013, ASME Section VIII Division 3 Example Problem Manual. The tutorial will include detailed example problems that demonstrate how the analytical techniques are to be applied, and their limitations. An overview of key elements of the materials, fabrication sections, along with a discussion of special construction techniques will be included in the tutorial. This will also include an overview of fatigue calculations and life assessment.

TECHNOLOGY DEMONSTRATION FORUM

Monday, July 17, 8:30 am – 5:45 pm; and Tuesday, July 18, 8:30 am – 5:45 pm
Grand Promenade, Conference Center

The Technology Demonstration Forum will be held on Monday, July 17th, and Tuesday, July 18th. Vendors and Sponsors will present and discuss their capabil-

ities, equipment, and services on the Grand Promenade of the Hilton Waikoloa Conference Center. For additional information, please contact Dr. Carl E. Jaske, Det Norske Veritas (USA), Inc., at cejaske@forhonor.com; or Mr. James F. Cory, Jr., Siemens PLM Software, at james.cory@siemens.com.

EPRI DISSIMILAR WELDS IN HIGH TEMPERATURE APPLICATIONS WORKSHOP

Thursday, July 20, 8:30 am – 5:45 pm; and Friday, July 21, 8:30 am – 12:15 pm
Kohala 4, Conference Center

The need to balance cost and performance means that in most high temperature plants there will be the need to transition from one alloy to another within the pressure boundary. There is a very large range of choices available to designers when considering details of these joints. Because different approaches are used, the in-service life of Dissimilar Metal Welds (DMWs) has been very variable. This variability creates uncertainty and this is problematic for many reasons. Firstly, post-construction life management activities are typically based on a reasonable expectation of in-service performance (i.e. when a DMW will fail). Secondly, particularly for DMWs in piping and vessels, a key performance issue is how components fail. Issues of leak or break are frequently assessed using a component damage tolerance approach.

The range of applications and materials used in DMWs has recently increased because of the widespread use of advanced steels and other high temperature alloys. The greater range of material combinations has further complicated assessment of in-service performance. The increased variability in performance is because behavior is not only sensitive to details of design, fabrication, and operation but also, in the case of tempered martensitic steels, there is a metallurgical risk factor to consider. Failures have been observed in DMWs between 9Cr CSEF steels and austenitic stainless steels that have been welded using a nickel-base filler metal.

The present Workshop offers the opportunity to review current approaches, issues and solutions for the use of 'well engineered' dissimilar joints. Sessions will review design considerations and fabrication techniques which are discussing currently considered best practice for DMWs. State of knowledge general application guidelines which can increase weld performance will be presented. Improved performance will consider lifetime (i.e., when the DMW will fail) and damage tolerance (i.e., how the DMW will fail). It is apparent that the present lack of consensus on these issues means that almost unlimited possibilities exist in DMW construction. Fitness for service issues for existing plants need to address DMW issues on a case-by-case basis. When remediation is required it is important sound engineering principles are applied to the requirements of each specific application.

SOCIAL PROGRAMS and TOURS

Conference-Wide Reception
Monday, July 17, 6:15 pm – 8:00 pm
Grand Promenade/Lagoon Lanai, Conference Center

All who registered are invited to attend the Conference Wide Reception. Meet with your colleagues, many of whom you may not have seen for a while. Join with the registrants and guests for a relaxing evening. We will have displays of student paper posters at the Reception. All student authors who participate in the 25th Rudy Scavuzzo Student Paper Symposium and Competition are invited to present their posters.

No charge for registered conference participants and guests.

Pu' uhonua O Hōnaunau National Historical Park & Kona Joes Coffee
Monday, July 17, 9:00 am – 3:00 pm (lunch on your own)

Extending along the lava flats of the Kona Coast, Pu'uhonua O Hōnaunau National Historical Park is home to some of the most significant traditional Hawaiian sites in the Hawaiian archipelago. One of the most prominent features of the park is the Pu'uhonua or place of refuge which is enclosed by the Great Wall, a massive 965 foot long masonry wall. Serving as a sanctuary in ancient times for defeated warriors, noncombatants, and those who violated the kapu (sacred laws), the Pu'uhonua O Hōnaunau remains a most sacred place to those who step foot on its grounds. The protected waters of Hōnaunau Bay combined with the availability of water from brackish springs provided the ideal location for the ali'i-Hawaiian royalty-whom established important residential and ceremonial sites nearby, an area known today as the Royal Grounds. For several centuries, the Pu'uhonua,

the Royal Grounds and adjacent areas formed one of the primary religious and political centers within the traditional district of Kona.

Kona Joe is the world's first trellised coffee plantation. They grow their own coffee like wine, and their goal is to farm, process, and roast the world's finest Kona Coffee. They firmly believe you will love it. Their award winning coffee is grown, processed, and roasted in the USA.

Tickets: $55 per person

Hamakua Macadamia Nut Co., Shopping in Hawi, and Visit King Kamehameha Statue
Tuesday, July 18, 9:00 am – 1:00 pm

In 1977, the President and Co-Owner Richard Schnitzler came to Hawai'i from Michigan, to work for Theo H. Davies & Co. sugar operations. From sugar, he moved into macadamia nuts and over the next 12 years worked with some of the largest macadamia nut producers in the state, before founding his own enterprise, Hamakua Macadamia Nut Company, in 1994. Richard and Edmund are absolutely committed to providing 100% Hawaiian macadamia nuts, 100% of the time, in ways that are economically efficient and environmentally responsible.

Stroll through the peaceful haven of Hawi, North Kohala's biggest little town, best known as the bicycle turnaround for the annual Ironman World Championship held every October. This historic town, set in the green northern tip of the island, was once the busy hub of North Kohala's now defunct sugar industry. Today, Hawi is home to a handful of charming art galleries, boutiques and restaurants set in colorful and lively plantation buildings. You'll find everything here from handmade jewelry and crafts to homemade fudge and 100% Kona coffee. The Bamboo Restaurant & Gallery was once voted best restaurant on Hawaii Island and is a great stop for a fresh island style meal. Beyond Hawi is the town of Kapaau, home of the original King Kamehameha Statue.

Tickets: $40 per person

CONFERENCE INFORMATION

Technical Sessions and Programs

All technical sessions will be held in the meeting area of the hotel. Each room will be equipped with an LCD projector that can be connected to a personal computer for electronic presentations (e.g., Microsoft PowerPoint). Please note that ASME will not provide personal computers. Personal computers are the responsibility of the session developer, or presenter. It is strongly recommended that authors provide their materials to the session developer at, or before, the Authors' Breakfast, so that all the papers in a session can be loaded onto a single computer. Authors are recommended to have their presentations on a flash (pen) drive, in the event that compatibility problems occur between their computers and the LCD projector.

The location of the session rooms is shown in the hotel floor plan on the back cover of this program.

Rudy Scavuzzo Student Paper Symposium and 25th Annual Student Paper Competition
Monday, July 17, 8:30 am – 10:15 am, 2:00 pm – 3:45 pm, and 4:00 pm – 5:45 pm; and Tuesday, July 18, 8:30 am – 12:15 pm

Badge Required for all Events

Please wear your badge for admission to all Conference activities. Your badge also provides a helpful introduction to other Conference attendees.

Student Paper Competition in Waikoloa Suite 3

Monday, July 17, 8:30 am – 10:15 am, and 2:00 pm – 3:45 pm
Student Paper Symposium in Waikoloa Suite 2

The *2017 Rudy Scavuzzo Student Paper Symposium and 25th Annual Student Paper Competition* is sponsored by the PVPD Senate. Daniel T. Peters, PVP Senate President, will conduct the sessions, together with the Student Symposium and Competition representatives from each PVP Technical Committee. The Senate Review Committee will identify the outstanding Finalist undergraduate and graduate student papers in two categories: the BS/MS level and the Ph.D. level. Finalist papers will be judged on written technical content (70%) and presentation effectiveness (30%). A $1,500 award will be made to each of the presenting Student Competition Finalist authors during the Honors and Awards Assembly on Wednesday, July 19th. In addition, in each category (i.e., BS/MS and Ph.D.), $1,200 will be awarded to the presenting author of the Outstanding Student Paper; $1,000 will be awarded to the presenting author of the First Runner-Up Student Paper, and $800 will be awarded to the presenting author of the Second Runner-Up Student Paper. Students must attend the Conference, and must present their papers to be eligible for an award. The winners will be announced at the Honors and Awards Assembly.

Technical Committee Meetings

Monday, July 17, 12:15 pm – 1:45 pm; and Tuesday, July 18, 12:15 pm – 1:45 pm

The Pressure Vessels & Piping Division Technical Committees will meet during the noon break on Monday, July 17, and Tuesday, July 18. Visitors are encouraged to attend and take an active part in PVP committee activities. All committee meetings, schedules, and rooms are listed on Page 11.

PVP Division Honors and Awards Assembly and Dinner
Wednesday, July 19, 5:00 pm – 10:00 pm
Monarchy Ballroom, Conference Center

The Honors and Awards Assembly, honoring all Division Award Recipients and the 2017 ASME S. Y. Zamrik PVP Medalist, Mr. Mahendra D. Rana, will be held on Wednesday, July 19, from 5:00 pm until 10:00 pm, in the Monarchy Ballroom. Throughout the evening there will be Luau styled entertainment provided by the Hilton Waikoloa Entertainment Team. One ticket is included in the Full Conference registration fee. Additional tickets may be purchased at the Conference Registration desk.

Authors' Breakfast/Briefing
Monday, July 17 – Thursday, July 20, 7:30 am – 8:15 am
Monarchy Ballroom, Conference Center

Authors, Panelists, Session Developers, Chairs, and Vice-Chairs are requested to attend a breakfast briefing in the Monarchy Ballroom, Conference Center on Monday through Thursday, at 7:30 am, on the morning of their sessions. Session protocol will be discussed, and the participants will have the opportunity to become better acquainted with one another before their scheduled sessions. Authors are encouraged to place all the presentations for their session on a single computer either before or at the Authors' Breakfast.

Registration Hours
Grand Promenade, Conference Center

Located in the Grand Promenade, Conference Center, the ASME registration desk will be open during the following hours, to provide advance registrants with their materials, to process on site registrations, and to provide additional Conference information:

Sunday, July 16	8:00 am – 6:00 pm
Monday, July 17	7:30 am – 4:00 pm
Tuesday, July 18	7:30 am – 4:00 pm
Wednesday, July 19	7:30 am – 3:00 pm
Thursday, July 20	7:30 am – 3:00 pm

On-Site Registration Fees

For those not registered in advance, the *On-Site Registration Fees* are as follows:

	Full Registration*	One Day Registration**
ASME Member	$975	$800
Author/Panelist	$975	$800
Session Chair	$975	$800
Session Vice Chair	$975	$800
Coop. Soc. Member***	$975	$800
Non-Member****	$1,100	$900
ASME Life Member†	$300	$300
ASME Member Student (Non-Author) ‡	$300	$300
ASME Member Student (Author) ‡	$300	$300
Student Non-Member (Author or Non-Author) ‡	$400	$400
Guest/Spouse ‡‡	N/C	N/C

* *Full Registration fees include admission to all technical sessions, coffee breaks, Conference-Wide Reception, one (1) ticket for the Honors and Awards Assembly and Dinner, and a Conference CD*

** *One Day Registration fees include admission to all technical sessions, and coffee breaks for one-day.*

*** *To qualify for discounted registration fees, you must be a member of ASME, or one of the Cooperating Societies. Please fill in your society affiliation and membership number on the registration form.*

**** *Anyone paying the non-member fee is eligible to receive one year's membership to ASME as part of their registration fee.*

† *Registration under this category includes admission to all technical sessions, coffee breaks, Conference-Wide Reception, one (1) ticket for the Honors and Awards Assembly and Dinner, and a Conference CD.*

‡ *Student Registration Fees include admission to all technical sessions, coffee breaks, Conference-Wide Reception, and a Conference CD. Students not in the Student Paper Competition will be required to purchase a ticket to attend the Honors and Awards Assembly and Dinner.*

‡‡ *Guests wishing to attend the Honors and Awards Assembly Dinner will be required to purchase a ticket. Guests wishing to attend the Guest Breakfast are required to purchase a ticket ($10) for each day they wish to do so.*

Cooperating Societies

If you are a member of a Cooperating Society, you may register at the ASME member rate.

ASME Event Connect App

The ASME Event Connect app will allow you to network with your peers, plan your itinerary, receive news updates and more. To download the ASME Event Connect app to your mobile device with IOS (IOS 8 & 9), Android (Version 4.1 and up) or Windows Mobile (Windows 8 Mobile) operating system, go to https://www.asme.org/events/pvp/about/asme-event-connect. For devices operating Microsoft Windows, Apple macOS or Blackberry OS, the ASME Event Connect web-based version must be used. When accessing the ASME Event Connect app via your mobile device, standard data rates may apply. Free Wi Fi access will be available to attendees at the conference venue.

Conference Publications

Information on paper titles and authors are included in the Final Program. All attendees registered for the entire Conference (i.e., Full Registration) will receive one CD containing all the technical papers presented at the Conference.

A *Download Station* will be available at the *Registration Desk* for *Conference Registrants* who wish to copy Conference CD content to a digital device that is not equipped with a CD player. It is recommended that attendees supply their own USB memory stick, which needs to have a capacity of 4GB. The Conference Organizers ask *Conference Registrants* to be mindful of their time using the *Download Station* so that other users can access this service in a timely manner.

Papers presented at the Conference will be available post-Conference in printed

bound volumes of the Official Conference Proceedings. Printed proceedings can be ordered through ASME Customer Service approximately two to three months after the Conference. A complete set of the volumes may be purchased as a package at a 10% discount. The Official Conference Proceedings will also be published post-conference as part of the ASME Digital Collection at http://asmedigitalcollection.asme.org. All ASME conferences are submitted for abstracting and indexing to Scopus, Compendex, ISI Conference Proceedings Citations Index, and to multiple other indexing publishers.

Disabled Registrants

Whenever possible, arrangements can be made for disabled registrants, if advance notice is given. Please indicate any special needs on the registration form, or contact Jamie Hart at HartJE@asme.org with your request.

Tax Deductibility

Expenses of attending professional meetings have been held to be tax deductible as ordinary business expenses for U.S. citizens. Please verify the tax regulations in your country to determine whether Conference expenses are deductible.

Guest/Family Programs

Guests and family members of registrants are welcome to the Guest Programs that include: *Pu'uhonua O Hōnaunau National Historical Park & Kona Joes Coffee* tour (Monday), the *Conference Wide Reception* at the *Grand Promenade/Lagoon Lanai* of the *Hilton Waikoloa Village Conference Center* (Monday evening), and *Hamakua Macadamia Nut Co., Shopping in Hawi, and Visit King Kamehameha Statue* tour (Tuesday). There will be a Guest Breakfast on Monday through Thursday from 7:30 am to 10:30 am in the Palm Terrace located between the Conference Center and the Palace Tower. Please note that the tours and breakfast have an associated fee for participants. Early registration is strongly recommended for the events that require fees, as they are available only on a first-come, first-served basis.

Professional Development Hours Available

Professional Development Hours are available for your attendance at the PVP Conference. Simply stop by the registration desk and fill out a certificate request form with the sessions that you have attended. The certificates can then be picked up on Thursday at the registration desk.

Publishing Conference Papers in the ASME Journal of Pressure Vessel Technology

Technical papers presented at the ASME PVP 2017 Conference are published in the form of the ASME Conference Proceedings on a CD. Publication of papers in these proceedings does not preclude authors from publishing their papers in ASME archival journals, such as the *ASME Journal of Pressure Vessel Technology* (i.e., the *Journal*), which is the technical voice of the Pressure Vessels & Piping Division.

Authors are encouraged to submit their papers to the Journal. The Journal is edited by Dr. Young W. Kwon, and manuscripts should be submitted to the address below. Manuscripts should be prepared according to the Journal guidelines, which can be found at the ASME web site at: http://journaltool.asme.org/Content/index.cfm.

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PVP 2017 COMMITTEE MEETINGS

Date/Time	Meeting	Room	Responsible Person
Sunday, July 16, 2017			
8:30 am – 12:30 pm	PVP Division Leadership Team	Kona 5	D. Scarth
1:30 pm – 2:30 pm	PVPD Senate Operations Committee	Kona 5	D. Peters
Monday, July 17, 2017			
8:30 am – 10:15 am	PVPD Professional Development	Kona 4	D. Stang
12:15 pm – 1:45 pm	PVPD Codes and Standards Technical Committee	Kona 4	R. Cipolla
12:15 pm – 1:45 pm	PVPD Fluid-Structure Interaction Technical Committee	Kona 3	C. Giannopapa/T. Taniguchi
12:15 pm – 1:45 pm	PVPD Operations, Applications and Components Technical Committee	Kohala 4	M. Feldman/G. Bezdikian
12:15 pm – 1:45 pm	PVPD Design and Analysis Technical Committee	Kona 5	R. Baliga
2:00 pm – 3:45 pm	PVPD International Coordination Committee	Kona 4	X.-K. Zhu
Tuesday, July 18, 2017			
8:30 am – 10:15 am	PVPD Communications Committee	Kona 4	H. Bouzid
8:30 am – 12:15 pm	NDPD Executive Committee	Kona 5	S. Mohanty
10:30 am – 12:15 pm	PVP2017/2018 Program Committee	Kona 4	P. Mertiny
12:15 pm – 1:45 pm	PVPD Materials and Fabrication Technical Committee	Kona 5	M. Brongers
12:15 pm – 1:45 pm	PVPD Seismic Engineering Technical Committee	Kona 3	T. Taniguchi/F. Paolacci
12:15 pm – 1:45 pm	PVPD High Pressure Technology Technical Committee	Kona 4	K. Simpson
12:15 pm – 1:45 pm	PVPD Computer Technology and Bolted Joints Technical Committee	Kohala 4	W. Reinhardt
2:00 pm – 3:45 pm	PVPD Honors and Awards Committee	Kona 4	T. Seipp
Wednesday, July 19, 2017			
8:30 am – 10:15 am	JPVT Editors	Kona 4	Y. Kwon
12:45 pm – 3:45 pm	Subgroup High Pressure Vessels Working Group on Design (BPV VIII-3)	Kona 4	D. Peters/A. Maslowski
Thursday, July 20, 2017			
8:30 am – 12:15 pm	PVP Division Leadership Team	Kona 5	M. Younan
8:30 am – 5:45 pm	Subgroup High Pressure Vessels (BPV VIII-3)	Kona 4	D. Peters/A. Maslowski
12:30 pm – 3:45 pm	PVPD General Committee	Kona 5	M. Younan
4:00 pm – 5:45 pm	PVPD Conference Evaluation	Kona 5	P. Mertiny/M. Feldman

Set your sights on the 2018 PVP Conference where we will promote excellence in the global pressure vessel and piping industry. Serving the PVP industry for more than 50 years, the PVP Conference has proven to be an outstanding opportunity to exchange ideas and meet colleagues in an international setting. As a recognized forum with participants from more than 40 countries in Europe, Africa, the Middle East, Asia, the Americas and Oceania islands, there is no better time or place to create and advance PVP technologies for our global community. The ASME PVP Division is sponsoring this 2018 conference in cooperation with the ASME NDPD Division.

PAPER & PANEL SESSIONS

More than 180 sessions are planned including workshops and tutorials, a Technology Demonstration Forum and the 26th Rudy Scavuzzo Student Paper Symposium and Competition. General topics are:

- Codes & Standards
- Computer Technology & Bolted Joints
- Design & Analysis
- Fluid Structure Analysis
- High Pressure Technology
- Materials & Fabrication
- Operations, Applications & Components
- Seismic Engineering
- Non-Destructive Examination
- 26th Rudy Scavuzzo Student Paper Symposium & Competition

SCHEDULE FOR SUBMISSION*

• **November 6, 2017**	**Abstracts are due**
• November 27, 2017	Abstract acceptance notification
• February 5, 2018	Draft papers due
• March 5, 2018	Peer review comments returned to authors
• April 2, 2018	Copyright Agreement Form (for each paper) due
• April 9, 2018	Final manuscripts in ASME format for publication due

** All final manuscripts must be submitted in the standard ASME format for publication. All presented technical papers will be published as citable documents available post-conference.*

FOR MORE INFORMATION

Please visit the 2018 PVP Conference website at www.asmeconferences.org/PVP2018/. Technical paper abstracts must be submitted electronically through the website.

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SESSION TITLES BY SESSION BLOCK

Sessions are arranged in Session Blocks in the format X.YZ, where: X indicates the Day, Y indicates the Session Block, and Z indicates the Conference Session Room. Conference Session Rooms are as follows: A = Kohala 1; B = Kohala 2; C = Kohala 3; D = King's 1; E = King's 2; F =King's 3; G = Queen's 4; H = Queen's 5; I = Queen's 6; J = Kona 1; K = Kona 2; L = Kona 3; M = Waikoloa Suite 1; N = Waikoloa Suite 2; O = Waikoloa Suite 3; P = *Not Used;* Q = Kohala 4; R = *Not Used;* S = Grand Promenade; T = *Not Used.* The parenthetical designations are the Technical Committee session references.

The Technical Committee and other acronyms used are shown below:

- CS = Codes & Standards
- CT = Computer Technology & Bolted Joints
- DA = Design & Analysis
- EPRI = EPRI Creep-Fatigue Workshop
- FSI = Fluid–Structure Interaction
- HT = High Pressure Technology
- MF = Materials & Fabrication
- NDPD = ASME NDE, Diagnosis and Prognosis Division
- OAC = Operations Applications, & Components
- SE = Seismic Engineering
- SPC = Rudy Scavuzzo Student Paper Symposium & Student Paper Competition
- TW = Technical Tutorials

All sessions are sponsored by the indicated Technical Committee unless specifically noted in the daily listing of individual sessions beginning on page 17.

Sunday, July 16, 2017

Block 0.2: Sunday, July 16, 2017 (1:00 pm – 3:00 pm)

0.2C (TW-2-1) BUSINESS PLANNING FOR ENGINEERS
0.2Q (TW-2-2) PROCESS AND BENEFITS OF ASME PRESSURE TECHNOLOGY CODES & STANDARDS DEVELOPMENT

Block 0.3: Sunday, July 16, 2017 (3:30 pm – 4:30 pm)

0.3Q (TW-2-3) EARLY CAREER ENGINEERS FORUM

Monday, July 17, 2017

Block 1.1: Monday, July 17, 2017 (8:30 am – 10:15 am)

1.1A (DA-16-1) INTRODUCTION & LIFE CYCLE MANAGEMENT STRATEGIES
1.1B (FSI-2-1) FIV DESIGN FOR INDUSTRY I (SPECIAL SESSION IN MEMORY OF M.K. AU YANG)
1.1C (CS-7-1) ASME SECTION III—RECENT DEVELOPMENTS
1.1D (HT-2-1) IMPULSIVELY LOADED VESSELS
1.1E (CS-1-1) STRUCTURAL INTEGRITY OF PRESSURE COMPONENTS—I
1.1F (MF-19-1) CREEP AND CREEP-FATIGUE INTERACTION—I
1.1G (MF-2-1) APPLICATION OF FRACTURE MECHANICS IN FAILURE ASSESSMENT—I
1.1H (HT-1-1) DESIGN, ANALYSIS, AND LIFE PREDICTION OF HIGH-PRESSURE VESSELS AND EQUIPMENT
1.1I (DA-10-1) GASKETS AND JOINT INTEGRITY
1.1J (MF-2-6) FUEL CLADDING CHARACTERIZATION, COHESIVE ZONE MODELING, AND CRACK GROWTH IN WELD
1.1K (CS-8-1) HYDROGEN EFFECTS ON MATERIALS BEHAVIOR
1.1L (SE-1-1) EARTHQUAKE RESISTANCE AND SEISMIC MARGIN
1.1M (HT-3-1) HIGH PRESSURE VESSEL & PIPING LIFE ASSESSMENT ISSUES
1.1N (SPC-2-3) STUDENT PAPER SYMPOSIUM—PHD—I
1.1O (SPC-1-1) STUDENT PAPER COMPETITION—MS/BS—I
1.1Q (MF-23-1) ADVANCED SENSOR TECHNOLOGIES FOR MONITORING STRUCTURAL INTEGRITY
1.1S (TW-4-1) TECHNOLOGY DEMONSTRATION FORUM

Block 1.2: Monday, July 17, 2017 (10:30 am – 12:15 pm)

1.2P (TW-3-1) OPENING CEREMONY AND PLENARY LECTURES
1.2S (TW-4-2) TECHNOLOGY DEMONSTRATION FORUM

Block 1.3: Monday, July 17, 2017 (2:00 pm – 3:45 pm)

1.3A (DA-16-2) OPERATIONAL INFLUENCES ON THE COKE DRUM LIFE CYCLE
1.3B (FSI-2-2) FIV DESIGN FOR INDUSTRY—II
1.3C (CS-7-2) ASME SECTION III—RECENT DEVELOPMENTS, ELEVATED TEMPERATURE
1.3D (HT-2-2) FLUID TRANSIENT AND EXPLOSION LOADINGS
1.3E (CS-1-2) STRUCTURAL INTEGRITY OF PRESSURE COMPONENTS—II
1.3F (MF-19-2) CREEP AND CREEP-FATIGUE INTERACTION—II
1.3G (MF-2-2) APPLICATION OF FRACTURE MECHANICS IN FAILURE ASSESSMENT—II
1.3H (OAC-6-1) LIFE CYCLE MANAGEMENT OF REFINERY PRESSURE VESSELS—WELDING & FABRICATION
1.3I (DA-10-2) HEAT EXCHANGER JOINT INTEGRITY
1.3J (MF-34-1) SNF CANISTER OVERVIEW & NONDESTRUCTIVE INSPECTION
1.3K (MF-3-1) HYDROGEN INFRASTRUCTURE
1.3L (SE-2-1) SEISMIC ISOLATION—I
1.3M (HT-6-2) DESIGN AND ANALYSIS OF HIGH-PRESSURE EQUIPMENT FOR OIL & GAS EXPLORATION AND PRODUCTION
1.3N (SPC-2-4) STUDENT PAPER SYMPOSIUM—PHD—II
1.3O (SPC-1-2) STUDENT PAPER COMPETITION—MS/BS—II
1.3Q (TW-1-1) THE USE OF COMPUTATIONAL FLUID DYNAMICS IN DESIGN (PART 1)
1.3S (TW-4-3) TECHNOLOGY DEMONSTRATION FORUM

Block 1.4: Monday, July 17, 2017 (4:00 pm – 5:45 pm)

1.4A (DA-16-3) ANALYSIS AND REPAIRS OF COKE DRUM SKIRTS
1.4B (FSI-2-3) FIV DESIGN FOR INDUSTRY—III
1.4C (CS-7-3) ASME SECTION III—RECENT DEVELOPMENTS, ELEVATED TEMPERATURE
1.4D (FSI-6-1) IMPACT AND BLAST LOADINGS
1.4E (CS-1-3) STRUCTURAL INTEGRITY OF PRESSURE COMPONENTS—III
1.4F (MF-19-3) CREEP AND CREEP-FATIGUE INTERACTION—III
1.4G (MF-2-3) APPLICATION OF FRACTURE MECHANICS IN FAILURE ASSESSMENT—III
1.4H (OAC-6-2) LIFE CYCLE MANAGEMENT OF REFINERY PRESSURE VESSELS—FITNESS FOR SERVICE
1.4I (DA-10-3) JOINT ASSEMBLY CONSIDERATIONS
1.4J (MF-34-2) SNF CANISTER STRUCTURAL INTEGRITY ASSESSMENTS
1.4K (MF-3-2) DEVELOPMENT OF METHODS FOR EVALUATING MATERIALS FOR HYDROGEN SERVICE
1.4L (SE-2-3) SEISMIC ISOLATION II
1.4M (HT-5-3) 20TH ANNIVERSARY OF BPVC SECTION VIII DIVISION 3—HOW WE GOT HERE AND WHERE WE ARE GOING
1.4N (FSI-1-1) LEAKS AND CRACKS
1.4O (SPC-1-3) STUDENT PAPER COMPETITION—PHD—I
1.4Q (TW-1-2) THE USE OF COMPUTATIONAL FLUID DYNAMICS IN DESIGN (PART 2)
1.4S (TW-4-4) TECHNOLOGY DEMONSTRATION FORUM

Tuesday, July 18, 2017

Block 2.1: Tuesday, July 18, 2017 (8:30 am – 10:15 am)

2.1A (DA-16-4) COKE DRUM REPAIRS—MATERIALS AND WELDING ASPECTS
2.1B (FSI-2-4) PIPING & ACOUSTICS—I
2.1C (CS-10-1) RECENT DEVELOPMENTS IN JAPANESE FITNESS-FOR-SERVICE RULES

2.1D (FSI-6-2) FLUID TRANSIENT AND BLAST LOADINGS
2.1E (MF-25-1) ASIAN PROGRAM IN STRUCTURAL INTEGRITY—I
2.1F (MF-18-1) FATIGUE AND FRACTURE OF WELDS AND HEAT AFFECTED ZONES—I
2.1G (MF-2-4) APPLICATION OF FRACTURE MECHANICS IN FAILURE ASSESSMENT—V
2.1H (OAC-6-3) LIFE CYCLE MANAGEMENT OF REFINERY PRESSURE VESSELS—OPERATION & MAINTENANCE
2.1I (CT-1-1) DESIGN AND ANALYSIS OF BOLTED JOINTS
2.1J (OAC-4-2) STRUCTURAL TESTING AND ANALYSIS
2.1K (MF-3-3) STAINLESS STEELS FOR HYDROGEN SERVICE—I
2.1L (SE-3-1) DAMPING AND VIBRATION CONTROL—I
2.1M (HT-5-2) PANEL SESSION ON SEC VIII, DIV 3 INDUSTRY USE, GAPS, AND NEEDS
2.1N (FSI-1-2) CFD AND FSI
2.1O (SPC-1-4) STUDENT PAPER COMPETITION—PHD—II
2.1Q (TW-1-3) FITNESS-FOR-SERVICE (FFS) PROCEDURES FOR EVALUATION OF DAMAGE OR DEFECTS IN PRESSURIZED EQUIPMENT USING API 579-1/ASME FFS-1 (PART 1)
2.1S (TW-4-5) TECHNOLOGY DEMONSTRATION FORUM

Block 2.2: Tuesday, July 18, 2017 (10:30 am – 12:15 pm)
2.2A (DA-16-5) NOVEL APPROACHES TO COKE DRUM LIFE CYCLE MANAGEMENT
2.2B (FSI-2-5) FIV IN TUBE ARRAYS—I
2.2C (CS-11-1) EXTREME PRESSURE EQUIPMENT
2.2D (MF-15-1) RECENT DEVELOPMENTS IN COMPOSITE MATERIALS
2.2E (MF-25-2) ASIAN PROGRAMS IN STRUCTURAL INTEGRITY—II
2.2F (CS-2-1) FATIGUE AND RATCHETING ISSUES IN PRESSURE VESSEL AND PIPING DESIGN
2.2G (DA-12-1) FRACTURE—I
2.2H (OAC-6-4) DEGRADATION MECHANISMS AND MITIGATION
2.2I (CT-2-1) ELEVATED TEMPERATURE BEHAVIOUR OF BOLTED FLANGE JOINTS
2.2J (OAC-4-4) AGING MANAGEMENT FOR EXTENDED STORAGE AND TRANSPORTATION OF SPENT (USED) FUEL
2.2K (MF-3-5) STEELS FOR HYDROGEN SERVICE
2.2L (SE-3-2) DAMPING AND VIBRATION CONTROL—II
2.2M (HT-5-1) PANEL SESSION ON SEC VIII, DIV 3 HISTORY
2.2N (FSI-1-3) GAS AND LIQUID
2.2O (DA-2-1) DESIGN & ANALYSIS OF PIPING AND COMPONENTS—I
2.2Q (TW-1-4) FITNESS-FOR-SERVICE (FFS) PROCEDURES FOR EVALUATION OF DAMAGE OR DEFECTS IN PRESSURIZED EQUIPMENT USING API 579-1/ASME FFS-1 (PART 2)
2.2S (TW-4-6) TECHNOLOGY DEMONSTRATION FORUM

Block 2.3: Tuesday, July 18, 2017 (2:00 pm – 3:45 pm)
2.3A (DA-16-6) CLOSING SESSION: WHAT'S NEXT FOR THE INDUSTRY?
2.3B (FSI-2-6) AXIAL FLOW FSI / FUEL VIBRATION
2.3C (CS-11-2) FAILURE ANALYSIS OF ENGINEERING STRUCTURE—I
2.3D (MF-15-2) COMPOSITE SYSTEMS FOR PRESSURE VESSELS AND PIPING
2.3E (MF-5-1) EUROPEAN PROGRAMS IN STRUCTURAL INTEGRITY—I
2.3F (CS-21-1) FATIGUE MONITORING AND RELATED ASSESSMENT METHODS—I
2.3G (DA-12-2) FRACTURE—II
2.3H (OAC-6-6) LIFE CYCLE MANAGEMENT (LCM) FOR HYDROPROCESSING REACTORS
2.3I (CT-3-1) TIGHTNESS AND FUGITIVE EMISSIONS OF BOLTED FLANGE JOINTS
2.3J (OAC-4-3) PACKAGING MATERIALS AND COMPONENTS
2.3K (MF-3-6) HYDROGEN COMPATIBILITY OF PRESSURE VESSELS
2.3L (SE-3-3) DAMPING AND VIBRATION CONTROL—III
2.3M (HT-6-1) PANEL SESSION ON DISCUSSION OF API 17TR8 REQUIREMENTS AS RELATED TO ASME STANDARDS
2.3N (FSI-1-4) CORROSION, FATIGUE AND IMPACT
2.3O (DA-2-2) DESIGN & ANALYSIS OF PIPING AND COMPONENTS—II
2.3Q (TW-1-5) FATIGUE ASSESSMENT OF WELDMENTS (PART 1)
2.3S (TW-4-7) TECHNOLOGY DEMONSTRATION FORUM

Block 2.4: Tuesday, July 18, 2017 (4:00 pm – 5:45 pm)
2.4A (NDP-1-1) EMERGING NDE AND RELIABILITY TECHNIQUES AND APPLICATIONS
2.4B (FSI-2-7) PIPING & ACOUSTICS—II
2.4C (CS-11-3) EXAMPLE OF ENGINEERING FAILURE ANALYSIS IN CHINA
2.4D (MF-16-1) PLASTIC AND COMPOSITE PIPE
2.4E (MF-17-1) PROBABILISTIC ASSESSMENT OF FAILURE
2.4F (CS-3-1) ENVIRONMENTAL FATIGUE ISSUES—I
2.4G (CS-22-1) MASTER CURVE FRACTURE TOUGHNESS AND OTHER SMALL SPECIMEN MECHANICAL PROPERTIES—I
2.4H (OAC-8-1) AGEING MANAGEMENT AND LICENSE RENEWAL
2.4I (CT-4-1) ASSEMBLY OF BOLTED FLANGE JOINTS
2.4J (OAC-4-1) THERMAL AND STRUCTURAL ANALYSIS
2.4K (MF-4-1) RESIDUAL STRESS MEASUREMENTS, WELD REPAIR AND ADVANCED WELDING TECHNIQUES
2.4L (SE-9-1) MULTI-HAZARDS AND MARGINS
2.4M (MF-12-1) PIPELINE INTEGRITY—NUMERICAL SIMULATION AND EXPERIMENTAL TESTING
2.4N (FSI-1-5) NUCLEAR POWER PLANT FIRES AND EXPLOSIONS
2.4O (DA-2-3) DESIGN & ANALYSIS OF PIPING AND COMPONENTS—III
2.4Q (TW-1-6) FATIGUE ASSESSMENT OF WELDMENTS (PART 2)
2.4S (TW-4-8) TECHNOLOGY DEMONSTRATION FORUM

Wednesday, July 19, 2017

Block 3.1: Wednesday, July 19, 2017 (8:30 am – 10:15 am)
3.1A (NDP-1-2) EMERGING NDE AND PROGNOSTIC TECHNIQUES AND APPLICATIONS
3.1B (FSI-2-8) FIV IN TUBE ARRAYS II
3.1C (CS-11-4) FAILURE ANALYSIS OF ENGINEERING STRUCTURE
3.1D (OAC-6-5) APPLICATIONS OF NON-METALLIC MATERIALS
3.1E (CS-9-1) MASTER CURVE BASED FRACTURE TOUGHNESS MODELS AND PARTIAL STRUCTURAL FACTOR DEVELOPMENT
3.1F (CS-3-2) ENVIRONMENTAL FATIGUE ISSUES—II
3.1G (CS-22-2) MASTER CURVE FRACTURE TOUGHNESS AND OTHER SMALL SPECIMEN MECHANICAL PROPERTIES—II
3.1H (OAC-1-1) RELIABILITY AND LIFE CYCLE MANAGEMENT
3.1I (CT-8-1) THREADED FASTENER
3.1J (OAC-5-1) DESIGN, ANALYSIS, MODELING AND PERFORMANCE OF VALVES AND PUMPS
3.1K (MF-4-2) WELD RESIDUAL STRESS SIMULATIONS INCLUDING RECOVERY OF STRESSES AND UNCERTAINTY QUANTIFICATION
3.1L (SE-12-1) ADVANCED SEISMIC EVALUATION AND CODE I ; JSME SEISMIC CODE ACTIVITY
3.1M (MF-12-2) PIPELINE INTEGRITY—WELDING TECHNOLOGY AND WELDS ASSESSMENT
3.1N (DA-4-1) INELASTIC, NONLINEAR, AND LIMIT LOAD ANALYSIS—I
3.1O (DA-2-4) DESIGN & ANALYSIS OF PIPING AND COMPONENTS—IV
3.1Q (TW-1-7) ASME SECTION VIII, DIVISION 3 ALTERNATIVE RULES FOR CONSTRUCTION OF HIGH PRESSURE VESSELS (PART 1)

Block 3.2: Wednesday, July 19, 2017 (10:30 am – 12:15 pm)
3.2A (NDP-2-1) TECHNIQUES AND APPLICATIONS FOR PLANT COMPONENTS
3.2B (FSI-2-9) FLUTTER, VIV AND ACOUSTICS
3.2C (CS-11-5) DEVELOPMENTS OF CHINESE CODES AND STANDARDS
3.2D (DA-18-1) COMPOSITE MATERIALS AND STRUCTURES
3.2E (CS-15-2) PROBABILISTIC AND RISK-INFORMED METHODS FOR STRUCTURAL INTEGRITY ASSESSMENT—II
3.2F (CS-3-3) ENVIRONMENTAL FATIGUE ISSUES—III
3.2G (CS-22-3) MASTER CURVE FRACTURE TOUGHNESS AND OTHER SMALL SPECIMEN MECHANICAL PROPERTIES—III
3.2H (OAC-1-2) INSPECTION AND EVALUATION FOR COMPONENT ASSESSMENT

3.2I (CT-10-1) NEW AND EMERGING METHODS OF ANALYSIS AND APPLICATIONS
3.2J (OAC-3-1) MONITORING, DIAGNOSTICS AND INSPECTION
3.2K (MF-7-1) MATERIALS AND TECHNOLOGIES FOR NUCLEAR POWER PLANTS—I
3.2L (SE-12-2) ADVANCED SEISMIC EVALUATION AND CODE II ; ADVANCED INELASTIC ANALYSIS METHOD
3.2M (MF-21-1) ADDITIVE MANUFACTURING ONE MECHANICAL PROPERTIES
3.2N (DA-4-2) INELASTIC, NONLINEAR, AND LIMIT LOAD ANALYSIS—II
3.2O (DA-2-5) DESIGN & ANALYSIS OF PIPING AND COMPONENTS—V
3.2Q (TW-1-8) ASME SECTION VIII, DIVISION 3 ALTERNATIVE RULES FOR CONSTRUCTION OF HIGH PRESSURE VESSELS (PART 2)

Block 3.3: Wednesday, July 19, 2017 (2:00 pm – 3:45 pm)
3.3A (DA-5-1) STRESS CLASSIFICATION AND DESIGN BY ANALYSIS METHODOLOGIES
3.3B (FSI-2-10) FIV & FLUTTER
3.3C (CS-11-6) FAILURE ANALYSIS OF ENGINEERING STRUCTURE—II
3.3D (DA-8-1) FITNESS FOR SERVICE EVALUATIONS
3.3E (CS-15-1) PROBABILISTIC AND RISK-INFORMED METHODS FOR STRUCTURAL INTEGRITY ASSESSMENT—I
3.3F (CS-3-4) ENVIRONMENTAL FATIGUE ISSUES—IV
3.3G (CS-23-1) HYDROGEN FLAKES ASSESSMENT IN THE RPV'S
3.3H (OAC-2-1) TESTING AND QUALIFICATION ON DIFFERENT MATERIALS
3.3I (CT-12-1) EXPLICIT AND IMPLICIT FINITE ELEMENT ANALYSIS
3.3J (DA-20-1) SPECIAL CONSIDERATIONS IN THE DESIGN AND ANALYSIS OF SUPPORTS, RESTRAINTS, AND WELDED ATTACHMENTS
3.3K (MF-7-2) MATERIALS AND TECHNOLOGIES FOR NUCLEAR POWER PLANTS—II
3.3L (SE-4-1) STRUCTURAL DYNAMICS IN SEISMIC ENGINEERING
3.3M (MF-21-2) ADDITIVE MANUFACTURING TWO
3.3N (DA-11-1) CFD IN DESIGN AND ANALYSIS
3.3O (DA-2-6) DESIGN & ANALYSIS OF PIPING AND COMPONENTS—VI
3.3Q (MF-14-1) LEAK-BEFORE-BREAK

Thursday, July 20, 2017

Block 4.1: Thursday, July 20, 2017 (8:30 am – 10:15 am)
4.1A (DA-1-1) DESIGN AND ANALYSIS OF PRESSURE VESSELS PER THE ASME CODE
4.1B (FSI-2-11) FIV IN TUBE ARRAYS III (TUBE-SUPPORT INTERACTION)
4.1C (CS-38-1) IMPROVEMENT OF FLAW CHARACTERIZATION RULES IN FITNESS-FOR-SERVICE CODES
4.1D (CS-6-1) API 579/ASME CODE FITNESS-FOR-SERVICE ACTIVITIES
4.1E (CS-31-1) ASSESSMENT OF FATIGUE AND FRACTURE—A PROBABILISTIC PERSPECTIVE (MAINTAINING INTEGRITY OF COMPONENTS)
4.1F (CS-3-5) ENVIRONMENTAL FATIGUE ISSUES—V
4.1G (MF-30-1) BRITTLE FRACTURE OF CARBON STEEL FITTINGS, FLANGES, AND PIPING—I
4.1H (DA-10-4) INTERNATIONAL LIAISON AND PCC-1 APPENDIX A SESSION—I
4.1I (CS-19-1) INTEGRITY OF CAST STAINLESS STEEL PIPE—I
4.1J (MF-11-1) INTEGRITY ISSUES IN SCC AND CORROSION FATIGUE
4.1K (MF-7-3) MATERIALS AND TECHNOLOGIES FOR NUCLEAR POWER PLANTS—III
4.1L (SE-5-1) SEISMIC DAMAGE ASSESSMENT AND HEALTH MONITORING
4.1M (MF-21-3) WELDING AND JOINING TECHNIQUES
4.1N (DA-7-1) THERMAL STRESSES AND ELEVATED TEMPERATURE DESIGN—I
4.1O (DA-15-1) EVALUATION AND COUNTERMEASURE FOR BDBE—I
4.1Q (EPRI-1) SESSION 1—KEYNOTE PRESENTATIONS

Block 4.2: Thursday, July 20, 2017 (10:30 am – 12:15 pm)
4.2A (DA-1-2) ADDITIONAL CONSIDERATIONS FOR THE DESIGN AND ANALYSIS OF PRESSURE VESSELS
4.2B (FSI-2-12) PIPING & ACOUSTICS—III
4.2C (CS-14-1) REPAIR, REPLACEMENT AND MITIGATION FOR FITNESS-FOR-SERVICE RULES—I
4.2D (MF-6-1) FITNESS FOR SERVICE AND FAILURE ASSESSMENT—I
4.2E (OAC-1-4) REGULATORY VIEWS ON THE USE OF PROBABILISTIC FRACTURE MECHANICS ASSESSMENTS IN THE NUCLEAR INDUSTRY
4.2F (CS-3-6) ENVIRONMENTAL FATIGUE ISSUES—VI
4.2G (MF-30-2) BRITTLE FRACTURE OF CARBON STEEL FITTINGS, FLANGES, AND PIPING—II
4.2H (DA-10-5) INTERNATIONAL LIAISON AND PCC-1 APPENDIX A SESSION—II
4.2I (CS-19-2) INTEGRITY OF CAST STAINLESS STEEL PIPE—II
4.2J (MF-33-1) 3D CRACK GROWTH SIMULATIONS USING FEA
4.2K (MF-7-4) MATERIALS AND TECHNOLOGIES FOR NUCLEAR POWER PLANTS—IV
4.2L (SE-6-1) SEISMIC ANALYSIS AND DESIGN OF PIPING SYSTEMS—I
4.2M (MF-21-4) STAINLESS STEELS AND NI-BASE ALLOYS
4.2N (DA-7-2) THERMAL STRESSES AND ELEVATED TEMPERATURE DESIGN—II
4.2O (DA-15-2) EVALUATION AND COUNTERMEASURE FOR BDBE—II
4.2Q (EPRI-2) SESSION 2—DESIGN AND FABRICATION

Block 4.3: Thursday, July 20, 2017 (2:00 pm – 3:45 pm)
4.3A (DA-1-3) OPTIMIZATION AND BENCH-MARKING IN THE DESIGN AND ANALYSIS OF PRESSURE VESSELS AND HEAT EXCHANGERS
4.3C (CS-14-2) REPAIR, REPLACEMENT AND MITIGATION FOR FITNESS-FOR-SERVICE RULES—II
4.3D (MF-6-2) FITNESS FOR SERVICE AND FAILURE ASSESSMENT—II
4.3E (CS-41-1) UPDATES TO THE 2017 EDITION OF THE ASME BOILER AND PRESSURE VESSEL CODE—PART I
4.3F (DA-3-1) FATIGUE I—MEMORIAL SESSION FOR FERNAND ELLYIN
4.3G (CS-9-2) ASME SECTION XI CODE ACTIVITIES
4.3H (CS-25-1) INTEGRITY OF REACTOR PRESSURE VESSELS AND INTERNALS FOR CODES
4.3I (CS-12-1) RECENT DEVELOPMENTS IN EUROPEAN CODES AND STANDARDS
4.3K (MF-9-1) STRESS INTENSITY FACTOR SOLUTIONS
4.3L (SE-6-2) SEISMIC ANALYSIS AND DESIGN OF PIPING SYSTEMS—II
4.3M (MF-21-5) THERMOMECHANICAL TREATMENT AND HOT ISOSTATIC PRESSING
4.3N (DA-9-1) PIPING AND EQUIPMENT DYNAMICS—I
4.3O (DA-17-1) COMPANY STANDARDS AND DESIGN PHILOSOPHY
4.3Q (EPRI-3) SESSION 3—DISSIMILAR WELDS IN FERRITIC STEELS

Block 4.4: Thursday, July 20, 2017 (4:00 pm – 5:45 pm)
4.4A (DA-1-4) THERMO-MECHANICAL DESIGN AND ANALYSIS OF PRESSURE VESSELS AND HEAT EXCHANGERS
4.4D (MF-6-3) FITNESS FOR SERVICE AND FAILURE ASSESSMENT—III
4.4E (CS-41-2) UPDATES TO THE 2017 EDITION OF THE ASME BOILER AND PRESSURE VESSEL CODE—PART II
4.4F (DA-3-3) FATIGUE—II
4.4L (SE-8-1) SEISMIC EVALUATION OF SYSTEMS, STRUCTURES AND COMPONENTS
4.4N (DA-9-2) PIPING AND EQUIPMENT DYNAMICS—II
4.4Q (EPRI-4) SESSION 4—DISSIMILAR WELDS BETWEEN FERRITIC AND AUSTENITIC STEELS

Friday, July 21, 2017

Block 5.1: Friday, July 21, 2017 (8:30 am – 10:15 am)
5.1Q (EPRI-5) SESSION 5—CASE STUDIES 1; IN SERVICE EXPERIENCE

Block 5.2: Friday, July 21, 2017 (10:30 am – 12:15 pm)
5.2Q (EPRI-6) SESSION 6—CASE STUDIES 2; IN SERVICE EXPERIENCE

DAILY SESSION LISTING

Sessions are arranged in Session Blocks in the format X.YZ, where: X indicates the Day, Y indicates the Session Block, and Z indicates the Conference Session Room. Conference Session Rooms are as follows: A = Kohala 1; B = Kohala 2; C = Kohala 3; D = King's 1; E = King's 2; F =King's 3; G = Queen's 4; H = Queen's 5; I = Queen's 6; J = Kona 1; K = Kona 2; L = Kona 3; M = Waikoloa Suite 1; N = Waikoloa Suite 2; O = Waikoloa Suite 3; P = *Not Used;* Q = Kohala 4; R = *Not Used;* S = Grand Promenade; T = *Not Used.* The parenthetical designations are the Technical Committee session references.

The Technical Committee and other acronyms used are shown below:

- CS = Codes & Standards
- CT = Computer Technology & Bolted Joints
- DA = Design & Analysis
- EPRI = Electric Power Research Institute Creep-Fatigue Workshop
- FSI = Fluid–Structure Interaction
- HT = High Pressure Technology
- MF = Materials & Fabrication
- NDPD = ASME NDE, Diagnosis and Prognosis Division
- OAC = Operations Applications, & Components
- SE = Seismic Engineering
- SPC = Rudy Scavuzzo Student Paper Symposium & Student Paper Competition
- TW = Technical Tutorials

Note: Unless specifically listed in the individual sessions below, all sessions are sponsored by the indicated Technical Committee.

SUNDAY, JULY 16

Block 0.2: Sunday, July 16, 2017 (1:00 pm – 3:00 pm)

SESSION O.2C (TW-2-1)

Sunday, July 16, 1:00 pm – 3:00 pm, Kohala 3

BUSINESS PLANNING FOR ENGINEERS

Developed by: D. L. Stang, Omax Corporation, Kent, WA, USA
Presented by: A. Reich, Streamline Automation, LLC/Vital Metrix, Inc.

SESSION O.2Q (TW-2-2)

PROCESS AND BENEFITS OF ASME PRESSURE TECHNOLOGY CODES & STANDARDS DEVELOPMENT

Sunday, July 16, 1:00 pm – 3:00 pm, Kohala 4

Developed by: D. L. Stang, Omax Corporation, Kent, WA, USA
Presented by: W. Bees, PVPD Senate; C. Rodery, BP p.l.c, League City, TX, USA; M. Rana, Consultant, Niantic, CT, USA

Block 0.3: Sunday, July 16, 2017 (3:30 pm – 4:30 pm)

SESSION 0.3Q (TW-2-3)

Sunday, July 16, 2017, 3:30 pm – 4:30 pm, Kohala 4

EARLY CAREER ENGINEERS FORUM

Developed by: A. Dermenjian, AAD Independent Operations, Arlington Heights, IL, USA
Chair: D. L. Stang, Omax Corporation, Kent, WA, USA
Presented by: A. Dermenjian, AAD Independent Operations, Arlington Heights, IL, USA

MONDAY, JULY 17

Block 1.1: Monday, July 17, 2017, (8:30 am – 10:15 am)

SESSION 1.1A (DA-16-1)

Monday, July 17, 8:30 am – 10:15 am, Kohala 1

INTRODUCTION & LIFE CYCLE MANAGEMENT STRATEGIES

2nd International Symposium on Coke Drum Life Cycle Management—Sponsored by Design & Analysis Technical Committee

Developed by: C. Rodery, BP p.l.c, League City, TX, USA; K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA; J. Penso, Shell Projects and Technology, Houston, TX, USA
Chair: C. Rodery, BP p.l.c, League City, TX, USA
Co-Chair: K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA

PVP2017-65895: API 934G—DESIGN, FABRICATION, OPERATIONAL EFFECTS, INSPECTION, ASSESSMENT AND REPAIR OF COKE DRUMS AND PERIPHERAL COMPONENTS IN DELAYED COKING UNITS (Presentation Only)

J. Penso, Shell Projects and Technology, Houston, TX, USA

PVP2017-65868: DEFORMATION BASED COKE DRUM LIFE ASSESSMENTS (Presentation Only)

K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA; J. Bedoya, Stress Engineering Services Inc., Houston, TX, USA; G. Garic, Stress Engineering Services Inc., Metairie, LA, USA

PVP2017-65903: ASSESSMENT, MITIGATION, MANAGEMENT AND EXTENSION OF COKE DRUM LIFE THROUGH EQUIPMENT HEALTH MONITORING SYSTEMS AND ON LINE INSPECTION

A. Seijas, Phillips 66 Company, Houston, TX, USA; J. Bedoya, Stress Engineering Services Inc., Houston, TX, USA; A. Stoller, Stress Engineering Services Inc., Mason, OH, USA; O. Perez, Phillips 66, Carson, CA, USA; L. Marcano, Phillips 66, Wilmington, CA, USA

PVP2017-65066: A SUCCESSFUL STRATEGY FOR MANAGING THE MECHANICAL INTEGRITY OF COKE DRUMS

P. DuPlessis, Suncor Energy, Calgary, AB, Canada; M. Samman, Houston Engineering Solutions, LLC, Houston, TX, USA

SESSION 1.1B (FSI-2-1)

Monday, July 17, 8:30 am – 10:15 am, Kohala 2

FIV DESIGN FOR INDUSTRY I (SPECIAL SESSION IN MEMORY OF M.K. AU YANG)

Symposium of Flow-Induced Vibration—Sponsored by Fluid-Structure Interaction Technical Committee

Developed by: N. Mureithi, Polytechnique Montreal, Montreal, QC, Canada
Chair: D. S. Weaver, McMaster University, Hamilton, ON, Canada
Co-Chair: N. Mureithi, Polytechnique Montreal, Montreal, QC, Canada

PVP2017-65219: EXPERIMENTAL AND NUMERICAL STUDIES OF FLUID-STRUCTURE INTERACTION (Presentation Only)

Y. Kwon, Naval Postgraduate School, Monterey, CA, USA

PVP2017-65272: FRETTING-WEAR DAMAGE DUE TO VIBRATION IN NUCLEAR AND PROCESS EQUIPMENT

M. Pettigrew, Ecole Polytechnique–Montreal, Deep River, ON, Canada; M. Yetisir, N. J. Fisher, B. A. W. Smith, C. E. Taylor, Canadian Nuclear Laboratories, Chalk River, ON, Canada

PVP2017-65529: NON-PROPRIETARY APPLICATION OF ASME CODE SECTION III APPENDIX N TO SONGS REPLACEMENT STEAM GENERATORS

R. D. Blevins, Independent Consultant, San Diego, CA, USA

PVP2017-65162: STUDY ON THE STREAM-WISE FLUIDELASTIC INSTABILITY OF ROTATED SQUARE ARRAYS OF CIRCULAR CYLINDERS SUBJECTED ON CROSS-FLOW

T. Nakamura, T. Tsujita, Osaka Sangyo University, Daito, Osaka, Japan

SESSION 1.1C (CS-7-1)

ASME SECTION III—RECENT DEVELOPMENTS

Symposium on Recent Developments in International Codes and Standards—Sponsored by Codes & Standards Technical Committee

Monday, July 17, 8:30 am – 10:15 am, Kohala 3

Developed by: T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA
Chair: R. Barnes, Anric, Etobicoke, ON, Canada
Co-Chair: T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA

PVP2017-65399: TECHNICAL BASIS FOR CONVERSION OF NON-MANDA-

TORY APPENDIX F OF SECTION III OF THE ASME BOILER AND PRESSURE VESSEL CODE TO A MANDATORY APPENDIX—PART I: APPENDIX REWRITE

J. Wen, Jensen Hughes, Independence, OH, USA; S. McKillop, MPR Associates, Alexandria, VA, USA; T. Adams, Jensen Hughes, Independence, OH, USA; R. Keating, MPR Associates, Inc., Alexandria, VA, USA

PVP2017-65400: TECHNICAL BASIS FOR CONVERSION OF NON-MANDATORY APPENDIX F OF SECTION III OF THE ASME BOILER AND PRESSURE VESSEL CODE TO A MANDATORY APPENDIX—PART II: ASSOCIATED CODE BOOK UPDATES

S. McKillop, MPR Associates, Alexandria, VA, USA; J. Wen, Jensen Hughes, Independence, OH, USA; R. Keating, MPR Associates, Inc., Alexandria, VA, USA; T. Adams, Jensen Hughes, Independence, OH, USA

PVP2017-65309: TECHNICAL BASIS FOR PROPOSED ASME CODE CASE BASED ON N-513 FOR HIGHER PRESSURE APPLICATIONS

R. McGill, Structural Integrity Associates, San Jose, CA, USA; R. Janowiak, Exelon, Hoffman Estates, IL, USA; E. Houston, Structural Integrity Associates, Inc., Centennial, CO, USA; D. J. Shim, Structural Integrity Associates, San Jose, CA, USA

PVP2017-65943: RELAXATION OF EXEMPTION REQUIREMENT OF PWHT FOR SA-508 GRADE 1A, BY CONSIDERING SURFACE WELDING RESIDUAL STRESS AS EVALUATED BY INSTRUMENTED INDENTATION TESTING METHOD

J. Kim, J. S. Lee, S. Choi, J. Kim, D. Kwon, Seoul National University, Seoul, Korea (Republic)

PVP2017-65994: ASME CODES AND STANDARDS V&V COMMITTEE—DEVELOPMENT OF STANDARDS FOR VERIFICATION, VALIDATION AND UNCERTAINTY ASSESSMENTS IN MODELING AND SIMULATION

C. Freitas, Southwest Research Institute, San Antonio, TX, USA

SESSION 1.1D (HT-2-1)

Monday, July 17, 8:30 am – 10:15 am, King's 1

IMPULSIVELY LOADED VESSELS

Developed by: M. Edel, Baker Engineering and Risk Consultants, San Antonio, TX, USA; D. Gross, Dominion Engineering, Reston, VA, USA; H. Levine, Thornton Tomasetti, Cupertino, CA, USA
Chair: M. Edel, Baker Engineering and Risk Consultants, San Antonio, TX, USA
Co-Chair: D. Gross, Dominion Engineering, Reston, VA, USA

PVP2017-65173: SELECTION OF BOLT PRELOAD FOR IMPULSIVELY LOADED VESSELS

T. A. Duffey, TA Duffey, Consulting Engineer, Tijeras, NM, USA; J. E. D. Hess, Los Alamos National Laboratory, Los Alamos, NM, USA

PVP2017-65391: EDS CONTAINMENT VESSEL TNT EQUIVALENCE TESTING

J. Stofleth, Sandia National Laboratories, Albuquerque, NM, USA; R. W Crocker, B. Haroldsen, Sandia National Laboratories, Livermore, CA, USA

PVP2017-65976: NUMERICAL STUDY OF AN IMPULSIVELY LOADED VESSEL CONTAINING DOUBLE VERSUS SINGLE CLOSURE BOLT PATTERNS

J. E. D. Hess, Los Alamos National Laboratory, Los Alamos, NM, USA

PVP2017-65232: FAILURE ANALYSIS OF VESSEL COVER UNDER INTERNAL PRESSURE IMPULSE

S. Yang, Q. Dong, L. Zhang, Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, Sichuan, China

SESSION 1.1E (CS-1-1)

Monday, July 17, 8:30 am – 10:15 am, King's 2

STRUCTURAL INTEGRITY OF PRESSURE COMPONENTS—I

Symposium on Structural Integrity—Co-Sponsored by Codes & Standards and Materials & Fabrication Technical Committees

Developed by: M. Benson, U.S. Nuclear Regulatory Commission, Rockville, MD, USA; S. Xu, Kinectrics Inc., Toronto, ON, Canada
Chair: M. Benson, U.S. Nuclear Regulatory Commission, Rockville, MD, USA
Co-Chair: J. C. Jin, Canadian Nuclear Safety Commission, Ottawa, ON, Canada

PVP2017-65090: CURRENT STATUS OF THE CHARACTERIZATION OF RPV MATERIALS HARVESTED FROM THE DECOMMISSIONED ZION UNIT 1 NUCLEAR POWER PLANT

T. M. Rosseel, M. Sokolov, X. Chen, R. Nanstad, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-65141: SAFETY MARGIN OPTIMISATION BY PROBABILISTIC ANALYSIS

L. Stefanini, F. Blom, NRG, Petten, Netherlands

PVP2017-65263: LEAPOR—A COMPUTER CODE FOR LEAKAGE-RATE CALCULATIONS FOR CRACKS IN COOLING WATER PIPING SYSTEMS

P. T. Williams, B. R. Bass, T. Dickson, H. Klasky, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-65304: RSE-M NUCLEAR IN-SERVICE INSPECTION CODE-A SET OF MODERN FLAW EVALUATION RULES (Presentation Only)

C. Faidy, CF Integrity Engineering, Tassin, France

SESSION 1.1F (MF-19-1)

Monday, July 17, 8:30 am – 10:15 am, King's 3

CREEP AND CREEP-FATIGUE INTERACTION—I

Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: C. M. Davies, Imperial College London, London, United Kingdom; R. Dennis, Frazer-Nash Consultancy, Avon, United Kingdom; H. Qian, GE Gas Power Systems, Windsor, CT, USA
Chair: C. M. Davies, Imperial College London, London, United Kingdom
Co-Chair: K. Tarnowski, The University of Sheffield, Sheffield, United Kingdom

PVP2017-65080: DIRECT METHOD ON CREEP FATIGUE DAMAGE ASSESSMENT CONSIDERING FULL CREEP-CYCLIC PLASTICITY INTERACTION

D. Barbera, H. Chen, University of Strathclyde, Glasgow, Scotland; W. Luan, East China University of Science and Technology, Shanghai, China

PVP2017-65241: MICROSTRUCTURAL EVALUATION OF 9CR-3W-3CO-NB HEAT-RESISTANT STEEL (SAVE12AD) AFTER LONG-TERM CREEP DEFORMATION

T. Hamaguchi, H. Okada, S. Kurihara, Nippon Steel & Sumitomo Metal Corporation, Amagasaki, Japan; H. Hirata, Nippon Steel & Sumitomo Metal Corporation, Futtsu, Japan; M. Yoshizawa, Nippon Steel & Sumitomo Metal Corporation, Düsseldorf, Germany

PVP2017-65296: SELECTION OF REPRESENTATIVE STRESS FUNCTION UNDER MULTIAXIAL STRESS STATE CONDITION FOR CREEP

M. S. Haque, C. M. Stewart, The University of Texas at El Paso, El Paso, TX, USA

PVP2017-65689: EFFECTS OF CREEP DEFORMATION MODEL OF GR. 91 STEEL AT 600 OC ON CREEP FRACTURE MECHANICS PARAMETERS

M. G. Won, Sungkyunkwan University, Suwon, Korea (Republic); N.-S. Huh, Seoul National University of Science and Technology, Seoul, Korea (Republic); H.-Y. Lee, W.-G. Kim, Korea Atomic Energy Research Institute, Daejeon, Korea (Republic); J. B. Choi, Sungkyunkwan University, Kyungi-do, Korea (Republic)

SESSION 1.1G (MF-2-1)

Monday, July 17, 8:30 am – 10:15 am, Queen's 4

APPLICATION OF FRACTURE MECHANICS IN FAILURE ASSESSMENT—I

Symposium on Fracture Mechanics and Analysis—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA
Chair: P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA
Co-Chair: H. Coules, University of Bristol, Bristol, United Kingdom

PVP2017-65351: ASSESSMENT OF DEFECTIVE STUDS: PART 1—FEATURES TESTING OF STUD MATERIAL UNDER LOW CONSTRAINT DUCTILE TEARING

P. James, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom; M. Jackson, Rolls Royce, Derby, Derbyshire, United Kingdom; P. Birkett, C. Madew, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom

PVP2017-65353: ASSESSMENT OF DEFECTIVE STUDS: PART 2—SIMPLIFIED ASSESSMENT OF STUDS ALLOWING FOR LOW CONSTRAINT CONDITIONS

P. James, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom; M. Jack-

son, Rolls Royce, Derby, Derbyshire, United Kingdom; C. Madew, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom

PVP2017-65441: FRACTURE TOUGHNESS VARIATION WITH FLAW DEPTH IN VARIOUS SPECIMEN GEOMETRIES AND ROLE OF CONSTRAINT IN MATERIAL FRACTURE RESISTANCE

Y. Hioe, S. Kalyanam, G. Wilkowski, S. Pothana, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA; J. Martin, BMPC, Schenectady, NY, USA

PVP2017-66221: ELASTIC-PLASTIC FRACTURE ANALYSIS OF A REACTOR PRESSURE VESSEL SUBJECTED TO PRESSURIZED THERMAL SHOCK

H. Guo, Z. Wang, Jiangsu University, Zhenjiang, Jiangsu, China; P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA

SESSION 1.1H (HT-1-1)

Monday, July 17, 8:30 am – 10:15 am, Queen's 5

DESIGN, ANALYSIS, AND LIFE PREDICTION OF HIGH-PRESSURE VESSELS AND EQUIPMENT

Symposium on Life Cycle Management—Co-Sponsored by High-Pressure Technology and Operations, Applications & Components Technical Committees

Developed by: K. Karpanan, FMC Technologies Inc., Houston, TX, USA; K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Chair: K. Karpanan, FMC Technologies Inc., Houston, TX, USA
Co-Chair: K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA

PVP2017-65111: AN EXPERIMENTAL SETUP FOR DETERMINING THE FAILURE LOCUS OF ASME TUBULAR PRESSURE VESSEL STEEL GRADES

I. Barsoum, M. Al-Khaled, The Petroleum Institute, Abu Dhabi, United Arab Emir.

PVP2017-65258: FRACTURE ASSESSMENTS OF HIGH PRESSURE VESSEL COMPONENTS HAVING LONGITUDINAL HOLES

Y. Xu, Dupont Performance Materials, Wilmington, DE, USA; K.-J. Young, Dupont Engineering, Wilmington, DE, USA

PVP2017-65223: HIGH PRESSURE TUBING MATERIAL PERFORMANCE REVIEW

K. D. Warren, A&A Machine & Fabrication, LLC, LaMarque, TX, USA

PVP2017-65652: DEEP-HOLE-DRILLING OF HIGH PRESSURE TUBES—PROCESS STABILITY AND THE INFLUENCE OF ECCENTRICITY ON AUTOFRETTAGE AND HEAT TRANSFER

H. Maderbacher, M. Poelzl, BHDT GmbH, Kapfenberg, Austria

PVP2017-65840: DISRUPTING THE METALLICS DOMAIN IN PRESSURE VESSEL AND PIPING MANUFACTURE-ADVANCED MANUFACTURING IN THE OIL AND GAS SECTOR

J. G. Rafferty, D. Gill, R. Kapur, TechnipFMC Inc., Dunfermline, Fife, United Kingdom

SESSION 1.1I (DA-10-1)

Monday, July 17, 8:30 am – 10:15 am, Queen's 6

GASKETS AND JOINT INTEGRITY

Developed by: W. Brown, Integrity Engineering Solutions, Dunsborough, WA, Australia; C. Rodery, BP p.l.c, League City, TX, USA
Chair: W. Brown, Integrity Engineering Solutions, Dunsborough, WA, Australia
Co-Chair: C. Rodery, BP p.l.c, League City, TX, USA

PVP2017-65439: DETERMINATION OF TARGET BOLT TENSION FOR FLANGES WITH LENS GASKETS

G. Van Zyl, SABIC, Jubail, Saudi Arabia

PVP2017-65507: ACCEPTABLE LEVELS OF CORROSION FOR PRESSURE BOUNDARY BOLTED JOINTS

W. Brown, S. Long, Integrity Engineering Solutions, Dunsborough, WA, Australia

PVP2017-65371: ASME B16.20 SPIRAL WOUND GASKETS PERFORMANCE TESTING

J. Veiga, Teadit Industria e Comercio Ltda, Rio De Janeiro, Brazil; S. Hamilton, Hex Technology, Austin, TX, USA; J. Baulch, Teadit North America, Pasadena, TX, USA

PVP2017-66232: ON THE USE OF GASKET FACTORS, FLANGE CALCULATION AND QUALIFIED ASSEMBLY TO REDUCE FUGITIVE EMISSIONS (Presentation Only)

F. Schoeckle, M. Schaaf, AMTEC GmbH, Lauffen, Germany

SESSION 1.1J (MF-2-6)

Monday, July 17, 8:30 am – 10:15 am, Kona 1

FUEL CLADDING CHARACTERIZATION, COHESIVE ZONE MODELING, AND CRACK GROWTH IN WELD

Symposium on Aging Management and Structural Integrity for Spent Nuclear Fuel Dry Cask Storage and Transportation Systems—Co-Sponsored by Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: J. Wang, H. Jiang, Oak Ridge National Laboratory, Oak Ridge, TN, USA
Chair: H. Jiang, Oak Ridge National Laboratory, Oak Ridge, TN, USA
Co-Chair: A. Duncan, Savannah River National Laboratory, Aiken, SC, USA

PVP2017-66173: CRACK GROWTH EVALUATION OF REMNANT FLAWS UNDERNEATH AN EXCAVATE AND WELD REPAIR

F. Ku, Structural Integrity Associates, San Jose, CA, USA; S. McCracken, Electric Power Research Institute, Harrisburg, NC, USA

PVP2017-65185: EXPANDING PLUG WEDGE TEST FOR EVALUATING HOOP TENSILE PROPERTIES OF FUEL CLADDING

H. Jiang, J. Wang, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-65022: CRACK EXTENSIONS IN COMPACT TENSION SPECIMENS OF HYDRIDED IRRADIATED ZR-2.5NB MATERIALS USING COHESIVE ZONE MODEL

S. Wu, S.-J. Sung, J. Pan, University of Michigan, Ann Arbor, MI, USA; P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA; D. Scarth, Kinectrics Inc., Toronto, ON, Canada

PVP2017-65021: PREDICTIONS OF CRACK EXTENSIONS IN ARC-SHAPED SPECIMENS OF AUSTENITIC STAINLESS STEELS WITH AND WITHOUT CHARGED HYDROGEN USING COHESIVE ZONE MODEL (Presentation Only)

S. Wu, S.-J. Sung, J. Pan, University of Michigan, Ann Arbor, MI, USA; P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA; P. Korinko, Savannah River National Laboratory, Aiken, SC, USA

SESSION 1.1K (CS-8-1)

Monday, July 17, 8:30 am – 10:15 am, Kona 2

HYDROGEN EFFECTS ON MATERIALS BEHAVIOR

Developed by: S. Xu, Kinectrics Inc., Toronto, ON, Canada; C. San Marchi, Sandia National Laboratories, Livermore, CA, USA
Chair: S. Xu, Kinectrics Inc., Toronto, ON, Canada
Co-Chair: F. Iwamatsu, Hitachi, Ltd., Ibaraki, Japan

PVP2017-65723: THE EFFECT OF HYDROGEN ON RUBBER IN HIGH PRESSURE HYDROGEN (Presentation Only)

S. H. Nahm, S. K. Jeon, Korea Research Institute of Standards and Science, Daejeon, Korea (Republic); O. H. Kwon, Pukyong National University, Busan, Korea (Republic); U. B. Baek, S.-W. Baek, Korea Research Institute of Standards and Science, Daejeon, Korea (Republic)

PVP2017-65885: POLYMER BEHAVIOUR IN CYCLIC HIGH PRESSURE ENVIRONMENTS AT TEMPERATURES RELEVANT TO THEIR USAGE IN THE HYDROGEN INFRASTRUCTURE (Presentation Only)

N. C. Menon, A. Kruizenga, Sandia National Laboratories, Livermore, CA, USA

PVP2017-65532: EXCELLENT RESISTANCE TO HYDROGEN EMBRITTLEMENT OF HIGH-STRENGTH COPPER-BASED ALLOY

Y. Ogawa, J. Yamabe, H. Matsunaga, S. Matsuoka, Kyushu University, Fukuoka, Japan

PVP2017-66250: CURRENT STATUS OF EVALUATION AND SELECTING OF MATERIALS TO BE USED FOR HYDROGEN REFUELING STATION EQUIPMENT IN JAPAN

H. Kobayashi, Tokyo Institute of Technology, Tokyo, Japan; T. Sano, The High Pressure Gas Safety Institute of Japan; Machida-shi, Tokyo, Japan; H. Kobayashi, Japan Petroleum Energy Center, Minato-Ku Tokyo, Japan; S. Matsuoka, Kyushu University, Fukuoka, Japan; H. Tsujigami, Iwatani Corporation, Hyogo-ken, Japan

SESSION 1.1L (SE-1-1)

Monday, July 17, 8:30 am – 10:15 am, Kona 3

EARTHQUAKE RESISTANCE AND SEISMIC MARGIN

Developed by: A. Maekawa, The Kansai Electric Power Co. Inc., Fukui, Japan; T. Taniguchi, Tottori University, Tottori, Japan; I. Nakamura, National Research Institute for Earth Science and Disaster Resilience, Ibaraki, Japan
Chair: I. Nakamura, National Research Institute for Earth Science and Disaster Resilience, Ibaraki, Japan
Co-Chair: T. Taniguchi, Tottori University, Tottori, Japan

PVP2017-65140: DYNAMICS MODELING AND ANALYSIS OF RIVETED MAINFRAME COMPUTER STRUCTURE
B. Notohardjono, S. Canfield, R. Ecker, IBM Corp, Poughkeepsie, NY, USA

PVP2017-65524: SEISMIC RESPONSE ANALYSIS OF FLEXIBLE DRAIN SYSTEM INTO EXTERNAL FLOATING ROOF STORAGE TANKS
G. Bernard, TechnipFMC, Le Trait, France; D. Vera, TechnipFMC, Rueil Malmaison, France; W. K. Lim, TechnipFMC, Singapore, Singapore

PVP2017-65600: SEISMIC TEST RESULT OF MOTOR OPERATED VALVE ACTUATORS FOR NUCLEAR POWER PLANT
N. Kojima, Toshiba Corporation, Yokohama, Japan; Y. Tsutsumi, Chubu Electric Power Co., Inc., Nagoya, Aichi, Japan; K. Nishino, Y. Watanabe, K. Yonekura, Toshiba Corporation, Yokohama, Japan

PVP2017-65602: SEISMIC TEST RESULTS OF THE MAIN STEAM SAFETY RELIEF VALVES FOR JAPANESE BOILING WATER REACTOR NUCLEAR POWER PLANTS
K. Nishino, Toshiba Corporation, Yokohama, Japan; Y. Tsutsumi, Chubu Electric Power Co., Inc., Nagoya, Aichi, Japan; K. Yonekura, N. Kojima, Y. Watanabe, Toshiba Corporation, Yokohama, Japan

SESSION 1.1M (HT-3-1)

Monday, July 17, 8:30 am – 10:15 am, Waikoloa Suite 1
HIGH PRESSURE VESSEL & PIPING LIFE ASSESSMENT ISSUES

Developed by: C. Tipple, Structural Integrity Associates, Centennial, CO, USA; C. Becht V, Becht Engineering Co., Inc., Liberty Corner, NJ, USA
Chair: C. Becht V, Becht Engineering Co., Inc., Liberty Corner, NJ, USA
Co-Chair: C. Tipple, Structural Integrity Associates, Centennial, CO, USA

PVP2017-65663: WELDING TECHNOLOGY IMPROVEMENT FOR 2 1/4 CR 1 MO 1/4 V HEAVY WALL LOW ALLOY STEELS
F. Fusari, P. Marangoni, S. Alberini, M. Musti, Bellei Energy CPE, Mantova, Italy

PVP2017-65773: STUDY OF CRACK-FACE PRESSURE EFFECT ON WELD FATIGUE LIFE CALCULATIONS USING STRUCTURAL STRESS METHOD FOR THICK-WALL VESSELS (Presentation Only)
K.-J. Young, Dupont Engineering, Wilmington, DE, USA; Y. Xu, Dupont Performance Materials, Wilmington, DE, USA

PVP2017-65770: FRACTURE MECHANICS ANALYSIS OF CLAD SUBSEA EQUIPMENT IN SOUR HPHT CONDITIONS
C. Holtam, R. Saraswat, DNV GL, Katy, TX, USA; R. Thodla, DNV GL, Dublin, OH, USA

PVP2017-66163: SURFACE STRESS ANALYSIS OF THE INTERNAL CORRODED PIPES UNDER EXTERNAL PRESSURE
Z. Chen, X. Shen, H. Ye, S. Yan, Z. Jin, Zhejiang University, Hangzhou, Zhejiang, China

SESSION 1.1N (SPC-2-3)

Monday, July 17, 8:30 am – 10:15 am, Waikoloa Suite 2
STUDENT PAPER SYMPOSIUM—PHD—I

Developed by: V. P. Janzen, Canadian Nuclear Laboratories, Chalk River, ON, Canada
Chair: V. P. Janzen, Canadian Nuclear Laboratories, Chalk River, ON, Canada
Co-Chair: P. James, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom

PVP2017-65737: AN HOMOGENISATION METHOD FOR A FSI PROBLEM: APPLICATION TO A TUBE BUNDLE ROW
G. Artini, D. Broc, CEA Saclay, Gif-sur-Yvette, France

PVP2017-65442: SIMPLIFIED ANALYSIS OF THE ROCKING MOTION OF A CYLINDRICAL TANK FOCUSING ON THE ROLE OF DYNAMIC FORCES INVOLVED IN ROCKING-BULGING INTERACTION
M. D'Amico, T. Taniguchi, Tottori University, Tottori, Japan; T. Nakashima, Jip Techno-science, Yao, Japan

PVP2017-65350: PREDICTION OF THE TEMPERATURE DEPENDENCE ON FRACTURE TOUGHNESS BY NEW STRESS DISTRIBUTION SCALING METHOD
K. Ishihara, T. Hamada, Kobelco Research Institute, Inc., Kobe, Hyogo, Japan; T. Meshii, University of Fukui, Fukui, Japan

PVP2017-65297: A NOVEL METAMODELING APPROACH FOR TIME-TEMPERATURE PARAMETER MODELS
M. S. Haque, C. Ramirez, C. M. Stewart, The University of Texas at El Paso, El Paso, TX, USA

SESSION 1.1O (SPC-1-1)

Monday, July 17, 8:30 am – 10:15 am, Waikoloa Suite 3
STUDENT PAPER COMPETITION—BS/MS—I

Developed by: K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Chair: K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Co-Chair: H. Qian, General Electric, Avon, CT, USA

PVP2017-65746: ASSESSMENT OF AIRCRAFT CRASH TO CONTAINMENT AND ITS EFFECTS ON REACTOR CAVITY AND MAJOR COMPONENT
J. M. Sim, Y. Chang, Kyung Hee University, Kyunggi-do, Korea (Republic)

PVP2017-65337: SHAKEDOWN LIMITS FOR HILLSIDE NOZZLES IN CYLINDRICAL VESSELS
A. K. Bakry, C. A. Saleh; M. M. Megahed, Cairo University, Giza, Egypt

PVP2017-65278: DEVELOPMENT OF A PROFILE MATCHING CRITERIA TO MODEL DENTS IN PIPELINES USING FINITE ELEMENT ANALYSIS
J. Woo, University of Alberta, Edmonton, AB, Canada; M. Kainat, Enbridge Liquid Pipelines, Edmonton, AB, Canada; S. Adeeb, University of Alberta, Edmonton, AB, Canada

PVP2017-65580: EXPERIMENTAL INVESTIGATION ON ADHESIVE BONDED JOINTS OF CARBON FIBER COMPOSITE LAMINATES CONTAINING DISBOND DEFECT
P. Qiu, J. Shi, J. Zheng, Zhejiang University, Hangzhou, Zhejiang, China

PVP2017-65714: STUDY ON THE ROCKING VIBRATION INDUCED IN THREE-DIMENSIONAL SEISMIC ISOLATION SYSTEM (Presentation Only)
N. Tomita, S. Fujita, Tokyo Denki University, Tokyo, Japan

SESSION 1.1Q (MF-23-1)

Monday, July 17, 8:30 am – 10:15 am, Kohala 4
ADVANCED SENSOR TECHNOLOGIES FOR MONITORING STRUCTURAL INTEGRITY

Developed by: L. Yu, University of South Carolina, Columbia, SC, USA; C. Lissenden, Penn State University, University Park, PA, USA; P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA
Chair: L. Yu, University Of South Carolina, Columbia, SC, USA
Co-Chair: A. Duncan, Savannah River National Laboratory, Aiken, SC, USA

PVP2017-65940: ON-LINE CONDITION MONITORING OF FRICTION STIR SPOT WELDING TOOL USING VIBRATION MEASUREMENTS
F. Al-Badour, A. Mahgoub, A. Bazoune, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia; A.R. Shuaib, Arizona State University, Tempe, AZ, USA; N. Merah, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia

PVP2017-66074: SIMULATION OF LAMB WAVE PROPAGATION USING EXCITATION POTENTIALS
M. F. Haider, V. Giurgiutiu, B. Lin, L. Yu, University of South Carolina, Columbia, SC, USA

PVP2017-66200: ACOUSTIC EMISSION SENSING IN NUCLEAR FACILITIES (Presentation Only)
S. Howden, B. Lin, T. Knight, L. Yu, University of South Carolina, Columbia, SC, USA

SESSION 1.1S (TW-4-1)

Monday, July 17, 8:30 am – 10:15 am, Grand Promenade
TECHNOLOGY DEMONSTRATION FORUM—I

Developed by: C. Jaske, HSI Group, Inc., Torrance, CA, USA; J. F. Cory, Jr., Siemens PLMS Software, Milford, OH, USA

Block 1.2: Monday, July 17, 2017 (10:30 am – 12:15 pm)

SESSION 1.2P (TW-3-1)

Monday, July 17, 10:30 am – 12:15 pm, Monarchy

PLENARY SESSION

Developed by: M. Younan, American University in Cairo, Cairo, Egypt

LARGE SCALE METAL WIRE + ARC ADDITIVE MANUFACTURE FOR PIPES AND PRESSURE VESSELS

S. Williams, Cranfield University, Cranfield, United Kingdom

HIGH PERFORMANCE COMPUTING AND BIG DATA THE PARENTS OF THE DIGITAL TWIN

T. Kurfess, Georgia Institute of Technology, Atlanta, GA, USA

SESSION 1.2S (TW-4-2)

Monday, July 17, 10, 10:30 am – 12:15 pm, Grand Promenade

TECHNOLOGY DEMONSTRATION FORUM 2

Developed by: C. Jaske, HSI Group, Inc., Torrance, CA, USA; J. F. Cory, Jr., Siemens PLMS Software, Milford, OH, USA

Block 1.3: Monday, July 17, 2017 (2:00 pm – 3:45 pm)

SESSION 1.3A (DA-16-2)

Monday, July 17, 2:00 pm – 3:45 pm, Kohala 1

OPERATIONAL INFLUENCES ON THE COKE DRUM LIFE CYCLE

2nd International Symposium on Coke Drum Life Cycle Management—Sponsored by Design & Analysis Technical Committee

Developed by: C. Rodery, BP p.l.c, League City, TX, USA; K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA; J. Penso, Shell Projects and Technology, Houston, TX, USA

Chair: J. Penso, Shell Projects and Technology, Houston, TX, USA

Co-Chair: J. Bedoya, Stress Engineering Services Inc., Houston, TX, USA

PVP2017-65875: A STATISTICAL APPROACH TO EVALUATING SINGLE SIDE INLET VS DUAL INLET TEMPERATURE DISTRIBUTIONS IN COKE DRUMS

J. Penso, Shell Projects and Technology, Houston, TX, USA; J. Bedoya, Stress Engineering Services Inc., Houston, TX, USA; A. Stoller, Stress Engineering Services Inc., Mason, OH, USA; R. Boswell, Stress Engineering Services Inc., Houston, TX, USA

PVP2017-65415: ASSESSMENT OF THE INFLUENCE OF CENTRAL AND LATERAL FEED INJECTION SYSTEMS ON THE REMAINING LIFE OF A COKE DRUM

G. A. Vivas, A. J. Moret, R. E. Bello, PDVSA Intevep, Los Teques, Miranda, Venezuela; L. M. Melian, PDVSA Petrocedeño, Jose, Anzoátegui, Venezuela; J. R. Carmona, Statoil International A.S, Jose, Anzoátegui, Venezuela

PVP2017-65182: FEED ENTRY SYSTEMS FOR THE MODERN DELAYED COKING UNIT (Presentation Only)

S. Beeston, Amec Foster Wheeler, Houston, TX, USA; R. Lah, Critical Flow Solutions, Sandy, UT, USA

PVP2017-65060: THE SIGNIFICANCE OF COKE RESISTANCE IN COKE DRUM FAILURES

M. Samman, Houston Engineering Solutions, LLC, Houston, TX, USA; B. Doerksen, Bechtel Hydrocarbon Technology Solutions, Inc., Houston, TX, USA

PVP2017-65699: NUMERICAL ANALYSIS OF TRANSIENT TEMPERATURE FIELD AND THERMAL STRESS OF COKE DRUM WITH 1.25CR-0.5MO STEEL BASED ON ITERATIVE ALGORITHM

Z. Lu, X. Chen, Z. Fan, J. Dong, J. Zhu, Hefei General Machinery Research Institute, Hefei, China

SESSION 1.3B (FSI-2-2)

Monday, July 17, 2:00 pm – 3:45 pm, Kohala 2

FIV DESIGN FOR INDUSTRY—II

Symposium of Flow-Induced Vibration—Sponsored by Fluid-Structure Interaction Technical Committee

Developed by: M. Pettigrew, Ecole Polytechnique–Montreal, Deep River, ON, Canada; V. P. Janzen, Canadian Nuclear Laboratories, Chalk River, ON, Canada

Chair: M. Pettigrew, Ecole Polytechnique–Montreal, Deep River, ON, Canada

Co-Chair: V. P. Janzen, Canadian Nuclear Laboratories, Chalk River, ON, Canada

PVP2017-66218: REVIEW OF THE AP1000 PWR COMPREHENSIVE VIBRATION ASSESSMENT PROGRAM (Presentation Only)

G. Meyer, Westinghouse Electric Company, Cranberry Township, PA, USA; R. Vollmer, Westinghouse Electric Company, State College, PA, USA; G. Banyay, Westinghouse, Ellwood City, PA, USA; J. Koether, A. Walker, Westinghouse, Cranberry Township, PA, USA

PVP2017-66067: FLOW-INDUCED VIBRATION AND FRETTING-WEAR DESIGN GUIDANCE FOR NUCLEAR STEAM GENERATORS AND HEAT EXCHANGERS—AN UPDATE (Presentation Only)

V. P. Janzen, Canadian Nuclear Laboratories, Chalk River, ON, Canada; M. Pettigrew, Ecole Polytechnique–Montreal, Deep River, ON, Canada

PVP2017-65901: THE EFFECTS OF TUBE ARRAY GEOMETRY ON FLUIDELASTIC INSTABILITY IN HEAT EXCHANGER TUBE ARRAYS IN CROSS FLOW

M. Hassan, University of Guelph, Guelph, ON, Canada; D. S. Weaver, McMaster University, Hamilton, ON, Canada

PVP2017-65780: TOWARDS A PRACTICAL QUASI-STEADY MODEL BASED ANALYSIS METHOD FOR FLUIDELASTIC INSTABILITY IN STEAM GENERATORS (Presentation Only)

N. Mureithi, S. Olala, Polytechnique Montreal, Montreal, QC, Canada

SESSION 1.3C (CS-7-2)

Monday, July 17, 2:00 pm – 3:45 pm, Kohala 3

ASME SECTION III—RECENT DEVELOPMENTS, ELEVATED TEMPERATURE

Symposium on Recent Developments in International Codes and Standards—Sponsored by Codes & Standards Technical Committee

Developed by: T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA

Chair: T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA

Co-Chair: M. C. Messner, Argonne National Laboratory, Lemont, IL, USA

PVP2017-65455: COMBINED LOAD AND DISPLACEMENT CONTROLLED TESTING TO SUPPORT DEVELOPMENT OF SIMPLIFIED COMPONENT DESIGN RULES FOR ELEVATED TEMPERATURE SERVICE

Y. Wang, Oak Ridge National Laboratory, Oak Ridge, TN, USA; R. Jetter, RI Jetter Consulting, Pebble Beach, CA, USA; M. C. Messner, S. Mohanty, T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA

PVP2017-65418: VERIFICATION OF THE EPP CODE CASE FOR STRAIN LIMITS EVALUATIONS BY INELASTIC ANALYSIS METHOD

M. C. Messner, T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA; R. Jetter, RI Jetter Consulting, Pebble Beach, CA, USA

PVP2017-65102: A DESIGN BASED APPROACH TO MATERIAL SELECTION FOR ADVANCED HIGH TEMPERATURE REACTOR COMPONENTS

T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA; R. Jetter, RI Jetter Consulting, Pebble Beach, CA, USA

PVP2017-65457: PRESSURIZED CREEP-FATIGUE TESTING OF ALLOY 617 USING SIMPLIFIED MODEL TEST METHOD

Y. Wang, Oak Ridge National Laboratory, Oak Ridge, TN, USA; R. Jetter, RI Jetter Consulting, Pebble Beach, CA, USA; T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA

PVP2017-65515: THE USE OF ASTM POWDER METALLURGICAL SPECIFICATIONS WITHIN ASME BOILER AND PRESSURE VESSEL CODE (Presentation Only)

D. Rahoi, CCM 2000, Iron Mountain, MI, USA

SESSION 1.3D (HT-2-2)

Monday, July 17, 2:00 pm – 3:45 pm, King's 1

FLUID TRANSIENT AND EXPLOSION LOADINGS

Developed by: D. Gross, Dominion Engineering, Reston, VA, USA; M. Edel, Baker Engineering and Risk Consultants, San Antonio, TX, USA; H. Levine, Thornton Tomasetti, Cupertino, CA, USA

Chair: D. Gross, Dominion Engineering, Reston, VA, USA

Co-Chair: M. Edel, Baker Engineering and Risk Consultants, San Antonio, TX, USA

PVP2017-65145: PRESSURE VESSEL AND PIPING HAZARD ANALYSIS METHODS COMPARISON

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

PVP2017-65032: GASEOUS DEFLAGRATION IN PIPING PART 1: EXPERIMENTAL OBSERVATIONS

T. Ligon, D. Gross, Dominion Engineering, Inc., Reston, VA, USA; J. Minichiello, Bechtel National, Inc., Richland, WA, USA

PVP2017-65033: GASEOUS DEFLAGRATION IN PIPING PART 2: PROPOSED METHODS AND CODE ACCEPTANCE CRITERIA

J. Minichiello, Bechtel National, Inc., Richland, WA, USA; T. Ligon, D. Gross, Dominion Engineering, Inc., Reston, VA, USA

PVP2017-65231: INFLUENCE OF DEFECT DISTRIBUTION ON DYNAMIC ELASTIC BUCKLING OF RINGS UNDER INTERNAL UNIFORMLY-DISTRIBUTED PRESSURE PULSE

Q. Dong, Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, Sichuan, China; S. Yang, L. Zhang, Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, Sichuan, China

PVP2017-65250: COMPUTATION OF FLUID THRUST FORCE FROM THE PRESSURE RELEASE TANK OF NUCLEAR POWER PLANT PRESSURIZER

F.-R. Xiong, N. Jiang, Nuclear Power Institute of China, Chengdu, Sichuan, China

SESSION 1.3E (CS-1-2)

Monday, July 17, 2:00 pm – 3:45 pm, King's 2

STRUCTURAL INTEGRITY OF PRESSURE COMPONENTS—II

Symposium on Structural Integrity—Co-Sponsored by Codes & Standards and Materials & Fabrication Technical Committees

Developed by: M. Benson, Nuclear Regulatory Commission, Rockville, MD, USA, S. Xu, Kinectrics Inc., Toronto, ON, Canada

Chair: F. Iwamatsu, Hitachi, Ltd., Ibaraki, Japan

Co-Chair: M. Benson, Nuclear Regulatory Commission, Rockville, MD, USA

PVP2017-65345: CREEP ANALYSIS FOR PRESSURIZED COMPONENTS UNDER CREEP CONDITIONS BASED ON ISOCHRONOUS STRESS-STRAIN CURVE AND ELASTIC-PERFECTLY PLASTIC MATERIAL MODEL

J.-G. Gong, Q.-W. Xia, F.-Z. Xuan, East China University of Science and Technology, Shanghai, China

PVP2017-65458: DESIGN OF THREADED CLOSURES FOR HIGH PRESSURE SCREW PLUG HEAT EXCHANGERS DESIGNED TO ASME SECTION VIII DIV. 2

H. K. Sippy, Tema India Ltd., Mumbai, Maharashtra, India; D. Chandiramani, Independent Consultant, Mumbai, India

PVP2017-65520: EFFECT OF NOZZLE DIMENSIONS ON THE STRESSES IN COMPENSATED OPENINGS IN CYLINDRICAL SHELLS—A COMPARATIVE STUDY OF ASME SECTION VIII DIVISION 2 AND PD 5500

D. Chandiramani, Independent Consultant, Mumbai, India; S. Gopalakrishnan, A. Mathkar, Lloyd's Register Asia, Thane-West, India

PVP2017-65859: COMMENTARY ON RECENT CHANGES IN ASME B31.3 POST WELD HEAT TREATMENT REQUIREMENTS AND THE EFFECTIVENESS OF WELD PREHEAT

P. E. Prueter, K. Smith, B. Macejko, The Equity Engineering Group, Inc., Shaker Heights, OH, USA; K. Shipley, The Equity Engineering Group, Inc., Twinsburg, OH, USA

SESSION 1.3F (MF-19-2)

Monday, July 17, 2:00 pm – 3:45 pm, King's 3

CREEP AND CREEP-FATIGUE INTERACTION—II

Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: C. M. Davies, Imperial College London, London, United Kingdom; R. Dennis, Frazer-Nash Consultancy, Avon, United Kingdom; H. Qian, GE Gas Power Systems, Windsor, CT, USA

Co-Chair: C. M. Davies, Imperial College London, London, United Kingdom

Chair: H. Chen, University of Strathclyde, Glasgow, Scotland

PVP2017-65685: EXPERIMENTAL DETERMINATION OF ELASTIC AND PLASTIC LLD RATES DURING CREEP CRACK GROWTH TESTING

K. Tarnowski, The University of Sheffield, Sheffield, United Kingdom; C. M. Davies, K. Nikbin, Imperial College London, London, United Kingdom; D. Dean, EDF Energy Generation, Gloucester, United Kingdom

PVP2017-65816: GUIDELINES TO THE ASSESSMENT OF CREEP RUPTURE RELIABILITY FOR 316SS USING THE LARSON-MILLER TIME-TEMPERATURE PARAMETER MODEL

C. Ramirez, M. S. Haque, C. M. Stewart, The University of Texas at El Paso, El Paso, TX, USA

PVP2017-65900: EVALUATION OF STRESS INCREASE CAUSED BY GEOMETRIC IMPERFECTIONS IN LONGITUDINALLY-WELDED HOT REHEAT STEAM PIPING OF MOD. 9CR-1MO STEEL

H. Shigeyama, Y. Takahashi, M. Yaguchi, Central Research Institute of Electric Power Industry, Yokosuka, Japan

PVP2017-65388: CREEP PROPERTY DETERMINATION OF WELDMENTS USING DIGITAL IMAGE CORRELATION (Presentation Only)

C. M. Davies, J. Ahn, M. Nasser, T. J. Dunnett, Imperial College London, London, United Kingdom

SESSION 1.3G (MF-2-2)

Monday, July 17, 2:00 pm – 3:45 pm, Queen's 4

APPLICATION OF FRACTURE MECHANICS IN FAILURE ASSESSMENT—II

Symposium on Fracture Mechanics and Analysis—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: A.-H. I. Mourad, United Arab Emirates University, Al Ain, United Arab Emir.; P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA; G. H. B. Donato, Centro Universitário da FEI, Sao Paulo, Brazil

Chair: A.-H. I. Mourad, United Arab Emirates University, Al Ain, United Arab Emir.

Co-Chair: Y. Chao, University of South Carolina, Columbia, SC, USA

PVP2017-65358: FRACTURE MECHANICS AT ELEVATED LOADING RATES IN THE DUCTILE TO BRITTLE TRANSITION REGION

U. Mayer, University of Stuttgart, Stuttgart, Baden-Württemberg, Germany; T. Reichert, J. Tlatlik, Fraunhofer Institute for Mechanics of Materials, Freiburg, Germany

PVP2017-65459: FABRICATION AND WEAR ANALYSIS OF ALUMINIUM MATRIX COMPOSITE REINFORCED BY SIC MICRO AND NANO PARTICLES

A. H. Idrisi, A.-H. I. Mourad, United Arab Emirates University, Al Ain, United Arab Emir.

PVP2017-65460: TRIBOLOGICAL ANALYSIS OF THERMAL SPRAY COATINGS OF NI AND AL2O3 WITH DISPERSION OF SOLID LUBRICANTS IN WEAR MODES

J. V. Christy, A.-H. I. Mourad, United Arab Emirates University, Al Ain, United Arab Emir.; S. Tiwari, Shri G S Institute of Tech & Sc., Indore, India

PVP2017-65510: CONSIDERATION OF YIELD DISCONTINUITY IN THE ELASTIC-PLASTIC FRACTURE ANALYSIS OF CIRCUMFERENTIALLY FLAWED PIPES

L. Wang, Brunel University London & NSIRC, Uxbridge, United Kingdom; E. Eren, TWI Ltd. & NSIRC, Cambridge, United Kingdom; B. Wang, Brunel University London & NSIRC, Uxbridge, United Kingdom; G. Wu, TWI Ltd. & NSIRC, Cambridge, United Kingdom

SESSION 1.3H (OAC-6-1)

Monday, July 17, 2:00 pm – 3:45 pm, Queen's 5

LIFE CYCLE MANAGEMENT OF REFINERY PRESSURE VESSELS—WELDING & FABRICATION

Symposium on Life Cycle Management—Co-Sponsored by High-Pressure Technology and Operations, Applications & Components Technical Committees

Developed by: A. Yasutomi, The Japan Steel Works, Ltd., Hokkaido, Japan; L. Antalffy, Fluor, Sugar Land, TX, USA; B. Millet, Fluor, Inc., Pasadena, TX, USA

Chair: B. Millet, Fluor, Inc., Pasadena, TX, USA

Co-Chair: A. Yasutomi, The Japan Steel Works, Ltd., Hokkaido, Japan; L. Antalffy, Fluor, Sugar Land, TX, USA

PVP2017-65446: HOW AN EXPERIENCED FABRICATOR CAN PROVIDE SUPPORT TO SITE ACTIVITIES TO UPGRADE EXISTING UNITS TO NEW OPER-

ATIONAL REQUIREMENTS
L. Sabattoli, S. Poddighe, ATB Riva Calzoni S.p.A., Roncadelle, Brescia, Italy
PVP2017-65640: WELDING CONSUMABLES FOR 2.25CR-1MO-V REFINING REACTORS
H. Takauchi, Kobe Steel, Ltd., Fujisawa, Kanagawa, Japan; T. Nakanishi, Kobe Steel, Ltd., Takasago-City, Kobe, Japan; H. Nako, Kobe Steel, Ltd., Kobe-City, Hyogo, Japan
PVP2017-65569: ULTRASONIC TESTING AND PHOTOGRAPHIC IMAGING SYSTEM FOR TUBE TO TUBE SHEET WELD OF HEAT EXCHANGER
M. Abe, Hitachi Zosen Corporation, Kumamoto, Japan; J. Murakami, Nichizo Tech Inc., Osaka, Japan; N. Shinmura, Nichizo Tech Inc., Kumamoto, Japan

SESSION 1.3I (DA-10-2)

Monday, July 17, 2:00 pm – 3:45 pm, Queen's 6
HEAT EXCHANGER JOINT INTEGRITY

Developed by: W. Brown, Integrity Engineering Solutions, Dunsborough, WA, Australia; G. Van Zyl, SABIC, Jubail, Saudi Arabia
Chair: W. Brown, Integrity Engineering Solutions, Dunsborough, WA, Australia
Co-Chair: G. Van Zyl, SABIC, Jubail, Saudi Arabia

PVP2017-65550: QUANTIFYING BOLT RELAXATION DURING HIGH TEMPERATURE OPERATION
W. Brown, T.-Y. Lim, Integrity Engineering Solutions, Dunsborough, WA, Australia
PVP2017-65610: EFFECTS OF PARTIAL COOLING ON TIGHTNESS OF HEAT EXCHANGER GIRTH FLANGE
K. Takahashi, T. Miyashita, S. Kataoka, Y. Uno, T. Sato, JGC Corporation, Yokohama, Japan
PVP2017-65826: DETERMINATION OF TEMPERATURE LIMITS FOR HEAT EXCHANGER JOINT ASSEMBLED OF SOLID STAINLESS TUBESHEET WITH GIRTH FLANGES
B. Y. Mohamed, M. A Hamdy, T.I. Eid, Enppi, Cairo, Egypt
PVP2017-65528: TIGHTENING BOLTS NEAR TO YIELD: FURTHER ANALYSIS OF THE EFFECTS ON MECHANICAL PROPERTIES (Presentation Only)
R. Noble, Asset55 Ltd., Hebburn, Tyne and Wear, United Kingdom

SESSION 1.3J (MF-34-1)

Monday, July 17, 2:00 pm – 3:45 pm, Kona 1
SNF CANISTER OVERVIEW & NONDESTRUCTIVE INSPECTION
Symposium on Aging Management and Structural Integrity for Spent Nuclear Fuel Dry Cask Storage and Transportation Systems—Co-Sponsored by Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: C. Lissenden, Penn State University, University Park, PA, USA; R. Sindelar, Savannah River National Laboratory, Aiken, SC, USA
Chair: R. Jones, Savannah River National Laboratory, Aiken, SC, USA
Co-Chair: P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA

PVP2017-66247: CONTAINER FOR COMMERCIAL SPENT NUCLEAR FUEL
R. Jones, J. Carter, Savannah River National Laboratory, Aiken, SC, USA
PVP2017-65920: ROBOTIC INSPECTION SYSTEM FOR SPENT NUCLEAR FUEL STORAGE CANIST (Presentation Only)
C. Lissenden, S. Choi, H. Cho, Penn State University, University Park, PA, USA; I. Jovanovic, University of Michigan, Ann Arbor, MI, USA; A. Motta, Penn State University, University Park, PA, USA
PVP2017-65926: ELECTROMAGNETIC ACOUSTIC TRANSDUCER (EMAT) DEVELOPMENT FOR NONDESTRUCTIVE INSPECTION OF SPENT NUCLEAR FUEL STORAGE CANISTERS
H. Cho, S. Choi, Penn State University, University Park, PA, USA; M. Lindsey, Structural Integrity Associates, State College, PA, USA; C. Lissenden, Penn State University, University Park, PA, USA

SESSION 1.3K (MF-3-1)

Monday, July 17, 2:00 pm – 3:45 pm, Kona 2
HYDROGEN INFRASTRUCTURE

Developed by: C. San Marchi, Sandia National Laboratories, Livermore, CA, USA
Chair: C. San Marchi, Sandia National Laboratories, Livermore, CA, USA
Co-Chair: M. Schwarz, University of Stuttgart, Stuttgart, Germany

PVP2017-66203: OVERVIEW OF U.S. DOE'S FUEL CELL TECHNOLOGIES OFFICE AND REMAINING R&D CHALLENGES (Presentation Only)
W. James, U.S. Department of Energy, Washington, DC, USA
PVP2017-65435: A CASE STUDY ON COOLING PIPE OF PRE-COOLER USED FOR 70 MPA HYDROGEN STATION
S. Okazaki, S. Hamada, Kyushu University, Fukuoka, Japan; H. Itoga, Hydrogen Energy Test and Research Center, Itoshima, Fukuoka, Japan; M. Nakamura, H. Matsunaga, Kyushu University, Fukuoka, Fukuoka, Japan
PVP2017-65155: INTRODUCTION OF THE SCENARIO HOW TO USE WELDING JOINTS SAFELY IN HIGH PRESSURIZED HYDROGEN GAS
H. Fukumoto, H. Kobayashi, S. Oshima, K. Kawamata, Japan Petroleum Energy Center, Minato-Ku Tokyo, Japan
PVP2017-65671: RECENT PROGRESS ON INTERPRETATION OF TENSILE DUCTILITY LOSS FOR VARIOUS AUSTENITIC STAINLESS STEELS WITH EXTERNAL AND INTERNAL HYDROGEN
O. Takakuwa, J. Yamabe, H. Matsunaga, Kyushu University, Fukuoka, Japan; Y. Furuya, National Institute for Materials Science, Tsukuba-shi, Japan; S. Matsuoka, Kyushu University, Fukuoka, Fukuoka, Japan

SESSION 1.3L (SE-2-1)

Monday, July 17, 2:00 pm – 3:45 pm, Kona 3
SEISMIC ISOLATION—I

Developed by: S. Fujita, Tokyo Denki University, Tokyo, Japan; O. Furuya, Tokyo Denki University, Saitama, Japan
Chair: S. Fujita, Tokyo Denki University, Tokyo, Japan
Co-Chair: O. Furuya, Tokyo Denki University, Saitama, Japan

PVP2017-65549: RESEARCH AND DEVELOPMENT OF THREE DIMENSIONAL SEISMIC ISOLATION SYSTEM UTILIZED CONED-DISC-SPRINGS WITH RUBBER BEARINGS
T. Miyagawa, Japan Atomic Power Company, Tokyo, Japan; T. Watakabe, T. Yamamoto Japan Atomic Energy Agency, Ibaraki, Japan; T. Fukasawa, S. Okamura, Mitsubishi FBR Systems, Shibuya-Ku, Tokyo, Japan
PVP2017-65557: DEVELOPMENT ON RUBBER BEARINGS FOR SODIUM-COOLED FAST REACTOR (PART 6): PROPOSAL OF NEW TYPE OF HYSTERESIS MODEL FOR ULTIMATE BEHAVIOR
T. Fukasawa, S. Okamura, Mitsubishi FBR Systems, Shibuya-Ku, Tokyo, Japan; T. Yamamoto, T. Watakabe, Japan Atomic Energy Agency, Oarai, Higashi-Ibaraki, Ibaraki, Japan
PVP2017-65655: DEVELOPMENT ON RUBBER BEARINGS FOR SODIUM-COOLED FAST REACTOR (PART 5) NON-LINEAR ANALYTICAL MODELS FOR THICK RUBBER BEARING
T. Hirotani, Shimizu Corporation, Tokyo, Japan; T. Mori, Bridgestone Corporation, Yokohama, Kanagawa, Japan; T. Fukasawa, S. Okamura, Mitsubishi FBR Systems, Shibuya-Ku, Tokyo, Japan; T. Yamamoto, Japan Atomic Energy Agency, Oarai, Higashi-Ibaraki, Ibaraki, Japan
PVP2017-65593: EXPERIMENT VERIFICATION OF SEISMIC ISOLATION DEVICE HAVING CHARGING FUNCTION
T. Yamaguchi, N. Miura, H. Nakakoji, A. Sone, Kyoto Institute of Technology, Kyoto, Japan

SESSION 1.3M (HT-6-2)

Monday, July 17, 2:00 pm – 3:45 pm, Waikoloa Suite 1
DESIGN AND ANALYSIS OF HIGH-PRESSURE EQUIPMENT FOR OIL & GAS EXPLORATION AND PRODUCTION

Developed by: K. Karpanan, FMC Technologies Inc., Houston, TX, USA
Chair: K. Karpanan, FMC Technologies Inc., Houston, TX, USA
Co-Chair: M. Shavandi, DNV GL, Katy, TX, USA

PVP2017-65594: A STUDY ON THE INFLUENCE OF SEA WATER CONVECTIVE HEAT TRANSFER COEFFICIENT IN DESIGN VERIFICATION OF SUBSEA HPHT EQUIPMENT
A. Sepehri, S. Harbert, D. Holberry, OneSubsea, Houston, TX, USA
PVP2017-65772: DEVELOPMENT OF A NOVEL TEST METHOD TO CHARACTERIZE MATERIAL PROPERTIES IN CORROSIVE ENVIRONMENTS FOR SUBSEA HPHT DESIGN

R. Thodla, DNV GL, Dublin, OH, USA; C. Holtam, R. Saraswat, DNV GL, Katy, TX, USA

PVP2017-66243: LOAD MONITORING AND CONDITION ASSESSMENT OF HIGH PRESSURE—HIGH TEMPERATURE (HPHT) SUBSEA FACILITIES
M. Shavandi, F. Tang, DNV GL, Katy, TX, USA

SESSION 1.3N (SPC-2-4)

Monday, July 17, 2:00 pm – 3:45 pm, Waikoloa Suite 2
STUDENT PAPER SYMPOSIUM—PHD—II

Developed by: F. Paolacci, University Roma Tre, Rome, Italy
Chair: F. Paolacci, University Roma Tre, Rome, Italy
Co-Chair: T. Hassan, North Carolina State University, Raleigh, NC, USA

PVP2017-65072: OPTIMIZING MAINTENANCE STRATEGY OF A REACTOR PRESSURE VESSEL USING 3D-CFD AND FEM BASED PROBABILISTIC PRESSURIZED THERMAL SHOCK ANALYSIS
X. Ruan, T. Nakasuji, K. Morishita, Kyoto University, Uji, Japan

PVP2017-65635: FAILURE MODE MAP OF PIPES UNDER DYNAMIC LOADINGS
M. A. Al Bari, R. Sakemi, N. Kasahara, University of Tokyo, Tokyo, Japan

PVP2017-65270: PRACTICAL DESIGN OF A HIGH FREQUENCY PHASED-ARRAY ACOUSTIC MICROSCOPE PROBE—A PRELIMINARY STUDY
J. N. Kim, R. L. Tutwiler, J. A. Todd, Pennsylvania State University, University Park, PA, USA

PVP2017-65432: THE FATIGUE THRESHOLD COMPUTATION OF STEEL IN HYDROGEN ENVIRONMENT BY SHAKEDOWN ANALYSIS
S. Huang, Z. Chen, W. Su, Zhejiang University, Hangzhou, Zhejiang, China

SESSION 1.3O (SPC-1-2)

Monday, July 17, 2:00 pm – 3:45 pm, Waikoloa Suite 3
STUDENT PAPER COMPETITION—BS/MS—II

Developed by: R. Noble, Asset55 Ltd., Hebburn, Tyne and Wear, United Kingdom
Chair: R. Noble, Asset55 Ltd., Hebburn, Tyne and Wear, United Kingdom
Co-Chair: Y. Shoji, YS Corporation LLC, Tokyo, Japan

PVP2017-65561: STUDY ON ULTIMATE BEHAVIOR OF BASE-ISOLATED LAYER IN NUCLEAR FACILITY FOR CLIFF-EDGES EFFECT
K. Imamura, Tokyo City University, Hiratuka City, Tokyo, Japan; O. Furuya, Tokyo Denki University, Saitama, Japan; K. Goda, Ohtsu Chemical Co., Ltd., Osaka, Japan

PVP2017-65175: MULTIAXIAL FATIGUE IN DRILL PIPES UNDER NON-PROPORTIONAL LOADING
N. Helmy, M. Younan, American University in Cairo, Cairo, Egypt

PVP2017-65473: EMBEDDED ELECTRODE SENSOR ARRAY FOR STRUCTURAL HEALTH MONITORING OF PIPELINE SYSTEMS
J. Weber, Georgia Institute of Technology, Atlanta, GA, USA; J. Shi, Zhejiang University, Hangzhou, Zhejiang, China; C. Zhang, Georgia Institute of Technology, Atlanta, GA, USA

PVP2017-65322: VISUALIZATION OF THERMAL FATIGUE DAMAGE DISTRIBUTION WITH SIMPLIFIED STRESS RANGE CALCULATIONS
J. Miura, T. Fujioka, Y. Shindo, Toyo University, Saitama, Japan

PVP2017-65109: DESIGN OF A DESKTOP TYPE VIBRATION ISOLAOR SUPPORTED BY FOUR AIR SPRINGS HAVING RESERVOIR TANKS
Y. Baba, K. Onishi, T. Asami, University of Hyogo, Himeji, Hyogo, Japan

SESSION 1.3Q (TW-1-1)

Monday, July 17, 2:00 pm – 3:45 pm, Kohala 4
THE USE OF COMPUTATIONAL FLUID DYNAMICS IN DESIGN (PART 1)

Developed by: D. L. Stang, Omax Corporation, Kent, WA, USA
Chair: D. L. Stang, Omax Corporation, Kent, WA, USA
Presented by: S. McGuffie, M. Porter, Porter McGuffie, Inc., Lawrence, KS, USA

SESSION 1.3S (TW-4-3)

Monday, July 17, 2:00 pm – 3:45 pm, Grand Promenade
TECHNOLOGY DEMONSTRATION FORUM—III

Developed by: C. Jaske, HSI Group, Inc., Torrance, CA, USA; J. F. Cory, Jr., Siemens PLMS Software, Milford, OH, USA

Block 1.4: Monday, July 17, 2017 (4:00 pm – 5:45 pm)

SESSION 1.4A (DA-16-3)

Monday, July 17, 4:00 pm – 5:45 pm, Kohala 1
ANALYSIS AND REPAIRS OF COKE DRUM SKIRTS
2nd International Symposium on Coke Drum Life Cycle Management—Sponsored by Design & Analysis Technical Committee

Developed by: C. Rodery, BP p.l.c, League City, TX, USA; K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA; A.-H. I. Mourad, United Arab Emirates University, Al Ain, United Arab Emir.; J. Penso, Shell Projects and Technology, Houston, TX, USA
Chair: K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Co-Chair: A.-H. I. Mourad, United Arab Emirates University, Al Ain, United Arab Emir.

PVP2017-65807: A COMPARATIVE STUDY OF THE THERMAL-MECHANICAL BEHAVIOR AND FATIGUE LIFE PREDICTIONS OF DIFFERENT COKE DRUM SUPPORT SKIRT DESIGNS
P. E. Prueter, M. Bifano, S. R. Kummari, The Equity Engineering Group, Inc., Shaker Heights, OH, USA; B. Hantz IV, Valero Energy Corp., San Antonio, TX, USA

PVP2017-65077: INTRODUCTION TO ACTUAL FIELD REPAIR FOR SKIRT ATTACHMENT PORTION IN COKE DRUM
T. Murakami, Y. Shishido, Sumitomo Heavy Industries Process Equipment Co., Ltd., Saijo, Ehime, Japan; M. Yoshimoto, Sumitomo Heavy Industries Process Equipment Co. Ltd., Saijo, Ehime, Japan

PVP2017-65161: WELD REPAIR OF C, CR-MO COKEDRUMS (& PRESSURE VESSELS) WITHOUT PWHT
A. Kaye, Canadian Natural Resources Ltd., Fort McMurray, AB, Canada; P. Lester, D. Barborak, AZZ WSI, Norcross, GA, USA

PVP2017-65264: FATIGUE LIFE/RELIABILITY CONSIDERATION DURING FIELD REPAIR OF COKE DRUM/PIPING
T. S. Chadda, Amec Foster Wheeler, Houston, TX, USA; A. Umakanthan, Reliance Industries Limited, Navi Mumbai, India

SESSION 1.4B (FSI-2-3)

Monday, July 17, 4:00 pm – 5:45 pm, Kohala 2
FIV DESIGN FOR INDUSTRY—III
Symposium of Flow-Induced Vibration—Sponsored by Fluid-Structure Interaction Technical Committee

Developed by: D. S. Weaver, McMaster University, Hamilton, ON, Canada; M. Pettigrew, Ecole Polytechnique–Montreal, Deep River, ON, Canada
Co-Chair: N. Mureithi, Polytechnique Montreal, Montreal, QC, Canada
Chair: R. D. Blevins, Independent Consultant, San Diego, CA, USA

PVP2017-66158: EXPERIMENTAL DAMPING OF A HEAT EXCHANGE TUBE WITH A LARGE NUMBER OF SUPPORTS IN AIR AND WATER
T. J. Park, C.-H. Ha, M. K. Cho, Doosan Heavy Industries and Construction Company, Changwon, Korea (Republic); H. S. Kang, K. Lee, Korea Atomic Energy Research Institute, Deajeon, Korea (Republic)

PVP2017-65207: RESEARCH ON TWO-PHASE FLOW INDUCED VIBRATION CHARACTERISTICS OF U-TUBE BUNDLE
N. Jiang, L. Gao, X. Huang, F. Zang, F.-R. Xiong, Nuclear Power Institute of China, Chengdu, China

PVP2017-65812: FLOW INDUCED VIBRATION INDUCED FATIGUE OF STRUCTURES PLACED IN A TWO-PHASE GAS/LIQUID FLOW
P. Diwakar, C. Thomas, Bechtel Corp, Houston, TX, USA; A. Prakash, Bechtel Nuclear Security & Environmental, San Ramon, CA, USA

PVP2017-65268: TWO WAY COUPLED FIELDS MULTI-PHYSICS MODELING IS INVESTIGATED AS AN ADDITIONAL APPROACH TO ADDRESS FLUID ELASTIC INSTABILITY (Presentation Only)
M. Breach, US Nuclear Regulatory Commission, Rockville, MD, USA; G. Banyay,

Westinghouse, Ellwood City, PA, USA; Y. Wong, US Nuclear Regulatory Commission, Rockville, MD, USA

SESSION 1.4C (CS-7-3)

Monday, July 17, 4:00 pm – 5:45 pm, Kohala 3

ASME SECTION III—RECENT DEVELOPMENTS, ELEVATED TEMPERATURE
Symposium on Recent Developments in International Codes and Standards—Sponsored by Codes & Standards Technical Committee

Developed by: T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA
Chair: T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA
Co-Chair: H. Wang, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-65754: CURRENT STATUS OF THE ASME MATERIALS PROPERTIES DATABASE DEVELOPMENT
W. Ren, L. Lin, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-66069: TECHNICAL BACKGROUND FOR ALLOY 617 TIME DEPENDENT ALLOWABLE STRESSES
J. Wright, N. Lybeck, Idaho National Laboratory, Idaho Falls, ID, USA; R. Swindeman, Cromtech Inc., Oak Ridge, TN, USA; R. Jetter, RI Jetter Consulting, Pebble Beach, CA, USA; T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA

PVP2017-65274: DEVELOPMENT OF SOFTWARE FOR THE IMPLEMENTATION OF ELASTIC AND SIMPLIFIED INELASTIC RULES FOR DESIGN OF CLASS A NUCLEAR COMPONENTS IN ELEVATED TEMPERATURE SERVICE
M. Swindeman, Stress Engineering Services Inc., Mason, OH, USA; T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA; R. Jetter, RI Jetter Consulting, Pebble Beach, CA, USA

PVP2017-66070: TECHNICAL BACKGROUND FOR ALLOY 617 ISOCHRONOUS STRESS STRAIN CURVES (Presentation Only)
N. Lybeck, Idaho National Laboratory, Idaho Falls, ID, USA; T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA; J. Wright, Idaho National Laboratory, Idaho Falls, ID, USA; R. Swindeman, Cromtech Inc., Oak Ridge, TN, USA; R. Jetter, RI Jetter Consulting, Pebble Beach, CA, USA

SESSION 1.4D (FSI-6-1)

Monday, July 17, 4:00 pm – 5:45 pm, King's 1

IMPACT AND BLAST LOADINGS

Developed by: D. Gross, Dominion Engineering, Reston, VA, USA; M. Edel, Baker Engineering and Risk Consultants, San Antonio, TX, USA; H. Levine, Thornton Tomasetti, Cupertino, CA, USA; K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Chair: D. Gross, Dominion Engineering, Reston, VA, USA
Co-Chair: M. Edel, Baker Engineering and Risk Consultants, San Antonio, TX, USA

PVP2017-65517: MODELING OF HYPERVELOCITY IMPACT EXPERIMENTS USING GAMMA-SPH TECHNIQUE
J. Limido, Impetus, Grenade, France; B. O'Toole, University of Nevada Las Vegas, Las Vegas, NV, USA; M. Trabia, S. Roy, R. Jennings, University of Nevada, Las Vegas, Las Vegas, NV, USA

PVP2017-66110: NUMERICAL SIMULATION OF TORNADO MISSILE IMPACT ON STEEL STACKS
G. Antaki, Becht Engineering Co., Inc., Aiken, SC, USA; R. Gilada, Luminant, Cleburne, TX, USA; D. Pease, Becht Engineering, Chino Valley, AZ, USA

PVP2017-65186: EVALUATION OF BLAST LOADS FROM PIPE RUPTURES
J. Geng, J. K. Thomas, Baker Engineering and Risk Consultants, Inc., San Antonio, TX, USA

PVP2017-65205: BLAST RESILIENT DESIGN OF INFRASTRUCTURE SUBJECTED TO GROUND THREATS
S. Salem, M. Campidelli, W. El-Dakhakhni, M. Tait, McMaster University, Hamilton, ON, Canada

SESSION 1.4E (CS-1-3)

Monday, July 17, 4:00 pm – 5:45 pm, King's 2

STRUCTURAL INTEGRITY OF PRESSURE COMPONENTS—III
Symposium on Structural Integrity—Co-Sponsored by Codes & Standards and Materials & Fabrication Technical Committees

Developed by: S. Xu, Kinectrics Inc., Toronto, ON, Canada; M. Benson, U.S. Nuclear Regulatory Commission, Rockville, MD, USA
Chair: K. Nikbin, Imperial College London, London, United Kingdom
Co-Chair: S. Xu, Kinectrics Inc., Toronto, ON, Canada

PVP2017-66272: THERMAL ANALYSIS OF GIRTH WELDED JOINTS OF DISSIMILAR METALS IN PIPES WITH VARYING CLAD THICKNESSES
B. Kogo, B. Wang, L. Wrobel, M. Chizari, Brunel University London, London, Middlesex, United Kingdom

PVP2017-65108: STEAM GENERATOR GRADE P91 STEEL COMPONENTS CREEP-ASSESSMENT THROUGH A PROCEDURE FOR THE ITALIAN CODE APPLICATION AND COMPARISON WITH THE ECCC RECOMMENDATIONS, AMERICAN STANDARD
O. Grisolia, INAIL, Rome, Italy, L. Scano, Studio Scano Associato, Udine, UD, Italy

PVP2017-65521: A COMPARATIVE STUDY OF CONCENTRICALLY AND ECCENTRICALLY PIERCED FLAT UNSTAYED HEADS
D. Chandiramani, Independent Consultant, Mumbai, India; S. Gopalakrishnan, A. Mathkar, Lloyd's Register Asia, Thane, Maharashtra, India; S. Nawandar, Fluor Daniel India Pvt Ltd., Gurgaon, Haryana, India

SESSION 1.4F (MF-19-3)

Monday, July 17, 4:00 pm – 5:45 pm, King's 3

CREEP AND CREEP-FATIGUE INTERACTION—III
Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: C. M. Davies, Imperial College London, London, United Kingdom; R. Dennis, Frazer-Nash Consultancy, Avon, United Kingdom
Chair: C. M. Davies, Imperial College London, London, United Kingdom
Co-Chair: R. Dennis, Frazer-Nash Consultancy, Avon, United Kingdom

PVP2017-65495: EXPERIMENTAL AND NUMERICAL INVESTIGATION ON CREEP CRACK GROWTH BEHAVIOR OF BRAZED JOINT
Y. Luo, W. Jiang, China University of Petroleum (East China), Qingdao, China

PVP2017-65908: COMPARATIVE CREEP LIFE EVALUATION OF HR3C USING CREEP DAMAGE MODELS
S.-J. Kang, H. Lee, M. Kim, J. B. Choi, Sungkyunkwan University, Kyungi-do, Korea (Republic)

PVP2017-65849: UNIFIED VISCOPLASTIC MODEL COUPLED WITH DAMAGE FOR EVALUATION OF CREEP-FATIGUE OF GRADE 91 STEEL
N. Islam, North Carolina State University, Raleigh, NC, USA; D. Dewees, Babcock & Wilcox, Barberton, OH, USA; T. Hassan, North Carolina State University, Raleigh, NC, USA

PVP2017-65389: MEAN STRESS RELAXATION PROCESS OF 9-12% CR STEEL AT HIGH TEMPERATURE: INTERNAL STRESSES AND DISLOCATION PATTERNS
P. Zhao, F.-Z. Xuan, D.-L. Wu, East China University of Science and Technology, Shanghai, China

SESSION 1.4G (MF-2-3)

Monday, July 17, 4:00 pm – 5:45 pm, Queen's 4

APPLICATION OF FRACTURE MECHANICS IN FAILURE ASSESSMENT—III
Symposium on Fracture Mechanics and Analysis—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: G. H. B. Donato, Centro Universitário da FEI, Sao Paulo, Brazil; A. Jesus, University of Porto, Porto, Portugal
Chair: P. Doddihal, Kinectrics Inc., Toronto, ON, Canada
Co-Chair: L. Xue, Thinkviewer LLC, Sugar Land, TX, USA

PVP2017-65024: WIDE RANGE COMPLIANCE SOLUTIONS FOR VARIOUS FRACTURE TEST SPECIMENS USING CRACK MOUTH OPENING DISPLACEMENT
C. Ruggieri, R. Souza, University of Sao Paulo, Sao Paulo, SP, Brazil

PVP2017-65406: IMPROVED ELASTIC COMPLIANCE EQUATION AND ITS INVERSE SOLUTION FOR COMPACT TENSION SPECIMENS
X.-K. Zhu, Edison Welding Institute, Columbus, OH, USA

PVP2017-65860: NEW METHOD FOR MESH SIZE SENSITIVITY MITIGATION IN NUMERICAL SIMULATION OF DUCTILE FRACTURE (Presentation Only)
L. Xue, Thinkviewer LLC, Sugar Land, TX, USA

PVP2017-66096: PREDICTION OF DUCTILE MATERIAL FAILURE BY USING INNOVATIVE DAMAGE MECHANICS CONCEPTS

S. Schaffrath, M. Feldmann, V. Brinnel, D. Novokshanov, S. Münstermann, RWTH Aachen University, Aachen, NRW, Germany

SESSION 1.4H (OAC-6-2)

Monday, July 17, 4:00 pm – 5:45 pm, Queen's 5

LIFE CYCLE MANAGEMENT OF REFINERY PRESSURE VESSELS—FITNESS FOR SERVICE

Symposium on Life Cycle Management—Co-Sponsored by High-Pressure Technology and Operations, Applications & Components Technical Committees

Developed by: T. Tahara, T&T Technology, Saitama Pref, Japan; H. Takauchi, Kobe Steel, Ltd., Fujisawa, Kanagawa, Japan
Chair: T. Tahara, T&T Technology, Saitama Pref, Japan
Co-Chair: H. Takauchi, Kobe Steel, Ltd., Fujisawa, Kanagawa, Japan

PVP2017-65160: EFFECTS OF NUT THINNING DUE TO CORROSION ON THE SEALING PERFORMANCE IN BOLTED FLANGE JOINTS UNDER INTERNAL PRESSURE (Presentation Only)

T. Kikuchi, Idemitsu Kosan Co., Ltd., Chiba, Japan; H. Tsuji, D. Tsurumi, Tokyo Denki University, Tokyo, Japan

PVP2017-65194: REMAINING LIFE ASSESSMENT OF AN EXTERNAL PRESSURE VESSEL IN CREEP RANGE AND INSPECTION FINDINGS

Y. Ishizaki, F. Yonekawa, T. Yumoto, T. Suzuki, S. Hijikawa, Idemitsu Kosan Co., Ltd., Chiba, Japan

PVP2017-65346: SERVICEABILITY ASSESSMENT FOR SAFE OPERATION OF HYDROPROCESSING REACTORS BY FFS (LEVEL 3 ASSESSMENT OF CRACK-LIKE FLAWS) (Presentation Only)

A. Yasutomi, The Japan Steel Works, Ltd., Hokkaido, Japan

PVP2017-65805: A FRACTURE MECHANICS-BASED APPROACH TO ESTABLISH MINIMUM PRESSURIZATION TEMPERATURE ENVELOPES

P. E. Prueter, S. R. Kummari, D. Osage, The Equity Engineering Group, Inc., Shaker Heights, OH, USA

SESSION 1.4I (DA-10-3)

Monday, July 17, 4:00 pm – 5:45 pm, Queen's 6

JOINT ASSEMBLY CONSIDERATIONS

Developed by: W. Brown, Integrity Engineering Solutions, Dunsborough, WA, Australia; R. Noble, Asset55 Ltd., Hebburn, Tyne and Wear, United Kingdom
Chair: R. Noble, Asset55 Ltd., Hebburn, Tyne and Wear, United Kingdom
Co-Chair: G. Van Zyl, SABIC, Jubail, Saudi Arabia

PVP2017-65993: A HISTORY OF THE TARGET TORQUE VALUES FROM ASME PCC-1 AND FUTURE DIRECTION

C. Rodery, BP p.l.c, League City, TX, USA

PVP2017-65506: FACTORS INFLUENCING NUT FACTOR TEST RESULTS

S. Long, W. Brown, Integrity Engineering Solutions, Dunsborough, WA, Australia

PVP2017-65800: DETERMINING ACCURACY AND REPEATABILITY OF TORQUE THROUGH POWERED EQUIPMENT

S. Hamilton, Hex Technology, Austin, TX, USA; B. Hantz IV, Valero Energy Corp., San Antonio, TX, USA; J. Wright, CHS, McPherson, KS, USA

PVP2017-65087: STUDY OF REACTOR INTERNAL BOLT BEHAVIORS UNDER LATERAL LOADS

Y.J. Gao, S. Feng, Q. Yu, Shanghai Nuclear Engineering Research & Design Institute, Shanghai, China; B. Chen, Zhejiang University of Technology, Hangzhou, China; S. Lin, Shanghai Nuclear Engineering Research & Design Institute, Shanghai, China

SESSION 1.4J (MF-34-2)

Monday, July 17, 4:00 pm – 5:45 pm, Kona 1

SNF CANISTER STRUCTURAL INTEGRITY ASSESSMENTS

Symposium on Aging Management and Structural Integrity for Spent Nuclear Fuel Dry Cask Storage and Transportation Systems—Co-Sponsored by Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA; Y.-J. Kim, Korea University, Seoul, Korea (Republic); A. Jesus, University of Porto, Faculty of Engineering, Porto, Portugal
Chair: A. Duncan, Savannah River National Laboratory, Aiken, SC, USA
Co-Chair: R. Jones, Savannah River National Laboratory, Aiken, SC, USA

PVP2017-66055: BOUNDING SURFACE FLAW CONFIGURATION SUSCEPTIBLE TO STRESS CORROSION CRACKING UNDER WELDING RESIDUAL STRESS IN A MULTIPLE-PURPOSE CANISTER

P.-S. Lam, R. Sindelar, A. Duncan, J. Carter, Savannah River National Laboratory, Aiken, SC, USA

PVP2017-66105: CRACK GROWTH RATE TESTING WITH INSTRUMENTED BOLT-LOAD COMPACT TENSION SPECIMENS UNDER CHLORIDE-INDUCED STRESS CORROSION CRACKING CONDITIONS IN SPENT NUCLEAR FUEL CANISTERS

A. Duncan, P.-S. Lam, R. Sindelar, J. Carter, Savannah River National Laboratory, Aiken, SC, USA

PVP2017-65968: RETARDATION EFFECT OF CYCLIC OVERLOAD ON STRESS CORROSION CRACK GROWTH IN STAINLESS STEEL

T. Saito, T. Hayashi, M. Itow, C. Narazaki, Toshiba Corporation, Yokohama, Kanagawa, Japan

PVP2017-66152: SPENT FUEL CANISTER PROBABILISTIC CONFINEMENT INTEGRITY ASSESSMENT

J. Broussard, Dominion Engineering, Inc., Reston, VA, USA; S. Chu, Electric Power Research Institute, San Francisco, CA, USA; K. Fuhr, Dominion Engineering, Inc., Reston, VA, USA

SESSION 1.4K (MF-3-2)

Monday, July 17, 4:00 pm – 5:45 pm, Kona 2

DEVELOPMENT OF METHODS FOR EVALUATING MATERIALS FOR HYDROGEN SERVICE

Developed by: C. San Marchi, Sandia National Laboratories, Livermore, CA, USA
Chair: K. Nibur, Hy-Performance Materials Testing, LLC., Bend, OR, USA
Co-Chair: U. B. Baek, Korea Research Institute of Standards and Science, Daejeon, Korea (Republic)

PVP2017-65505: EVALUATION OF THE INTERNAL HYDROGEN-INDUCED THRESHOLD STRESS INTENSITY FACTOR IN 2.25CR-1MO STEELS DETERMINED BY THE OFFSET POTENTIAL DROP METHOD

S. Konosu, Ibaraki University, Hitachi, Ibaraki, Japan; T. Inoue, Nippon Steel & Sumitomo Metal Corporation, Futtsu, Chiba, Japan; Y. Murakami, JFE Steel Corporation, Kawasaki, Japan

PVP2017-66121: SCANNING KELVIN PROBE FORCE MICROSCOPY STUDY OF HYDROGEN DISTRIBUTION AND EVOLUTION IN DUPLEX STAINLESS STEEL

B. An, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan; Z. Hua, Zhejiang University, Hangzhou, Zhejiang, China; T. Iijima, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan; C. Gu, J. Zheng, Zhejiang University, Hangzhou, Zhejiang, China

PVP2017-66185: HYDROGEN EFFECT ON THE DEFORMATION BEHAVIOR OF AUSTENITIC STAINLESS STEELS INVESTIGATED BY NANOINDENTATION

L. Zhang, Y. Hong, J. Zheng, Zhejiang University of Technology, Hangzhou, China; B. An, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan; C. Zhou, Zhejiang University of Technology, Hangzhou, Zhejiang, China

PVP2017-66136: APPLICATION OF SMALL PUNCH TEST METHOD TO SCREENING GAS HYDROGEN EMBRITTLEMENT BEHAVIORS IN STRUCTURAL STEELS (Presentation Only)

H.-S. Shin, K.-O Bae, Andong National University, Andong, Gyeongbuk, Korea (Republic); H. M. Lee, J.-S. Park, S. H. Nahm, Korea Research Institute of Standards and Science, Daejeon, Korea (Republic)

SESSION 1.4L (SE-2-3)

Monday, July 17, 4:00 pm – 5:45 pm, Kona 3

SEISMIC ISOLATION—II

Developed by: O. Furuya, Tokyo Denki University, Saitama, Japan; T. Matsuoka, Meiji University, Kawasaki, Kanagawa, Japan
Chair: O. Furuya, Tokyo Denki University, Saitama, Japan

Co-Chair: T. Matsuoka, Meiji University, School of Science and Technology, Kawasaki, Japan

PVP2017-65156: FUZZY SEMI-ACTIVE CONTROL OF MULTI-DEGREE-OF-FREEDOM STRUCTURE USING MAGNETORHEOLOGICAL ELASTOMERS
X. B. Nguyen, T. Komatsuzaki, Y. Iwata, H. Asanuma, Kanazawa University, Kanazawa, Ishikawa, Japan

PVP2017-65922: VARIABLE INERTIA DAMPER USING MR FLUID—PART II: IMPROVEMENT OF INERTIA EFFECT
T. Matsuoka, N. Abe, Meiji University, Kawasaki, Kanagawa, Japan; K. Hiramoto, Niigata University, Niigata, Japan; K. Sunakoda, Akita University, Saitama, Japan

PVP2017-66262: RECENT EXPERIMENTAL STUDIES TO ASSESS THE ULTIMATE FAILURE CRITERIA & FAILURE PROBABILITIES OF PIPES IN SEISMICALLY ISOLATED NPPS IN KOREA (Presentation Only)
D. Hahm, M. K. Kim, Korea Atomic Energy Research Institute, Daejeon, Korea (Republic)

PVP2017-65713: IMPROVEMENT OF SEISMIC RESISTANCE PERFORMANCE OF THERMAL POWER PLANTS BY APPLYING VIBRATION CONTROL DAMPERS
K. Fushimi, S. Fujita, Tokyo Denki University, Tokyo, Japan; K. Minagawa, Saitama Institute of Technology, Saitama, Japan

SESSION 1.4M (HT-5-3)

Monday, July 17, 4:00 pm – 5:45 pm, Waikoloa Suite 1

20TH ANNIVERSARY OF BPVC SECTION VIII DIVISION 3—HOW WE GOT HERE AND WHERE WE ARE GOING

Symposium on 20th Anniversary of ASME BPVC Section VIII Div. 3—Sponsored by High Pressure Technology Technical Committee

Developed by: A. Maslowski, ASME, New York, NY, USA
Chair: A. Maslowski, ASME, New York, NY, USA
Co-Chair: K. Karpanan, FMC Technologies Inc., Houston, TX, USA

PVP2017-66082: DEVELOPMENT OF JAPANESE HIGH PRESSURE VESSEL STANDARD HPIS C106 WITH ASME SECTION VIII DIVISION 3
S. Terada, Kobe Steel, Ltd., Takasago, Hyogo, Japan

PVP2017-65119: OVERVIEW OF REVISIONS TO THE ASME BOILER AND PRESSURE VESSEL CODE SECTION VIII DIVISION 3 FOR THE 2017 EDITION AND THE NEAR FUTURE
D. Peters, Structural Integrity Associates, Edinboro, PA, USA; A. Maslowski, ASME, New York, NY, USA; G. Mital, Flow International Corp, Kent, WA, USA

PVP2017-66021: ADOPTION OF THE COMPOSITE REINFORCED PRESSURE VESSELS (CRPV) INTO THE ASME BPV CODE
R. Biel, Lord & Biel, LLC, Cypress, TX, USA; G. Cano, Transcanada Pipelines, Calgary, AB, Canada

SESSION 1.4N (FSI-1-1)

Monday, July 17, 4:00 pm – 5:45 pm, Waikoloa Suite 2

LEAKS AND CRACKS

Developed by: J. C. Jo, Pusan National University, Busan, Korea (Republic); A. Tijsseling, TU Eindhoven, Eindhoven, Netherlands; C. S. Martin, Georgia Institute of Technology, South Dennis, MA, USA
Chair: J. C. Jo, Pusan National University, Busan, Korea (Republic)
Co-Chair: A. Tijsseling, TU Eindhoven, Eindhoven, Netherlands

PVP2017-65360: INVESTIGATION OF LEAKAGE RATES IN PRESSURE RETAINING PIPING
F. E. Silber, X. Schuler, S. Weihe, University of Stuttgart, Stuttgart, Baden-Württemberg, Germany; S. Schmid, Institute of Nuclear Technology and Energy Systems, Stuttgart, Germany; R. Kulenovic, University of Stuttgart, Stuttgart, Baden-Württemberg, Germany

PVP2017-65404: SURFACE ROUGHNESS 3D MODELLING AND ITS ASSOCIATION WITH LEAK TIGHTNESS FOR A METAL-TO-METAL CONTACTING SURFACE
A. Anwar, W. Dempster, Y. Gorash, D. Nash, University of Strathdyde, Glasgow, Scotland

PVP2017-66153: MONITORING CRACK PROPAGATION OF HIGH PRESSURE AND HIGH TEMPERATURE COMPONENTS BY MULTIPHYSICS NUMERICAL ANALYSIS APPROACH
H. A. Moghaddam, P. Mertiny, University of Alberta, Edmonton, AB, Canada

SESSION 1.4O (SPC-1-3)

Monday, July 17, 4:00 pm – 5:45 pm, Waikoloa Suite 3

STUDENT PAPER COMPETITION—PHD—I

Developed by: Y. Shoji, YS Corporation LLC, Tokyo, Japan
Chair: Y. Shoji, YS Corporation LLC, Tokyo, Japan
Co-Chair: R. Noble, Asset55 Ltd., Hebburn, Tyne and Wear, United Kingdom

PVP2017-65097: DUCTILE DAMAGE ASSESSMENT USING CONTINUUM DAMAGE MECHANICS AND METHODOLOGY FOR HIGH STRAIN-RATE DAMAGE ANALYSIS
A. Sancho, P. A. Hooper, C. M. Davies, Imperial College London, London, United Kingdom

PVP2017-65383: FRACTURE TOUGHNESS TESTING OF A LOW ALLOY STRUCTURAL STEEL USING NON-STANDARD BEND SPECIMENS AND AN EXPLORATORY APPLICATION TO DETERMINE THE REFERENCE TEMPERATURE, T_0
V. S. Barbosa, C. Ruggieri, University of Sao Paulo, Sao Paulo, Brazil

PVP2017-65403: 3D MICRO-MACRO FLUID-STRUCTURE MODEL OF PRESSURE RELIEF VALVE LEAK TIGHTNESS
A. Anwar, W. Dempster, Y. Gorash, University of Strathclyde, Glasgow, Scotland

PVP2017-65453: AN ANALYTICAL APPROACH FOR STRAIN ANALYSIS OF BURIED STEEL PIPELINE IN MINING SUBSIDENCE AREAS
M. Xia, H. Zhang, China University of Petroleum, Beijing, China

SESSION 1.4Q (TW-1-2)

Monday, July 17, 4:00 pm – 5:45 pm Kohala 4

THE USE OF COMPUTATIONAL FLUID DYNAMICS IN DESIGN (PART 2)

Developed by: D. L. Stang, Omax Corporation, Kent, WA, USA
Chair: D. L. Stang, Omax Corporation, Kent, WA, USA
Presented by: S. McGuffie, M. Porter, Porter McGuffie, Inc., Lawrence, KS, USA

SESSION 1.4S (TW-4-4)

Monday, July 17, 4:00 pm – 5:45 pm, Grand Promenade

TECHNOLOGY DEMONSTRATION FORUM 4

Developed by: C. Jaske, HSI Group, Inc., Torrance, CA, USA; J. F. Cory, Jr., Siemens PLMS Software, Milford, OH, USA

TUESDAY, JULY 18

Block 2.1: Tuesday, July 18, 2017 (8:30 am – 10:15 am)

SESSION 2.1A (DA-16-4)

Tuesday, July 18, 8:30 am – 10:15 am, Kohala 1

COKE DRUM REPAIRS—MATERIALS AND WELDING ASPECTS

2nd International Symposium on Coke Drum Life Cycle Management—Sponsored by Design & Analysis Technical Committee

Developed by: C. Rodery, BP p.l.c, League City, TX, USA; K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA; J. Penso, Shell Projects and Technology, Houston, TX, USA
Chair: J. Bedoya, Stress Engineering Services Inc., Houston, TX, USA
Co-Chair: A. Kaye, Canadian Natural Resources Ltd., Fort McMurray, AB, Canada

PVP2017-65412: ASSESSMENT OF THE INFLUENCE OF THE USE OF WELD OVERLAY AS A REPAIR METHOD ON THE STRESS LEVEL OF BULGED SECTIONS OF COKE DRUMS
G. A. Vivas, A. J. Moret, R. E. Bello, PDVSA Intevep, Los Teques, Miranda, Venezuela; L. M. Melian, PDVSA Petrocedeño, Jose, Anzoátegui, Venezuela; E. D. Araque, CIA Inspection, Hannon, ON, Canada

PVP2017-66118: JAGGED CRACKING IN THE HEAT-AFFECTED ZONE OF WELD OVERLAY ON COKE DRUM CLADDING
Y. Suzuk, Suncor Energy Inc., Calgary, AB, Canada; L. Li, University of Alberta, Edmonton, AB, Canada; M. M. Garcia, D. Ting, S. Yuen, Suncor Energy Inc., Calgary, AB, Canada

PVP2017-65914: MICROSTRUCTURAL CHARACTERIZATION OF BASE MATERIAL AND HEAT AFFECTED ZONES OF SERVICED AND NON-SERVICED COKE DRUMS (Presentation Only)
S. Romo, J.P. Oliveira, The Ohio State University, Columbus, OH, USA; J. Bedoya, Stress Engineering Services Inc., Houston, TX, USA; D. Barborak, AZZ WSI, Norcross, GA, USA; J. Penso, Shell Projects and Technology, Houston, TX, USA
PVP2017-65918: LOW-CYCLE FATIGUE THERMO-MECHANICAL TESTING FOR COKE DRUM SERVICE (Presentation Only)
S. Romo, J.P. Oliveira, The Ohio State University, Columbus, OH, USA; J. Bedoya, Stress Engineering Services Inc., Houston, TX, USA; D. Barborak, AZZ WSI, Norcross, GA, USA; J. Penso, Shell Projects and Technology, Houston, TX, USA

SESSION 2.1B (FSI-2-4)

Tuesday, July 18, 8:30 am – 10:15 am, Kohala 2
PIPING & ACOUSTICS—I
Symposium of Flow-Induced Vibration—Sponsored by Fluid-Structure Interaction Technical Committee

Developed by: S. Ziada, McMaster University, Hamilton, ON, Canada; A. Mohany, University of Ontario Institute of Technology, Oshawa, ON, Canada
Chair: H. Goyder, Cranfield University, Swindon, United Kingdom
Co-Chair: A. Mohany, University of Ontario Institute of Technology, Oshawa, ON, Canada

PVP2017-65189: EXPANSION OF MULTI-PURPOSE STEAM FACILITY AND APPLICATION TO ACOUSTIC RESONANCE IN A CLOSED SIDE BRANCH INVESTIGATING EFFECTS OF STATIC PRESSURE UNDER WET STEAM FLOW
Y. Uchiyama, R. Morita, Central Research Institute of Electric Power Industry, Yokosuka-Shi, Kanagawa, Japan
PVP2017-65244: CONSIDERATIONS IN STEAM PIPING DESIGN FOR PREVENTION OF AN ACOUSTIC RESONANCE AT A CLOSED SIDE BRANCH
R. Morita, Y. Uchiyama, F. Inada, Central Research Institute of Electric Power Industry, Yokosuka-Shi, Kanagawa, Japan; S. Takahashi, Hitachi, Ltd., Hitachi, Japan
PVP2017-65732: ACOUSTICAL CHARACTERISTICS OF SINGLE AND TWO-PHASE HORIZONTAL PIPE FLOW THROUGH AN ORIFICE
S. Belfroid, TNO, Delft, Netherlands
PVP2017-65933: TOWARDS UNDERSTANDING TWO-PHASE FLOW-INDUCED VIBRATION OF PIPING STRUCTURE WITH FLOW RESTRICTING ORIFICES
O. Bamidele, W. Ahmed, M. Hassan, University of Guelph, Guelph, ON, Canada

SESSION 2.1C (CS-10-1)

Tuesday, July 18, 8:30 am – 10:15 am, Kohala 3
RECENT DEVELOPMENTS IN JAPANESE FITNESS-FOR-SERVICE RULES
Symposium on Recent Developments in International Codes and Standards—Sponsored by Codes & Standards Technical Committee

Developed by: D. Rudland, U.S. Nuclear Regulatory Commission, Frederick, MD, USA; Y. Li, Japan Atomic Energy Agency, Ibaraki-Ken, Japan
Chair: D. Rudland, U.S. Nuclear Regulatory Commission, Frederick, MD, USA
Co-Chair: Y. Li, Japan Atomic Energy Agency, Ibaraki-Ken, Japan; S. Asada, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; N. Miura, Central Research Institute of Electric Power Industry, Yokosuka, Japan

PVP2017-66183: SENSITIVITY ANALYSIS OF CRACK SHAPE ON SCREENING PARAMETER IN JSME FFS RULES FOR NUCLEAR POWER PLANTS
N. Miura, Central Research Institute of Electric Power Industry, Yokosuka, Japan; K. Hojo, Mitsubishi Heavy Industries Ltd., Kobe, Japan
PVP2017-65314: SCREENING CRITERIA OF FRACTURE ASSESSMENT METHODS FOR PIPES HAVING A CIRCUMFERENTIAL SURFACE FLAW
H. Machida, T. Kato, Tepco Systems Corporation, Tokyo, Japan
PVP2017-66092: CLOSED-FORM STRESS INTENSITY FACTOR SOLUTIONS FOR DEEP SURFACE FLAWS IN PLATES
K. Azuma, Y. Li, K. Hasegawa, Japan Atomic Energy Agency, Ibaraki-Ken, Japan; S. Xu, Kinectrics Inc., Toronto, ON, Canada
PVP2017-65958: BENCHMARK ANALYSES USING PROBABILISTIC FRACTURE MECHANICS ANALYSIS CODES PASCAL AND FAVOR (Presentation Only)
K. Arai, J. Katsuyama, Y. Li, Japan Atomic Energy Agency, Ibaraki-Ken, Japan

SESSION 2.1D (FSI-6-2)

Tuesday, July 18, 8:30 am – 10:15 am, King's 1
FLUID TRANSIENT AND BLAST LOADINGS

Developed by: M. Edel, Baker Engineering and Risk Consultants, San Antonio, TX, USA; D. Gross, Dominion Engineering, Reston, VA, USA; H. Levine, Thornton Tomasetti, Cupertino, CA, USA; K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Chair: M. Edel, Baker Engineering and Risk Consultants, San Antonio, TX, USA
Co-Chair: D. Gross, Dominion Engineering, Reston, VA, USA

PVP2017-65146: APPLICATION OF ONE-DIMENSIONAL HYDROGEN EVENT PRESSURE PULSE PROPAGATION AND DIMINISHMENT MODEL TO ANALYSIS AND DESIGN OF HANFORD WTP PIPING
A. Pellman, J. Collin, Dominion Engineering Inc., Reston, VA, USA; J. Minichiello, Bechtel National, Inc., Richland, WA, USA
PVP2017-65187: BLAST WALL SHIELDING EFFECTIVENESS
J. Geng, J. K. Thomas, Baker Engineering and Risk Consultants, Inc., San Antonio, TX, USA
PVP2017-65301: RESILIENCE ASSESSMENT OF MASONRY WALLS UNDER EXPLOSIVE LOADING
M. Campidelli, W. El-Dakhakhni, M. Tait, McMaster University, Hamilton, ON, Canada; W. Mekky, Bruce Power, Tiverton, ON, Canada
PVP2017-65234: INVESTIGATION ON THE LOADING CHARACTERISTICS IN PROOF UNITS
L. Zhang, Q. Dong, S. Yang, Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

SESSION 2.1E (MF-25-1)

Tuesday, July 18, 8:30 am – 10:15 am, King's 2
ASIAN PROGRAM IN STRUCTURAL INTEGRITY—I
Symposium on Structural Integrity—Co-Sponsored by Codes & Standards and Materials & Fabrication Technical Committees

Developed by: G. Qian, Paul Scherrer Institute, Villigen-Psi, Switzerland; Y. Chao, University of South Carolina, Columbia, SC, USA; P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA; S. B. Leen, National University of Ireland Galway, Galway, Ireland
Chair: G. Qian, Paul Scherrer Institute, Villigen-Psi, Switzerland
Co-Chair: Y. Chao, University of South Carolina, Columbia, SC, USA

PVP2017-65979: CONSTRAINT ASSESSMENT FOR SPECIMENS TESTED UNDER UNIAXIAL AND BIAXIAL LOADING CONDITIONS
Y. Cao, Shanghai Nuclear Engineering Research and Design Institute, Shanghai, China; G. Qian, Paul Scherrer Institute, Villigen-Psi, Switzerland; Y. He, Shanghai Nuclear Engineering Research and Design Institute, Shanghai, China; Y. Chao, University of South Carolina, Columbia, SC, USA; M. Niffenegger, Paul Scherrer Institute, Villigen, Switzerland
PVP2017-66202: FRACTURE MECHANICS ANALYSES OF EMBEDDED CRACKS UNDER PTS AND EFFECTS OF RESIDUAL STRESSES
G. Qian, Paul Scherrer Institute, Villigen-Psi, Switzerland; V.F. González-Albuixech, CIIM Universitat Politècnica de València, Valencia, Spain; M. Niffenegger, Paul Scherrer Institute, Villigen, Switzerland
PVP2017-65484: ESTIMATION OF Q345R FRACTURE TOUGHNESS BASED ON MASTER CURVE
L. Gui, X. Tong, B. Shou, H. Yu, China Special Equipment Inspection and Research Institute, Beijing, China
PVP2017-65129: ROOM TEMPERATURE CREEP BEHAVIOR AND ITS EFFECT ON TENSILE PROPERTIES IN CP-TI
L. Chang, C. Zhou, X.-H. He, Nanjing Tech University, Nanjing, China

SESSION 2.1F (MF-18-1)

Tuesday, July 18, 8:30 am – 10:15 am, King's 3
FATIGUE AND FRACTURE OF WELDS AND HEAT AFFECTED ZONES—I
Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: M. Kerr, Naval Nuclear Laboratory, Niskayuna, NY, USA; D. J.

Shim, Structural Integrity Associates, San Jose, CA, USA
Chair: M. Kerr, Naval Nuclear Laboratory, Niskayuna, NY, USA
Co-Chair: D. J. Shim, Structural Integrity Associates, San Jose, CA, USA

PVP2017-65422: HOT TAPPING IN OIL REFINERIES—CORROSION AND MATERIAL CONCERNS
C. Shargay, Fluor Enterprises Inc., Aliso Viejo, CA, USA; K. Daru, Fluor Enterprises, Inc., Sugar Land, TX, USA; J. Desai, Fluor Daniel India PVT. Limited, New Delhi, Haryana, India

PVP2017-65541: WELDABILITY EVALUATION OF FILLER METALS FOR DISSIMILAR METAL WELD OF ALLOY 230 TO GRADE P91 STEEL
C. M. Sarich, B. Alexandrov, A. Benatar, The Ohio State University, Columbus, OH, USA; J. Penso, Shell Projects and Technology, Houston, TX, USA; J. L. Kovacich, The Ohio State University, Columbus, OH, USA

PVP2017-65794: PREDICTIONS OF ICHAZ TENSILE RESPONSE IN GTAW PROCESS FOR 9CR STEELS
P. Mac Ardghail, R. A. Barrett, N. Harrison, S. B. Leen, National University of Ireland Galway, Galway, Ireland

PVP2017-65947: SIMULATION OF FATIGUE CRACK INITIATION IN HEAT AFFECTED ZONE MICROSTRUCTURE USING CRYSTAL-PLASTICITY FINITE ELEMENT METHOD
T. Hiraide, S. Igi, T. Tagawa, R. Ikeda, JFE Steel Corporation, Chiba, Chiba, Japan; S. Tsutsumi, Osaka University, Ibaraki, Osaka, Japan

PVP2017-65540: COMPARATIVE EVALUATION OF HIGH TEMPERATURE SERVICE PROPERTIES IN ALLOY 230 WELDS. SUSCEPTIBILITY TO SOLIDIFICATION AND STRESS RELIEF CRACKING (Presentation Only)
S. Suh, B. Alexandrov, A. Benatar, The Ohio State University, Columbus, OH, USA; J. Penso, Shell Projects and Technology, Houston, TX, USA

SESSION 2.1G (MF-2-4)

Tuesday, July 18, 8:30 am – 10:15 am, Queen's 4

APPLICATION OF FRACTURE MECHANICS IN FAILURE ASSESSMENT—V
Symposium on Fracture Mechanics and Analysis—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: P. Doddihal, D. Scarth, Kinectrics Inc., Toronto, ON, Canada
Chair: P. Doddihal, Kinectrics Inc., Toronto, ON, Canada
Co-Chair: C. Liu, Kinectrics Inc., Toronto, ON, Canada

PVP2017-66194: ENGINEERING PROCESS-ZONE MODEL FOR EVALUATION OF STRUCTURAL STRENGTH OF FUEL CHANNEL ANNULUS SPACERS IN CANDU NUCLEAR REACTORS
D. Scarth, S. Xu, C. Liu, Kinectrics Inc., Toronto, ON, Canada

PVP2017-66192: DEVELOPMENT OF CLOSED-FORM RELATIONS FOR STRESS INTENSITY FACTORS AND OPENING DISPLACEMENTS FOR EVALUATION OF STRUCTURAL STRENGTH OF ANNULUS SPACERS IN CANDU NUCLEAR REACTORS (Presentation Only)
L. Gutkin, C. Liu, D. Scarth, Kinectrics Inc., Toronto, ON, Canada

PVP2017-66193: IMPROVED ENGINEERING PROCESS-ZONE MODEL FOR EVALUATION OF STRUCTURAL STRENGTH OF ANNULUS SPACERS IN CANDU NUCLEAR REACTORS
C. Liu, L. Gutkin, D. Scarth, Kinectrics Inc., Toronto, ON, Canada

PVP2017-66051: FRACTURE INITIATION IN COMPACT TENSION SPECIMENS OF HYDRIDED IRRADIATED ZR-2.5NB MATERIALS WITH SPLIT CIRCUMFERENTIAL HYDRIDES
S.-J. Sung, J. Pan, University of Michigan, Ann Arbor, MI, USA; P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA; D. Scarth, Kinectrics Inc., Toronto, ON, Canada

PVP2017-66052: FRACTURE INITIATION IN PRESSURE TUBE SPECIMENS OF HYDRIDED IRRADIATED ZR-2.5NB MATERIALS WITH SPLIT CIRCUMFERENTIAL HYDRIDES
S.-J. Sung, J. Pan, University of Michigan, Ann Arbor, MI, USA; P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA; D. Scarth, Kinectrics Inc., Toronto, ON, Canada

SESSION 2.1H (OAC-6-3)

Tuesday, July 18, 8:30 am – 10:15 am, Queen's 5

LIFE CYCLE MANAGEMENT OF REFINERY PRESSURE VESSELS—OPERATION & MAINTENANCE
Symposium on Life Cycle Management—Co-Sponsored by High-Pressure Technology and Operations, Applications & Components Technical Committees

Developed by: T. Tahara, T&T Technology, Saitama Pref, Japan; Y. Ishizaki, Idemitsu Kosan Co., Ltd., Chiba, Japan; B. Millet, Fluor, Inc., Pasadena, TX, USA
Chair: B. Millet, Fluor, Inc., Pasadena, TX, USA
Co-Chair: Y. Ishizaki, Idemitsu Kosan Co., Ltd., Chiba, Japan

PVP2017-65468: AN ICME APPLICATION TO ASSESS THE FUTURE-SERVICE CAPABILITIES OF A THERMAL DAMAGED PRESSURE VESSEL (Presentation Only)
Y.-P. Yang, EWI, Columbus, OH, USA; G. Jung, Shell Global Solutions, Houston, TX, USA; J. Penso, Shell Projects and Technology, Houston, TX, USA; W. Mohr, EWI, Columbus, OH, USA

PVP2017-65461: REACTOR DAMAGE CATEGORIZATION AND DAMAGE REPAIR
L. Antalffy, Fluor, Sugar Land, TX, USA; A. Yasutomi, The Japan Steel Works, Ltd., Hokkaido, Japan; T. Tahara, T&T Technology, Saitama Pref, Japan; A. Rajguru, Fluor Enterprises, Inc., Sugar Land, TX, USA; B. Millet, Fluor, Inc., Pasadena, TX, USA

PVP2017-65642: A REMEDIATION OF FLAWS IN STAINLESS STEEL CLADDING ON HYDROPROCESSING REACTORS
T. Tahara, T&T Technology, Saitama Pref, Japan; A. Yasutomi, The Japan Steel Works, Ltd., Hokkaido, Japan; M. Sakata, JGC Corp., Yokohama, Kanagawa Pref., Japan; K. Sakata, Chiyoda Corp., Yokohama, Kanagawa Pref., Japan

SESSION 2.1I (CT-1-1)

Tuesday, July 18, 8:30 am – 10:15 am, Queen's 6

DESIGN AND ANALYSIS OF BOLTED JOINTS

Developed by: T. Sawa, Hiroshima University, Tokyo, Japan; .A-H. Bouzid, École de Technologie Supérieure, Montreal, QC, Canada
Chair: T. Sawa, Hiroshima University, Tokyo, Japan
Co-Chair: A-H. Bouzid, École de Technologie Supérieure, Montreal, QC, Canada

PVP2017-65624: AN ESTIMATION OF THE LOAD FACTOR AND THE SEALING PERFORMANCE EVALUATION OF BOLTED PIPE FLANGE CONNECTIONS WITH GASKETS UNDER INTERNAL PRESSURE
T. Sawa, Hiroshima University, Tokyo, Japan; K. Sato, Nippon Valqua Industries, Ltd., Gojo, Japan

PVP2017-65332: FEM STRESS ANALYSIS AND MECHANICAL CHARACTERISTICS OF BOLTED PIPE FLANGE CONNECTIONS WITH PTFE BLENDED GASKETS SUBJECTED TO EXTERNAL BENDING MOMENTS AND INTERNAL PRESSURE
K. Sato, Nippon Valqua Industries, Ltd., Gojo, Japan; T. Sawa, Hiroshima University, Tokyo, Japan; R. Morimoto, Mitsubishi Chemical Corporation, Okayama, Japan; T. Kobayashi, National Institute of Technology, Numazu College, Numazu, Shizuoka, Japan

PVP2017-65062: EFFECT OF MATERIAL ANISOTROPY ON THE STRUCTURAL INTEGRITY OF COMPOSITE BOLTED FLANGED JOINTS
A. K. Vafadar, A.-H. Bouzid, École de Technologie Supérieure, Montreal, QC, Canada; A. Ngo, École de Technologie Supérieure, Montréal, QC, Canada

PVP2017-66229: DETERMINATION OF THE GASKET STRESS DISTRIBUTION
M. Schaaf, AMTEC GmbH, Lauffen, Germany

SESSION 2.1J (OAC-4-2)

Tuesday, July 18, 8:30 am – 10:15 am, Kona 1

STRUCTURAL TESTING AND ANALYSIS
Symposium on Aging Management and Structural Integrity for Spent Nuclear Fuel Dry Cask Storage and Transportation Systems—Co-Sponsored by Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: S. Hensel, Savannah River Nuclear Solutions, Aiken, SC, USA
Chair: S. Hensel, Savannah River Nuclear Solutions, Aiken, SC, USA
Co-Chair: P. Blanton, Savannah River Nuclear Solutions, Aiken, SC, USA

PVP2017-65373: TESTING AND NUMERICAL SIMULATION OF ELASTOMERS—FROM SPECIMEN TESTS TO SIMULATION OF SEAL BEHAVIOR

UNDER ASSEMBLY CONDITIONS
M. Weber, U. Zencker, D. Wolff, M. Jaunich, A. Koemmling, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany
PVP2017-65668: DROP TESTING OF A CONTAINER FOR THE STORAGE, TRANSPORT AND DISPOSAL OF INTERMEDIATE LEVEL WASTE
T. Quercetti, K. Müller, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany; M. Johnson, T. Tait, Croft Associates Ltd., Culham, Abingdon, United Kingdom; C.-F. Tso, Arup, London, United Kingdom
PVP2017-65731: INFLUENCE OF IMPACT ANGLE AND REAL TARGET PROPERTIES ON DROP TEST RESULTS OF CUBIC CONTAINERS
U. Zencker, L. Qiao, H. Voelzke, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany
PVP2017-66084: COMPARISON BETWEEN TEST AND ANALYSIS FOR SPENT NUCLEAR FUEL TRANSPORTATION CASK
W. Choi, S. Cho, K.-S. Seo, K.-S. Bang, J.-C. Lee, Korea Atomic Energy Research Institute, Daejeon, Korea (Republic)

SESSION 2.1K (MF-3-3)

Tuesday, July 18, 8:30 am – 10:15 am, Kona 2
STAINLESS STEELS FOR HYDROGEN SERVICE—I

Developed by: C. San Marchi, Sandia National Laboratories, Livermore, CA, USA
Chair: J. Yamabe, Kyushu University, Fukuoka, Japan
Co-Chair: W. James, U.S. Department of Energy, Washington, DC, USA
PVP2017-65603: TEMPERATURE EFFECTS ON FRACTURE THRESHOLDS OF HYDROGEN PRECHARGED STAINLESS STEEL WELDS
J. Ronevich, C. San Marchi, D. Balch, Sandia National Laboratories, Livermore, CA, USA
PVP2017-65978: NOTCHED FATIGUE OF AUSTENTIC ALLOYS IN HYDROGEN
K. Nibur, Hy-Performance Materials Testing, LLC., Bend, OR, USA; J. Foulk, Sandia National Laboratories, Livermore, CA, USA; P. J. Gibbs, C. San Marchi, Sandia National Laboratories, Livermore, CA, USA
PVP2017-65450: FATIGUE LIFE PROPERTIES OF CIRCUMFERENTIALLY-NOTCHED AUSTENITIC STAINLESS STEEL TYPE 304 IN HYDROGEN GAS
N. Nagaishi, Industrial Technology Center of SAGA, Saga, Japan; M. Yoshikawa, S. Okazaki, H. Matsunaga, J. Yamabe, Kyushu University, Fukuoka, Japan
PVP2017-65988: TENSILE AND FATIGUE BEHAVIOR OF AN AUSTENITIC STAINLESS CRNI-STEEL AT 10 MPA HYDROGEN GAS ATMOSPHERE
M. Schwarz, E. Sattler, S. Zickler, S. Weihe, University of Stuttgart, Stuttgart, Baden-Württemberg, Germany

SESSION 2.1L (SE-3-1)

Tuesday, July 18, 8:30 am – 10:15 am, Kona 3
DAMPING AND VIBRATION CONTROL—I

Developed by: K. Minagawa, Saitama Institute of Technology, Saitama, Japan
Chair: K. Minagawa, Saitama Institute of Technology, Saitama, Japan
Co-Chair: A. Casimiro Caputo, Roma Tre University, Rome, Italy
PVP2017-65592: RESEARCH AND DEVELOPMENT OF VISCOUS FLUID DAMPERS FOR IMPROVEMENT OF SEISMIC RESISTANCE OF THERMAL POWER PLANTS PART 1 FUNDAMENTAL ANALYSIS AND COMPONENT TEST
G. Tanaka, Oiles Corp, Tochigi, Japan; K. Minagawa, Saitama Institute of Technology, Saitama, Japan; K. Aida, Mitsubishi Hitachi Power Systems, Ltd., Kure-Shi, Japan; S. Fujita, Tokyo Denki University, Tokyo, Japan
PVP2017-65628: RESEARCH AND DEVELOPMENT OF VISCOUS FLUID DAMPERS FOR IMPROVEMENT OF SEISMIC RESISTANCE OF THERMAL POWER PLANTS PART 2 EVALUATION OF LIFETIME
K. Aida, Mitsubishi Hitachi Power Systems, Ltd., Kure-Shi, Japan; K. Minagawa, Saitama Institute of Technology, Saitama, Japan; G. Tanaka, Oiles Corp, Tochigi, Japan; S. Fujita, Tokyo Denki University, Tokyo, Japan
PVP2017-65638: RESEARCH AND DEVELOPMENT OF VISCOUS FLUID DAMPERS FOR IMPROVEMENT OF SEISMIC RESISTANCE OF THERMAL POWER PLANTS PART 3 EVALUATION OF VIBRATION CONTROL PERFORMANCE
K. Minagawa, Saitama Institute of Technology, Saitama, Japan; K. Aida, Mitsubishi Hitachi Power Systems, Ltd., Kure-Shi, Japan; G. Tanaka, Oiles Corp, Tochigi, Japan; S. Fujita, Tokyo Denki University, Tokyo, Japan
PVP2017-66167: LAMINATED TYPE ISOLATION DEVICE FOR LIGHT WEIGHT STRUCTURE USING URETHANE ELASTOMER
K. Goda, K. Ishihana, Ohtsu Chemical Co., Ltd., Takaishi, Osaka, Japan; O. Furuya, Tokyo Denki University, Saitama, Japan; K. Imamura, Tokyo City University, Hiratuka City, Tokyo, Japan

SESSION 2.1M (HT-5-2)

Tuesday, July 18, 8:30 am – 10:15 am, Waikoloa Suite 1
PANEL SESSION ON SEC VIII, DIV 3 INDUSTRY USE, GAPS, AND NEEDS Symposium on 20th Anniversary of ASME BPVC Section VIII Div. 3—Sponsored by High Pressure Technology Technical Committee

Developed by: A. Maslowski, ASME, New York, NY, USA
Chair: A. Maslowski, ASME, New York, NY, USA
Co-Chair: J R. Sims, Becht Engineering Co., Inc., Liberty Corner, NJ, USA
Panelists:
H. Maderbacher, BHDT GmbH, Kapfenberg, Austria
M. Poelzl, BHDT GmbH, Kapfenberg, Austria
K.-J. Young, Dupont Engineering, Wilmington, DE, USA

SESSION 2.1N (FSI-1-2)

Tuesday, July 18, 8:30 am – 10:15 am, Waikoloa Suite 2
CFD AND FSI

Developed by: A. Tijsseling, TU Eindhoven, Eindhoven, Netherlands; J. C. Jo, Pusan National University, Busan, Korea (Republic); C. S. Martin, Georgia Institute of Technology, South Dennis, MA, USA
Chair: A. Tijsseling, TU Eindhoven, Eindhoven, Netherlands
Co-Chair: J. C. Jo, Pusan National University, Busan, Korea (Republic)
PVP2017-65143: NUMERICAL SIMULATION OF A HIGHLY COMPRESSED SATURATED WATER FLASHING FLOW
J. C. Jo, J. J. Jeong, B. Yun, Pusan National University, Busan, Korea (Republic); F. Moody, Consultant, Turlock, CA, USA
PVP2017-65601: NUMERICAL ANALYSIS OF FLOW-INDUCED VIBRATION OF LARGE DIAMETER PIPE WITH SHORT ELBOW
S. Takaya, Japan Atomic Energy Agency, Ibaraki, Japan; T. Fujisaki, NDD, Ibaraki, Japan; Masaaki Tanaka, Japan Atomic Energy Agency, Ibaraki, Japan
PVP2017-66106: REVIEW OF SCALING DISTORTIONS FOR INTEGRAL SYSTEM TESTS
P. Lien, US Nuclear Regulatory Commission, Rockville, MD, USA
PVP2017-65700: FLUID FLOW BEHAVIOUR DURING FREE VIBRATIONS OF A MONO-HEXAGON ASSEMBLY: VALIDATION OF 3-D NAVIER-STOKES MODEL IN CAST3M WITH EXPERIMENTS ON PISE-1A
Q. Zhou, J.-P. Magnaud, CEA Saclay, Gif-sur-Yvette, France; A. Monavon, Université Pierre et Marie Curie, Paris, France; B. Cariteau, CEA Saclay, Gif-sur-Yvette, France

SESSION 2.1O (SPC-1-4)

Tuesday, July 18, 8:30 am – 10:15 am, Waikoloa Suite 3
STUDENT PAPER COMPETITION—PHD—II

Developed by: B. Li, AMEC Foster Wheeler, Toronto, ON, Canada
Chair: B. Li, AMEC Foster Wheeler, Toronto, ON, Canada
Co-Chair: K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
PVP2017-65693: EVALUATION OF WELD HOMOGENIZATION SCHEMES BASED ON PLASTIC LOADS OF SINGLE EDGE NOTCHED TENSION (SE(T)) TESTING
S. Naib, W. De Waele, S. Hertelé, Universiteit Gent, Zwijnaarde, Belgium
PVP2017-65583: AN IMPROVED CONTINUUM DAMAGE CONSTITUTIVE MODEL FOR CREEP DEFORMATION OF CAST 20CR32NI1NB STEEL
X. Guo, J. Gong, L. Geng, Nanjing Tech University, Nanjing, China
PVP2017-65339: INFLUENCE OF INHOMOGENEOUS MICROSTRUCTURE OF MULTI-PASS WELD METAL ON CREEP BEHAVIOR OF CROSS-WELD SPECIMEN BASED ON FINITE ELEMENT METHOD
B. Yang, F.-Z. Xuan, East China University of Science and Technology, Shanghai, China
PVP2017-65604: THEORETICAL ANALYSIS OF FREE VIBRATIONS BASED ON A NEW HIGH ORDER SHELL THEORY FOR CYLINDRICAL SHELLS CON-

VEYING FLUID
M. Ji, K. Inaba, Tokyo Institute of Technology, Tokyo, Japan

SESSION 2.1Q (TW-1-3)

Tuesday, July 18, 8:30 am – 10:15 am, Kohala 4

FITNESS-FOR-SERVICE (FFS) PROCEDURES FOR EVALUATION OF DAMAGE OR DEFECTS IN PRESSURIZED EQUIPMENT USING API 579-1/ASME FFS-1 (PART 1)

Developed by: D. L. Stang, Omax Corporation, Kent, WA, USA
Chair: D. L. Stang, Omax Corporation, Kent, WA, USA
Presented by: P. E. Prueter, B. Macejko, The Equity Engineering Group, Inc., Shaker Heights, OH, USA

SESSION 2.1S (TW-4-5)

Tuesday, July 18, 8:30 am – 10:15 am, Grand Promenade

TECHNOLOGY DEMONSTRATION FORUM—V

Developed by: C. Jaske, HSI Group, Inc., Torrance, CA, USA; J. F. Cory, Jr., Siemens PLMS Software, Milford, OH, USA

Block 2.2: Tuesday, July 18, 2017 (10:30 am – 12:15 pm)

SESSION 2.2A (DA-16-5)

Tuesday, July 18, 10:30 am – 12:15 pm, Kohala 1

NOVEL APPROACHES TO COKE DRUM LIFE CYCLE MANAGEMENT
2nd International Symposium on Coke Drum Life Cycle Management—Sponsored by Design & Analysis Technical Committee

Developed by: C. Rodery, BP p.l.c, League City, TX, USA; K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA; J. Penso, Shell Projects and Technology, Houston, TX, USA
Chair: M. Samman, Houston Engineering Solutions, LLC, Houston, TX, USA
Co-Chair: T. S. Chadda, Amec Foster Wheeler, Houston, TX, USA

PVP2017-65222: EXTENDING DRUM LIFE WHILE INCREASING THROUGHPUT IN A DELAYED COKING UNIT
K. Kirkpatrick, L. Antalffy, B. Millet, G. Miller, Fluor Enterprises, Houston, TX, USA

PVP2017-65414: FATIGUE ASSESSMENT OF A BULGED COKE DRUM
G. A. Vivas, A. J. Moret, R. E. Bello, PDVSA Intevep, Los Teques, Miranda, Venezuela; L. M. Melian, PDVSA Petrocedeño, Jose, Anzoátegui, Venezuela; E. D. Araque, CIA Inspection, Hannon, ON, Canada

PVP2017-65098: REMEDIATION OF PRESSURE VESSELS; LIFTING & TILTING LARGE DRUMS
A. Kaye, Canadian Natural Resources Ltd., Fort McMurray, AB, Canada

PVP2017-65870: ASSESSMENT OF THE CRITICAL TILTING ANGLE OF A COKE DRUM VESSEL SUBJECT TO SEISMIC LOADING
J. Penso, Shell Projects and Technology, Houston, TX, USA; J. Bedoya, S. Bouse, S. Ramamoorthy, Stress Engineering Services Inc., Houston, TX, USA

SESSION 2.2B (FSI-2-5)

Tuesday, July 18, 10:30 am – 12:15 pm, Kohala 2

FIV IN TUBE ARRAYS—I
Symposium of Flow-Induced Vibration—Sponsored by Fluid-Structure Interaction Technical Committee

Developed by: T. Nakamura, Osaka Sangyo University, Daito, Osaka, Japan; N. Mureithi, Polytechnique Montreal, Montreal, QC, Canada; A. Mohany, University of Ontario Institute of Technology, Oshawa, ON, Canada
Chair: D. Broc, CEA Saclay, Gif-sur-Yvette, France
Co-Chair: V. P. Janzen, Canadian Nuclear Laboratories, Chalk River, ON, Canada

PVP2017-66166: EXPERIMENTAL STUDY ABOUT TWO-PHASE DAMPING RATIO ON A TUBE BUNDLE SUBJECTED TO TWO-PHASE FLOW
W. G. Sim, Hannam University, Daejeon, Korea (Republic); K. S. Kim, Kongju National University, Chunan, Korea (Republic); B. Dagdan, Hannam University, Taejeon, Korea (Republic)

PVP2017-65511: REPRODUCING FLUID ELASTIC COUPLING FORCES ON A U-TUBE WITH A HYBRID TESTING APPROACH
V. Lhuillier, Electricite de France, Palaiseau, France

PVP2017-65585: COUPLED VIBRATION RESEARCH FOR CYLINDERS IN HEAT EXCHANGER BASED ON NONCONTACT-MEASUREMENT AND ACOUSTIC FLUID-SOLID INTERACTION SIMULATIONS
W. Tan, H. Wu, Z. Yang, Z. Li, L. Liu, Tianjin University, Tianjin, Tianjin, China

PVP2017-65179: IDENTIFICATION OF TWO-PHASE FLOW PATTERNS USING SUPPORT VECTOR CLASSIFICATION
I. Benito, N. Mureithi, Polytechnique Montreal, Montreal, QC, Canada

SESSION 2.2C (CS-11-1)

Tuesday, July 18, 10:30 am – 12:15 pm, Kohala 3

EXTREME PRESSURE EQUIPMENT
Symposium on Recent Developments in International Codes and Standards—Sponsored by Codes & Standards Technical Committee

Developed by: J. Zheng, Zhejiang University, Hangzhou, China
Chair: J. Zheng, Zhejiang University, Hangzhou, China
Co-Chair: J. Shi, Zhejiang University, Hangzhou, Zhejiang, China

PVP2017-65100: EXPERIMENTAL INVESTIGATION AND FINITE ELEMENT ANALYSIS ON COLD STRETCHING FOR AUSTENITIC STAINLESS PRESSURE VESSELS
Y. Han, K. Wang, Ningbo University of Technology, Cixi, Ningbo, China

PVP2017-65577: MOLECULAR DYNAMICS SIMULATION OF H-ACTIVATED NANO-VOIDS MIGRATION AND GROWTH
Y. Zheng, Z. Zhang, G. Cheng, Xi'an Jiaotong University, Xi'an, Shaanxi, China; F.-Z. Xuan, Z. Wang, East China University of Science & Technology, Shanghai, China

PVP2017-65582: THE ADSORPTION STUDY OF HYDROGEN ON IRON AND VANADIUM
M. He, Z. Zhang, G. Cheng, Xi'an Jiaotong University, Xi'an, Shaanxi, China

PVP2017-66220: INVASION OF HYDROGEN INTO ALPHA-FE: A MOLECULAR DYNAMICS STUDY
X. Li, T. Cui, Y. Zhao, J. Zheng, P. Xu, Zhejiang University, Hangzhou, Zhejiang, China

SESSION 2.2D (MF-15-1)

Tuesday, July 18, 10:30 am – 12:15 pm, King's 1

RECENT DEVELOPMENTS IN COMPOSITE MATERIALS
International Symposium on Composite Systems for Pressure Vessels and Piping—Co-Sponsored by Design & Analysis, Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: M. Uddin, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA; P. Mertiny, University of Alberta, Edmonton, AB, Canada
Chair: M. Uddin, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA
Co-Chair: P. Mertiny, University of Alberta, Edmonton, AB, Canada

PVP2017-65698: CURRENT APPROACHES TO FITNESS FOR SERVICE OF FRP IN CHEMICAL HANDLING APPLICATIONS
P. Khaladkar, PECT Consulting, Hockessin, DE, USA

PVP2017-65969: INTEGRATED COMPUTATIONAL TOOLS FOR THE ACCELERATED DEVELOPMENT OF TRADITIONAL AND MULTIFUNCTIONAL COMPOSITES STRUCTURES
J. Baur, Air Force Research Laboratory, Wright-Patterson AFB, OH, USA; D. Hartl, Texas A&M University, College Station, TX, USA; G. Frank, R. Bradford, University of Dayton Research Institute, Dayton, OH, USA; G. Huff, Texas A&M University, College Station, TX, USA

PVP2017-66281: MATERIAL, MANUFACTURING AND TEST RESULTS FOR HIGH-TEMPERATURE FIBER-REINFORCED POLYMER STRUCTURES FOR NMR RESERVOIR SURVEILLANCE AND OTHER OILFIELD APPLICATIONS
P. Mertiny, University of Alberta, Edmonton, AB, Canada; M. Bashar, Shawcor, Calgary, AB, Canada; T. Yakimoski, Baker Hughes, Calgary, AB, Canada; A. Hammami, Shawcor, Toronto, ON, Canada

SESSION 2.2E (MF-25-2)

Tuesday, July 18, 10:30 am – 12:15 pm, King's 2

ASIAN PROGRAM IN STRUCTURAL INTEGRITY—II

Symposium on Structural Integrity—Co-Sponsored by Codes & Standards and Materials & Fabrication Technical Committees

Developed by: Y. Chao, University of South Carolina, Columbia, SC, USA; G. Qian, Paul Scherrer Institute, Villigen-Psi, Switzerland; P.-S. Lam, Savannah River National Laboratory, Aiken, SC, USA
Chair: Y. Liu, Tsinghua University, Beijing, Beijing, China
Co-Chair: G. Qian, Paul Scherrer Institute, Villigen-Psi, Switzerland

PVP2017-65479: MICROSTRUCTURE AND TOUGHNESS OF T92 STEEL AGING AT 700?
G. Baolan, X. Tong, China Special Equipment Inspection and Research Institute, Beijing, China

PVP2017-65672: THEORETICAL ANALYSIS AND ENGINEERING IMPLICATIONS FOR THE HIGH ORDER TERM SOLUTIONS OF THE MODE II TYPE CREEP CRACK
Y. Dai, Y. Liu, Tsinghua University, Beijing, China; Y. Chao, University of South Carolina, Columbia, SC, USA

PVP2017-65738: CALCULATION OF AXIAL THERMAL EXPANSION FOR A 1000MW NUCLEAR STEAM TURBINE HIP CASING
Z. Mei, H. Zhang, D. Xie, Y. Guo, X. Hou, Wuhan University, Wuhan, Hubei, China

PVP2017-65656: ON A PLASTIC LIMIT LOADS OF COMPLEX-CRACKED PIPES WITH WELDS OVERLAY USING FINITE ELEMENT LIMIT ANALYSES
D.-S. Jeon, N.-S. Huh, Seoul National University of Science and Technology, Seoul, Korea (Republic)

SESSION 2.2F (CS-2-1)

Tuesday, July 18, 10:30 am – 12:15 pm, King's 3

FATIGUE AND RATCHETING ISSUES IN PRESSURE VESSEL AND PIPING DESIGN

Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: W. Reinhardt, Candu Energy Inc., Mississauga, ON, Canada; R. Adibiasl, AMEC Foster Wheeler, Toronto, ON, Canada
Chair: D. Metzger, SNC, Mississauga, ON, Canada
Co-Chair: R. Adibiasl, AMEC Foster Wheeler, Toronto, ON, Canada

PVP2017-66008: THERMAL STRESS RATCHET CHECK IN PIPING ANALYSIS
R. Adibi-Asl, M. Noban, E. Chen, Amec Foster Wheeler, Toronto, ON, Canada

PVP2017-66112: COMPARISON OF METHODS FOR STRUCTURAL STRESS DETERMINATION ACC. TO EN 13445-3 ANNEX NA
R. Trieglaff, TÜV NORD EnSys GmbH & Co. KG, Hamburg, Germany; J. Rudolph, AREVA GmbH, Erlangen, Bavaria, Germany; M. Beckert, TÜV NORD EnSys GmbH & Co. KG, Hamburg, Germany; F. Hauser, Technische Hochschule Nürnberg Georg Simon Ohm, Nürnberg, Germany

PVP2017-66240: ALTERNATIVE APPROACHES FOR ASME CODE SIMPLIFIED ELASTIC PLASTIC ANALYSIS
S. Ranganath, XGEN Engineering, San Jose, CA, USA; N. Palm, Electric Power Research Institute, Washington, PA, USA

SESSION 2.2G (DA-12-1)

Tuesday, July 18, 10:30 am – 12:15 pm, Queen's 4

FRACTURE—I

Symposium on Fracture Mechanics and Analysis—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: S. Finneran, DNV GL - Materials Advisory Services, Dublin, OH, USA; S. Kataoka, JGC Corporation, Yokohama, Japan
Chair: S. Finneran, DNV GL - Materials Advisory Services, Dublin, OH, USA
Co-Chair: S. Kataoka, JGC Corporation, Yokohama, Japan

PVP2017-65042: CORRELATION OF FRACTOGRAPHIC EXAMINATIONS WITH NUMERICAL CALCULATIONS REGARDING DYNAMIC FRACTURE
J. Tlatlik, T. Reichert, Fraunhofer Institute for Mechanics of Materials, Freiburg, Baden-Württemberg, Germany

PVP2017-65311: APPLICATION OF SDS METHOD TO PREDICT FRACTURE TOUGHNESS TEMPERATURE DEPENDENCY OF A533B STEEL
T. Meshii, K. Ishihara, H. Nakano, University of Fukui, Fukui-city, Fukui, Japan

PVP2017-65132: AN INVESTIGATION OF I-II MIXED MODE STRUCTURES WITH STOP HOLE TECHNIQUE BASED ON EXTENDED FINITE ELEMENT METHOD
X.-T. Miao, C. Zhou, X.-H. He, Nanjing Tech University, Nanjing, Jiangsu, China

SESSION 2.2H (OAC-6-4)

Tuesday, July 18, 10:30 am – 12:15 pm, Queen's 5

DEGREDATION MECHANISMS AND MITIGATION

Symposium on Life Cycle Management—Co-Sponsored by High-Pressure Technology and Operations, Applications & Components Technical Committees

Developed by: A. Cheta, Qatar Shell GTL, Doha, Qatar
Chair: A. Cheta, Qatar Shell GTL, Doha, Qatar
Co-Chair: Y. Shoji, YS Corporation LLC, Tokyo, Japan

PVP2017-65046: CRUDE FURNACE CREEP ASSESSMENT AND HIGH TEMPERATURE DEGRADATION
G. Lee, Royal Dutch Shell, Kuala Lumpur, Malaysia; O. Kwon, Quest Integrity NZL Ltd., Wellington, New Zealand; Z. Ramli, Z. M. Afifi, Hengyuan Refining Company, Port Dickson, Malaysia

PVP2017-65709: RESEARCH PROGRESS OF HIGH TEMPERATURE NAPHTHENIC ACID CORROSION RULES AND PREVENTION METHODS IN PETROCHEMICAL PLANTS
Y. Lv, X. Chen, Hefei General Machinery Research Institute, Hefei, Anhui, China; Z. Chen, Zhejiang University, Hangzhou, Zhejiang, China

PVP2017-66127: INVESTIGATION OF BURST PRESSURE IN T-JOINTS WITH WALL-THINNING BY USING FEA
A. Yamaguchi, National Institute of Occupational Safety and Health, Japan, Tokyo, Japan

PVP2017-65317: UPPER SHELF ENERGY PREDICTION MODEL FOR IRRADIATED REACTOR VESSEL STEELS
T. Ogawa, Toshiba Corporation, Yokohama, Kanagawa, Japan; J. B. Hall, B. E. Mays, Westinghouse, Pittsburgh, PA, USA; T. Hardin, Electric Power Research Institute, Palo Alto, CA, USA

PVP2017-65276: OPTIMIZATION OF THE RECEIPT AND DELIVERY SCHEDULES FOR A TRANSFER TANK FARM OF PRODUCTS PIPELINE NETWORK
L. Wang, C. Wu, L. Zuo, Y. Huang, H. Chen, China University of Petroleum-Beijing, Beijing, Beijing, China

SESSION 2.2I (CT-2-1)

Tuesday, July 18, 10:30 am – 12:15 pm, Queen's 6

ELEVATED TEMPERATURE BEHAVIOUR OF BOLTED FLANGE JOINTS

Developed by: J. Veiga, Teadit Industria e Comercio Ltda, Rio De Janeiro, Brazil; Y. Omiya, Okayama University, Okayama, Japan
Chair: J. Baulch, Teadit North America, Pasadena, TX, USA
Co-Chair: A. Bausman, VSP Technologies, Kingsport, TN, USA

PVP2017-65027: OXIDATION INHIBITED GRAPHITE: WHAT IS IT?
B. Hantz IV, Valero Energy Corp., San Antonio, TX, USA

PVP2017-65765: STUDY OF HIGH-TEMPERATURE RELAXATION USING LOAD INDICATING BOLTS (Presentation Only)
R. Flocken, Valley Forge & Bolt Mfg. Co., Phoenix, AZ, USA; G. Jung, Shell Global Solutions, Houston, TX, USA

PVP2017-65758: COMPONENT TESTING AND NUMERICAL CALCULATION OF A BOLTED HIGH TEMPERATURE POWER PLANT PIPE FLANGE CONNECTION UNDER COMPLEX, NEAR-SERVICE LOADS
B. Leibing, A. Klenk, M. Seidenfuss, University of Stuttgart, Stuttgart, Baden-Württemberg, Germany

PVP2017-65271: CHARACTERISATION OF POLYTETRAFLUOROETHYLENE AND FIBER BASED GASKETS UNDER CREEP AND THERMAL RATCHETING
R. P. K. Jeya, A.-H. Bouzid, École de Technologie Supérieure, Montreal, QC, Canada

SESSION 2.2J (OAC-4-4)

Tuesday, July 18, 10:30 am – 12:15 pm, Kona 1

AGING MANAGEMENT FOR EXTENDED STORAGE AND TRANSPORTATION OF SPENT (USED) FUEL

Symposium on Aging Management and Structural Integrity for Spent Nu-

clear Fuel Dry Cask Storage and Transportation Systems—Co-Sponsored by Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: Z. Han, Argonne National Laboratory, Lemont, IL, USA; H. Voelzke, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany
Chair: Z. Han, Argonne National Laboratory, Lemont, IL, USA
Co-Chair: H. Voelzke, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany

PVP2017-66139: SENSOR REQUIREMENTS FOR DETECTION AND CHARACTERIZATION OF STRESS CORROSION CRACKING IN WELDED STAINLESS STEEL CANISTERS (Presentation Only)
S. Chatzidakis, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-66241: AGING MANAGEMENT FOR EXTENDED LONG-TERM DRY STORAGE OF SPENT NUCLEAR FUEL AND TRANSPORTATION (Presentation Only)
Y. Liu, Z. Han, D. Diercks, M. Nutt, Argonne National Laboratory, Argonne, IL, USA

PVP2017-66260: REGULATORY BASIS FOR DRY SPENT NUCLEAR FUEL STORAGE CANISTER INSPECTIONS (Presentation Only)
B. Gutherman, Gutherman Technical Services, Shamong, NJ, USA; R. McCullum, The Nuclear Energy Institute, Washington, DC, USA

PVP2017-66270: ADVANCED MANUFACTURING FOR THE DEPARTMENT OF ENERGY STANDARDIZED CANISTER (Presentation Only)
S. Birk, Battelle Energy Alliance, Idaho Falls, ID, USA; D. Clark, DEClark Welding Engineering, PLLC, Idaho Falls, ID, USA

PVP2017-65064: INTERIM SAFE STORAGE OF RADIOACTIVE MATERIALS AT THE SAVANNAH RIVER SITE
L. Kyriazidis, S. Hensel, J. Jordan, Savannah River Nuclear Solutions, Aiken, SC, USA

SESSION 2.2K (MF-3-5)

Tuesday, July 18, 10:30 am – 12:15 pm, Kona 2
STEELS FOR HYDROGEN SERVICE

Developed by: C. San Marchi, Sandia National Laboratories, Livermore, CA, USA
Chair: J. Ronevich, Sandia National Laboratories, Livermore, CA, USA
Co-Chair: H. Matsunaga, Kyushu University, Fukuoka, Japan

PVP2017-66273: EFFECT OF HYDROGEN ON FATIGUE-CRACK GROWTH OF A FERRITIC-PEARLITIC LOW CARBON STEEL
A. Nagao, JFE Steel Corporation, Kawasaki, Kanagawa, Japan; S. Wang, University of Wisconsin-Madison, Madison, WI, USA; K. Nygren, M. Dadfarnia, P. Sofronis, University of Illinois at Urbana-Champaign, Urbana, IL, USA; I. Robertson, University of Wisconsin-Madison, Madison, WI, USA

PVP2017-65907: FATIGUE CRACK GROWTH BEHAVIOR OF AUTOFRETTAGED HYDROGEN PRESSURE VESSEL MADE OF LOW ALLOY STEEL
Y. Wada, Y. Yanagisawa, The Japan Steel Works, Muroran, Japan

PVP2017-65726: EVALUATION OF HYDROGEN EMBRITTLEMENT OF CR-MO LOW ALLOY STEEL BY SSRT WITH CATHODICALLY CHARGED SPECIMEN
D. Tsurumi, H. Saito, H. Tsuji, Tokyo Denki University, Tokyo, Japan

PVP2017-65542: HYDROGEN-ASSISTED DEGRADATION OF A HIGH-STRENGTH STAINLESS STEEL WITH A NEWLY-DEVELOPED ALUMINUM-BASED COATING IN HIGH-PRESSURE HYDROGEN-GAS ENVIRONMENT
J. Yamabe, T. Awane, O. Takakuwa, S. Matsuoka, Kyushu University, Fukuoka, Japan

PVP2017-65630: EFFECTS OF PLASTIC STRAIN ON HYDROGEN DESORPTION OF AUSTENITIC STEELS (Presentation Only)
E. J. Song, S.-W. Baek, U. B. Baek, S. H. Nahm, Korea Research Institute of Standards and Science, Daejeon, Korea (Republic)

SESSION 2.2L (SE-3-2)

Tuesday, July 18, 10:30 am – 12:15 pm, Kona 3
DAMPING AND VIBRATION CONTROL—II

Developed by: F. Paolacci, University Roma Tre, Rome, Italy
Chair: F. Paolacci, University Roma Tre, Rome, Italy
Co-Chair: T. Taniguchi, Tottori University, Tottori, Japan

PVP2017-65047: ON-SITE VIBRATION TEST FOR MEASURING DAMPING RATIO OF PWR REACTOR COOLANT LOOP
T. Ishiguro, The Kansai Electric Power Co., Inc., Mikata, Fukui, Japan; T. Numata, The Kansai Electric Power Co., Inc., Ohi, Fukui, Japan; N. Goshima, Mitsubishi Heavy Industries, Ltd., Kobe, Hyogo, Japan; M. Monde, Mitsubishi Heavy Industries, Ltd., Takasago, Hyogo, Japan; H. Fuyama, Mitsubishi Heavy Industries, Ltd., Kobe, Hyogo, Japan

PVP2017-65192: INERTIA MASS DAMPER AND ITS APPLICATION
K. Sunakoda, Akita University, Saitama, Japan; I. Yamazaki, Sanwa Tekki Corporation, Utsunomiya, Japan

PVP2017-65497: EXPERIMENTAL STUDY OF FULL SCALE BUCKLING RESTRAINED BRACE WITH INSPECTION WINDOWS
C.-S. Tsai, H.-C. Su, Feng Chia University, Taichung, Taiwan; T. C. Chiang, Earthquake Proof System, Inc., Taichung, Taiwan

PVP2017-65894: DESIGN OF SERIES MULTIPLE TUNED MASS DAMPERS FOR RESPONSE CONTROL OF ASYMMETRIC BUILDINGS
J.-F. Wang, J.-C. Li, National United University, Miaoli, Taiwan; C.-C. Lin, National Chung-hsing University, Taichang, Taiwan

SESSION 2.2M (HT-5-1)

Tuesday, July 18, 10:30 am – 12:15 pm, Waikoloa Suite 1
PANEL SESSION ON SEC VIII, DIV 3 HISTORY
Symposium on 20th Anniversary of ASME BPVC Section VIII Div. 3—Sponsored by High Pressure Technology Technical Committee

Developed by: A. Maslowski, ASME, New York, NY, USA
Chair: A. Maslowski, ASME, New York, NY, USA
Co-Chair: J R. Sims, Becht Engineering Co., Inc., Liberty Corner, NJ, USA; D. Peters, Structural Integrity Associates, Edinboro, PA, USA

Panelists:
J R. Sims, Becht Engineering Co., Inc., Liberty Corner, NJ, USA
D. Peters, Structural Integrity Associates, Edinboro, PA, USA
J. Kapp, Materials, Wynantskill, NY, USA
S. Terada, Kobe Steel, Ltd., Takasago, Hyogo, Japan

SESSION 2.2N (FSI-1-3)

Tuesday, July 18, 10:30 am – 12:15 pm, Waikoloa Suite 2
GAS AND LIQUID

Developed by: J. C. Jo, Pusan National University, Busan, Korea (Republic); A. Tijsseling, TU Eindhoven, Eindhoven, Netherlands; C. S. Martin, Georgia Institute of Technology, South Dennis, MA, USA
Chair: J. C. Jo, Pusan National University, Busan, Korea (Republic)
Co-Chair: A. Tijsseling, TU Eindhoven, Eindhoven, Netherlands

PVP2017-65471: IMPULSIVELY-GENERATED PRESSURE TRANSIENTS AND STRAINS IN A CYLINDRICAL FLUID-FILLED TUBE TERMINATED BY A CONVERGING SECTION
J.-C. Veilleux, J. Shepherd, California Institute of Technology, Pasadena, CA, USA

PVP2017-65755: ANALYTICAL SOLUTIONS FOR LIQUID SLUGS AND PIGS TRAVELING IN PIPELINES WITH ENTRAPPED GAS
A. Tijsseling, TU Eindhoven, Eindhoven, Netherlands, Q. Hou, Tianjin University, Tianjin, China; Z. Bozkus, Middle East Technical University, Ankara, Turkey

PVP2017-66020: EXPERIMENTAL STUDY OF THE DYNAMIC RESPONSE OF PARTIALLY FILLED PIPES FOCUSED ON NATURAL FREQUENCIES AND MODE SHAPES
O. de la Torre, National University of Ireland Galway, Galway, Ireland; X. Escaler, Universitat Politècnica De Catalunya, Barcelona, Spain; J. Goggins, National University of Ireland Galway, Galway, Ireland

PVP2017-65736: DYNAMIC INSTABILITY ANALYSIS OF A SPRING-LOADED PRESSURE SAFETY VALVE CONNECTED TO PIPE BY USING CFD METHOD
F. Zheng, X. Song, W. Sun, Dalian University of Technology, Dalian, China

SESSION 2.2O (DA-2-1)

Tuesday, July 18, 10:30 am – 12:15 pm, Waikoloa Suite 3
DESIGN AND ANALYSIS OF PIPING AND COMPONENTS—I

Developed by: B. Li, AMEC Foster Wheeler, Toronto, ON, Canada; K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Chair: B. Li, AMEC Foster Wheeler, Toronto, ON, Canada

Co-Chair: K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA

PVP2017-65025: ACOUSTIC VIBRATION INDUCED FATIGUE IN WELDED PIPE SUPPORTS

Y. Liu, Bechtel, Sugar Land, TX, USA; P. Diwakar, Bechtel Corp, Houston, TX, USA; D. Lin, Bechtel Oil, Gas & Chemicals, Inc., Houston, TX, USA; M. Jaouhari, Bechtel Corporation, Sugar Land, TX, USA; A. Prakash, Bechtel Nuclear Security & Environmental, San Ramon, CA, USA

PVP2017-65026: STRESS EFFECT ON PIPE BENDS OF TRIMMED ELBOW BASED ON ASME B31

Y. Liu, L. Shen, P. Diwakar, M. Jaouhari, P. Patel, Bechtel Oil, Gas & Chemicals, Inc., Houston, TX, USA

PVP2017-65043: VIBRATION TESTING OF COMPRESSION JOINTS

P. Hirschberg, Structural Integrity Associates, San Jose, CA, USA; M. Sindelar, Lokring Technology, Willoughby, OH, USA; M. Kassar, Exelon Generation, Warrenville, IL, USA; R. Haupt, Pressure Piping Engineering Associates Inc., Foster City, CA, USA

PVP2017-65053: FATIGUE ANALYSIS OF SMALL BORE FULL ENCIRCLEMENT SLEEVE AND SOCKET WELDS

M. Jones, A. Harris, J. Wilson, Rolls Royce Plc, Derby, United Kingdom

PVP2017-65237: NUMERICAL -EXPERIMENTAL STUDY ON THE EROSION-CAVITATION WEAR OF COAL OIL SLURRY VALVE

Z. Zheng, G. Ou, H. Jin, Zhejiang Sci-Tech University, Hangzhou, China

SESSION 2.2Q (TW-1-4)

Tuesday, July 18, 10:30 am – 12:15 pm, Kohala 4

FITNESS-FOR-SERVICE (FFS) PROCEDURES FOR EVALUATION OF DAMAGE OR DEFECTS IN PRESSURIZED EQUIPMENT USING API 579-1/ASME FFS-1 (PART 2)

Developed by: D. L. Stang, Omax Corporation, Kent, WA, USA
Chair: D. L. Stang, Omax Corporation, Kent, WA, USA
Presented by: P. E. Prueter, B. Macejko, The Equity Engineering Group, Inc., Shaker Heights, OH, USA

SESSION 2.2S (TW-4-6)

Tuesday, July 18, 10:30 am – 12:15 pm, Grand Promenade

TECHNOLOGY DEMONSTRATION FORUM—VI

Developed by: C. Jaske, HSI Group, Inc., Torrance, CA, USA; J. F. Cory, Jr., Siemens PLMS Software, Milford, OH, USA

Block 2.3: Tuesday, July 18, 2017 (2:00 pm – 3:45 pm)

SESSION 2.3A (DA-16-6)

Tuesday, July 18, 2:00 pm – 3:45 pm, Kohala 1

CLOSING SESSION: WHAT'S NEXT FOR THE INDUSTRY?

2nd International Symposium on Coke Drum Life Cycle Management—Sponsored by Design & Analysis Technical Committee

Developed by: C. Rodery, BP p.l.c, League City, TX, USA; K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Chair: C. Rodery, BP p.l.c, League City, TX, USA
Co-Chair: B. Hantz IV, Valero Energy Corp., San Antonio, TX, USA; J. Taagepera, Chevron ETC, Richmond, CA, USA

SESSION 2.3B (FSI-2-6)

Tuesday, July 18, 2:00 pm – 3:45 pm, Kohala 2

AXIAL FLOW FSI/FUEL VIBRATION

Symposium of Flow-Induced Vibration—Sponsored by Fluid-Structure Interaction Technical Committee

Developed by: P. Moussou, IMSIA, Palaiseau, France; C. Meskell, Trinity College, Dublin, Ireland
Chair: P. Moussou, IMSIA, Palaiseau, France
Co-Chair: Woo Gun Sim, Hannam University, Daejeon, Korea (Republic)

PVP2017-65045: CONFINEMENT DEPENDENCY ON ADDED STIFFNESS EFFECT ON A FUEL ASSEMBLY UNDER AXIAL FLOW

G. Ricciardi, CEA Cadarache, St Paul les Durance, France

PVP2017-65172: CONSTRUCTION OF DYNAMIC MODEL OF PLANAR AND ROCKING MOTION FOR FREE STANDING SPENT FUEL RACK

K. Sakamoto, R. Kan, A. Takai, S. Kaneko, University of Tokyo, Tokyo, Japan

PVP2017-65242: CRITICAL FLOW VELOCITY FOR A STATIC INSTABILITY OF PARALLEL-PLATE FUEL ASSEMBLIES (Presentation Only)

H. S. Kang, K. Lee, C. W. Shin, H. J. Kim, T. Kwon, Korea Atomic Energy Research Institute, Deajeon, Korea (Republic)

PVP2017-65664: FLUID DAMPING IN FUEL ASSEMBLIES

P. Moussou, IMSIA, Palaiseau, France; A. Guilloux, EDF, Palaiseau, France; G. Ricciardi, E. Boccaccio, CEA Cadarache, St Paul les Durance, France

PVP2017-65967: SIMULATION OF THE INTERACTION BETWEEN A SLENDER FLEXIBLE CYLINDER AND AN AXIAL HIGH-SPEED AIR FLOW

J. Degroote, I. Hertens, A. Osman, J. Vierendeels, Ghent University, Ghent, Belgium

SESSION 2.3C (CS-11-2)

Tuesday, July 18, 2:00 pm – 3:45 pm, Kohala 3

FAILURE ANALYSIS OF ENGINEERING STRUCTURE—I

Symposium on Recent Developments in International Codes and Standards—Sponsored by Codes & Standards Technical Committee

Developed by: G. Jia, The General Administration of Quality Supervision, Inspection and Quarantine, Beijing, China
Chair: G. Jia, The General Administration of Quality Supervision, Inspection and Quarantine, Beijing, China
Co-Chair: G. Deng, China Special Equipment Inspection and Research Institution, Beijing, China

PVP2017-65018: OIL STORAGE TANK SETTLEMENT ASSESSMENT BASED ON STANDARD AND FINITE ELEMENT ANALYSES

L. Shi, X. Wang, Fushun Research Institute of Petroleum and Petrochemicals, SINOPEC, Fushun, China; J. Shuai, K. Xu, China University of Petroleum-Beijing, Beijing, China; M. Li, Fushun Research Institute of Petroleum and Petrochemicals, SINOPEC, Fushun, China

PVP2017-65092: STUDY ON NUMERICAL SIMULATION OF GAS-SOLID EROSION FOR FEED TYPE TEE

Z. Fang, China Special Equipment Inspection and Research Institute, Beijing, China; W. Hu, China University of Petroleum-Beijing, Beijing, China; D. Liu, G. Li, China Special Equipment Inspection and Research Institute, Beijing, China

PVP2017-65279: THE RESEARCH OF THE FITNESS-FOR-SERVICE ASSESSMENT ON STEELS FOR PRESSURE VESSEL SUBJECTED TO FIRE DAMAGE: METALLURGICAL ANALYSIS AND THE INFLUENCE ON PERFORMANCE DEGRADATION

B. Li, W. Shu, X. Tang, Y. Zuo, Shanghai Institute of Special Equipment Inspection and Technical Research, Shanghai, China

PVP2017-65687: ON-LINE MONITORING AND WARNING OF IMPORTANT IN-SERVICE PRESSURE EQUIPMENT BASED ON CHARACTERISTIC SAFETY PARAMETERS

X. Chen, T. Yang, Z. Fan, Y. Lv, Hefei General Machinery Research Institute, Hefei, Anhui, China

PVP2017-66162: SIGNAL ANALYSIS AND PROCESSING FOR MAGNETIC FLUX LEAKAGE INSPECTION DEVICE FOR UNDERGROUND STORAGE TANK

Z. Ling, M. Zheng, M. Wang, W. Guo, W. Tan, Zhejiang Provincial Special Equipment Inspection and Research Institute, Hangzhou, China

SESSION 2.3D (MF-15-2)

Tuesday, July 18, 2:00 pm – 3:45 pm, King's 1

COMPOSITE SYSTEMS FOR PRESSURE VESSELS AND PIPING

International Symposium on Composite Systems for Pressure Vessels and Piping—Co-Sponsored by Design & Analysis, Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: M. Uddin, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA; P. Mertiny, University of Alberta, Edmonton, AB, Canada
Chair: M. Uddin, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA
Co-Chair: P. Mertiny, University of Alberta, Edmonton, AB, Canada

PVP2017-65209: PERFORMANCE OF ALL-POLYPROPYLENE COMPOSITES

AT LNG TEMPERATURES
B. Atli-Veltin, TNO, Delft, Netherlands
PVP2017-66075: RELATING ASME FLAW EVALUATION TO ASME TASK GROUP ON CARBON FIBER REPAIRS
T. J. Jimenez, Fiberwrap, San Diego, CA, USA; E. Houston, Structural Integrity Associates, Inc., Centennial, CO, USA; N. Meyer, Fyfe Company, San Diego, CA, USA
PVP2017-66076: INTERNAL REPAIR OF BURIED PIPES WITH CFRP COMPOSITES
R. Ojdrovic, Simpson Gumpertz & Heger, Waltham, MA, USA; A. Pridmore, Structural Technologies, Columbia, MD, USA
PVP2017-66129: APPLICATION OF CFRP FOR STEEL PIPELINE UPGRADES AT SURRY POWER STATION
J. Sealey, Surry Power Station, Smithfield, VA, USA; A. Pridmore, Structural Technologies, Columbia, MD, USA; R. Ojdrovic, Simpson Gumpertz & Heger, Waltham, MA, USA; L. Gordon, Dominion Surry Power Station, Surry, VA, USA

SESSION 2.3E (MF-5-1)

Tuesday, July 18, 2:00 pm – 3:45 pm, King's 2
EUROPEAN PROGRAMS IN STRUCTURAL INTEGRITY—I
Symposium on Structural Integrity—Co-Sponsored by Codes & Standards and Materials & Fabrication Technical Committees

Developed by: P. James, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom; E. Keim, T. Nicak, AREVA, Erlangen, Germany; D. Moinereau, Electricite De France, Moret-sur-Loing F-77818, France
Chair: A. Horn, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom
Co-Chair: S. Blasset, AREVA GmbH, Erlangen, Germany

PVP2017-65283: AGE 60+—APPLICABILITY OF AGEING RELATED DATA BASES AND METHODOLOGIES FOR ENSURING SAFE OPERATION OF LWR BEYOND 60 YEARS
M. Brumovsky, UJV Rez a.s., Rez, Czech Republic; S. Ortner, UK National Nuclear Lab, Abingdon, United Kingdom
PVP2017-65757: A NUMERICAL STUDY ON FRACTURE TOUGHNESS OF CANDU PRESSURE TUBE
T. Nicak, AREVA, Erlangen, Germany; B. Wasiluk, Canadian Nuclear Safety Commission, Kanata, ON, Canada; E. Keim, AREVA, Erlangen, Germany
PVP2017-65762: TECHNICAL BASIS FOR CHARACTERIZATION OF MULTIPLE CLOSELY SEPARATED FLAWS LOCATED IN DIFFERENT PLANES
S. Blasset, T. Nicak, E. Keim, R. Tiete, F. Obermeier, AREVA GmbH, Erlangen, Germany

SESSION 2.3F (CS-21-1)

Tuesday, July 18, 2:00 pm – 3:45 pm, King's 3
FATIGUE MONITORING AND RELATED ASSESSMENT METHODS—I
Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: J. Rudolph, AREVA GmbH, Erlangen, Bavaria, Germany
Chair: J. Rudolph, AREVA GmbH, Erlangen, Bavaria, Germany
Co-Chair: S. Bergholz, AREVA GmbH, Erlangen, Bavaria, Germany; T. Gilman, Structural Integrity Associates, Inc., San Jose, CA, USA

PVP2017-66072: STRUCTURAL HEALTH MONITORING FOR CONVENTIONAL POWER PLANTS—SOLUTIONS FOR OPERATIONAL CHALLENGES
J. Rudolph, AREVA GmbH, Erlangen, Bavaria, Germany; S. Bergholz, AREVA GmbH, Erlangen, Bavaria, Germany
PVP2017-66190: A SCREENING METHODOLOGY TO RAPIDLY REDUCE ILI DATA, VISUALISE AND DETERMINE MOST DETRIMENTAL DEFECTS IN PIPELINES
N. Larrosa, The University of Manchester, Manchester, United Kingdom; P. L. Crespo, University of Malaga, Malaga, Spain; R. A. Ainsworth, The University of Manchester, Manchester, United Kingdom
PVP2017-65678: STRESS LINEARIZATION CONCEPTS AND RESTRICTIONS IN ELASTIC DESIGN BY ANALYSIS
D. Mackenzie, University of Strathclyde, Glasgow, Scotland
PVP2017-66090: A STUDY FOR EVALUATING LOCAL DAMAGE TO REINFORCED CONCRETE PANELS SUBJECTED TO OBLIQUE IMPACT OF DEFORMABLE PROJECTILE
A. Nishida, Y. Ohta, H. Tsubota, Y. Li, Japan Atomic Energy Agency, Ibaraki-Ken, Japan

SESSION 2.3G (DA-12-2)

Tuesday, July 18, 2:00 pm – 3:45 pm, Queen's 4
FRACTURE—II
Symposium on Fracture Mechanics and Analysis—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: S. Kataoka, JGC Corporation, Yokohama, Japan; S. Finneran, DNV GL - Materials Advisory Services, Dublin, OH, USA
Chair: S. Kataoka, JGC Corporation, Yokohama, Japan
Co-Chair: S. Finneran, DNV GL - Materials Advisory Services, Dublin, OH, USA

PVP2017-65575: APPLICATION OF THE EXTENDED FINITE ELEMENT METHOD (XFEM) TO SIMULATE CRACK PROPAGATION IN PRESSURIZED STEEL PIPES
M. Lin, S. Agbo, J. J. R. Cheng, University of Alberta, Edmonton, AB, Canada; N. Yoosef-Ghodsi, Enbridge Pipelines Inc., Edmonton, AB, Canada; S. Adeeb, University of Alberta, Edmonton, AB, Canada
PVP2017-65745: BENCHMARK OF NUMERICAL PREDICTIONS OF STRESS INTENSITY FACTORS: FINITE ELEMENTS AND EXTENDED-FINITE ELEMENTS METHODS
R. Lacroix, A. Caron, S. Dischert, P. Conraux, ESI Group, Lyon, France; H. Deschanels, AREVA NP, Lyon, France
PVP2017-65962: RECENT DEVELOPMENTS OF FRACTURE MECHANICS TOOLS FOR NOZZLE CORNERS
A. Blouin, S. Chapuliot, S. Marie, A. Jaubert, S. Courtin, AREVA NP, Paris la Defense, France

SESSION 2.3H (OAC-6-6)

Tuesday, July 18, 2:00 pm – 3:45 pm, Queen's 5
LIFE CYCLE MANAGEMENT (LCM) FOR HYDROPROCESSING REACTORS
Symposium on Life Cycle Management—Co-Sponsored by High-Pressure Technology and Operations, Applications & Components Technical Committees

Developed by: T. Tahara, T&T Technology, Saitama Pref, Japan; L. Sabattoli, ATB Riva Calzoni S.p.A., Roncadelle, Brescia, Italy; L. Antalffy, Fluor, Sugar Land, TX, USA
Chair: T. Tahara, T&T Technology, Saitama Pref, Japan
Co-Chair: L. Sabattoli, ATB Riva Calzoni S.p.A., Roncadelle, Brescia, Italy
Panelists:
T. Tahara, Seikowave KK., Fujiminno., Saitama Pref., Japan
S. Terada, Kobe Steel, Ltd., Takasago, Hyogo, Japan
A. Yasutomi, The Japan Steel Works, Ltd., Hokkaido, Japan
G. Buchheim, Becht Engineering Co., Inc., Kihei, HI, USA

SESSION 2.3I (CT-3-1)

Tuesday, July 18, 2:00 pm – 3:45 pm, Queen's 6
TIGHTNESS AND FUGITIVE EMISSIONS OF BOLTED FLANGE JOINTS

Developed by: T. Kobayashi, National Institute of Technology, Numazu College, Numazu, Shizuoka, Japan; S. Nagata, Toyo Engineering Corporation, Chiba, Japan
Chair: T. Kobayashi, National Institute of Technology, Numazu College, Numazu, Shizuoka, Japan
Co-Chair: S. Nagata, Toyo Engineering Corporation, Chiba, Japan

PVP2017-65420: GASKET TIGHTNESS: AN EXPLORATION OF ACHIEVABLE TIGHTNESS IN ASME B16.5 STANDARD FLANGES FOR VARIOUS GASKET TECHNOLOGIES
A. Bausman, VSP Technologies, Kingsport, TN, USA; D. Rice, VSP Technologies, Leland, NC, USA; A. F. Waterland, III, VSP Technologies, Prince George, VA, USA
PVP2017-65734: EXPLORING M & Y GASKET FACTORS AND THEIR DEGREE OF CORRELATION WITH PROPOSED PVRC GASKET FACTORS
D. Rice, VSP Technologies, Leland, NC, USA; A. Fitzgerald Waterland, III, VSP Technologies, Prince George, VA, USA; A. Bausman, VSP Technologies, Kingsport, TN, USA

PVP2017-65017: PREDICTING LEAK RATE OF GASSES THROUGH PACKING SEALS WITH DIFFERENT ANALYTICAL APPROACHES
A. Aweimer, A.-H. Bouzid, M. Kazeminia, École de Technologie Supérieure, Montreal, QC, Canada
PVP2017-65887: A DETAILED PROPOSAL FOR AN OXIDATION TEST FOR GRAPHITE IN GASKETS
S. Bond, FLEXITALLIC, Houston, TX, USA
PVP2017-65010: OXIDATION STUDY OF GRAPHITE AT VARYING TEMPERATURES (Presentation Only)
R. Taylor, Lamons, Houston, United Kingdom; Kris Kolb, Lamons Gasket Co., Houston, TX, USA

SESSION 2.3J (OAC-4-3)

Tuesday, July 18, 2:00 pm – 3:45 pm, Kona 1
PACKAGING MATERIALS AND COMPONENTS

Developed by: M. Weber, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany
Chair: M. Weber, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany
Co-Chair: J. Jordan, Savannah River Nuclear Solutions, Aiken, SC, USA

PVP2017-65364: COMPARISON OF EXPERIMENTAL RESULTS AND NUMERICAL SIMULATIONS OF PENETRATION TESTS WITH DAMPING CONCRETE
R. Scheidemann, L. Qiao, K. Müller, Federal Institute for Materials Research and Testing, Berlin, Germany
PVP2017-65697: DEVELOPMENT OF A MATERIAL MODEL FOR THE CRUSH OF SPRUCE WOOD
M. Neumann, G. Eisenacher, T. Schönfelder, F. Wille, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany
PVP2017-66195: THE SAVY-4000 MEETING THE CHALLENGE FOR WORKER SAFETY (Presentation Only)
T. Stone, P. Smith, Los Alamos National Laboratory, Los Alamos, NM, USA
PVP2017-65822: ADAPTATION OF AN AIR TRANSPORT PACKAGE DESIGN FOR PRESSURE RETAINING VESSELS (Presentation Only)
P. Blanton, Savannah River Nuclear Solutions, Aiken, SC, USA; K. Eberl, Savannah River National Laboratory, Aiken, SC, USA

SESSION 2.3K (MF-3-6)

Tuesday, July 18, 2:00 pm – 3:45 pm, Kona 2
HYDROGEN COMPATIBILITY OF PRESSURE VESSELS

Developed by: C. San Marchi, Sandia National Laboratories, Livermore, CA, USA
Chair: P. Bortot, TenarisDalmine, Dalmine (BG) Italy, Italy
Co-Chair: Y. Wada, The Japan Steel Works, Ltd., Hokkaido, Japan

PVP2017-65247: HYDROGEN EMBRITTLEMENT SUSCEPTIBILITY OF CLAD STEEL PIPES
L. Jemblie, The Norwegian University of Science and Technology, Trondheim, Norway; V. Olden, B. Nyhus, SINTEF Materials and Chemistry, Trondheim, Norway; O. M. Akselsen, The Norwegian University of Science and Technology, Trondheim, Norway
PVP2017-65498: THE REVISED HTHA SUSCEPTIBILITY METHOD ON RISK ASSESSMENT OF HYDROGENATION REACTORS CONCERNING THE EFFECTS OF AUSTENITIC STAINLESS OVERLAY
J. Zhao, Nanjing Tech University, Nanjing, Jiangsu Province, China
PVP2017-65040: EFFECT OF UNCONTROLLED HYDROGEN INJECTION ON SCC SUSCEPTIBILITY OF 304L STEEL IN HIGH TEMPERATURE WATER
A. L. Medina-Almazán, Instituto Nacional de Investigaciones Nucleares, Ocoyoacac, Mexico; G. Galicia-Aguilar, Instituto de Ingeniería/Universidad Veracruzana, Boca del Rio, Veracruz, Mexico; J. C. Zenteno-Suárez, C. Arganis-Juárez, N. López-García, Instituto Nacional de Investigaciones Nucleares, Ocoyoacac, Mexico
PVP2017-65556: DEVELOPMENT FOR MANUFACTURE OF REFINING REACTORS MADE OF 9CR-1MO-V STEEL
T. Nakanishi, S. Terada, M. Yamada, I. Maeda, T. Ikeuchi, Kobe Steel, Ltd., Takasago, Hyogo, Japan
PVP2017-66099: THE EUROPEAN FUNDED PROJECT MATHRYCE: A SUMMARY OF THE RESULTS AND RELATED STANDARDIZATION ACTIVITIES (Presentation Only)
P. Bortot, M. E. Cristea, Dalmine S.p.A, Dalmine (BG), Italy

SESSION 2.3L (SE-3-3)

Tuesday, July 18, 2:00 pm – 3:45 pm, Kona 3
DAMPING AND VIBRATION CONTROL—III

Developed by: K. Minagawa, Saitama Institute of Technology, Saitama, Japan
Chair: K. Aida, Mitsubishi Hitachi Power Systems, Ltd., Kure-Shi, Japan
Co-Chair: K. Minagawa, Saitama Institute of Technology, Saitama, Japan

PVP2017-65334: GA-OPTIMIZED FUZZY LOGIC CONTROL OF MULTI DEGREE FREEDOM STRUCTURE UNDER SEISMIC EXCITATION
T. P. Huu, A. Sone, N. Miura, Kyoto Institute of Technology, Kyoto, Japan
PVP2017-65493: PRECISE OPTIMIZATION OF THREE-ELEMENT TYPE DYNAMIC VIBRATION ABSORBER (MINIMIZATION OF MAXIMUM AMPLITUDE MAGNIFICATION FACTOR)
O. Nishihara, Kyoto University, Kyoto, Japan
PVP2017-65707: DESIGN METHOD OF SEMI-ACTIVE CONTROL SYSTEMS MINIMIZING THE ERROR BETWEEN THE CONTROLLED SIGNALS OF THE SEMI-ACTIVE AND ITS REFERENCE ACTIVE CONTROL SYSTEMS
K. Hiramoto, Niigata University, Niigata, Japan; T. Matsuoka, Meiji University, Kawasaki, Kanagawa, Japan; K. Sunakoda, Akita University, Saitama, Japan

SESSION 2.3M (HT-6-1)

Tuesday, July 18, 2:00 pm – 3:45 pm, Waikoloa Suite 1
PANEL SESSION ON DISCUSSION OF API 17TR8 REQUIREMENTS AS RELATED TO ASME STANDARDS

Developed by: J. Kaculi, Dril-Quip Inc., Houston, TX, USA
Chair: J. Kaculi, Dril-Quip Inc., Houston, TX, USA
Co-Chair: D. Peters, Structural Integrity Associates, Edinboro, PA, USA
Panelists:
D. Peters, Structural Integrity Associates, Inc., Edinboro, PA, USA
Man Pham, Anadarko, The Woodlands, TX, USA
J. Kaculi, Dril-Quip Inc., Houston, TX, USA

SESSION 2.3N (FSI-1-4)

Tuesday, July 18, 2:00 pm – 3:45 pm, Waikoloa Suite 2
CORROSION, FATIGUE AND IMPACT

Developed by: A. Tijsseling, TU Eindhoven, Eindhoven, Netherlands; J. C. Jo, Pusan National University, Busan, Korea (Republic); C. S. Martin, Georgia Institute of Technology, South Dennis, MA, USA; K. Inaba, Tokyo Institute of Technology, Tokyo, Japan
Chair: A. Tijsseling, TU Eindhoven, Eindhoven, Netherlands
Co-Chair: J. C. Jo, Pusan National University, Busan, Korea (Republic)

PVP2017-65154: INVESTIGATION OF FLOW STRUCTURE TO PREVENT THERMAL FATIGUE IN A DOWNWARD BRANCH PIPE WITH A CLOSED END
K. Miyoshi, A. Nakamura, Institute of Nuclear Safety System, Inc., Fukui, Japan
PVP2017-65359: IMPROVEMENT OF FAC MAINTENANCE PROGRAM ISSUED FROM BRT-CICERO—VIA CFD CALCULATIONS (Presentation Only)
E. Gipon, S. Trevin, M.-P. Moutrille, EDF DTG, Grenoble, France
PVP2017-65606: THERMO-MECHANICAL LOADING OF FULL-SCALE WELDED PIPING COMPONENTS IN HIGH TEMPERATURE WATER ENVIRONMENT
M. C. Kammerer, X. Schuler, R. Kulenovic, M. Zhou, E. Laurien, University of Stuttgart, Stuttgart, Baden-Württemberg, Germany
PVP2017-65823: NON-REFLECTING BOUNDARIES FOR SMOOTHED PARTICLE HYDRODYNAMICS MODELING HYPERVELOCITY IMPACTS (Presentation Only)
C. Giannopapa, Eindhvoen University of Technology, Eindhoven, Netherlands

SESSION 2.3O (DA-2-2)

Tuesday, July 18, 2:00 pm – 3:45 pm, Waikoloa Suite 3
DESIGN AND ANALYSIS OF PIPING AND COMPONENTS—II

Developed by: K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Chair: K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Co-Chair: B. Li, AMEC Foster Wheeler, Toronto, ON, Canada

PVP2017-65818: INVESTIGATION OF SMOOTH PIPE BENDS UNDER THE

EFFECT OF IN-PLANE BENDING
D. Abdulhameed, J. J. R. Cheng, University of Alberta, Edmonton, AB, Canada; M. Martens, TransCanada PipeLines, Calgary, AB, Canada; S. Adeeb, University of Alberta, Edmonton, AB, Canada
PVP2017-65797: TARGET RELIABILITY INDEX FOR LOAD AND RESISTANCE FACTOR DESIGN OF CLASS 2 CARBON STEEL PIPES
K. Avrithi, R. Mendoza, University of Houston-Downtown, Houston, TX, USA
PVP2017-65333: BENCHMARKING OF EXPLICIT DYNAMIC FINITE ELEMENT ANALYSIS FOR STORAGE AND TRANSPORTATION CASKS UNDER IMPACT LOADING CONDITIONS
S. Yoshida, T. Okamoto, Tepco Systems Corporation, Koto-Ku, Japan; S. Takagi, Tokyo Electric Power Company Holdings, Tokyo, Japan
PVP2017-65096: DESIGN MODIFICATION TO MITIGATE THE REACTOR INNER ZONE INLET HEADER TEMPERATURE IN A CANDU REACTOR
B. Li, AMEC Foster Wheeler, Toronto, ON, Canada; P. Tang, Bruce Power, Tiverton, ON, Canada; K. Khan, AMEC Foster Wheeler Nuclear Canada, Toronto, ON, Canada; A. Bhatia, Bruce Power, Tiverton, ON, Canada

SESSION 2.3Q (TW-1-5)

Tuesday, July 18, 2:00 pm – 3:45 pm, Kohala 4
FATIGUE ASSESSMENT OF WELDMENTS (PART 1)

Developed by: D. L. Stang, Omax Corporation, Kent, WA, USA
Chair: D. L. Stang, Omax Corporation, Kent, WA, USA
Presented by: P. Dong, University of Michigan, Ann Arbor, MI, USA; M. J. Doré, TWI Ltd., Cambridge, UK

SESSION 2.3S (TW-4-7)

Tuesday, July 18, 2:00 pm – 3:45 pm, Grand Promenade
TECHNOLOGY DEMONSTRATION FORUM—VII

Developed by: C. Jaske, HSI Group, Inc., Torrance, CA, USA; J. F. Cory, Jr., Siemens PLMS Software, Milford, OH, USA

Block 2.4: Tuesday, July 18, 2017 (4:00 pm – 5:45 pm)

SESSION 2.4A (NDPD-1-1)

Tuesday, July 18, 4:00 pm – 5:45 pm, Kohala 1
EMERGING NDE AND RELIABILITY—TECHNIQUES AND APPLICATIONS

Developed by: V. Agarwal, Idaho National Laboratory, Idaho Falls, ID, USA; S. Dugan, University of Stuttgart, Stuttgart, Baden-Württemberg, Germany; M. Spies, Fraunhofer Institute for Non-destructive Testing, Saarbruecken, Germany
Chair: V. Agarwal, Idaho National Laboratory, Idaho Falls, ID, USA
Co-Chair: J. Oka, Los Alamos National Laboratory, Los Alamos, NM, USA
PVP2017-65474: ASSESSING ADVANCED TEST REACTOR PROCESS STATES USING ACOUSTIC MEASUREMENT INFRASTRUCTURE
V. Agarwal, J. A., Smith, Idaho National Laboratory, Idaho Falls, ID, USA
PVP2017-66191: INITIAL THERMAL TESTING OF THE PIPE OVER-PACK CONTAINER WITH A COMBUSTIBLE WASTE MATRIX FOR LOS ALAMOS NATIONAL LABORATORY
J. Oka, T. Stone, P. Smith, M. Caviness, M. Croce, Los Alamos National Laboratory, Los Alamos, NM, USA
PVP2017-65523: DEFORMATION ANALYSIS OF DENTED PIPELINES VIA SURFACE INTERPOLATION
C. Okoloekwe, University of Alberta, Edmonton, AB, Canada; M. Kainat, D. Langer, S. Hassanien, Enbridge Liquid Pipelines, Edmonton, AB, Canada; J. J. R. Cheng, University of Alberta, Edmonton, AB, Canada
PVP2017-65306: MULTISENSOR DEGRADATION DATA FUSION AND REMAINING LIFE PREDICTION
E. Elsayed, C. Wang, J. Cabrera, K. Li, Rutgers University, Piscataway, NJ, USA
PVP2017-66236: A NOVEL DEFECT LOCATION METHOD FOR PLATE-LIKE STRUCTURE BY USING FORWARD-SCATTERING WAVE AND FUZZY C-MEANS CLUSTERING
S. Chen, S. Zhou, Y. Li, L. Zhang, East China University of Science and Technology, Shanghai, China

SESSION 2.4B (FSI-2-7)

Tuesday, July 18, 4:00 pm – 5:45 pm, Kohala 2
PIPING & ACOUSTICS—II
Symposium of Flow-Induced Vibration—Sponsored by Fluid-Structure Interaction Technical Committee

Developed by: A. Mohany, University of Ontario Institute of Technology, Oshawa, ON, Canada; M. Hassan, University Of Guelph, Guelph, ON, Canada
Chair: A. Mohany, University of Ontario Institute of Technology, Oshawa, ON, Canada
Co-Chair: S. Belfroid, TNO, Delft, Netherlands
PVP2017-65298: AEROACOUSTIC SOURCE OF MULTIPLE CAVITIES AND PREDICTION OF SELF-EXCITED OSCILLATIONS
A. Shaaban, S. Ziada, McMaster University, Hamilton, ON, Canada
PVP2017-65402: NATURAL FREQUENCIES AND DAMPING OF A FULL-SCALE PIPE LOOP IN AIR AND WATER
H. Goyder, Cranfield University, Swindon, United Kingdom
PVP2017-65405: FLOW-INDUCED NOISE OF PERFORATED PLATES AT OBLIQUE ANGLES OF INCIDENCE
P. Vanoostveen, McMaster University, Mount Hope, ON, Canada; S. Ziada, McMaster University, Hamilton, ON, Canada
PVP2017-65692: COMBUSTION OSCILLATION IN GAS TURBINE COMBUSTOR FOR FUEL MIXTURE OF HYDROGEN AND NATURAL GAS
A. Uemichi, I. Kanetsuki, S. Kaneko, The University of Tokyo, Tokyo, Japan

SESSION 2.4C (CS-11-3)

Tuesday, July 18, 4:00 pm – 5:45 pm, Kohala 3
EXAMPLE OF ENGINEERING FAILURE ANALYSIS IN CHINA
Symposium on Recent Developments in International Codes and Standards—Sponsored by Codes & Standards Technical Committee

Developed by: X. Chen, Hefei General Machinery Research Institute, Hefei, Anhui, China
Chair: X. Chen, Hefei General Machinery Research Institute, Hefei, Anhui, China
Co-Chair: Z. Fan, Hefei General Machinery Research Institute, Hefei, China
PVP2017-65282: FITNESS-FOR-SERVICE ASSESSMENT ON PRESSURE PIPING OF GRADE X70 PIPELINE STEEL (API SPEC.5L) AFTER EXPOSURE TO FIRE
Y. Zuo, W. Shu, X. Tang, B. Li, Shanghai Institute of Special Equipment Inspection and Technical Research, Shanghai, China
PVP2017-65492: CASE STUDY OF SHAKEDOWN EVALUATION OF A SHELL WITH A NOZZLE BASED ON ELASTIC-PLASTIC ANALYSIS
J. Shen, Wison Engineering Co., Ltd., Shanghai, China; H. Peng, Tsinghua University, Beijing, China; L. Wan, Sinopec Engineering Incorporation, Beijing, China; Y. Tang, Wison Engineering Co., Ltd., Shanghai, China; Y. Liu, Tsinghua University, Beijing, China
PVP2017-65632: STRESS ANALYSIS AND OPTIMIZATION RESEARCH FOR CLAD STEEL TUBE SHEET IN DIFFERENT TUBE PATTERNS
K. Wang, Z. Liu, W. Xu, G. Tan, Y. Wang, Zhengzhou University, Zhengzhou, Henan province, China
PVP2017-65651: CORROSION BEHAVIOR OF X70 PIPELINE STEEL AND CORROSION RATE PREDICTION UNDER THE COMBINATION OF CORROSIVE MEDIUM AND APPLIED PRESSURE
K. Li, W. Wu, G. Cheng, Y. Li, H. Hu, Xi'an Jiaotong University, Xi'an, China
PVP2017-66172: LOAD AND RESISTANCE FACTOR DESIGN OF DUAL CRITERION AGAINST GROSS PLASTIC DEFORMATION AND COLLAPSE
C.-H. Duan, X.-X. Li, Beijing University of Chemical Technology, Beijing, China; Y. Sun, HuaLu Engineering & Technology Co., Ltd., Shaanxi, China; M. Lu, Tsinghua University, Beijing, China

SESSION 2.4D (MF-16-1)

Tuesday, July 18, 4:00 pm – 5:45 pm; King's 1
PLASTIC AND COMPOSITE PIPE
International Symposium on Composite Systems for Pressure Vessels and Piping—Co-Sponsored by Design & Analysis, Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: S. Kalyanam, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA; P. Rush, MPR Associates, Alexandria, VA, USA
Chair: S. Kalyanam, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA
Co-Chair: P. Rush, MPR Associates, Alexandria, VA, USA

PVP2017-65591: RELATIVE INFLUENCE OF SOIL STIFFNESS AND ELBOW GEOMETRY ON BURIED PIPING THERMAL STRESSES
M. P. H. Marohl, G. Frazee, T. Musto, Sargent & Lundy LLC, Chicago, IL, USA

PVP2017-65990: EVALUATION OF ASME CLASS 3 HDPE FLANGED JOINTS
T. Musto, G. Frazee, M. P. H. Marohl, Sargent & Lundy, L.L.C., Chicago, IL, USA

PVP2017-66146: ACCEPTANCE LIMITS FOR SUBSURFACE VOIDS IN HDPE PIPING
P. Rush, MPR Associates, Alexandria, VA, USA; D. Scarth, Kinectrics Inc., Toronto, ON, Canada; D. Munson, Consultant, Honolulu, HI, USA

SESSION 2.4E (MF-17-1)

Tuesday, July 18, 4:00 pm – 5:45 pm; King's 2

PROBABILISTIC ASSESSMENT OF FAILURE

Symposium on Probabilistic Assessments and Risk Management—Co-Sponsored by Codes & Standards, Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: S. Xu, Kinectrics Inc., Toronto, ON, Canada; K. Nikbin, Imperial College London, London, United Kingdom
Chair: J. C. Jin, Canadian Nuclear Safety Commission, Ottawa, ON, Canada
Co-Chair: K. Nikbin, Imperial College London, London, United Kingdom

PVP2017-65989: PROPOSED APPROACH OF SCENARIO ANALYSIS USING A PROBABILISTIC CODE
C. Sallaberry, R. Kurth, F. Brust, E. Kurth, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA

PVP2017-65991: SENSITIVITY ANALYSIS FOR XLPR ACCEPTANCE TESTING
C. Sallaberry, R. Kurth, F. Brust, E. Kurth, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA

PVP2017-65255: ASSESSMENT OF A STRESS-FREE TEMPERATURE MODEL FOR RESIDUAL STRESSES IN SURFACE CLADDING OF A REACTOR PRESSURE VESSEL
B. R. Bass, P. T. Williams, T. Dickson, H. Klasky, Oak Ridge National Laboratory, Oak Ridge, TN, USA

SESSION 2.4F (CS-3-1)

Tuesday, July 18, 4:00 pm – 5:45 pm, King's 3

ENVIRONMENTAL FATIGUE ISSUES—I

Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: S. Asada, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; S. Mohanty, Argonne National Laboratory, Lemont, IL, USA; C. Faidy, CF Integrity Engineering, Tassin, France; H. Mehta, GE Hitachi Nuclear Engineering, San Jose, CA, USA
Chair: S. Asada, Mitsubishi Heavy Industries, Ltd., Kobe, Japan
Co-Chair: H. Mehta, GE Hitachi Nuclear Engineering, San Jose, CA, USA

PVP2017-65006: OVERVIEW OF INTERNATIONAL IMPLEMENTATION OF ENVIRONMENTAL FATIGUE (UPDATE)
F. H. E De Haan-de Wilde, NRG, Petten, Netherlands, F. Blom, NRG, Petten, Netherlands

PVP2017-65302: CODIFIED FATIGUE CURVES FOR NUCLEAR AND NON-NUCLEAR PRESSURE EQUIPMENT (Presentation Only)
C. Faidy, CF Integrity Engineering, Tassin, France; J. Rudolph, AREVA GmbH, Erlangen, Bavaria, Germany

PVP2017-66242: FATIGUE LIMIT IN THE ASME CODE FATIGUE DESIGN CURVES FOR AUSTENITIC AND FERRITIC STEELS
S. Ranganath, XGEN Engineering, San Jose, CA, USA; H. Mehta, GE Hitachi Nuclear Engineering, San Jose, CA, USA; J. Hosler, Electric Power Research Institute, Charlotte, NC, USA; N. Palm, Electric Power Research Institute, Washington, PA, USA

PVP2017-65257: COMPLEX LOW-CYCLE FATIGUE DAMAGE ASSESSMENT OF COMPONENTS AND PIPING OF NUCLEAR POWER PLANT TYPE WWER
L. Vlcek, L. Junek, Institute of Applied Mechanics Brno, Ltd., Brno, Czech Republic

SESSION 2.4G (CS-22-1)

Tuesday, July 18, 4:00 pm – 5:45 pm, Queen's 4

MASTER CURVE FRACTURE TOUGHNESS AND OTHER SMALL SPECIMEN MECHANICAL PROPERTIES—I

Symposium on Fracture Mechanics and Analysis—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: W. Server, ATI Consulting, Black Mountain, NC, USA; M. Yamamoto, Central Research Institute of Electric Power Industry, Yokosuka, Kanagawa, Japan
Chair: W. Server, ATI Consulting, Black Mountain, NC, USA
Co-Chair: M. Yamamoto, Central Research Institute of Electric Power Industry, Yokosuka, Kanagawa, Japan

PVP2017-65083: EVALUATION OF WEIBULL PARAMETERS BY DIFFERENT SMALL PUNCH TESTS SAMPLES BASED ON BEREMIN MODEL
K. Guan, L. Guo, M. Fu, East China University of Science and Technology, Shanghai, China

PVP2017-65174: EMBRITTLEMENT TREND CURVES FOR FRACTURE TOUGHNESS OF 15KH2MFAA TYPE STEEL
M. Brumovsky, M. Kytka, R. Kopriva, UJV Rez a.s., Rez, Czech Republic

PVP2017-65396: EUROPEAN STANDARD ON SMALL PUNCH TESTING OF METALLIC MATERIALS
M. Bruchhausen, European Commission, Joint Research Centre, Petten, Netherlands, E. Altstadt, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; T. Austin, European Commission, Joint Research Centre, Petten, Netherlands, P. Dymacek, Institute of Physics of Materials Academy of Sciences of the Czech Republic, Brno, Czech Republic; S. Holmström, European Commission, Joint Research Centre, Petten, Netherlands

PVP2017-65518: APPLICATION OF MASTER CURVE APPROACH TO SURVEILLANCE TEST DATA FOR WWER-1000 REACTOR PRESSURE VESSELS
V. Revka, L. Chyrko, Institute for Nuclear Research, Kyiv, Ukraine

PVP2017-65982: LARGE SA-508 CLASS 2 NOZZLE FORGING NEAR-SURFACE FRACTURE TOUGHNESS
J. B. Hall, Westinghouse, Pittsburgh, PA, USA; B. E. Mays, Westinghouse, Pittsburgh, PA, USA; M. DeVan, AREVA, Lynchburg, VA, USA

SESSION 2.4H (OAC-8-1)

Tuesday, July 18, 4:00 pm – 5:45 pm, Queen's 5

AGEING MANAGEMENT AND LICENSE RENEWAL

Symposium on Life Cycle Management—Co-Sponsored by High-Pressure Technology and Operations, Applications & Components Technical Committees

Developed by: G. Bezdikian, Georges Bezdikian Consulting, Le Vesinet, France; G. Young, Entergy Services Inc., Russellville, AR, USA
Chair: G. Bezdikian, Georges Bezdikian Consulting, Le Vesinet, France
Co-Chair: G. Young, Entergy Services Inc., Russellville, AR, USA

PVP2017-65934: PROBABILISTIC STRUCTURAL ANALYSIS FOR AGING MANAGEMENT OF REACTOR INTERNALS BOLTING
G. Troyer, C. Waskey, S. Fyfitch, J. Somers, AREVA, Lynchburg, VA, USA

PVP2017-65998: ICE FUEL DEBRIS COLLECTION METHOD AT FUKUSHIMA DAIICHI NUCLEAR POWER PLANT (Presentation Only)
H. Morishige, Fukushima Nuclear Accident Countermeasures Review Group, Kobe, Hyougo, Japan; Y. Yamashiki, Kyoto University, Kyouto, Kyoto, Japan

PVP2017-65395: MEASUREMENT OF INDIRECT PARAMETERS TO ESTIMATE THE RESIDUAL STRAIN IN 304L STAINLESS STEELS (Presentation Only)
C. Arganis-Juárez, Instituto Nacional de Investigaciones Nucleares, Ocoyoacac, Mexico, Mexico; A. K. Arias-Alcántara, Universidad Nacional Autónoma de México, Mexico City, Ciudad de Mexico, Mexico

PVP2017-65769: SWELLING OF VVER-1000 CORE BAFFLE: NUMERICAL MODELING AND DIRECT MEASUREMENT OF ITS GEOMETRICAL DIMENSIONS
A. Oryniak, I. Orynyak, IPP-Centre Ltd., Kiev, Ukraine

SESSION 2.4I (CT-4-1)

Tuesday, July 18, 4:00 pm – 5:45 pm. Queen's 6

ASSEMBLY OF BOLTED FLANGE JOINTS

Developed by: A. Bausman, VSP Technologies, Kingsport, TN, USA; D. Rice, VSP Technologies, Leland, NC, USA
Chair: A. Bausman, VSP Technologies, Kingsport, TN, USA
Co-Chair: D. Rice, VSP Technologies, Leland, NC, USA

PVP2017-65639: FLOATING HEAD HEAT EXCHANGER JOINT—REVIEW AND SOLUTION TO HYDROTEST FAILURES (Presentation Only)
R. Noble, Asset55 Ltd., Hebburn, Tyne and Wear, United Kingdom

PVP2017-65701: INTRODUCTION OF GASKET TESTING PROTOCOLS IN THE NEW RCC-M® F7000 REVISION PROPOSAL
H. Lejeune, C. Boulben, Cetim, Nantes, France

PVP2017-66252: VBA APP FOR THE CALCULATION OF OPTIMAL TIGHTENING SEQUENCES FOR RING TYPE JOINTS
I. Coria, M. Abasolo, J. Aguirrebeitia, I. Heras, University of the Basque Country, Bilbao, Vizcaya, Spain

PVP2017-66275: ANALYTICAL MODELLING OF ELASTIC INTERACTION IN BOLTED FLANGE GASKETED JOINTS
L. Zhu, Xi'an Jiaotong University, Xi'an, China; A.-H. Bouzid, École de Technologie Supérieure, Montreal, QC, Canada; J. Hong, Xi'an Jiaotong University, Xi'an, Shaanxi, China

SESSION 2.4J (OAC-4-1)

Tuesday, July 18, 4:00 pm – 5:45 pm. Kona 1

THERMAL AND STRUCTURAL ANALYSIS

Developed by: M. Neumann, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany
Chair: M. Neumann, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany
Co-Chair: M. Weber, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany

PVP2017-65054: LIFE EXTENSION OF THE 9975 PACKAGE AS A STORAGE CONTAINER: THERMAL ANALYSIS
B. Kiflu, Savannah River Nuclear Solutions, Aiken, SC, USA; S. Hensel, Savannah River Nuclear Solutions, Aiken, SC, USA

PVP2017-65218: THERMAL ASPECTS OF SAFETY ANALYSIS FOR SHIPMENT OF WEST VALLEY MELTER
J. Laurinat, J. England, M. Kesterson, E. Ketusky, Savannah River National Laboratory, Aiken, SC, USA; C. Mckeel, Savannah River Nuclear Solutions, Aiken, SC, USA

PVP2017-65721: BEHAVIOR OF WOOD FILLED IMPACT LIMITERS DURING THE IAEA THERMAL TEST
M. Feldkamp, M. Erenberg, M. Nehrig, C. Bletzer, A. Musolff, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany

PVP2017-65880: DEVELOPMENT OF RADIOACTIVE MATERIAL SHIPPING/STORAGE CONTAINER O-RING ACCEPTANCE CRITERIA FOLLOWING LONG TERM AGING (Presentation Only)
J. Johnson, Savannah River Nuclear Solutions, North Augusta, SC, USA; E. Skidmore, Savannah River National Laboratory, Aiken, SC, USA; C. Mckeel, Savannah River Nuclear Solutions, Aiken, SC, USA

SESSION 2.4K (MF-4-1)

Tuesday, July 18, 4:00 pm – 5:45 pm; Kona 2

RESIDUAL STRESS MEASUREMENTS, WELD REPAIR AND ADVANCED WELDING TECHNIQUES

Developed by: D. Rudland, U.S. Nuclear Regulatory Commission, Frederick, MD, USA; E. Keim, AREVA, Erlangen, Germany
Chair: D. Rudland, U.S. Nuclear Regulatory Commission, Frederick, MD, USA
Co-Chair: E. Keim, AREVA, Erlangen, Germany

PVP2017-65466: DEVELOPMENT OF WELD RESIDUAL STRESS MEASUREMENT METHOD FOR PRIMED STEELS
Y.-P. Yang, EWI, Columbus, OH, USA; T. D. Huang, H. Rucker, Ingalls, Pascagoula, MS, USA; W. Zhang, The Ohio State University, Columbus, OH, USA; M. Harbison, Ingalls, Pascagoula, MS, USA

PVP2017-66180: A REVIEW OF WELDING RESEARCH WITHIN THE NEW NUCLEAR MANUFACTURING (NNUMAN) PROGRAMME
M. Smith, A. Vasileiou, D. Rathod, J. Francis, N. Irvine, The University of Manchester, Manchester, United Kingdom

PVP2017-65165: ANALYSIS AND OPTIMIZATION OF THE DEEP-HOLE DRILLING TECHNIQUE IN MEASURING COMPLEX RESIDUAL STRESS
G. Zheng, State Power Investment Corporation Central Research Institute, Beijing, China; S. Hossain, Military Technological College, Muscat, Oman; F. Shen, State Power Investment Corporation Central Research Institute, Beijing, China; C. Truman, University of Bristol, Bristol, United Kingdom

SESSION 2.4L (SE-9-1)

Tuesday, July 18, 4:00 pm – 5:45 pm, Kona 3

MULTI-HAZARDS AND MARGINS

Developed by: C. Petropoulos, Sargent & Lundy, LLC, Chicago, IL, USA
Chair: C. Petropoulos, Sargent & Lundy, LLC, Chicago, IL, USA
Co-Chair: A. Casimiro Caputo, Roma Tre University, Rome, Italy

PVP2017-65137: ON THE USE OF PROPER FRAGILITY MODELS FOR SEISMIC QUANTITATIVE RISK ASSESSMENT OF PROCESS PLANTS IN SEISMIC PRONE AREAS
S. Alessandri, A. C. Caputo, D. Corritore, R. Giannini, F. Paolacci, Roma Tre University, Rome, Italy

PVP2017-65464: A METHOD TO ESTIMATE PROCESS PLANT SEISMIC RESILIENCE
A. C. Caputo, F. Paolacci, University Roma Tre, Rome, Italy

PVP2017-65465: NUMERICAL SIMULATION OF SEISMIC RISK AND LOSS PROPAGATION EFFECTS IN PROCESS PLANTS. AN OIL REFINERY CASE STUDY
A. C. Caputo, A. Vigna, University Roma Tre, Roma, Italy

PVP2017-65588: RELATIVE INFLUENCE OF OFFSET SPACING AND TRANSITION SUPPORT LOCATION ON BURIED PIPING SEISMIC STRESSES
G. Frazee, M. P. H. Marohl, T. Musto, Sargent & Lundy LLC, Chicago, IL, USA

SESSION 2.4M (MF-12-1)

Tuesday, July 18, 4:00 pm – 5:45 pm, Waikoloa Suite 1

PIPELINE INTEGRITY—NUMERICAL SIMULATION AND EXPERIMENTAL TESTING

Developed by: D.-Y. Park, CanmetMATERIALS, Natural Resources Canada, Calgary, AB, Canada; X.-K. Zhu, Edison Welding Institute, Columbus, OH, USA
Chair: D.-Y. Park, CanmetMATERIALS, Natural Resources Canada, Calgary, AB, Canada
Co-Chair: M. Paredes, Massachusetts Institute of Technology, Cambridge, MA, USA

PVP2017-65407: EFFECT OF FINITE STRAINS AND RESIDUAL STRESSES ON PATH INDEPENDENCE OF J-INTEGRAL FOR DUCTILE CRACKS
X.-K. Zhu, Edison Welding Institute, Columbus, OH, USA; T. McGaughy, EWI, Columbus, OH, USA

PVP2017-65236: EXPRESSION OF A GENERIC FULL-RANGE TRUE STRESS-TRUE STRAIN MODEL FOR PIPELINE STEELS USING THE PRODUCT-LOG (OMEGA) FUNCTION
O. Ndubuaku, University of Alberta, Edmonton, AB, Canada; M. Martens, TransCanada PipeLines, Calgary, AB, Canada; J. J. R. Cheng, S. Adeeb, University of Alberta, Edmonton, AB, Canada

PVP2017-65177: EFFECTS OF NOTCH ACUITY ON FRACTURE TOUGHNESS MEASUREMENTS
D.-Y. Park, J.-P. Gravel, CanmetMATERIALS, Natural Resources Canada, Calgary, AB, Canada; D.-M. Duan, TransCanada, Calgary, AB, Canada

PVP2017-66036: MODELING OF CRACK PROPAGATION IN DEFECTIVE X100 LINE PIPES (Presentation Only)
M. Paredes, Massachusetts Institute of Technology, Cambridge, MA, USA; A. Nonn, OTH-Regensburg, Regensburg, Germany; T. Wierzbicki, Massachusetts Institute of Technology, Cambridge, MA, USA

SESSION 2.4N (FSI-1-5)

Tuesday, July 18, 4:00 pm – 5:45 pm, Waikoloa Suite 2

NUCLEAR POWER PLANT FIRES AND EXPLOSIONS

Developed by: J. C. Jo, Pusan National University, Busan, Korea (Republic); A. Tijsseling, TU Eindhoven, Eindhoven, Netherlands; C. S. Martin, Georgia Institute of Technology, South Dennis, MA, USA
Chair: J. C. Jo, Pusan National University, Busan, Korea (Republic)
Co-Chair: A. Tijsseling, TU Eindhoven, Eindhoven, Netherlands

PVP2017-66285: NUCLEAR POWER PLANT FIRES AND EXPLOSIONS, I, PLANT DESIGNS AND HYDROGEN IGNITION
R. Leishear, Leishear Engineering, LLC., Aiken, SC, USA

PVP2017-66278: NUCLEAR POWER PLANT FIRES AND EXPLOSIONS, II, HYDROGEN IGNITION OVERVIEW
R. Leishear, Leishear Engineering, LLC., Aiken, SC, USA

PVP2017-66284: NUCLEAR POWER PLANT FIRES AND EXPLOSIONS, III, HAMAOKA PIPING EXPLOSION
R. Leishear, Leishear Engineering, LLC., Aiken, SC, USA

PVP2017-66279: NUCLEAR POWER PLANT FIRES AND EXPLOSIONS, IV, WATER HAMMER IGNITION MECHANISMS
R. Leishear, Leishear Engineering, LLC., Aiken, SC, USA

SESSION 2.4O (DA-2-3)

Tuesday, July 18, 4:00 pm – 5:45 pm, Waikoloa Suite 3
DESIGN AND ANALYSIS OF PIPING AND COMPONENTS—III

Developed by: K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Chair: K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Co-Chair: S. Iyer, Candu Energy, Mississauga, ON, Canada

PVP2017-65382: EVALUATION OF THE REACTION MOMENT OF METAL BELLOWS EXPANSION JOINTS SUBJECTED TO ANGULAR MOVEMENTS
J. Veiga, Teadit Industria e Comercio Ltda, Rio De Janeiro, Brazil; N. Kavanagh, Teadit Juntas Ltda, Campinas, SP, Brazil

PVP2017-66113: ASME PRESSURE DESIGN OF CLASS 1 PIPE BENDS USING ELASTIC-PLASTIC FEA
U. Abdelsalam, Amec Foster Wheeler - Nuclear Canada, Toronto, ON, Canada; A. Glover, Bruce Power, Toronto, ON, Canada; D. Vijay, Amec Foster Wheeler - Nuclear Canada, Toronto, ON, Canada

PVP2017-65997: A METHOD FOR OPTIMIZING PIPE ROUTES AND LOCATIONS FOR GEOTHERMAL STEAM GATHERING SYSTEMS TO MINIMIZE COST AND VISUAL EFFECTS
M Jonsson, L. Magnusdottir, University of Iceland, Reykjavik, Iceland

PVP2017-65578: INVESTIGATION ON ACOUSTIC PROPAGATION OF ULTRASOUND IN POLYETHYLENE PIPE USED IN NUCLEAR POWER PLANT
X. Sheng, D. Hou, J. Zheng, Zhejiang University, Hangzhou, Zhejiang, China

SESSION 2.4Q (TW-1-6)

Tuesday, July 18, 4:00 pm – 5:45 pm, Kohala 4
FATIGUE ASSESSMENT OF WELDMENTS (PART 2)

Developed by: D. L. Stang, Omax Corporation, Kent, WA, USA
Chair: D. L. Stang, Omax Corporation, Kent, WA, USA
Presented by: P. Dong, University of Michigan, Ann Arbor, MI, USA; M. J. Doré, TWI Ltd., Cambridge, UK

SESSION 2.4S (TW-4-8)

Tuesday, July 18, 4:00 pm – 5:45 pm, Grand Promenade
TECHNOLOGY DEMONSTRATION FORUM—VIII

Developed by: C. Jaske, HSI Group, Inc., Torrance, CA, USA; J. F. Cory, Jr., Siemens PLMS Software, Milford, OH, USA

WEDNESDAY, JULY 19

Block 3.1: Wednesday, July 19, 2017 (8:30 am – 10:15 am)

SESSION 3.1A (NDPD-1-2)

Wednesday, July 19, 8:30 am – 10:15 am, Kohala 1
EMERGING NDE AND PROGNOSTIC TECHNIQUES AND APPLICATIONS

Developed by: V. Agarwal, Idaho National Laboratory, Idaho Falls, ID, USA
Chair: V. Agarwal, Idaho National Laboratory, Idaho Falls, ID, USA
Co-Chair: S. Dugan, University of Stuttgart, Stuttgart, Baden-Württemberg, Germany

PVP2017-65051: APPLICATION OF COMPUTED TOMOGRAPHY FOR THE EXAMINATION OF PRESSURE RETAINING NUCLEAR PLANT COMPONENTS
R. Gratton, J. Wilson, K. Skuse, Rolls-Royce Plc, Bristol, United Kingdom

PVP2017-65964: APPLICATION OF COMPUTED RADIOGRAPHY IN PRESSURE VESSEL WELDS: ASME SEC V REQUIREMENTS & RECOMMENDATIONS OF ASTM E2007
S. Saha, Intertek Inspec, Sharjah, Sharjah, United Arab Emir.

PVP2017-65215: DEVELOPMENT AND DELIVERY OF EDDY CURRENT SURFACE EXAMINATION PER ASME SEC XI, APPENDIX IV (Presentation Only)
N. Farenbaugh, Curtiss-Wright, Hutchinson, MN, USA

PVP2017-66149: REAL TIME CORROSION DETECTION OF REBAR REINFORCED BY USING EMBEDDABLE FIBER OPTIC ULTRASOUND SENSOR
X. Wang, C. Du, S. Bi, University of Massachusetts, Lowell, MA, USA; J. O. Twumasi, UMass Lowell, Lowell, MA, USA; Q. Tang, University of Massachusetts, Lowell, MA, USA

PVP2017-65178: LEAK DETECTION IN PRESSURE VESSELS USING ULTRASONIC TECHNIQUES
G. R. Piazzetta, R. C. C. Flesch, A. L. S. Pacheco, Universidade Federal de Santa Catarina, Florianopolis, Santa Catarina, Brazil

SESSION 3.1B (FSI-2-8)

Wednesday, July 19, 8:30 am – 10:15 am, Kohala 2
FIV IN TUBE ARRAYS—II
Symposium of Flow-Induced Vibration—Sponsored by Fluid-Structure Interaction Technical Committee

Developed by: M. Hassan, University of Guelph, Guelph, ON, Canada; T. Nakamura, Osaka Sangyo University, Daito, Osaka, Japan
Chair: M. Hassan, University of Guelph, Guelph, ON, Canada
Co-Chair: M. Pettigrew, Ecole Polytechnique–Montreal, Deep River, ON, Canada

PVP2017-65019: RESEARCH ON CROSS FLOW INDUCED VIBRATION OF FLEXIBLE TUBE BUNDLE
Z. Feng, W. Zhang, Y. Zhang, F. Zang, H. Qi, Nuclear Power Institute of China, Chengdu, China

PVP2017-65342: MODAL ANALYSIS OF A TRIANGULAR-PITCH BUNDLE SUBJECTED TO TWO-PHASE CROSS-FLOW
E. Deri, EDF, Chatou, France

PVP2017-65349: NUMERICAL EXPERIMENT ON TWO-PHASE FLOW BEHAVIORS IN TUBE BUNDLE GEOMETRY FOR DIFFERENT MIXTURES
W. Benguigui, E. Deri, J. Lavieville, S. Mimouni, E. Longatte, EDF, Paris, France

PVP2017-66068: INVESTIGATIONS OF IN-PLANE FLUIDELASTIC INSTABILITY IN A MULTI-SPAN U-BEND TEST RIG—TESTS IN AIR-FLOW
P. Feenstra, T. Sawadogo, B. A. W. Smith, V. P. Janzen, Canadian Nuclear Laboratories, Chalk River, ON, Canada; H. Cothron, Electric Power Research Institute, Hixson, TN, USA

SESSION 3.1C (CS-11-4)

Wednesday, July 19, 8:30 am – 10:15 am, Kohala 3
FAILURE ANALYSIS OF ENGINEERING STRUCTURE
Symposium on Recent Developments in International Codes and Standards—Sponsored by Codes & Standards Technical Committee

Developed by: G. Cheng, Z. Zhang, Xi'an Jiaotong University, Xi'an, Shaanxi, China
Chair: G. Cheng, Xi'an Jiaotong University, Xi'an, Shaanxi, China
Co-Chair: Z. Zhang, Xi'an Jiaotong University, Xi'an, Shaanxi, China

PVP2017-65613: EFFECT OF MECHANICAL MODEL ON LIMIT LOAD ANALYSIS OF HIGH PRESSURE HEATER TUBESHEET
Y. Du, X. Tang, Shanghai Institute of Special Equipment Inspection and Technical Research, Shanghai, China; J. Wang, Z. Yang, Y. Ren, Shanghai Electric Power Generation Equipment Co. Ltd., Shanghai, China

PVP2017-65617: NUMERICAL SIMULATION OF TEMPERATURE FIELD AND RESIDUAL STRESS IN MULTI-PASS WELDS IN 2.25CR-1MO-0.25V STEEL

PLATE AND COMPARISON WITH EXPERIMENTAL MEASUREMENTS

M. Qin, G. Cheng, Z. Zhang, Q. Li, Xi'an Jiaotong University, Xi'an, Shaanxi, China; J. Zhang, Lanzhou LS Heavy Equipment Co., Ltd., Lanzhou, Gansu, China

PVP2017-65629: NUMERICAL SIMULATION OF THE FOUR-ROLL BENDING PROCESS FOR 2.25CR-1MO-0.25V THICK-PLATE AT ELEVATED TEMPERATURE

Y. Wang, G. Cheng, Z. Zhang, Y. Li, Xi'an Jiaotong University, Xi'an, Shaanxi, China; J. Zhang, Lanzhou LS Heavy Equipment Co., Ltd., Lanzhou, Gansu, China

PVP2017-65684: INVESTIGATION OF FRACTURE TOUGHNESS OF HEAT AFFECTED ZONE OF 2.25CR-1MO-0.25V STEEL PRESSURE EQUIPMENT

W. Wu, Y. Song, M. Chai, Z. Zhang, G. Cheng, Xi'an Jiaotong University, Xi'an, Shaanxi, China

PVP2017-65957: NUMERIC STUDY ON PROPELLANT LEAKAGE IN ATMOSPHERIC ENVIRONMENT

D. Ma, W. Tan, Z. Zhang, Xi'an Jiaotong University, Xi'an, Shaanxi, China

SESSION 3.1D (OAC-6-5)

Wednesday, July 19, 8:30 am – 10:15 am, King's 1

APPLICATIONS OF NON-METALLIC MATERIALS

International Symposium on Composite Systems for Pressure Vessels and Piping—Co-Sponsored by Design & Analysis, Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: A. Cheta, Qatar Shell GTL, Doha, Qatar; Y. Shoji, YS Corporation LLC, Tokyo, Japan
Chair: A. Cheta, Qatar Shell GTL, Doha, Qatar
Co-Chair: Y. Shoji, YS Corporation LLC, Tokyo, Japan

PVP2017-65224: ADVANCED APPLICATIONS FOR HDPE PIPES

W. Long, Performance Pipe, Plano, TX, USA

PVP2017-65421: MULTIPLE PURPOSES OF REFRACTORY LININGS IN SULFUR RECOVERY UNITS

C. Shargay, V. Wong, T. Tajalli, Fluor Enterprises, Inc., Aliso Viejo, CA, USA

PVP2017-65833: ASME CODE CASE N-770 IN ACTION: THE FIRST US APPLICATION OF MITSUBISHI'S WATER JET PEENING TECHNOLOGY TO MITIGATE PWSCC IN REACTOR VESSEL AND BOTTOM MOUNTED NOZZLES (Presentation Only)

S. Baumgartner, G. Martin, Mitsubishi Nuclear Energy Systems, Charlotte, NC, USA

SESSION 3.1E (CS-9-1)

Wednesday, July 19, 8:30 am – 10:15 am, King's 2

MASTER CURVE BASED FRACTURE TOUGHNESS MODELS AND PARTIAL STRUCTURAL FACTOR DEVELOPMENT

Symposium on Probabilistic Assessments and Risk Management—Co-Sponsored by Codes & Standards, Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: M. Kirk, Nuclear Regulatory Commission, Rockville, MD, USA; M. A. Erickson, Phoenix Engineering Associates, Inc., Claremont, NH, USA
Chair: K. Wallin, VTT Technical Research Centre of Finland Ltd., Espoo, Finland
Co-Chair: M. Kirk, Nuclear Regulatory Commission, Rockville, MD, USA

PVP2017-66147: DIRECT USE OF FRACTURE TOUGHNESS FOR FLAW EVALUATIONS OF PRESSURE BOUNDARY MATERIALS IN SECTION XI, DIVISION 1, CLASS 1 FERRITIC STEEL COMPONENTS

M. A. Erickson, Phoenix Engineering Associates, Inc., Claremont, NH, USA; M. Kirk, Nuclear Regulatory Commission, Rockville, MD, USA

PVP2017-66148: DEVELOPMENT OF A PARTIAL STRUCTURAL FACTOR APPROACH FOR DIRECT FRACTURE TOUGHNESS IMPLEMENTATION INTO THE ASME BOILER AND PRESSURE VESSEL CODE

M. A. Erickson, Phoenix Engineering Associates, Inc., Claremont, NH, USA; M. Kirk, Nuclear Regulatory Commission, Rockville, MD, USA

PVP2017-66204: EVALUATION OF PARTIAL SAFETY FACTORS FOR DESIGN OF EXTERNALLY PRESSURIZED CYLINDERS AND DEFECT ASSESSMENT OF PIPES (Presentation Only)

N.-S. Huh, Seoul National University of Science and Technology, Seoul, Korea (Republic)

PVP2017-66280: LARGE DATASET ASSESSMENT OF THE UPPER SHELF MASTER CURVE MODEL

M. Kirk, Nuclear Regulatory Commission, Rockville, MD, USA; M. A. Erickson, Phoenix Engineering Associates, Inc., Claremont, NH, USA; R. Link, US Naval Academy, Annapolis, MD, USA

SESSION 3.1F (CS-3-2)

Wednesday, July 19, 8:30 am – 10:15 am, King's 3

ENVIRONMENTAL FATIGUE ISSUES—II

Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: S. Asada, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; S. Mohanty, Argonne National Laboratory, Lemont, IL, USA; H. Mehta, GE Hitachi Nuclear Engineering, San Jose, CA, USA; C. Faidy, CF Integrity Engineering, Tassin, France
Chair: H. Mehta, GE Hitachi Nuclear Engineering, San Jose, CA, USA
Co-Chair: C. Faidy, CF Integrity Engineering, Tassin, France

PVP2017-65563: ANALYSIS OF ENVIRONMENTAL FATIGUE CRACK GROWTH BEHAVIOR OF TYPE 347 STAINLESS STEELS UNDER SIMULATED PWR WATER CONDITIONS

S. Hong, K.-D. Min, S.-H. Jeon, B. Lee, Korea Atomic Energy Research Institute, Daejeon, Korea (Republic)

PVP2017-65256: INCEFA-PLUS (INCREASING SAFETY IN NPPS BY COVERING GAPS IN ENVIRONMENTAL FATIGUE ASSESSMENT)

K. Mottershead, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom; S. Cicero, University of Cantabria, Santander, Spain; M. Bruchhausen, European Commission, Joint Research Centre, Petten, Netherlands, T. Metais, EDF, Villeurbanne, France; D. R Tice, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom

PVP2017-65367: ASME CODE-CASE PROPOSAL TO EXPLICITLY QUANTIFY THE INTERACTION BETWEEN THE PWR ENVIRONMENT AND COMPONENT SURFACE FINISH

T. Metais, EDF, Villeurbanne, France; S. Courtin, L. de Baglion, AREVA, Ile-de-France, France; C. Gourdin, CEA, Gif-sur-Yvette, France; J.-C. le Roux, EDF R&D, Moret-sur-Loing, France

PVP2017-66030: MODELS FOR CALCULATING THE EFFECT OF ENVIRONMENT ON FATIGUE LIFE (FEN) FOR COMPLEX WAVEFORMS AND/OR NON-ISOTHERMAL CONDITIONS

C. Currie, A. Morley, Rolls-Royce Plc, Derby, Derbyshire, United Kingdom; N. Platts, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom; M. Twite, K. Wright, Rolls-Royce Plc, Derby, United Kingdom

SESSION 3.1G (CS-22-2)

Wednesday, July 19, 8:30 am – 10:15 am, Queen's 4

MASTER CURVE FRACTURE TOUGHNESS AND OTHER SMALL SPECIMEN MECHANICAL PROPERTIES—II

Symposium on Fracture Mechanics and Analysis—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: M. Yamamoto, Central Research Institute of Electric Power Industry, Yokosuka, Kanagawa, Japan; W. Server, ATI Consulting, Black Mountain, NC, USA
Chair: J. B. Hall, Westinghouse, Pittsburgh, PA, USA
Co-Chair: W. Server, ATI Consulting, Black Mountain, NC, USA; E. Lucon, Protiro Inc., Boulder, CO, USA

PVP2017-65568: FRACTURE TOUGHNESS EVALUATION OF NEUTRON-IRRADIATED REACTOR PRESSURE VESSEL STEEL USING MINIATURE-C(T) SPECIMENS

Y. Ha, T. Tobita, H. Takamizawa, Y. Nishiyama, Japan Atomic Energy Agency, Tokai-Mura, Ibaraki-Ken, Japan

PVP2017-65904: USE OF MINI-CT SPECIMENS FOR FRACTURE TOUGHNESS CHARACTERIZATION OF LOW UPPER-SHELF LINDE 80 WELD

M. Sokolov, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-66085: THE MASTER CURVE FRACTURE TOUGHNESS EVALUATION OF IRRADIATED PLATE MATERIAL JRQ USING MINIATURE-C(T) SPECIMENS

M. Yamamoto, Central Research Institute of Electric Power Industry, Yokosuka, Kanagawa, Japan

PVP2017-66206: APPLICABILITY OF MINIATURE C(T) SPECIMEN TO FRACTURE TOUGHNESS EVALUATION FOR THE IRRADIATED JAPANESE REACTOR PRESSURE VESSEL STEEL

T. Sugihara, Nuclear Development Corporation, Tokai-mura, Japan; T. Hirota, H. Sakamoto, K. Yoshimoto, Mitsubishi Heavy Industries, Ltd., Takasago, Japan; K. Tsutsumi, Mitsubishi Heavy Industries, Ltd., Kobe, Japan

SESSION 3.1H (OAC-1-1)

Wednesday, July 19, 8:30 am – 10:15 am, Queen's 5

RELIABILITY AND LIFE CYCLE MANAGEMENT

Symposium on Life Cycle Management—Co-Sponsored by High-Pressure Technology and Operations, Applications & Components Technical Committees

Developed by: A. Reich, Streamline Automation LLC, Huntsville, AL, USA; H. Watson, Savannah River National Laboratory, Aiken, SC, USA
Chair: A. Reich, Streamline Automation LLC, Huntsville, AL, USA
Co-Chair: H. Watson, Savannah River National Laboratory, Aiken, SC, USA

PVP2017-65105: APPLICATION OF PARTIAL SAFETY FACTORS FOR FITNESS-FOR-SERVICE ASSESSMENT OF PRESSURE EQUIPMENT WITH LOCAL METAL LOSS

T. Kaida, Rabigh Refining & Petrochemical Co., Rabigh, Saudi Arabia; S. Sakai, University of Tokyo, Tokyo, Japan

PVP2017-65408: BAYESIAN ANALYSIS OF EXPERT ELICITATION RESPONSES FOR LIFE CYCLE MANAGEMENT REPLACEMENT PROBABILITY ESTIMATES

J. Cluever, LPI, Inc., Richland, WA, USA; T. C. Esselman, LPI, Inc., Amesbury, MA, USA; S. Harvey, Electric Power Research Institute, Charlotte, NC, USA

PVP2017-65821: CONSIDERATIONS FOR THE USE OF PROBABILISTIC ASSESSMENTS IN REGULATORY DECISION MAKING RELATED TO PRESSURE BOUNDARY COMPONENT AGING

B. Carroll, J. C. Jin, Canadian Nuclear Safety Commission, Ottawa, ON, Canada

PVP2017-65180: PERFORMANCE EVALUATION OF A RESPIRATOR VORTEX COOLING DEVICE

A. Elizondo, Savannah River National Laboratory, Aiken, SC, USA; R. Iacovone, Savannah River Nuclear Solutions, Aiken, SC, USA

SESSION 3.1I (CT-8-1)

Wednesday, July 19, 8:30 am – 10:15 am, Queen's 6

THREADED FASTENER

Developed by: S. Nassar, University of Oakland, Northhill, CA, USA; T. Fukuoka, Kobe University, Kobe, Japan
Chair: W. Reinhardt, SNC Lavalin Nuclear Inc., Mississauga, ON, Canada
Co-Chair: T. Fukuoka, Kobe University, Kobe, Japan

PVP2017-65061: EVALUATION OF MECHANICAL BEHAVIOR OF TAPER PIPE THREADS IN THE TIGHTENING PROCESS BY FINITE ELEMENT ANALYSIS AND ELEMENTARY THEORY OF SOLID MECHANICS

T. Fukuoka, Y. Hirai, Kobe University, Kobe, Japan

PVP2017-65118: A CASE STUDY FOR THE LOW FIDELITY MODELING OF THREADED FASTENERS SUBJECT TO TENSILE LOADINGS AT LOW AND HIGH STRAIN RATES

J. Mersch, J. Smith, E. P. Johnson, Sandia National Laboratories, Albuquerque, NM, USA

PVP2017-65261: THE EFFECTS OF LOW TEMPERATURE CARBON DIFFUSION TREATED FASTENERS ON THREAD GALLING RESISTANCE

K. P. Clark, VSP Technologies, Prince George, VA, USA

PVP2017-65291: THE EFFECTIVENESS OF NON-LOOSENING FASTENERS

Y. Shoji, YS Corporation LLC, Tokyo, Japan

SESSION 3.1J (OAC-5-1)

Wednesday, July 19, 8:30 am – 10:15 am, Kona 1

DESIGN, ANALYSIS, MODELING AND PERFORMANCE OF VALVES AND PUMPS

Developed by: L. I. Ezekoye, Ezekoye Engineering Services LLC, Pittsburgh, PA, USA; M. Brumovsky, UJV Rez a.s., Rez, Czech Republic
Chair: L. I. Ezekoye, Ezekoye Engineering Services LLC, Pittsburgh, PA, USA
Co-Chair: M. Brumovsky, UJV Rez a.s., Rez, Czech Republic

PVP2017-65031: ANALYSING EFFECT OF VARIOUS PARAMETERS ON MAXIMUM SURGE PRESSURE IN A PIPELINE AND DECIDING GOVERNING PARAMETER USING STATISTICAL APPROACH (Presentation Only)

P. Joshi, Aker Solutions, Mumbai, India

PVP2017-66269: CHECK VALVE FLOW AND DISK LIFT SIMULATION USING CFD

L. I. Ezekoye, Ezekoye Engineering Services LLC, Pittsburgh, PA, USA; R. Farrell, M. Rain, Flowserve Corporation, Raleigh, NC, USA

PVP2017-65251: SEVERE SERVICE VALVES: FACTORS FOR SELECTION (Presentation Only)

S. Allen, P. van Oudenaren, Bray International, Houston, TX, USA

PVP2017-66040: LONG TERM OPERATION OF SAFETY VALVES AT PRESSURES NEAR THE SET PRESSURE

L. I. Ezekoye, Ezekoye Engineering Services LLC, Pittsburgh, PA, USA; B. S. Gordon, J. W. Boufford, Westinghouse Electric Company, Cranberry Township, PA, USA; T. W. Beagen, Pentair Valves & Controls, Mansfield, MA, USA

SESSION 3.1K (MF-4-2)

Wednesday, July 19, 8:30 am – 10:15 am, Kona 2

WELD RESIDUAL STRESS SIMULATIONS INCLUDING RECOVERY OF STRESSES AND UNCERTAINTY QUANTIFICATION

Developed by: E. Keim, AREVA, Erlangen, Germany; D. Rudland, U.S. Nuclear Regulatory Commission, Frederick, MD, USA
Chair: E. Keim, AREVA, Erlangen, Germany
Co-Chair: D. Rudland, U.S. Nuclear Regulatory Commission, Frederick, MD, USA

PVP2017-65552: METHODS FOR UNCERTAINTY QUANTIFICATION AND COMPARISON OF WELD RESIDUAL STRESS MEASUREMENTS AND PREDICTIONS

J. Lewis, D. Brooks, Sandia National Laboratories, Albuquerque, NM, USA; M. Benson, U.S. Nuclear Regulatory Commission, Rockville, MD, USA

PVP2017-66104: FINITE ELEMENT ANALYSIS OF WELD RESIDUAL STRESS AND FLAW GROWTH IN A THICK-WALLED PRESSURIZER SAFETY NOZZLE WITH MECHANICAL STRESS IMPROVEMENT PROCESS APPLICATION

G. Facco, P. Raynaud, M. Benson, U.S. Nuclear Regulatory Commission, Rockville, MD, USA

PVP2017-66137: EXPERIMENTAL INVESTIGATION OF INCONEL 600 HARDENING RECOVERY

A. Andrieu, EDF, Moret-sur-Loing, France; F. Rossillon, EDF SEPTEN, Villeurbanne, France; G. Rolland, EDF, Ecuelles, France; D. Albrecht, EDF, Villeurbanne, France; S. Hendili, Electricité de France, Chatou, France

SESSION 3.1L (SE-12-1)

Wednesday, July 19, 8:30 am – 10:15 am, Kona 3

ADVANCED SEISMIC EVALUATION AND CODE I; JSME SEISMIC CODE ACTIVITY

Developed by: A. Maekawa, The Kansai Electric Power Co. Inc., Fukui, Japan; I. Nakamura, National Research Institute for Earth Science and Disaster Resilience, Ibaraki, Japan; Y. Li, Japan Atomic Energy Agency, Ibaraki-Ken, Japan
Chair: A. Nishida, Japan Atomic Energy Agency, Ibaraki, Japan
Co-Chair: O. Furuya, Tokyo Denki University, Saitama, Japan

PVP2017-65166: SEISMIC QUALIFICATION OF PIPING SYSTEMS BY DETAILED INELASTIC RESPONSE ANALYSIS PART 1-A CODE CASE FOR PIPING SEISMIC EVALUATION BASED ON DETAILED INELASTIC RESPONSE ANALYSIS

M. Morishita, Japan Atomic Energy Agency, Ibaraki, Japan; A. Otani, IHI Corporation, Yokohama, Japan; T. Watakabe, Japan Atomic Energy Agency, Ibaraki, Japan; I. Nakamura, National Research Institute for Earth Science and Disaster Resilience, Ibaraki, Japan; T. Shibutani, Yokohama National University, Yokohama, Japan

PVP2017-65190: SEISMIC QUALIFICATION OF PIPING SYSTEMS BY DETAILED INELASTIC RESPONSE ANALYSIS, PART 2- A GUIDELINE FOR PIPING SEISMIC INELASTIC RESPONSE ANALYSIS

A. Otani, IHI Corporation, Yokohama, Japan; T. Shibutani, Yokohama National University, Yokohama, Japan; M. Morishita, Japan Atomic Energy Agency, Ibaraki,

Japan; I. Nakamura, National Research Institute for Earth Science and Disaster Resilience, Ibaraki, Japan; T. Watakabe, Japan Atomic Energy Agency, Ibaraki, Japan

PVP2017-65316: SEISMIC QUALIFICATION OF PIPING SYSTEMS BY DETAILED INELASTIC RESPONSE ANALYSIS PART 3—VARIATION IN ELASTIC-PLASTIC ANALYSIS RESULTS ON CARBON STEEL PIPES FROM THE BENCHMARK ANALYSES AND THE PARAMET

I. Nakamura, National Research Institute for Earth Science and Disaster Resilience, Ibaraki, Japan; A. Otani, IHI Corporation, Yokohama, Japan; M. Morishita, Japan Atomic Energy Agency, Ibaraki, Japan; M. Shiratori, Yokohama National University, Yokohama, Japan; T. Watakabe, Japan Atomic Energy Agency, Ibaraki, Japan

PVP2017-65324: SEISMIC QUALIFICATION OF PIPING SYSTEMS BY DETAILED INELASTIC RESPONSE ANALYSIS PART4-SECOND ROUND BENCHMARK ANALYSES WITH STAINLESS STEEL PIPING COMPONENTS TEST

T. Watakabe, Japan Atomic Energy Agency, Ibaraki, Japan; I. Nakamura, National Research Institute for Earth Science and Disaster Resilience, Ibaraki, Japan; A. Otani, IHI Corporation, Yokohama, Japan; M. Morishita, Japan Atomic Energy Agency, Ibaraki, Japan; T. Shibutani, Yokohama National University, Yokohama, Japan

SESSION 3.1M (MF-12-2)

Wednesday, July 19, 8:30 am – 10:15 am, Waikoloa Suite 1

PIPELINE INTEGRITY—WELDING TECHNOLOGY AND WELDS ASSESSMENT

Developed by: X.-K. Zhu, Edison Welding Institute, Columbus, OH, USA
Chair: X.-K. Zhu, Edison Welding Institute, Columbus, OH, USA
Co-Chair: M. Paredes, Massachusetts Institute of Technology, Cambridge, MA, USA

PVP2017-65819: HOT TAP FITTINGS—TO EXTRUDE OR FABRICATE

T. McKone, G. Cooper, TD Williamson, Tulsa, OK, USA

PVP2017-65379: AN OVERVIEW OF TIME DEPENDENT CRACK GROWTH MODELS USED FOR ERW SEAM WELD ANALYSES

R. Olson, B. A. Young, J. O'Brian, Battelle Memorial Institute, Columbus, OH, USA

PVP2017-66038: WELDING OF INTERNALLY CLAD X65 PIPES WITH PRECIPITATION STRENGTHENED NI-BASED FILLER METALS

G. Penso, B. Alexandrov, The Ohio State University, Columbus, OH, USA

PVP2017-65148: STUDY ON GAS METAL ARC WELDING OF TWO X80 STEELS WITH DIFFERENT COMPOSITIONS

Z. Huang, J. Xu, H. Wang, Wuhan Iron and Steel (Group) Company, Wuhan, Hubei, China

SESSION 3.1N (DA-4-1)

Wednesday, July 19, 8:30 am – 10:15 am, Waikoloa Suite 2

INELASTIC, NONLINEAR AND LIMIT LOAD ANALYSIS—I

Developed by: R. Baliga, Advent Engineering Services, San Ramon, CA, USA; D. Vlaicu, Ontario Power Generation, Pickering, ON, Canada
Chair: R. Baliga, Advent Engineering Services, San Ramon, CA, USA
Co-Chair: D. Vlaicu, Ontario Power Generation, Pickering, ON, Canada

PVP2017-65171: FULL SCALE BLASTING TEST AND FINITE ELEMENT ANALYSIS OF NOZZLE REPAIR PIPELINE

X. Wu, J. Shuai, China University of Petroleum, Beijing, China

PVP2017-65184: PLASTIC LOADS FOR CONICAL SHELLS SUBJECTED TO INTERNAL PRESSURE AND AXIAL TENSION

J. Blachut, University of Liverpool, Liverpool, United Kingdom; D. Sala, AGH University of Science and Technology, Krakow, Poland

PVP2017-65489: FEASIBILITY OF REDUCED-SIZE SPINNING-CYLINDER SPECIMENS FOR PRESSURISED THERMAL SHOCK TESTING

H. Coules, P. Orrock, C. Truman, University of Bristol, Bristol, United Kingdom

PVP2017-65760: CYLINDER AXIAL CRACK REFERENCE STRESS COMPARISON USING ELASTIC-PLASTIC FEA 3D CRACK MESH J-INTEGRAL VALUES

G. Thorwald, Quest Integrity Group, Boulder, CO, USA; P. Vargas, Chevron Energy Technology Company, Houston, TX, USA

PVP2017-65390: EXPERIMENTAL AND NUMERICAL INVESTIGATIONS OF EXFOLIATED GRAPHITE SEALS

E. Viéville, H. Laurent, G. Rio, Université Bretagne Sud, Lorient, France; B. Omnès, H. Lejeune, Cetim, Nantes, France

SESSION 3.1O (DA-2-4)

Wednesday, July 19, 8:30 am – 10:15 am, Waikoloa Suite 3

DESIGN AND ANALYSIS OF PIPING AND COMPONENTS—IV

Developed by: S. Iyer, Candu Energy, Mississauga, ON, Canada
Chair: S. Iyer, Candu Energy, Mississauga, ON, Canada
Co-Chair: B. Li, AMEC Foster Wheeler, Toronto, ON, Canada

PVP2017-65481: ENVIRONMENTAL FATIGUE EVALUATION FOR INTERFACE OF DISSIMILAR METAL WELDED PIPING

D. G. Lee, D. Kim, K.-J. Yang, J. H. Lee, S. C. Jang, KEPCO E&C, Gimcheon, Korea (Republic)

PVP2017-65488: SHORT-TERM MECHANICAL ANALYSIS OF POLYETHYLENE PIPE REINFORCED BY WINDING STEEL WIRES USING STEEL WIRE SPIRAL STRUCTURAL FINITE ELEMENT MODEL

J. Shi, Wuhan Institute of Technology, Wuhan, China; J. Shi, Zhejiang University, Hangzhou, Zhejiang, China; H. Chen, Y. He, Q. Wang, Wuhan Institute of Technology, Wuhan, China

PVP2017-65114: FAILURE ANALYSIS OF A LARGE KNIFE GATE VALVE SUBJECTED TO MULTIAXIAL LOADING

I. Barsoum, The Petroleum Institute, Abu Dhabi, United Arab Emir.; A. Muñoz, Mott MacDonald, Abu Dhabi, United Arab Emir.

PVP2017-65144: EFFECTS OF SOIL DISPLACEMENT RATE AND COMPLEX LOADING ON SOIL-PIPE INTERACTION—A PHYSICAL PROTOTYPE MODEL

C. K. Wong, R. G. Wan, R. C. K. Wong, University of Calgary, Calgary, AB, Canada

SESSION 3.1Q (TW-1-7)

Wednesday, July 19, 8:30 am – 10:15 am, Kohala 4

ASME SECTION VIII, DIVISION 3 ALTERNATIVE RULES FOR CONSTRUCTION OF HIGH PRESSURE VESSELS (PART 1)

Developed by: D. L. Stang, Omax Corporation, Kent, WA, USA
Chair: D. L. Stang, Omax Corporation, Kent, WA, USA
Presented by: D. T. Peters, Structural Integrity Associates, Edinboro, PA, USA

Block 3.2: Wednesday, July 19, 2017 (10:30 am – 12:15 pm)

SESSION 3.2A (NDPD-2-1)

Wednesday, July 19, 10:30 am – 12:15 pm, Kohala 1

TECHNIQUES AND APPLICATIONS FOR PLANT COMPONENTS

Developed by: S. Dugan, University of Stuttgart, Stuttgart, Baden-Württemberg, Germany; M. Spies, Fraunhofer Institute for Non-destructive Testing, Saarbruecken, Germany
Chair: S. Dugan, University of Stuttgart, Stuttgart, Baden-Württemberg, Germany
Co-Chair: V. Agarwal, Idaho National Laboratory, Idaho Falls, ID, USA

PVP2017-65855: IMPROVING ULTRASONIC EXAMINATION PROCEDURES FOR DETECTION OF THERMAL FATIGUE

J. Spanner, Electric Power Research Institute, Charlotte, NC, USA

PVP2017-65963: APPLICATION OF ULTRASONIC PHASED ARRAY TECHNIQUE FOR A BOILER DRUM MEETING THE REQUIREMENTS OF ASME SEC I

S. Saha, Intertek Inspec, Sharjah, Sharjah, United Arab Emir.

PVP2017-66210: ULTRASONIC INSPECTION OF DISSIMILAR METAL WELDS FOR PROBABILISTIC RELIABILITY ASSESSMENT OF PIPE WELDS

S. Dugan, A. Jüngert, University of Stuttgart, Stuttgart, Baden-Württemberg, Germany

PVP2017-65191: IMAGE ANALYSIS OF INDICATIONS IN FILLET WELDING BY PHASED ARRAY ULTRASONIC TECHNIQUE

Y. Zhang, Y. Yang, Shanghai Institute of Special Equipment Inspection and Technical Research, Shanghai, China; Q. Li, Shanghai Power Erection NO.1 Company, Shanghai, China; L. Chen, Shanghai Institute of Special Equipment Inspection and Technical Research, Shanghai, China

PVP2017-66124: ULTRASONIC INSPECTION TECHNIQUE FOR INSIDE PRESSURIZED PIPE ELBOWS

C. Miao, W. Guo, X. Du, Z. Ling, Zhejiang Provincial Special Equipment Inspection and Research Institute, Hangzhou, China

SESSION 3.2B (FSI-2-9)

Wednesday, July 19, 10:30 am – 12:15 pm; Kohala 2

FLUTTER, VIV AND ACOUSTICS

Symposium of Flow-Induced Vibration—Sponsored by Fluid-Structure Interaction Technical Committee

Developed by: L. Baranyi, University of Miskolc, Miskolc-Egyetemvaros, Hungary; N. Mureithi, Polytechnique Montreal, Montreal, QC, Canada
Chair: G. Ricciardi, CEA Cadarache, St Paul les Durance, France
Co-Chair: K. Anami, Osaka Electro-Communication University, Neyagawa, Osaka, Japan

PVP2017-65470: EFFECT OF SECONDARY MOTION ON HYDRODYNAMICS OF A CYLINDER OSCILLATING IN STILL FLUID

L. Baranyi, University of Miskolc, Miskolc-Egyetemvaros, Hungary; E. Konstantinidis, University of Western Macedonia, Kozani, Greece

PVP2017-65565: STUDY ON THE RELATION BETWEEN SIDE RATIOS OF RECTANGULAR CROSS SECTIONS AND SECONDARY VORTICES AT TRAILING EDGE IN MOTION-INDUCED VORTEX EXCITATION

K. Matsuda, K. Kato, K. Arise, H. Ishii, Kyushu Institute of Technology, Kitakyushu, Fukuoka, Japan

PVP2017-65913: PHASE CHARACTERISTICS OF VORTEX SHEDDING FROM TUBE BANKS ON ACOUSTIC RESONANCE

H. Hamakawa, S. Hino, Oita University, Oita, Japan; E. Nishida, Shonan Institute of Technology, Fujisawa Kanagawa, Japan; E. Kurihara, Oita University, Oita, Japan

PVP2017-65431: BENDING-TORSIONAL FLUTTER OF A SLENDER WEB IN A CROSS FLOW

K. Hiroaki, N. Kawai, M. Watanabe, Aoyama Gakuin University, Sagamihara, Japan

PVP2017-65525: HEAT TRANSFER ENHANCEMENT IN THREE-DIMENSIONAL FLOW PAST A HYDROPHOBIC CYLINDER FOR HEAT EXCHANGER APPLICATIONS

M. Mastrokalos, L. Kaiktsis, National Technical University of Athens, Zografou, Greece

SESSION 3.2C (CS-11-5)

Wednesday, July 19, 10:30 am – 12:15 pm; Kohala 3

DEVELOPMENTS OF CHINESE CODES AND STANDARDS

Symposium on Recent Developments in International Codes and Standards—Sponsored by Codes & Standards Technical Committee

Developed by: Y. Liu, Tsinghua University, Beijing, China
Chair: Y. Liu, Tsinghua University, Beijing, China
Co-Chair: J. Shen, Wison Engineering Co., Ltd., Shanghai, China

PVP2017-65052: COMPARISON ABOUT STANDARDS OF FIBER-REINFORCED PLASTIC PRESSURE VESSELS BETWEEN CHINA AND AMERICA

Y. Yang, W. Shu, X. Luo, X. Wen, J. Si, Shanghai Institute of Special Equipment Inspection and Technical Research, Shanghai, China

PVP2017-65430: INVESTIGATION OF PARTIAL SAFETY FACTOR APPROACH FOR FLAW ASSESSMENT PROCEDURE IN CHINESE FFS CODE

Z. Han, G. Xie, S. Shao, Z. Li, China Special Equipment Inspection and Research Institute, Beijing, China

PVP2017-65695: NUMERICAL SIMULATION OF LOCAL POST WELD HEAT TREATMENT BY ELECTRIC HEATING METHOD OF PRESSURE EQUIPMENT

L. Sun, F. Ji, X. Wang, G. Deng, China Special Equipment Inspection and Research Institute, Beijing, China; L. Cheng, SINOPEC Nanjing Chemical Industries Co ., Ltd., Nanjing, Jiangsu, China

PVP2017-65712: A SIMPLIFIED CALCULATION METHOD FOR THE WALL TEMPERATURES OF PRESSURE VESSELS WITH INSULATING LAYERS

F. Ji, G. Deng, L. Sun, J. Yang, H. Suo, China Special Equipment Inspection and Research Institute, Beijing, Beijing, China

PVP2017-65906: NUMERICAL AND EXPERIMENTAL RESEARCH ON PIPELINE MAGNETIC FLUX LEAKAGE TESTING WITH INSPECTION DEVICE OF VARIABLE DIAMETERS

Y. Liu, W. Hong, Y. Xiangyue, H. Chengdai, W. Xinhua, Hangzhou Special Equipment Inspection and Research Institute, Hangzhou, China

SESSION 3.2D (DA-18-1)

Wednesday, July 19, 10:30 am – 12:15 pm, King's 1

COMPOSITE MATERIALS AND STRUCTURES

International Symposium on Composite Systems for Pressure Vessels and Piping—Co-Sponsored by Design & Analysis, Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: P. Mertiny, University of Alberta, Edmonton, AB, Canada
Chair: P. Mertiny, University of Alberta, Edmonton, AB, Canada
Co-Chair: M. Uddin, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA

PVP2017-65265: COMPUTATIONAL INVESTIGATION OF COMPOSITE REPAIR MATERIALS PREVENTIVE EFFECTS ON WRINKLE BENDS FATIGUE FAILURE

M. Kiani, T. Mally, R. Walker, E. Locke, Citadel Technologies, Tulsa, OK, USA

PVP2017-65764: IMPACT OF DIFFERENT ENVIRONMENTAL CONDITIONS ON THE THERMOMECHANICAL CHARACTERISTICS OF COMPACTED AND NON-COMPACTED PLAIN WEAVE LAMINATED COMPOSITES

M. H. Al Kuwaiti, A.-H. I. Mourad, United Arab Emirates University, Al Ain, United Arab Emir.

PVP2017-65813: COMPARISON OF FULL-SCALE AND COUPON FATIGUE TESTING FOR COMPOSITE REPAIRS (Presentation Only)

I. A. Alnaser, M. W. Keller, The University of Tulsa, Tulsa, OK, USA

PVP2017-65888: ADDITIVE MANUFACTURING OF PRESSURE VESSELS (WITH PLATING)

B. P. McNelly, R. L Hooks, W. R Setzler, C. S Hughes, Johns Hopkins University, Laurel, MD, USA

PVP2017-65366: COMPOSITE FIBRE REINFORCED PIPE ELBOWS SUBJECT TO COMBINED LOADING

D. Camilleri, B. Ellul, University of Malta, Msida, Malta

PVP2017-65365: FIBRE REINFORCED COMPOSITE PRESSURE VESSEL HEADS SUBJECT TO EXTERNAL PRESSURE

M. Muscat, D. Camilleri, B. Ellul, University of Malta, Msida, Malta

SESSION 3.2E (CS-15-2)

Wednesday, July 19, 10:30 am – 12:15 pm, King's 2

PROBABILISTIC AND RISK-INFORMED METHODS FOR STRUCTURAL INTEGRITY ASSESSMENT—II

Symposium on Probabilistic Assessments and Risk Management—Co-Sponsored by Codes & Standards, Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: D. Rudland, U.S. Nuclear Regulatory Commission, Frederick, MD, USA; S. Xu, Kinectrics Inc., Toronto, ON, Canada
Chair: D. Rudland, U.S. Nuclear Regulatory Commission, Frederick, MD, USA
Co-Chair: Y. Li, Japan Atomic Energy Agency, Ibaraki-Ken, Japan

PVP2017-65921: GUIDELINE ON PROBABILISTIC FRACTURE MECHANICS ANALYSIS FOR JAPANESE REACTOR PRESSURE VESSELS

J. Katsuyama, Japan Atomic Energy Agency, Ibaraki, Japan; K. Osakabe, Mizuho Information & Research Institute, Chiyoda, Tokyo, Japan; S. Uno, Y. Li, Japan Atomic Energy Agency, Ibaraki, Japan; S. Yoshimura, The University of Tokyo, Tokyo, Japan

PVP2017-65950: VERIFICATION METHODOLOGY AND RESULTS OF PROBABILISTIC FRACTURE MECHANICS CODE PASCAL3

K. Masaki, Y. Miyamoto, K. Osakabe, Mizuho Information & Research Institute, Chiyoda, Tokyo, Japan; S. Uno, Japan Atomic Energy Agency, Tokai-mura, Japan; J. Katsuyama, Japan Atomic Energy Agency, Ibaraki, Japan

PVP2017-66003: PROBABILISTIC FRACTURE MECHANICS ANALYSIS MODELS FOR JAPANESE REACTOR PRESSURE VESSELS

K. Lu, J. Katsuyama, S. Uno, Y. Li, Japan Atomic Energy Agency, Naka-Gun, Japan

PVP2017-66004: VERIFICATION OF PROBABILISTIC FRACTURE MECHANICS ANALYSIS CODE PASCAL THROUGH BENCHMARK ANALYSES WITH FAVOR

Y. Li, S. Uno, J. Katsuyama, Japan Atomic Energy Agency, Ibaraki, Japan; T. Dickson, Oak Ridge National Laboratory, Oak Ridge, TN, USA; M. Kirk, Nuclear Regulatory Commission, Rockville, MD, USA

SESSION 3.2F (CS-3-3)

Wednesday, July 19, 10:30 am – 12:15 pm, King's 3

ENVIRONMENTAL FATIGUE ISSUES—III

Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: S. Asada, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; H. Mehta, GE Hitachi Nuclear Engineering, San Jose, CA, USA; C. Faidy, CF Integrity Engineering, Tassin, France; S. Mohanty, Argonne National Laboratory, Lemont, IL, USA
Chair: S. Asada, Mitsubishi Heavy Industries, Ltd., Kobe, Japan
Co-Chair: T. Metais, EDF, Villeurbanne, France

PVP2017-65876: FATIGUE MODELING OF 508 LAS UNDER VARIABLE AMPLITUDE LOADING: A MECHANISTIC BASED ANALYTICAL APPROACH
B. Barua, S. Mohanty, W. Soppet, S. Majumdar, K. Natesan, Argonne National Laboratory, Lemont, IL, USA

PVP2017-65890: IS IT POSSIBLE TO GET-RID OF S-N CURVE FOR FATIGUE EVALUATION?: A FULLY MECHANISTIC MODEL OF 316SS REACTOR STEEL FOR FATIGUE LIFE EVALUATION
B. Barua, S. Mohanty, W. Soppet, S. Majumdar, K. Natesan, Argonne National Laboratory, Lemont, IL, USA

PVP2017-66077: TIME/CYCLE-DEPENDENT MATERIAL MODELS FOR 316 SS—316 SS SIMILAR METAL WELDS: A PRESENTATION BASED ON AN ARGONNE PUBLICATION (Presentation Only)
S. Mohanty, W. Soppet, S. Majumdar, K. Natesan, Argonne National Laboratory, Lemont, IL, USA

PVP2017-66078: STRESS ANALYSIS OF A PRESSURIZED WATER REACTOR PRESSURE VESSEL UNDER GRID-LOAD-FOLLOWING CONDITIONS: A PRESENTATION BASED ON AN ARGONNE PUBLICATION (Presentation Only)
S. Mohanty, W. Soppet, S. Majumdar, K. Natesan, Argonne National Laboratory, Lemont, IL, USA

SESSION 3.2G (CS-22-3)

Wednesday, July 19, 10:30 am – 12:15 pm, Queen's 4

MASTER CURVE FRACTURE TOUGHNESS AND OTHER SMALL SPECIMEN MECHANICAL PROPERTIES—III

Symposium on Fracture Mechanics and Analysis—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: M. Yamamoto, Central Research Institute of Electric Power Industry, Yokosuka, Kanagawa, Japan; W. Server, ATI Consulting, Black Mountain, NC, USA
Chair: M. Yamamoto, Central Research Institute of Electric Power Industry, Yokosuka, Kanagawa, Japan
Co-Chair: M. Sokolov, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-65259: COST-EFFECTIVE ALTERNATIVES TO CONVENTIONAL CHARPY TESTS FOR MEASURING THE IMPACT TOUGHNESS OF VERY-HIGH-TOUGHNESS STEELS
E. Lucon, Protiro Inc., Boulder, CO, USA

PVP2017-65792: THE EFFECT OF SPECIMEN SIZE FOR THE P91 STEEL AT ELEVATED AND HIGH TEMPERATURES
L. Stratil, F. Siska, H. Hadraba, S. Fintova, T. Mrna, Academy of Sciences of the Czech Republic, Brno, Czech Republic

PVP2017-66174: LOW CYCLE FATIGUE TESTS WITH THE USE OF MINIATURIZED TEST SPECIMENS
J. Dzugan, R. Prochazka, P. Konopik, Comtes FHT, Dobrany, Czech Republic

SESSION 3.2H (OAC-1-2)

Wednesday, July 19, 10:30 am – 12:15 pm, Queen's 5

INSPECTION AND EVALUATION FOR COMPONENT ASSESSMENT

Developed by: H. Watson, Savannah River National Laboratory, Aiken, SC, USA; A. Reich, Streamline Automation LLC, Huntsville, AL, USA
Chair: H. Watson, Savannah River National Laboratory, Aiken, SC, USA
Co-Chair: A. Reich, Streamline Automation LLC, Huntsville, AL, USA

PVP2017-65030: EFFICIENT FITTING PROCEDURE FOR CORROSION RATE DISTRIBUTION IN VIEW OF RELIABILITY ANALYSIS
S. Sakai, University of Tokyo, Tokyo, Japan; T. Kaida, Rabigh Refining & Petrochemical Co., Rabigh, Saudi Arabia

PVP2017-65169: AN INTEGRATION METHOD FOR ASSESSING THE OPERATIONAL RELIABILITY OF UNDERGROUND GAS STORAGE IN DEPLETED RESERVOIR
W. Yu, Y. Min, China University of Petroleum-Beijing, Beijing, China; W. Huang, China National Petroleum Corporation, Beijing, China; K. Wen, Y. Zhang, China University of Petroleum-Beijing, Beijing, China

PVP2017-65641: RELIABILITY PREDICTION OF LONG-DISTANCE TRANSMISSION PIPELINES WITH 3PE COATING WITH DELAY TIME CONCEPTS
X. Li, H. Hu, G. Cheng, Y. Li, Xi'an Jiaotong University, Xi'an, Shaanxi, China; C. Yin, CNPC Tubular Goods Research Institute, Xi'an, China

PVP2017-65500: APPLICATION OF MODEL-BASED CONDITION MONITORING TO THE HUMAN CARDIOVASCULAR SYSTEM
A. Reich, Streamline Automation LLC, Huntsville, AL, USA; J. Heym, Vital Metrix, Inc., Huntsville, AL, USA

SESSION 3.2I (CT-10-1)

Wednesday, July 19, 10:30 am – 12:15 pm, Queen's 6

NEW AND EMERGING METHODS OF ANALYSIS AND APPLICATIONS

Developed by: Y. Park, New Mexico State University, Las Cruces, NM, USA; S. Meunier, EDF R&D, Moret-sur-Loing, France
Chair: Y. Park, New Mexico State University, Las Cruces, NM, USA
Co-Chair: S. Meunier, EDF R&D, Moret-sur-Loing, France

PVP2017-65093: THE CORRELATION ANALYSIS OF THE BIG DATA FOR PIPELINE DEFECTS
H. Zhang, L. Zhang, S. Dong, China University of Petroleum, Beijing, China

PVP2017-65730: ON THE INFLUENCE OF FLOWS IN CLEARANCES FOR THERMAL SHOCKS IN A GLOBE VALVE
S. Meunier, J. Ferrari, J.-F. Rit, J.-P. Mathieu, D. Hersant, EDF, Moret-sur-Loing, France

PVP2017-65845: EAM POTENTIAL FOR HYDROGEN STORAGE APPLICATION
Y. Park, New Mexico State University, Las Cruces, NM, USA; I. Hijazi, Marshall University, Huntington, WV, USA

PVP2017-66235: ANALYSIS OF TENSION AND BENDING RESPONSE TO CHARACTERIZE ELASTIC-PLASTIC MATERIAL BEHAVIOR
D. Metzger, SNC, Mississauga, ON, Canada; W. Reinhardt, Candu Energy Inc., Mississauga, ON, Canada

SESSION 3.2J (OAC-3-1)

Wednesday, July 19, 10:30 am – 12:15 pm, Kona 1

MONITORING, DIAGNOSTICS AND INSPECTION

Developed by: M. Brumovsky, UJV Rez a.s., Rez, Czech Republic
Chair: I. Ezekoye, Westinghouse, Cranberry Township, PA, USA
Co-Chair: R. Kopriva, UJV Rez a.s., Rez, Czech Republic

PVP2017-65055: ONLINE CREEP-FATIGUE MONITORING OF CYCLIC OPERATION IN A COAL-FIRED POWER PLANT
S. Rosinski, K. Coleman, Electric Power Research Institute, Charlotte, NC, USA; M. Berasi, Structural Integrity Associates, Uniontown, OH, USA; C. Carney, Structural Integrity Associates, San Jose, CA, USA; U. Woerz, Structural Integrity Associates, Huntersville, NC, USA

PVP2017-65620: KEY TECHNOLOGY AND APPLICATION OF VISUAL INSPECTION OF BURIED POLYETHYLENE PIPELINE
S. Wang, X. Tang, P. Song, B. Ren, Y. Qian, Shanghai Institute of Special Equipment Inspection and Technical Research, Shanghai, China

PVP2017-65253: A STUDY ON THE BALL INDENTATION TEST FOR LINEAR HARDENING METALS
T. Zhang, W. Wang, A. Li, Shandong University, Jinan, Shandong, China

PVP2017-66141: RECAPTURING NET POSITIVE SUCTION HEAD (NPSH) MARGINS IN BOILING WATER REACTOR EMERGENCY CORE COOLING SYSTEMS
A. Bilanin, Continuum Dynamics, Inc., Ewing, NJ, USA; A. Kaufman, W. Bilanin, Continuum Dynamics Inc., Ewing, NJ, USA

SESSION 3.2K (MF-7-1)

Wednesday, July 19, 10:30 am – 12:15 pm; Kona 2

MATERIALS AND TECHNOLOGIES FOR NUCLEAR POWER PLANTS—I

Developed by: W. Ren, Oak Ridge National Laboratory, Oak Ridge, TN, USA
Chair: W. Ren, Oak Ridge National Laboratory, Oak Ridge, TN, USA
Co-Chair: R. Nanstad, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-65007: IRRADIATION INDUCED CHANGES IN MECHANICAL AND MICROSTRUCTURAL PROPERTIES OF THE HIGH FLUX REACTOR VESSEL: UPDATE OF THE RESULTS FROM 2014 AND 2015 SURVEILLANCE TEST CAMPAIGNS
M. Kolluri, F. H. E De Haan-de Wilde, H. S. Nolles, A. J. M. de Jong, F. A. van den Berg, NRG, Petten, Netherlands

PVP2017-65202: PROACTIVE IN-SITU WELDING STRESS CONTROL FOR LASER REPAIR WELDING OF IRRADIATED AUSTENITIC MATERIALS
J. Chen, Oak Ridge National Laboratory, Oak Ridge, TN, USA; J. Tatman, Electric Power Research Institute, Charlotte, NC, USA; Z. Chen, University of Tennessee, Knoxville, TN, USA; Z. Feng, Oak Ridge National Laboratory, Oak Ridge, TN, USA; G. Frederick, Electric Power Research Institute, Charlotte, NC, USA

PVP2017-65984: IRRADIATION EFFECTS ON MECHANICAL PROPERTIES AT HIGH FLUENCE FOR COMMERCIAL REACTOR PRESSURE VESSEL SURVEILLANCE MATERIALS (Presentation Only)
R. Nanstad, J. Robertson, Oak Ridge National Laboratory, Oak Ridge, TN, USA; G R. Odette, N. Almirall, University of California, Santa Barbara, Santa Barbara, CA, USA; M. Sokolov, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-65307: THE EPRI PWR SUPPLEMENTAL SURVEILLANCE PROGRAM (PSSP) FINAL DESIGN AND IMPLEMENTATION
W. Server, ATI Consulting, Black Mountain, NC, USA; B. Burgos, T. Hardin, Electric Power Research Institute, Palo Alto, CA, USA; J. B. Hall, Westinghouse, Pittsburgh, PA, USA

SESSION 3.2L (SE-12-2)

Wednesday, July 19, 10:30 am – 12:15 pm, Kona 3

ADVANCED SEISMIC EVALUATION AND CODE II; ADVANCED INELASTIC ANALYSIS METHOD

Developed by: A. Maekawa, The Kansai Electric Power Co. Inc., Fukui, Japan; I. Nakamura, National Research Institute for Earth Science and Disaster Resilience, Ibaraki, Japan; Y. Li, Japan Atomic Energy Agency, Ibaraki-Ken, Japan
Chair: I. Nakamura, National Research Institute for Earth Science and Disaster Resilience, Ibaraki, Japan
Co-Chair: N. Kojima, Toshiba Corporation, Yokohama, Japan

PVP2017-65341: INVESTIGATION ON METHOD OF ELASTO-PLASTIC ANALYSIS FOR PIPING SYSTEM MADE OF STAINLESS STEEL (SECONDARY BENCHMARK ANALYSIS)
N. Kojima, S. Hirouchi, M. Arai, T. Kabaya, M. Bando, MHI Nuclear Systems and Solution Engineering Co., Ltd., Kobe, Japan

PVP2017-66056: ACCEPTANCE CRITERION OF DUCTILE FAILURE AND PLASTIC COLLAPSE FOR SAFE-SHUTDOWN EARTHQUAKES USING NONLINEAR DYNAMIC ANALYSIS
I. Tamura, The Chugoku Electric Power Company, Hiroshima, Japan; S. Matsuura, R. Shimazu, Central Research Institute of Electric Power Industry, Abiko-Shi, Japan; K. Kimura, Tokyo Institute of Technology, Tokyo, Japan

PVP2017-65673: SEISMIC PERFORMANCE EVALUATION FOR STEEL-FRAME-STRUCTURE CONSIDERING MEMBER FRACTURE
K. Shiomi, IHI Corporation, Yokohama, Kanagawa, Japan

SESSION 3.2M (MF-21-1)

Wednesday, July 19, 10:30 am – 12:15 pm, Waikoloa Suite 1

ADDITIVE MANUFACTURING ONE MECHANICAL PROPERTIES

Developed by: P. Korinko, Savannah River National Laboratory, Aiken, SC, USA; A. Duncan, Savannah River National Laboratory, Aiken, SC, USA; C. M. Davies, Imperial College London, London, United Kingdom
Chair: P. Korinko, Savannah River National Laboratory, Aiken, SC, USA
Co-Chair: C. M. Davies, Imperial College London, London, United Kingdom

PVP2017-65409: DEFORMATION AND FRACTURE BEHAVIOUR OF 316L STAINLESS STEEL MANUFACTURED THROUGH SELECTIVE LASER MELTING
C. M. Davies, P. Garg, P. A. Hooper, Imperial College London, London, United Kingdom

PVP2017-65410: FATIGUE CRACK INITIATION AND GROWTH BEHAVIOUR OF 316L STAINLESS STEEL MANUFACTURED THROUGH SELECTIVE LASER MELTING
C. M. Davies, H. Thomlinson, P. A. Hooper, Imperial College London, London, United Kingdom

PVP2017-65809: CHARACTERIZATION OF ADDITIVELY MANUFACTURED HEAT EXCHANGER TUBING
P. Korinko, J. Bobbitt, Savannah River National Laboratory, Aiken, SC, USA; H. McKee, Kansas City National Security Campus, Kansas City, MO, USA; F. List, III, K. Carver, Oak Ridge National Laboratory, Knoxville, TN, USA

PVP2017-65948: ORIENTATION EFFECTS ON FATIGUE BEHAVIOR OF ADDITIVELY MANUFACTURED STAINLESS STEEL
T. R. Smith, University of California Davis, Davis, CA, USA; J. D. Sugar, C. San Marchi, Sandia National Laboratories, Livermore, CA, USA; J. M. Schoenung, University of California Irvine, Irvine, CA, USA

SESSION 3.2N (DA-4-2)

Wednesday, July 19, 10:30 am – 12:15 pm, Waikoloa Suite 2

INELASTIC, NONLINEAR AND LIMIT LOAD ANALYSIS—II

Developed by: D. Vlaicu, Ontario Power Generation, Pickering, ON, Canada; R. Baliga, Advent Engineering Services, San Ramon, CA, USA
Chair: D. Vlaicu, Ontario Power Generation, Pickering, ON, Canada
Co-Chair: R. Baliga, Advent Engineering Services, San Ramon, CA, USA

PVP2017-65724: NONLINEAR BUCKLING ANALYSIS OF CYLINDRICAL SHELL WITH NORMAL NOZZLE SUBJECTED TO AXIAL LOADS
Q. Shi, Z. Wang, H. Tang, Harbin Boiler Co., Ltd., Harbin, Heilongjiang, China

PVP2017-65763: ON THE CRITICAL BOUNDARY CONDITIONS FOR RUPTURE OF BUCKLED STEEL PIPELINES
N. M. Rahbari, J. J. R. Cheng, S. Adeeb, University of Alberta, Edmonton, AB, Canada

PVP2017-66014: NUMERICAL ANALYSIS OF MECHANICAL INTERACTION OF PIPE-IN-PIPE FLOWLINE
M. Akolawole, Y. Pu, Newcastle University, Newcastle Upon Tyne, Tyne and Wear, United Kingdom

SESSION 3.2O (DA-2-5)

Wednesday, July 19, 10:30 am – 12:15 pm, Waikoloa Suite 3

DESIGN AND ANALYSIS OF PIPING AND COMPONENTS—V

Developed by: B. Li, AMEC Foster Wheeler, Toronto, ON, Canada
Chair: B. Li, AMEC Foster Wheeler, Toronto, ON, Canada
Co-Chair: S. Iyer, Candu Energy, Mississauga, ON, Canada

PVP2017-65634: STUDY ON DYNAMIC RESPONSE OF PIPING SYSTEM INDUCED BY WATER HAMMER CONSIDERING SUPPORT CHARACTERISTICS
A. Okami, S. Kataoka, T. Honda, JGC Corporation, Yokohama, Japan

PVP2017-65164: EVALUATION OF GAS ACCUMULATION IN THE RCIC SYSTEM DISCHARGE PIPING OF BWR NUCLEAR POWER PLANT
C. J. Li, Z.-Y. Hung, P.-H. Huang, Industrial Technology Research Institute, Hsinchu, Taiwan

PVP2017-65744: STRESS OF LARGE DIAMETER PIPING SYSTEM SHOE SUPPORT
S. Ranjbaran, Sazeh Consultant, Tehran, Tehran, Iran; A. D. Ghalelar, Nargan Engineers & Constructors, Tehran, Tehran, Iran

PVP2017-65756: LOAD FACTORS FOR CONCRETE WALL PIPE PENETRATIONS WITH A WALL MOUNTED WELDED PLATE
S. R. Costanzo, C. W. Mak, P. H. Hoang, Sargent and Lundy, LLC, Chicago, IL, USA

SESSION 3.2Q (TW-1-8)

Wednesday, July 19, 10:30 am – 12:15 pm, Kohala 4

ASME SECTION VIII, DIVISION 3 ALTERNATIVE RULES FOR CONSTRUCTION OF HIGH PRESSURE VESSELS (PART 2)

Developed by: D. L. Stang, Omax Corporation, Kent, WA, USA
Chair: D. L. Stang, Omax Corporation, Kent, WA, USA
Presented by: Daniel T. Peters, Structural Integrity Associates, Edinboro, PA, USA

Block 3.3: Wednesday, July 19, 2017 (2:00 pm – 3:45 pm)

SESSION 3.3A (DA-5-1)

Wednesday, July 19, 2:00 pm – 3:45 pm, Kohala 1

STRESS CLASSIFICATION AND DESIGN BY ANALYSIS METHODOLOGIES

Developed by: Q. Ma, Walla Walla University, College Place, WA, USA; R. Baliga, Advent Engineering Services, San Ramon, CA, USA
Chair: Q. Ma, Walla Walla University, College Place, WA, USA
Co-Chair: R. Baliga, Advent Engineering Services, San Ramon, CA, USA

PVP2017-65008: PLASTIC FLOW ANALYSIS OF THICK WALLED PRESSURE VESSELS
J. A. Jelwan, P. Sader, Holy Spirit University of Kaslik, Jounieh, Mount Lebanon, Lebanon

PVP2017-65239: DYNAMIC LOAD FACTOR FOR SURGE LOAD ON PIPE USING THE STRESS WAVE PROPAGATION METHODOLOGY
S. Abu, Samsung C&T Corporation, Gyeonggi-Do, Korea (Republic)

PVP2017-65846: STATISTICAL EVALUATION OF STRESS INDEPENDENCE OF TWO CONNECTED STRUCTURES
C. Johnson, J. A. Mann, III, G. Westwater, Emerson, Marshalltown, IA, USA

PVP2017-66217: VISCOELASTIC AND DAMAGE MODEL OF POLYETHYLENE PIPE MATERIAL FOR SLOW CRACK GROWTH ANALYSIS
Y. Zhang, X. Luo, J. Shi, Zhejiang University, Hangzhou, Zhejiang, China

SESSION 3.3B (FSI-2-10)

Wednesday, July 19, 2:00 pm – 3:45 pm, Kohala 2

FIV & FLUTTER

Symposium of Flow-Induced Vibration—Sponsored by Fluid-Structure Interaction Technical Committee

Developed by: C. Meskell, Trinity College, Dublin, Ireland; H. Goyder, Cranfield University, Swindon, United Kingdom
Chair: H. Goyder, Cranfield University, Swindon, United Kingdom
Co-Chair: E. Deri, EDF, Chatou, France

PVP2017-65240: COMBINATIONAL INFLUENCE OF INTERNAL FLOW AND EXTERNAL ANNULAR AXIAL FLOW ON INSTABILITY OF CANTILEVERED DOUBLE WALL PIPES
K. Fujita, A. Moriasa, Osaka City University, Osaka, Japan

PVP2017-65325: DESIGN GUIDELINES FOR DYNAMIC STABILITY OF TAINTER GATES
K. Anami, N. Ishii, Osaka Electro-Communication University, Neyagawa, Osaka, Japan; C. Knisely, Bucknell University, Lewisburg, PA, USA; T. Oku, Mayekawa Mfg. Co., Ltd., Moriya, Ibaraki, Japan

PVP2017-65335: SELF-EXCITED VIBRATION OF A PLATE SUPPORTED BY AIR PRESSURE IN A FLOATING CONVEYING MACHINE
M, Takeda, M. Watanabe, Aoyama Gakuin University, Sagamihara-shi, Kanagawa, Japan

PVP2017-65352: CONFINEMENT EFFECTS ON ADDED MASS OF CYLINDRICAL STRUCTURES IN A POTENTIAL FLOW
R. Capanna, G. Ricciardi, CEA Cadarache, St Paul les Durance, France; C. Eloy, Irphe, Marseille, France; E. Sarrouy, Laboratoire de Mécanique et d'Acoustique (LMA), Marseille, France

SESSION 3.3C (CS-11-6)

Wednesday, July 19, 2:00 pm – 3:45 pm, Kohala 3

FAILURE ANALYSIS OF ENGINEERING STRUCTURE—II

Symposium on Recent Developments in International Codes and Standards—Sponsored by Codes & Standards Technical Committee

Developed by: G. Jia, The General Administration of Quality Supervision, Inspection and Quarantine, Beijing, China
Chair: G. Jia, The General Administration of Quality Supervision, Inspection and Quarantine, Beijing, China
Co-Chair: G. Deng, China Special Equipment Inspection and Research Institution, Beijing, China

PVP2017-66042: ACOUSTIC EMISSION ENTROPY FOR EVALUATION OF FRACTURE TOUGHNESS OF HSLA STEEL WELDED JOINT
M. Chai, W. Wu, Z. Zhang, G. Cheng, Q. Duan, Xi'an Jiaotong University, Xi'an, China

PVP2017-66123: APPLICATION OF FLEXIBLE ULTRASONIC PHASED ARRAY TECHNIQUE ON DETECTION OF FILLET WELDS IN SMALL-DIAMETER PIPE HOLDER
W. Guo, C. Miao, X. Du, M. Wang, J. Xia, Zhejiang Provincial Special Equipment Inspection and Research Institute, Hangzhou, China

PVP2017-66249: STUDY ON SAFETY OF HIGH VOLTAGE GIS BUSBARS SHELL
S. Yuan, S. Zhou, Y. Fan, Xi'an Shiyou University, Xi'an, China

PVP2017-65494: STRESS ANALYSIS OF ELLIPSOIDAL HEAD WITH HEATING SPIRAL
J. Shen, Wison Engineering Co., Ltd., Shanghai, China; H. Peng, Tsinghua University, Beijing, China; Y. Tang, Wison Engineering Co., Ltd., Shanghai, China; X. Liu, Changzheng Engineering Co., Limited., Beijing, China; Y. Liu, Tsinghua University, Beijing, China

SESSION 3.3D (DA-8-1)

Wednesday, July 19, 2:00 pm – 3:45 pm, King's 1

FITNESS FOR SERVICE EVALUATIONS

Symposium on Fitness-for-Service—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: G. Van Zyl, SABIC, Jubail, Saudi Arabia; K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Chair: G. Van Zyl, SABIC, Jubail, Saudi Arabia
Co-Chair: K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA

PVP2017-65183: RESIDUAL STRESS ASSESSMENT FOR PRESSURE VESSEL SUBJECT TO THERMAL SHOCK
J. Hsiao, H. Qian, C. Brunner, T. Bober, L. D'Amico, GE Gas Power Systems, Windsor, CT, USA

PVP2017-65512: EFFECTS OF SECONDARY CREEP FORMULATION ON API 579-1 RESIDUAL LIFE EVALUATION
L. Scano, Studio Scano Associato, Udine, Italy, L. Esposito, University of Naples, Naples, Italy

PVP2017-65715: SUFFICIENCY OF REFERENCE STRESS SOLUTIONS FOR FFS EVALUATION OF CRACK-LIKE FLAWS
K. Oyamada, High Pressure Gas Safety Institute of Japan, Tokyo, Japan; N. Miura, Central Research Institute of Electric Power Industry, Yokosuka, Japan

PVP2017-66271: CONSIDERATION OF REDUCTION IN STIFFNESS DUE TO CRACKING AND THE IMPACT ON STANDARD STRESS INTENSITY FACTOR SOLUTIONS
D. Blanks, Quest Integrity Group, Varsity Lakes, QLD, Australia

PVP2017-65882: GUIDELINES FOR BRITTLE FRACTURE ASSESSMENTS ON PIPING SYSTEMS (Presentation Only)
K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA; J. Penso, Shell Projects and Technology, Houston, TX, USA; G. Garic, Stress Engineering Services Inc., Metairie, LA, USA

SESSION 3.3E (CS-15-1)

Wednesday, July 19, 2:00 pm – 3:45 pm, King's 2

PROBABILISTIC AND RISK-INFORMED METHODS FOR STRUCTURAL INTEGRITY ASSESSMENT—I

Symposium on Probabilistic Assessments and Risk Management—Co-Sponsored by Codes & Standards, Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: B. A. Young, Battelle, Columbus, OH, USA; S. Xu, Kinectrics Inc., Toronto, ON, Canada; D. Rudland, U.S. Nuclear Regulatory Commission, Frederick, MD, USA
Chair: J. C. Jin, Canadian Nuclear Safety Commission, Ottawa, ON, Canada
Co-Chair: B. A. Young, Battelle, Columbus, OH, USA

PVP2017-65262: FAVOR VERSION 16.1—A COMPUTER CODE FOR FRACTURE MECHANICS ANALYSES OF NUCLEAR REACTOR PRESSURE VESSELS
B. R. Bass, T. Dickson, P. T. Williams, H. Klasky, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-66101: PROBABILISTIC ASSESSMENT OF CANDU REACTOR CORE FOR RISK OF PRESSURE TUBE FAILURE DUE TO PRESENCE OF IN-SERVICE FLAWS
D. Cho, Bruce Power, Toronto, ON, Canada; D. Mok, Amec Foster Wheeler, Toronto, ON, Canada; S. Xu, D. Scarth, Kinectrics Inc., Toronto, ON, Canada
PVP2017-65384: BENCHMARKING PROBABILISTIC CODES FOR LBB ANALYSIS FOR CIRCUMFERENTIAL CRACKS
R. Kurth, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA; B. A. Young, Battelle, Columbus, OH, USA; C. Sallaberry, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA; P. Scott, Battelle Memorial Institute, Columbus, OH, USA; F. Brust, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA
PVP2017-66102: IMPACT OF UNDETECTED FABRICATION FLAWS ON LBB RISK
R. Kurth, C. Sallaberry, E. Kurth, F. Brust, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA
PVP2017-65225: PROBABILISTIC FRACTURE MECHANICS ANALYSIS OF BOILING WATER REACTOR VESSEL ON RELATIVELY LOW FAILURE PROBABILITY PROBLEM USING PROFAS-RV PFM ANALYSIS CODE
J. Kim, B. Lee, Korea Atomic Energy Research Institute, Daejeon, Korea (Republic)

SESSION 3.3F (CS-3-4)

Wednesday, July 19, 2:00 pm – 3:45 pm, King's 3
ENVIRONMENTAL FATIGUE ISSUES—IV
Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: S. Asada, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; H. Mehta, GE Hitachi Nuclear Engineering, San Jose, CA, USA; C. Faidy, CF Integrity Engineering, Tassin, France; S. Mohanty, Argonne National Laboratory, Lemont, IL, USA
Chair: C. Faidy, CF Integrity Engineering, Tassin, France
Co-Chair: S. Mohanty, Argonne National Laboratory, Lemont, IL, USA
PVP2017-65514: APPLICABILITY OF HOLLOW CYLINDRICAL SPECIMENS TO ENVIRONMENTAL ASSISTED FATIGUE TESTS
S. Asada, K. Tsutsumi, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; Y. Fukuta, H. Kanasaki, Mitsubishi Heavy Industries, Ltd., Takasago, Hyogo, Japan
PVP2017-65975: AN INVESTIGATION INTO THE LIFETIMES OF SOLID AND HOLLOW FATIGUE ENDURANCE SPECIMENS USING CYCLIC HARDENING MATERIAL MODELS IN FINITE ELEMENT ANALYSIS
P. J. Gill, C. Madew, P. James, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom; C. Currie, Rolls-Royce, Derby, United Kingdom; A. Morley, Rolls-Royce Plc, Derby, Derbyshire, United Kingdom
PVP2017-65135: MEAN STRESS EFFECT ON FATIGUE PROPERTIES OF TYPE 316 STAINLESS STEEL (PART I: IN HIGH-TEMPERATURE AIR ENVIRONMENT)
M. Kamaya, Institute of Nuclear Safety System, Inc., Mikata-gun Fukui, Japan
PVP2017-65136: MEAN STRESS EFFECT ON FATIGUE PROPERTIES OF TYPE 316 STAINLESS STEEL (PART II: IN PWR PRIMARY WATER ENVIRONMENT)
M. Kamaya, Institute of Nuclear Safety System, Inc., Mikata-gun Fukui, Japan

SESSION 3.3G (CS-23-1)

Wednesday, July 19, 2:00 pm – 3:45 pm, Queen's 4
HYDROGEN FLAKES ASSESSMENT IN THE RPV'S

Developed by: V. Lacroix, Tractebel Engie, Brussels, Belgium
Chair: V. Lacroix, Tractebel Engie, Brussels, Belgium
Co-Chair: P. Dulieu, Tractebel Engie, Brussels, Belgium
PVP2017-65305: ORNL EVALUATION OF SAFETY CASES FOR TWO BELGIAN REACTOR PRESSURE VESSELS CONTAINING QUASI-LAMINAR DEFECTS
H. Klasky, B. R. Bass, T. Dickson, S. B. Gorti, R. Nanstad, Oak Ridge National Laboratory, Oak Ridge, TN, USA
PVP2017-66031: STRUCTURAL INTEGRITY ASSESSMENT OF DOEL 3 AND TIHANGE 2 RPVS: ASME B&PV CODE SECTION III PRIMARY STRESS REEVALUATION ACCOUNTING FOR THE PRESENCE OF HYDROGEN FLAKES
P. Dulieu, V. Lacroix, Tractebel Engie, Brussels, Belgium
PVP2017-66032: STRUCTURAL INTEGRITY ASSESSMENT OF DOEL 3 AND TIHANGE 2 RPVS: FATIGUE CRACK GROWTH ANALYSIS OF HYDROGEN FLAKES
V. Lacroix, P. Dulieu, Tractebel Engie, Brussels, Belgium
PVP2017-66216: ORGANIZATION OF THE INDEPENDENT SAFETY REVIEW DONE BY ELECTRABEL FOR THE SAFETY ASSESSMENT OF DOEL 3 AND TIHANGE 2 RPVS
A. Meert, J.-P. De Cock, ENGIE Electrabel, Brussels, Belgium

SESSION 3.3H (OAC-2-1)

Wednesday, July 19, 2:00 pm – 3:45 pm, Queen's 5
TESTING AND QUALIFICATION ON DIFFERENT MATERIALS

Developed by: G. Bezdikian, Georges Bezdikian Consulting, Le Vesinet, France; G. Young, Entergy Services Inc., Russellville, AR, USA
Chair: G. Young, Entergy Services Inc., Russellville, AR, USA
Co-Chair: G. Bezdikian, Georges Bezdikian Consulting, Le Vesinet, France
PVP2017-65252: KEEPING OUR AIR CLEAN: A VALVE MANUFACTURER'S PERSPECTIVE (Presentation Only)
S. Allen, Bray International, Houston, TX, USA
PVP2017-65911: QUALIFICATION OF VACUUM BREAKERS (Presentation Only)
B. Shitole, AMEC, Calgary, AB, Canada
PVP2017-65916: USING 16-8-2 FILLER METALS IN PETROCHEMICAL APPLICATIONS (Presentation Only)
J. Penso, Shell Projects and Technology, Houston, TX, USA
PVP2017-65394: PLUTONIUM DYNAMIC TESTING OPERATIONS AT LANL AND NTS (Presentation Only)
B. Lopez, S. Talachy, Los Alamos National Laboratory, Los Alamos, NM, USA

SESSION 3.3I (CT-12-1)

Wednesday, July 19, 2:00 pm – 3:45 pm, Queen's 6
EXPLICIT AND IMPLICIT FINITE ELEMENT ANALYSIS

Developed by: W. Reinhardt, Candu Energy Inc., Mississauga, ON, Canada; D. Metzger, SNC, Mississauga, ON, Canada; R. Adibi-Asl, Amec Foster Wheeler, Toronto, ON, Canada
Chair: J. Rudolph, AREVA GmbH, Erlangen, Bavaria, Germany
Co-Chair: D. Metzger, SNC, Mississauga, ON, Canada
PVP2017-66135: DECAY LENGTH IN PRESSURE VESSELS
R. Adibi-Asl, Amec Foster Wheeler, Toronto, ON, Canada; R. Seshadri, Memorial University, St. John's, NL, Canada
PVP2017-66238: COMPARISON OF STRIP YIELD AND NET SECTION PLASTICITY MODELS FOR A BAR IN BENDING WITH A SINGLE EDGE CRACK
W. Reinhardt, Candu Energy Inc., Mississauga, ON, Canada; D. Metzger, SNC, Mississauga, ON, Canada
PVP2017-66268: DYNAMIC CYCLIC STRESS ANALYSIS OF ROLLING OF A DIAMETRICALLY LOADED HELICAL TEST SPECIMEN
D. Metzger, M. Paulseth, A. Gagnon, SNC, Mississauga, ON, Canada
PVP2017-65817: ERROR NORM VS. UNCERTAINTY METRIC IN ASSESSING ACCURACY OF THE FINITE ELEMENT METHOD
P. V. Marcal, MPACT, Corp., Oak Park, CA, USA; J. T. Fong, National Institute of Standards and Technology, Gaithersburg, MD, USA; R. Rainsberger, XYZ Scientific Applications Inc., Pleasant Hill, CA, USA; L. Ma, National Institute of Standards and Technology, Gaithersburg, MD, USA

SESSION 3.3J (DA-20-1)

Wednesday, July 19, 2:00 pm – 3:45 pm, Kona 1
SPECIAL CONSIDERATIONS IN THE DESIGN AND ANALYSIS OF SUPPORTS, RESTRAINTS, AND WELDED ATTACHMENTS

Developed by: P. Wiseman, LISEGA Inc., Kodak, TN, USA
Chair: P. Wiseman, LISEGA Inc., Kodak, TN, USA
Co-Chair: Z. Hoch, LISEGA Inc., Kodak, TN, USA
PVP2017-65970: NOZZLE LOAD CONSIDERATIONS AND MISCONCEPTIONS INTRODUCED BY PIPING SUPPORT FRICTION
B. S. Antaal, D. Williams, LISEGA Inc., Kodak, TN, USA
PVP2017-65864: COMPARISONS OF CFD AND TRADITIONAL SOLUTIONS FOR STEAM HAMMER EVENTS
A. Mayes, K. Gawande, D. K. Williams, LISEGA Inc., Kodak, TN, USA

PVP2017-66086: A HISTORICAL REVIEW AND ADDITIONS TO SIFS AND STRESS INDICES FOR TRUNNION ELBOWS
D. Williams, S. Nargund, LISEGA Inc., Kodak, TN, USA
PVP2017-65377: REVIEW AND COMPARISON OF BUCKLING METHODOLOGIES FOR ASME B&PV CODE LINEAR PIPING AND COMPONENT RESTRAINTS
P. Wiseman, S. Nargund, Z. Hoch, LISEGA Inc., Kodak, TN, USA

SESSION 3.3K (MF-7-2)

Wednesday, July 19, 2:00 pm – 3:45 pm, Kona 2
MATERIALS AND TECHNOLOGIES FOR NUCLEAR POWER PLANTS—II

Developed by: W. Ren, Oak Ridge National Laboratory, Oak Ridge, TN, USA
Chair: W. Ren, Oak Ridge National Laboratory, Oak Ridge, TN, USA
Co-Chair: R. Nanstad, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-65348: A STUDY OF DUCTILITY DIP CRACKING OF INCONEL 690 WELDING FILLER METAL—DEVELOPMENT OF A REFUSION CRACKING TEST
A. Rapetti, P. Todeschini, Eléctricité de France R&D, Moret-sur-Loing, France; S. Hendili, Electricité de France R&D, Chatou, France; F. Christien, Ecole Nationale Supérieure des Mines de St-Etienne, St-Etienne, France; F. Tancret, University of Nantes, Nantes, France
PVP2017-65694: TECHNICAL BASIS FOR THE EXEMPTIONS TO MANDATORY POST WELD HEAT TREATMENT (PWHT) OF SA-738 GRADE B FOR SEC. III DIV.1 SUBSECTION NE APPLICATION
T. Hayashi, Toshiba Corporation, Yokohama, Kanagawa, Japan; C. Kim, Westinghouse Electric Co, Murrysville, PA, USA; K. Kumagai, IHI Corporation, Yokohama, Kanagawa, Japan; M. Goto, S. Otake, Toshiba Corporation, Yokohama, Kanagawa, Japan
PVP2017-66064: TUBE EXPANSION & HYBRID FRICTION DIFFUSION BONDING OF CU-NI AND ASTM A516 G70 TUBE-TO-TUBESHEET JOINTS
A. Hbbani, F. Al-Badour, A. Bazoune, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia
PVP2017-66255: DEALLOYING OF AS-WELDED MICROSTRUCTURES IN ALUMINUM BRONZES IN ESSENTIAL COOLING WATER SERVICE
R. Kirchhofer, H. Vaillancourt, Intertek AIM, Santa Clara, CA, USA; M. Garner, South Texas Project, Wadsworth, TX, USA; R. C. Cipolla, Intertek AIM, Santa Clara, CA, USA
PVP2017-66130: ELEVATED TEMPERATURE CRACKING RESISTANCE OF TA-BEARING HIGH CHROMIUM NI-BASE FILLER METALS
C. Fink, J. C. Lippold, The Ohio State University, Columbus, OH, USA; A. T. Hope, Thermo-Calc Software Inc., McMurray, PA, USA; S. McCracken, Electric Power Research Institute, Harrisburg, NC, USA

SESSION 3.3L (SE-4-1)

Wednesday, July 19, 2:00pm – 3:45 pm, Kona 3
STRUCTURAL DYNAMICS IN SEISMIC ENGINEERING

Developed by: K. Fujita, Osaka City University, Osaka, Japan
Chair: K. Fujita, Osaka City University, Osaka, Japan
Co-Chair: K. Aida, Mitsubishi Hitachi Power Systems, Ltd., Kure-Shi, Japan

PVP2017-65329: CORE SEISMIC EXPERIMENT AND ANALYSIS OF FULL SCALE SINGLE MODEL FOR FAST REACTOR
A. Iwasaki, Mitsubishi Heavy Industries, Ltd., Takasago, Japan; S. Matsubara, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; T. Yamamoto, S. Kitamura, Japan Atomic Energy Agency, Fukui pref., Japan; H. Harada, Mitsubishi FBR Systems, Tokyo, Japan
PVP2017-65354: CORE SEISMIC EXPERIMENT AND ANALYSIS OF HEXAGONAL BUNDLE MODEL FOR FAST REACTOR
A. Iwasaki, Mitsubishi Heavy Industries, Ltd., Takasago, Japan; S. Matsubara, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; S. Okamura, Mitsubishi FBR Systems, Shibuya-Ku, Tokyo, Japan; S. Kitamura, T. Yamamoto, Japan Atomic Energy Agency, Fukui pref., Japan
PVP2017-65357: CORE SEISMIC EXPERIMENT AND ANALYSIS OF A LARGE NUMBER OF ELEMENT MODELS FOR FAST REACTOR
A. Iwasaki, Mitsubishi Heavy Industries, Ltd., Takasago, Japan; S. Matsubara, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; S. Okamura, Mitsubishi FBR Systems, Shibuya-Ku, Tokyo, Japan; S. Kitamura, T. Yamamoto, Japan Atomic Energy Agency, Fukui pref., Japan
PVP2017-65313: FUNDAMENTAL STUDY ON EVALUATION METHOD OF NONLINEAR SLOSHING WAVE HEIGHT OF CYLINDRICAL TANKS
H. Morita, Mitsubishi Heavy Industries, Ltd., Hyogo-pref, Japan; T. Takata, H. Madokoro, Mitsubishi Heavy Industries, Ltd., Takasago, Japan; H. Sago, H. Murakami, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; S. Yokoi, Mitsubishi FBR Systems, Inc., Tokyo, Japan
PVP2017-65677: EARTHQUAKE RESISTANCE ASSESSMENT OF CONTAMINATED WATER STORAGE TANK AND ITS REINFORCEMENT BASIC DESIGN AT FUKUSHIMA
H. Morishige, Fukushima Nuclear Accident Countermeasures Review Group, Kobe, Hyougo, Japan; K. Fujita, Osaka City University, Osaka, Japan; Y. Yamashiki, Kyoto University, Kyouto, Kyoto, Japan

SESSION 3.3M (MF-21-2)

Wednesday, July 19, 2:00 pm – 3:45 pm, Waikoloa Suite 1
ADDITIVE MANUFACTURING TWO

Developed by: A. Duncan, Savannah River National Laboratory, Aiken, SC, USA; J. Todd, Pennsylvania State University, University Park, PA, USA
Chair: A. Duncan, Savannah River National Laboratory, Aiken, SC, USA
Co-Chair: J. Todd, Pennsylvania State University, University Park, PA, USA

PVP2017-65827: QUALITY ASSURANCE AND TECHNOLOGY QUALIFICATION FOR ADDITIVE MANUFACTURING OF METALLIC PRESSURE COMPONENTS
M. K. Mandeville, Jr., DNV GL, Katy, TX, USA; M. Brongers, DNV GL, Dublin, OH, USA; F. Tang, DNV GL, Katy, TX, USA
PVP2017-65857: HYDROGEN ISOTOPE PERMEATION AND TRAPPING IN ADDITIVELY MANUFACTURED STEELS
R. A. Karnesky, P. Chao, D. Buchenauer, Sandia National Laboratories, Livermore, CA, USA
PVP2017-65992: THERMAL-MECHANICAL FINITE ELEMENT SIMULATION OF ADDITIVE MANUFACTURING; PROCESS MODELING OF THE LENS PROCESS
M. Stender, L. Beghini, M. Veilleux, S. Subia, J. D. Sugar, Sandia National Laboratories, Livermore, CA, USA
PVP2017-66134: THERMAL STABILITY OF 3-D AM PRINTED 316L STAINLESS STEEL PROTOTYPES AND ITS IMPACT ON MECHANICAL PROPERTIES (Presentation Only)
N. Yang, R. A. Karnesky, J. Yee, Sandia National Laboratories, Livermore, CA, USA

SESSION 3.3N (DA-11-1)

Wednesday, July 19, 2:00 pm – 3:45 pm, Waikoloa Suite 2
CFD IN DESIGN AND ANALYSIS

Developed by: S. McGuffie, Porter McGuffie, Inc., Lawrence, KS, USA
Chair: S. McGuffie, Porter McGuffie, Inc., Lawrence, KS, USA
Co-Chair: S. Xu, Hefei General Machinery Research Institute, Hefei, China

PVP2017-65310: ANALYSIS ON THE TRANSIENT-STATE OF THE GAS-CONDENSATE PIPELINE
G. Shi, X. Li, China University of Petroleum-Beijing, Beijing, China; Z. Wang, Changqing Technology Engineering Co., Ltd., Xi'an, China; D. Wang, J. Gong, China University of Petroleum-Beijing, Beijing, China
PVP2017-65669: CFD SIMULATION OF SUPERCRITICAL LNG HEAT TRANSFER IN A HORIZONTAL TUBE OF AN INTERMEDIATE FLUID VAPORIZER
S. Xu, X. Chen, Z. Fan, Hefei General Machinery Research Institute, Hefei, China
PVP2017-66001: TEMPERATURE MEASUREMENT OF A 7×7 ARRAY OF HEATED RODS SUBJECTED TO VACUUM DRYING CONDITIONS
D. Maharjan, M. Hadj-Nacer, M. Greiner, University of Nevada, Reno, Reno, NV, USA
PVP2017-66002: EXPERIMENTALLY BENCHMARKED COMPUTATIONAL FLUID DYNAMICS SIMULATIONS OF A 7×7 ARRAY OF HEATED RODS WITHIN A SQUARE-CROSS-SECTION ENCLOSURE FILLED WITH RAREFIED HELIUM
D. Maharjan, M. Hadj-Nacer, M. Greiner, University of Nevada, Reno, Reno, NV, USA

SESSION 3.3O (DA-2-6)

Wednesday, July 19, 2:00 pm – 3:45 pm, Waikoloa Suite 3
DESIGN AND ANALYSIS OF PIPING AND COMPONENTS—VI

Developed by: S. Iyer, Candu Energy, Mississauga, ON, Canada; K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA
Chair: S. Iyer, Candu Energy, Mississauga, ON, Canada
Co-Chair: K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA

PVP2017-66019: NUMERICAL MODELLING OF THE COOLING SYSTEM AT ALBA SYNCHROTRON RADIATION FACILITY TO UNDERSTAND ITS PERFORMANCE
X. Escaler, Universitat Politècnica De Catalunya, Barcelona, Spain; M. Prieto, M. Quispe, ALBA Synchrotron Light Source, Cerdanyola del Valles, Spain; M. Kjeldsen, Flow Design Bureau AS, Stavanger, Norway; O. de la Torre, National University of Ireland Galway, Galway, Connacht, Ireland

PVP2017-65981: ATTENTION POINTS FOR HIGH TEMPERATURE STRUCTURE DESIGN USING NI-BASED ALLOY (Presentation Only)
J. Tan, F.-Z. Xuan, East China University of Science and Technology, Shanghai, China

PVP2017-65094: FINITE ELEMENT ANALYSIS BASED SIF CALCULATION AND COMPARISON WITH VARIOUS APPROACHES FOR SIF CALCULATION
M. Kulkarni, V. Dewangan, Technip India Ltd., Mumbai, India

PVP2017-65996: DISTRICT HEATING NETWORK OPTIMIZATION USING A COUPLED PUMP AND PIPE SYSTEM ANALYSIS
M. Jonsson, L. Magnusdottir, University of Iceland, Reykjavik, Iceland

PVP2017-66245: BASIC DESIGN RULES FOR LINES IN PULSATING FLOW SERVICE
M. Eijgenhuijsen, G. Masand, Chevron Australia Pty Ltd., Perth, Australia

SESSION 3.3Q (MF-14-1)

Wednesday, July 19, 2:00 pm – 3:45 pm, Kohala 4
LEAK BEFORE BREAK

Developed by: P. J. Gill, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom
Chair: P. J. Gill, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom
Co-Chair: A. Horn, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom

PVP2017-66037: MODELING OF PIPE SYSTEM BEHAVIOR WITH CIRCUMFERENTIAL SURFACE CRACK FOR SECONDARY STRESS MARGIN ASSESSMENT
M. Uddin, F. Brust, G. Wilkowski, S. Kalyanam, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA; J. Martin, BMPC, Schenectady, NY, USA

PVP2017-65438: "APPARENT NET-SECTION-COLLAPSE" METHODOLOGY FOR CIRCUMFERENTIAL SURFACE FLAWS IN PIPING
S. Kalyanam, G. Wilkowski, S. Pothana, Y. Hioe, C. Sallaberry, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA

PVP2017-65985: LEAK DETECTION ASSESSMENT OF A THROUGH WALL CRACK IN A CIRCUMFERENTIAL WELD
P. J. Gill, C. Madew, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom; S. Booth, EDF Energy, Gloucester, United Kingdom

PVP2017-65193: STUDY ON DIFFUSION AREA OF FLUID LEAKAGE WITH PIPE FAILURE
S. Watanabe, K. Yoneda, Central Research Institute of Electric Power Industry, Yokosuka, Kanagawa, Japan

THURSDAY, JULY 20

Block 4.1: Thursday, July 20, 2017 (8:30 am – 10:15 am)

SESSION 4.1A (DA-1-1)

Thursday, July 20, 8:30 am – 10:15 am, Kohala 1
DESIGN AND ANALYSIS OF PRESSURE VESSELS PER THE ASME CODE

Developed by: N. Barkley, Contract Fabricators, Inc., Holly Springs, MS, USA
Chair: J. Taagepera, Chevron ETC, Richmond, CA, USA
Co-Chair: R. Frith, University of Queensland, St Lucia, Queensland, Australia

PVP2017-65023: A NEW PRESSURE VESSEL CLASS—CHALLENGING WELD EFFICIENCIES
R. Frith, University of Queensland, St Lucia, Queensland, Australia, S. Laird, FE Consultants Pty Ltd., Newstead, Qld, Australia

PVP2017-65858: ELLIPSOIDAL HEAD RULES: A COMPARISON BETWEEN ASME SECTION VIII, DIVISIONS 1 AND 2
T. Seipp, Becht Engineering Co., Inc., Okotoks, AB, Canada; N. Barkley, Contract Fabricators, Inc., Holly Springs, MS, USA; C. Wright, Christopher Wright Registered Engineer, Minnetonka, MN, USA

PVP2017-65766: DESIGN AND ANALYSIS OF VERTICAL VESSELS FOR LIFTING IN FULLY DRESSED CONDITION
C. Doctor, Fluor Canada Ltd., Calgary, AB, Canada; R. Stefanovic, Fluor Canada, Calgary, AB, Canada

PVP2017-65188: FINITE ELEMENT ANALYSIS OF A QUICK-ACTUATING CLOSURE
G. Ricco, BSS Ltd., Beijing, China

SESSION 4.1B (FSI-2-11)

Thursday, July 20, 8:30 am – 10:15 am, Kohala 2
FIV IN TUBE ARRAYS III (TUBE-SUPPORT INTERACTION)
Symposium of Flow-Induced Vibration—Sponsored by Fluid-Structure Interaction Technical Committee

Developed by: D. S. Weaver, McMaster University, Hamilton, ON, Canada; N. Mureithi, Polytechnique Montreal, Montreal, QC, Canada; T. Nakamura, Osaka Sangyo University, Daito, Osaka, Japan
Chair: T. Nakamura, Osaka Sangyo University, Daito, Osaka, Japan
Co-Chair: L. Kaiktsis, National Technical University of Athens, Zografou, Greece

PVP2017-65708: GAP EFFECT ON THE RANDOM AND FLUID-ELASTIC FORCES ACTING IN THE VIBRATION OF A LOOSELY SUPPORTED TUBE UNDER CROSS-FLOW
L. Borsoi, P. Piteau, X. Delaune, CEA, Gif-sur-Yvette, France; J. Antunes, Instituto Superior Técnico, Universidade de Lisboa, Bobadela LRS, Portugal

PVP2017-65725: FLUID STRUCTURE INTERACTION FOR TUBES BUNDLES: PRESENTATION OF A LINEAR EQUIVALENT MODEL
D. Broc, G. Artini, CEA Saclay, Gif-sur-Yvette, France

PVP2017-65727: FLUID STRUCTURE INTERACTION FOR TUBES BUNDLES: DIFFERENT HOMOGENIZATION METHODS
D. Broc, G. Artini, CEA Saclay, Gif-sur-Yvette, France

PVP2017-65898: AN EXPERIMENTAL INVESTIGATION OF THE DYNAMICS OF A LOOSELY SUPPORTED TUBE ARRAY
A. Elhelaly, M. Hassan, University of Guelph, Guelph, ON, Canada; A. Mohany, University of Ontario Institute of Technology, Oshawa, ON, Canada; Soha Eid Moussa, University of Guelph, Guelph, ON, Canada

SESSION 4.1C (CS-38-1)

Thursday, July 20, 8:30 am – 10:15 am, Kohala 3
IMPROVEMENT OF FLAW CHARACTERIZATION RULES IN FITNESS-FOR-SERVICE CODES

Developed by: V. Lacroix, Tractebel Engie, Brussels, Belgium
Chair: V. Lacroix, Tractebel Engie, Brussels, Belgium
Co-Chair: K. Hasegawa, Japan Atomic Energy Agency, Ibaraki-ken, Japan

PVP2017-65199: STUDY ON THE RELATIONSHIP BETWEEN INTERACTION FACTORS AND STRESS INTENSITY FACTOR FOR ELLIPTICAL FLAWS
K. Azuma, Y. Li, K. Hasegawa, Japan Atomic Energy Agency, Ibaraki-ken, Japan

PVP2017-65303: RSE-M NUCLEAR IN-SERVICE INSPECTION CODE—NEW FLAW INTERACTION RULES
C. Faidy, CF Integrity Engineering, Tassin, France

PVP2017-65667: INTRODUCTION OF SUBSURFACE PROXIMITY CRITERIA IN THE WORLD AND ITS REMAINING FATIGUE LIVES
K. Hasegawa, Y. Li, Japan Atomic Energy Agency, Ibaraki-Ken, Japan; G. Katsumata, Mizuho Information and Research Institute, Tokyo, Japan; P. Dulieu, V. Lacroix, Tractebel Engie, Brussels, Belgium

PVP2017-65670: STRESS INTENSITY FACTOR INTERACTION OF SUBSURFACE FLAWS UNDER NOTCHES
K. Hasegawa, Japan Atomic Energy Agency, Ibaraki-ken, Japan; P. Dulieu, V. Lacroix, Tractebel Engie, Brussels, Belgium
PVP2017-66049: PROPOSAL OF A NEW SUBSURFACE-TO-SURFACE FLAW TRANSFORMATION RULE FOR FATIGUE CRACK GROWTH ANALYSES
V. Lacroix, Tractebel Engie, Brussels, Belgium; A. Bouydo, Tractebel Engie, Woluwé Saint Lambert, Belgium; G. Katsumata, Mizuho Information and Research Institute, Tokyo, Japan; Y. Li, K. Hasegawa, Japan Atomic Energy Agency, Ibaraki-ken, Japan

SESSION 4.1D (CS-6-1)

Thursday, July 20, 8:30 am – 10:15 am, King's 1
API 579/ASME CODE FITNESS-FOR-SERVICE ACTIVITIES
Symposium on Fitness-for-Service—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: P. E. Prueter, The Equity Engineering Group, Inc., Shaker Heights, OH, USA
Chair: P. E. Prueter, The Equity Engineering Group, Inc., Shaker Heights, OH, USA
Co-Chair: M. Uddin, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA

PVP2017-65960: ANALYSIS OF MULTIPLE CRACKS IN A PRESSURE VESSEL SEAM WELD USING THE API 579-1/ASME FFS-1 LEVEL 3
J. E. Maneschy, JEM Consultoria, Rio de Janeiro, Brazil; J. Freire, J. de J. L. Carvajalino, V. E. L. Paiva, J. G. Diaz, PUC Rio de Janeiro, Rio de Janeiro, Brazil
PVP2017-66201: FITNESS-FOR-SERVICE ASSESSMENT OF STEAM GENERATOR TUBING SUBJECT TO DEALLOYING DEGRADATION
R. Mousavi, Ontario Power Generation, Richmond Hill, ON, Canada; X. Duan, Candu Energy, Mississauga, ON, Canada; M. Kozluk, CANTECH Associates Ltd., Burlington, ON, Canada; M. Wang, SNC Lavalin, Mississauga, ON, Canada; Y. Shi, Candu Energy, Mississauga, ON, Canada
PVP2017-65475: NUMERICAL STUDY OF STEAM FILM COOLING ON A THICK-WALL CYLINDER WITH R5 CODE BASED STRENGTH ANALYSIS
Z. Cai, W. Wang, H. Hong, Y. Liu, Shanghai Jiao Tong University, Shanghai, China

SESSION 4.1E (CS-31-1)

Thursday, July 20, 8:30 am – 10:15 am, King's 2
ASSESSMENT OF FATIGUE AND FRACTURE—A PROBABILISTIC PERSPECTIVE (MAINTAINING INTEGRITY OF COMPONENTS)
Symposium on Probabilistic Assessments and Risk Management—Co-Sponsored by Codes & Standards, Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: Y. Garud, SIMRAND, LLC, San Jose, CA, USA
Chair: Y. Garud, SIMRAND, LLC, San Jose, CA, USA
Co-Chair: D. Steininger, Electric Power Research Institute, Palo Alto, CA, USA

PVP2017-65416: CONFIDENCE BOUNDS FOR FATIGUE DISTRIBUTION FUNCTIONS
D. G. Harlow, Lehigh University, Bethlehem, PA, USA
PVP2017-65850: ASSESSMENT OF UNCERTAINTY SOURCES IN FATIGUE USAGE IN RELATION TO DETERMINISTIC MARGINS, AND SENSITIVITY ANALYSIS
Y. Garud, SIMRAND, LLC, San Jose, CA, USA; D. Steininger, Electric Power Research Institute, Palo Alto, CA, USA
PVP2017-66133: RELIABILITY BASED DESIGN OPTIMIZATION OF PRIMARY SHIELD STRUCTURE CONSISTING OF STEEL-PLATE COMPOSITE (SC) WALLS UNDER SEISMIC LOAD
A. Chakraborty, S. K. Radha, Virtual Integrated Analytics Solutions, Houston, TX, USA; K. C. Sener, A. H. Varma, Purdue University, West Lafayette, IN, USA
PVP2017-65496: DEVELOPMENT OF A NOVEL TEST PROCEDURE TO INVESTIGATE THE IMPACT OF STRAIN GRADIENTS ON THE FATIGUE ENDURANCE OF STAINLESS STEEL
M.-R. Riley, C. M. Davies, S. Garwood, Imperial College London, London, United Kingdom

SESSION 4.1F (CS-3-5)

Thursday, July 20, 8:30 am – 10:15 am, King's 3
ENVIRONMENTAL FATIGUE ISSUES—V
Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: S. Asada, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; H. Mehta, GE Hitachi Nuclear Engineering, San Jose, CA, USA; C. Faidy, CF Integrity Engineering, Tassin, France; S. Mohanty, Argonne National Laboratory, Lemont, IL, USA
Chair: S. Mohanty, Argonne National Laboratory, Lemont, IL, USA
Co-Chair: T. Metais, EDF, Villeurbanne, France

PVP2017-65374: STRAIN WAVEFORM EFFECTS FOR LOW CYCLE FATIGUE IN SIMULATED PWR WATER
T. Seppänen, J. Alhainen, E. Arilahti, J. Solin, VTT Technical Research Centre of Finland Ltd., Espoo, Finland
PVP2017-66197: DISCUSSIONS ON EFFECTS OF TEMPERATURE IN FATIGUE AND ASSESSMENT OF STAINLESS NPP PRIMARY PIPING
J. Solin, VTT Technical Research Centre of Finland Ltd., Espoo, Finland; F. Curtit, G. Blatman, EDF, Moret-sur-Loing, France; T. Metais, EDF, Villeurbanne, France; H. E. Karabaki, PreussenElektra GmbH, Hannover, Germany
PVP2017-66097: FATIGUE WITH HOLD TIMES SIMULATING NPP NORMAL OPERATION RESULTS FOR STAINLESS STEEL GRADES 304L AND 347
H. E. Karabaki, PreussenElektra GmbH, Hannover, Germany; J. Solin, VTT Technical Research Centre of Finland Ltd., Espoo, Finland; M. Twite, Rolls-Royce Plc, Derby, United Kingdom; M. Herbst, Areva NP, Erlangen, Germany; J. Mann, University of Manchester, Manchester, United Kingdom
PVP2017-66103: EXPERIMENTAL RESEARCH ON CYCLIC RESPONSE, HOLD EFFECTS AND FATIGUE OF STAINLESS STEEL
J. Solin, J. Alhainen, T. Seppänen, VTT Technical Research Centre of Finland Ltd., Espoo, Finland; H. E. Karabaki, PreussenElektra GmbH, Hannover, Germany; W. Mayinger, E. ON Kernkraft GmbH, Hanover, Germany

SESSION 4.1G (MF-30-1)

Thursday, July 20, 8:30 am – 10:15 am, Queen's 4
BRITTLE FRACTURE OF CARBON STEEL FITTINGS, FLANGES, AND PIPING—I

Developed by: J. Penso, Shell Projects and Technology, Houston, TX, USA; M. Brongers, DNV GL, Dublin, OH, USA
Chair: J. Penso, Shell Projects and Technology, Houston, TX, USA
Co-Chair: M. Brongers, DNV GL, Dublin, OH, USA

PVP2017-65801: IMPACT TOUGHNESS DEFICIENCIES IN ASME SA350 LF2 FLANGES
R. Thompson, K. Baker, Chevron ETC, Houston, TX, USA
PVP2017-65803: MECHANICAL PROPERTIES OF VANADIUM MICROALLOYED HIGH-STRENGTH ASTM A694 FORGINGS
K. Baker, R. Thompson, Chevron ETC, Houston, TX, USA; T. Gorrell, Allied Group, Houston, TX, USA
PVP2017-65825: INCREASED SUSCEPTIBILITY OF CARBON STEEL PIPE FITTING AND FLANGES TO BRITTLE FRACTURE
B. Messer, S. Soltaninia, Fluor Corp, Calgary, AB, Canada; T. Hamre, Acuren Group Inc., Edmonton, AB, Canada

SESSION 4.1H (DA-10-4)

Thursday, July 20, 8:30 am – 10:15 am, Queen's 5
INTERNATIONAL LIAISON AND PCC-1 APPENDIX A SESSION—I

Developed by: C. Rodery, BP p.l.c, League City, TX, USA; W. Brown, Integrity Engineering Solutions, Dunsborough, WA, Australia
Chair: C. Rodery, BP p.l.c, League City, TX, USA
Co-Chair: W. Brown, Integrity Engineering Solutions, Dunsborough, WA, Australia

Panelists:
T. Sawa, Hiroshima University, Tokyo, Japan
J. Veiga, Teadit Industria e Comercio Ltda, Rio De Janeiro, Brazil
H. Lejeune, Cetim, Nantes 44000, France
M. Schaaf, AMTEC GmbH, Lauffen, Germany

SESSION 4.1I (CS-19-1)

Thursday, July 20, 8:30 am – 10:15 am, Queen's 6

INTEGRITY OF CAST STAINLESS STEEL PIPE—I

Developed by: D. J. Shim, Structural Integrity Associates, San Jose, CA, USA
Chair: D. J. Shim, Structural Integrity Associates, San Jose, CA, USA
Co-Chair: K. Hojo, Mitsubishi Heavy Industries Ltd., Kobe, Japan

PVP2017-65768: FRACTURE TOUGHNESS AND DEFORMATION BEHAVIOR OF CAST AUSTENITIC STAINLESS STEELS AFTER THERMAL AGING

Y. Chen, W.-Y. Chen, Argonne National Laboratory, Lemont, IL, USA; C. Xu, University of Florida, Gainesville, FL, USA; X. Zhang, Argonne National Laboratory, Argonne, IL, USA; Z. Li, Y. Yang, University of Florida, Gainesville, FL, USA

PVP2017-65633: ALLOWABLE FLAW SIZE OF JAPANESE CAST STAINLESS STEEL PIPE USING PROBABILISTIC FRACTURE MECHANICS METHOD

S. Hayashi, Mitsubishi Heavy Industries, Ltd., Takasago-Shi, Japan; K. Hojo, Mitsubishi Heavy Industries Ltd., Kobe, Japan; M. Ochi, Mitsubishi Heavy Industries Ltd., Takasago, Japan; T. Yamane, W. Nishi, Mitsubishi Heavy Industries Ltd., Kobe, Japan

PVP2017-65959: THERMAL AGING BEHAVIOR OF GRADE CF3M CAST AUSTENITIC STAINLESS STEELS

Y. Miura, T. Sawabe, K. Betsuyaku, T. Arai, Central Research Institute of Electric Power Industry, Yokosuka, Japan

SESSION 4.1J (MF-11-1)

Thursday, July 20, 8:30 am – 10:15 am, Kona 1

INTEGRITY ISSUES IN SCC AND CORROSION FATIGUE

Developed by: K. Nikbin, Imperial College London, London, United Kingdom; Z. Wei, Tenneco, Ann Arbor, MI, USA
Chair: K. Nikbin, Imperial College London, London, United Kingdom
Co-Chair: Z. Wei, Tenneco, Ann Arbor, MI, USA

PVP2017-65216: A METHOD FOR FIELD EVALUATION OF HEAT TREATMENT TO IDENTIFY VESSELS THAT ARE SUSCEPTIBLE TO SULFIDE STRESS CRACKING

G. Ramirez, ABS Group, Houston, TX, USA; K. Kenady, ABS Consulting, San Antonio, TX, USA; J. Jackson, G2MT Laboratories, LLC, Houston, TX, USA

PVP2017-65830: MATERIAL-ENVIRONMENT INTERACTIONS AND RANKING OF MATERIALS IN CORROSION-FATIGUE AND STRESS CORROSION CRACKING RESISTANCE

Z. Wei, Tenneco, Ann Arbor, MI, USA; L. Luo, K. Smith, Tenneco Inc., Grass Lake, MI, USA; A. Basutka, H. Kang, University of Michigan, Dearborn, MI, USA

PVP2017-65886: CRACK GROWTH RATES FOR EVALUATING PWSCC OF THICK-WALL ALLOY 690 MATERIAL AND ALLOY 52, 152, AND VARIANT WELDS

A. Jenks, G. White, Dominion Engineering, Inc., Reston, VA, USA; P. Crooker, Electric Power Research Institute, Palo Alto, CA, USA

PVP2017-65915: ASSESSMENT OF 2205 WELDMENTS IN HYDROPROCESSING REACTOR AIR COOLERS (Presentation Only)

J. Penso, Shell Projects and Technology, Houston, TX, USA

PVP2017-66151: BWR SHROUD WELD OFF-AXIS CRACK GROWTH INVESTIGATION

J. Broussard, Dominion Engineering, Inc., Reston, VA, USA; W. Lunceford, Electric Power Research Institute, Morgan Hill, CA, USA

SESSION 4.1K (MF-7-3)

Thursday, July 20, 8:30 am – 10:15 am, Kona 2

MATERIALS AND TECHNOLOGIES FOR NUCLEAR POWER PLANTS—III

Developed by: W. Ren, Oak Ridge National Laboratory, Oak Ridge, TN, USA
Chair: W. Ren, Oak Ridge National Laboratory, Oak Ridge, TN, USA
Co-Chair: R. Nanstad, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-65159: EVALUATION ON MICROSTRUCTURE AND MECHANICAL PROPERTIES OF WELDED JOINTS BY GMAW IN UNS N10003 ALLOY

K. Yu, Chinese Academy of Sciences, Shanghai, China; Z. Jiang, Harbin Institute of Technology, Harbin, China; X. Shi, C. Li, S. Chen, Chinese Academy of Sciences, Shanghai, China

PVP2017-66107: ALLOYING OF STEEL AND GRAPHITE BY HYDROGEN IN NUCLEAR REACTOR

E. A. Krasikov, National Research Centre "Kurchatov Institute", Moscow, Russia

PVP2017-65436: SURFACE ENGINEERING OF NUCLEAR MATERIALS BY ULTRASONIC NANOCRYSTALLINE SURFACE MODIFICATION TECHNIQUE (Presentation Only)

Y.-S. Pyun, A. Amanov, Sun Moon University, Asan-Si, Korea (Republic)

PVP2017-66254: MECHANICAL PROPERTIES OF DEALLOYED ALUMINUM BRONZE LARGE-BORE CASTINGS IN ESSENTIAL COOLING WATER SERVICE

R. C. Cipolla, Intertek AIM, Santa Clara, CA, USA; M. Garner, A. J. Aldridge, South Texas Project, Wadsworth, TX, USA

SESSION 4.1L (SE-5-1)

Thursday, July 20, 8:30 am – 10:15 am, Kona 3

SEISMIC DAMAGE ASSESSMENT AND HEALTH MONITORING

Developed by: F. Paolacci, University Roma Tre, Rome, Italy
Chair: F. Paolacci, University Roma Tre, Rome, Italy
Co-Chair: P. Franchin, Sapienza University of Rome, Rome, Italy

PVP2017-65138: UNIVARIATE FRAGILITY MODELS FOR SEISMIC VULNERABILITY ASSESSMENT OF REFINERY PIPING SYSTEMS

S. Caprinozzi, A. M. Mohiuddin, F. Paolacci, University Roma Tre, Rome, Italy, O. S. Bursi, V. La Salandra, University of Trento, Trento, Italy

PVP2017-65170: STATE OF THE ART OF SEISMIC FRAGILITY OF GAS PIPELINES

L. Di Sarno, University of Sannio, Benevento, Italy, F. Paolacci, University Roma Tre, Rome, Italy

PVP2017-65273: LOW-DAMAGE DESIGN PHILOSOPHY FOR FUTURE EARTHQUAKE-RESISTANT STRUCTURES

N. Chouw, The University of Auckland, Auckland, New Zealand

PVP2017-65447: STRUCTURAL HEALTH MONITORING FOR LOCAL DAMAGES OF RC WALLS USING PIEZOCERAMIC-BASED SENSORS UNDER SEISMIC LOADING

W.-I Liao, National Taipei University of Technology, Taipei, Taiwan; W.-J. Jean, National Center for Research on Earthquake Engineering, Taipei, Taiwan

PVP2017-65665: ELASTO-PLASTIC FINITE ELEMENT ANALYSIS OF LONG-LIVED SEISMIC TIES FOR THERMAL POWER BOILER STRUCTURE

K. Aida, S. Morikawa, Mitsubishi Hitachi Power Systems, Ltd., Kure-shi, Japan; M. Shimono, Mitsubishi Heavy Industries, Ltd., Hiroshima-shi, Japan; M. Kato, Mitsubishi Heavy Industries, Ltd., Takasago City, Japan; K. Morishita, Mitsubishi Heavy Industries, Ltd., Nagoya City, Japan

PVP2017-65927: AN ALGORITHM FOR PARAMETER IDENTIFICATIONS OF ACTIVE MASS DAMPER AND PRIMARY SYSTEMS BASED ON ACCELERATION MEASUREMENTS

C.-C. Chang, National Center for Research on Earthquake Engineering, Taipei, Taiwan; J.-F. Wang, National United University, Miaoli, Taiwan; C.-C. Lin, National Chung-hsing University, Taichang, Taiwan

SESSION 4.1M (MF-21-3)

Thursday, July 20, 8:30 am – 10:15 am, Waikoloa Suite 1

WELDING AND JOINING TECHNIQUES

Developed by: C. Hamelin, ANSTO, Kirrawee, DC, NSW, Australia; A. Horn, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom
Chair: C. Hamelin, ANSTO, Kirrawee, DC, NSW, Australia
Co-Chair: A. Horn, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom

PVP2017-65376: NEW APPROACH ON SOLID-STATE JOINING OF STAINLESS STEEL TUBE TO TUBE SHEET JOINTS

A. Roos, M. Winkler, Helmholtz-Zentrum Geesthacht, Geesthacht, Germany; G. Wimmer, Linde AG, Tacherting, Germany; J. Dos Santos, S. Hanke, Helmholtz-Zentrum Geesthacht, Geesthacht, Germany

PVP2017-65543: CONTROL OF RETAINED DELTA FERRITE IN TYPE 410 STAINLESS STEEL WELDS

D. Stone, B. Alexandrov, The Ohio State University, Columbus, OH, USA; J. Penso, Shell Projects and Technology, Houston, TX, USA

PVP2017-65599: DEVELOPMENT OF MANUFACTURING TECHNOLOGIES FOR THE ITER TOROIDAL FIELD COIL -EFFORT FOR PRECISE MANUFACTURING

Y. Nishijima, D. Hara, Mitsubishi Heavy Industries, Kobe, Japan; M. Toyoda, K. Kamitani, S. Tsubota, Mitsubishi Heavy Industries, Takasago, Japan; T. Baba, Mit-

subishi Heavy Industries, Kobe, Japan

PVP2017-65793: HYBRID WELDING VS. CONVENTIONAL WELDING—A SOLUTION TO RESIDUAL STRESS AND DISTORTION MITIGATION?

S. Gallee, R. Lacroix, Esi-France, Lyon, France; V. Robin, Electricité de France, Chatou, France; F. Gommez, E. Jourden, AREVA NP, LYON, France

SESSION 4.1N (DA-7-1)

Thursday, July 20, 8:30 am – 10:15 am, Waikoloa Suite 2

THERMAL STRESSES AND ELEVATED TEMPERATURE DESIGN—I

Developed by: A. Segall, Penn State University, University Park, PA, USA; S. Iyer, Candu Energy, Mississauga, ON, Canada
Chair: A. Segall, Penn State University, University Park, PA, USA
Co-Chair: S. Iyer, Candu Energy, Mississauga, ON, Canada

PVP2017-65211: USING ISOCHRONOUS METHOD TO CALCULATE CREEP DAMAGE—PART 1

C. Nadarajah, Becht Engineering Co. Inc., Fairfax, VA, USA; B. Hantz IV, Valero Energy Corp., San Antonio, TX, USA; S. Krishnamurthy, Honeywell UOP, Des Plaines, IL, USA

PVP2017-65212: USING ISOCHRONOUS METHOD TO CALCULATE CREEP DAMAGE IN PRESSURE VESSEL COMPONENT—PART 2

C. Nadarajah, Becht Engineering Co. Inc., Fairfax, VA, USA; B. Hantz IV, Valero Energy Corp., San Antonio, TX, USA; S. Krishnamurthy, Honeywell UOP, Des Plaines, IL, USA

PVP2017-65851: CREEP-FATIGUE DAMAGE EVALUATION OF MODIFIED GRADE 91 HEADERS USING DAMAGE COUPLED UNIFIED VISCOPLASTIC MODEL

N. Islam, North Carolina State University, Raleigh, NC, USA; D. Dewees, M. Cooch, Babcock and Wilcox, Barberton, OH, USA; T. Hassan, North Carolina State University, Raleigh, NC, USA

PVP2017-65437: NUMERICAL SIMULATION OF THE CREEP FAILURE OF A STEAM REFORMER OUTLET MANIFOLD

G. Van Zyl, SABIC, Jubail, Saudi Arabia; J. Keltjens, SABIC, Geleen, Netherlands, A. Al-Shawaf, SABIC, Jubail, Saudi Arabia

SESSION 4.1O (DA-15-1)

Thursday, July 20, 8:30 am – 10:15 am, Waikoloa Suite 3

EVALUATION AND COUNTERMEASURE FOR BDBE—I

Developed by: B. Li, AMEC Foster Wheeler, Toronto, ON, Canada; N. Kasahara, University of Tokyo, Tokyo, Japan
Chair: B. Li, AMEC Foster Wheeler, Toronto, ON, Canada
Co-Chair: N. Kasahara, University of Tokyo, Tokyo, Japan

PVP2017-65227: FAILURE MODE OF ED AND AD TYPE HEAD PLATES SUBJECT TO CONVEX SIDE PRESSURE

H. Yada, M. Ando, K. Tsukimori, Japan Atomic Energy Agency, Fukui-Ken, Japan; M. Ichimiya, Y. Anoda, Fukui University, Fukui, Japan

PVP2017-65289: STATISTICAL ANALYSES OF INCIDENTS ON OIL AND GAS PIPELINES BASED ON COMPARING DIFFERENT PIPELINE INCIDENT DATABASES

K. Shan, J. Shuai, China University of Petroleum-Beijing, Beijing, China

PVP2017-65344: SAFETY ANALYSES FOR PREVENTING PCV DAMAGE BY FCI IN KASHIWAZAKI-KARIWA 6,7

A. Hayakawa, S. Suehiro, S. Mizuno, Y. Oyama, S. Kawamura, Tokyo Electric Power Company Holdings, Inc., Chiyoda-ku, Tokyo, Japan

PVP2017-65676: FRACTURE BEHAVIOR OF AGED CF8A CAST AUSTENITE STAINLESS STEEL UNDER DYNAMIC AND CYCLIC LOADING CONDITIONS

J. W. Kim, M. R. Choi, Chosun University, Gwangju, Korea (Republic); Y.-J. Kim, Korea University, Seoul, Korea (Republic)

PVP2017-65478: DIFFERENCE OF STRENGTH EVALUATION APPROACH BETWEEN FOR DBE AND FOR BDBE

N. Kasahara, T. Sato, The University of Tokyo, Tokyo, Japan

SESSION 4.1Q (EPRI-1-1)

Thursday, July 20, 8:30 am – 10:15 am, Kohala 4

SESSION 1—KEYNOTE PRESENTATIONS

Developed by: J. Parker, Electric Power Research Institute, Charlotte, NC, USA; E. Benton, Electric Power Research Institute, Charlotte, NC, USA
Chair: J. Parker, Electric Power Research Institute, Charlotte, NC, USA
Co-Chair: S. Zamrik, Penn State, State College, PA, USA
Panelists:
P. Mayr, Chemnitz University of Technology, Chemnitz, Germany
J. Henry, Kiefner, Columbus, OH, USA

Block 4.2: Thursday, July 20, 2017 (10:30 am – 12:15 pm)

SESSION 4.2A (DA-1-2)

Thursday, July 20, 10:30 am – 12:15 pm, Kohala 1

ADDITIONAL CONSIDERATIONS FOR THE DESIGN AND ANALYSIS OF PRESSURE VESSELS

Developed by: N. Barkley, Contract Fabricators, Inc., Holly Springs, MS, USA
Chair: N. Barkley, Contract Fabricators, Inc., Holly Springs, MS, USA
Co-Chair: J. Taagepera, Chevron ETC, Richmond, CA, USA

PVP2017-65176: A SIMPLE ANALYTICAL METHOD TO PREDICT AXIAL BUCKLING CRITICAL LOAD OF WELDED CYLINDRICAL SHELLS

C. Yu, Z. Ren, Xi'an Jiaotong University, Xi'an, China

PVP2017-65220: A METHOD FOR STRESS ANALYSIS OF CYLINDERS WITH LOADINGS FROM ATTACHED RECTANGULAR SECTIONS WITH AN ASPECT RATIO GREATER THAN FOUR

B. Millet, K. Kirkpatrick, G. Miller, B. Mosher, Fluor Enterprises, Inc., Sugar Land, TX, USA

PVP2017-65786: A COMPARISON STUDY OF PIPING LOADS EFFECT ON SUPPORT/FOUNDATION FOR ELASTIC AND RIGID VERTICAL VESSELS

M. Diaz-Barrie, E. Szeto, R. Stefanovic, R. Chahal, Fluor Canada, Calgary, AB, Canada

PVP2017-65246: DYNAMIC MATERIAL TEST AND ANALYSIS FOR RUPTURE STUDY FOR PRESSURE VESSEL EXPOSED TO FIRE IN PLANT

T. Kawai, Y. Mitarai, Y. Waki, Chiyoda Corporation, Yokohama, Japan; K. Kimura, Y. Yamabe-Mitarai, National Institute for Materials Science, Tsukuba, Ibaraki, Japan

SESSION 4.2B (FSI-2-12)

Thursday, July 20, 10:30 am – 12:15 pm, Kohala 2

PIPING & ACOUSTICS—III

Symposium of Flow-Induced Vibration—Sponsored by Fluid-Structure Interaction Technical Committee

Developed by: H. Goyder, Cranfield University, Swindon, United Kingdom; P. Moussou, IMSIA, Palaiseau, France
Chair: K. Fujita, Osaka City University, Osaka, Japan
Co-Chair: R. Morita, Central Research Institute of Electric Power Industry, Kanagawa, Japan

PVP2017-65545: TURBULENT STRUCTURE STUDY ON FLOW INDUCED VIBRATION IN TEE JUNCTION PIPE

T. Ishigami, M. Nishiguchi, M. Maekawa, H. Izuchi, Chiyoda Corporation, Yokohama-shi, Kanagawa-ken, Japan

PVP2017-65767: CHARACTERIZATION OF FLOW-SOUND-STRUCTURE COUPLING IN SPRING-LOADED VALVES

S. El Bouzidi, McMaster University, Hamilton, ON, Canada; M. Hassan, University of Guelph, Guelph, ON, Canada; S. Ziada, McMaster University, Hamilton, ON, Canada

PVP2017-65929: STUDY ON THE MECHANISM OF FATIGUE FAILURE AT BRANCH CONNECTIONS CAUSED BY SHELL-MODE VIBRATION

S. Kataoka, JGC Corporation, Yokohama, Japan

PVP2017-66265: DEVELOPMENT OF PIPING DYNAMIC ANALYSIS TO ADDRESS PULSATION VIBRATION AND ACCEPTANCE CRITERIA

M. A. El Ella, A. Papadopoulos, Power Generation Engineering and Services Company, Cairo, Egypt

SESSION 4.2C (CS-14-1)

Thursday, July 20, 10:30 am – 12:15 pm, Kohala 3

REPAIR, REPLACEMENT AND MITIGATION FOR FITNESS-FOR-SERVICE RULES—I

Developed by: S. McCracken, Electric Power Research Institute, Harrisburg, NC, USA

Chair: S. McCracken, Electric Power Research Institute, Harrisburg, NC, USA
Co-Chair: J. O'Sullivan, Procon 1, LLC, Fort Myers Beach, FL, USA; H. Kobayashi, The Japan Atomic Company, Tokyo, Japan

PVP2017-65942: ADVANCES IN NUCLEAR NON-METALLIC REPAIR/REPLACEMENT ACTIVITIES
J. O'Sullivan, Procon 1, LLC, Fort Myers Beach, FL, USA

PVP2017-66017: UNDERWATER LASER PEENING APPLICATION FOR U.S. NUCLEAR PLANT
A. Ito, Toshiba, Yokohama, Japan; S. Marlette, Westinghouse Electric Company, Cranberry Township, PA, USA; M. Yoda, K. Imasaki, I. Chida, Toshiba, Yokohama, Japan

PVP2017-66164: WJP APPLICABILITY STUDY FOR PWR COMPONENTS AS A PWSCC MITIGATION TECHNIQUE
R. Kimura, Hitachi-GE Nuclear Energy, Ltd., Hitachi, Japan; N. Saito, H. Hato, Hitachi, Ltd., Hitachi-shi, Ibaraki-ken, Japan; A. Kanno, M. Ando, Hitachi-GE Nuclear Energy, Ltd., Hitachi-shi, Ibaraki-ken, Japan

PVP2017-65659: REPAIR WELDING OF IRRADIATED REACTOR PRESSURE VESSELS STEEL AND CURRENT DIRECTION OF REVISING JSME RULES ON FITNESS-FOR-SERVICE CODE
Y. Kono, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; H. Adachi, Toshiba, Yokohama, Japan; R. Kimura, Hitachi-GE Nuclear Energy, Ltd., Hitachi, Japan

SESSION 4.2D (MF-6-1)

Thursday, July 20, 10:30 am – 12:15 pm, King's 1

FITNESS FOR SERVICE AND FAILURE ASSESSMENT—I

Symposium on Fitness-for-Service—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: M. Cohn, Intertek, Santa Clara, CA, USA; C. Jaske, HSI Group, Inc., Torrance, CA, USA; B. Wiersma, Savannah River National Laboratory, Aiken, SC, USA
Chair: M. Cohn, Intertek, Santa Clara, CA, USA
Co-Chair: C. Jaske, HSI Group, Inc., Torrance, CA, USA

PVP2017-65977: ESSENTIAL ELEMENTS OF AN ASSET INTEGRITY MANAGEMENT PROGRAM FOR AMMONIA AND METHANOL PLANTS
C. Jaske, HSI Group, Inc., Torrance, CA, USA; S. Weichel, M. Brongers, DNV GL, Dublin, OH, USA

PVP2017-65820: REGULATORY PERSPECTIVES ON FITNESS FOR SERVICE ASSESSMENTS OF CANDU PRESSURE BOUNDARY COMPONENTS
J. C. Jin, B. Carroll, Canadian Nuclear Safety Commission, Ottawa, ON, Canada

PVP2017-65361: CORRELATION OF FRACTURE TOUGHNESS WITH CHARPY IMPACT ENERGY FOR LOW ALLOW, STRUCTURAL STEEL WELDS
K. E. Bianchi, Federal University of Rio Grande, Rio Grande, Brazil; V. S. Barbosa, R. G. Savioli, University of Sao Paulo, Sao Paulo, SP, Brazil; P. E. A. Fernandes, National Service for Industrial Training, Osasco, Brazil; C. Ruggieri, University of Sao Paulo, Sao Paulo, Sao Paulo, Brazil

SESSION 4.2E (OAC-1-4)

Thursday, July 20, 10:30 am – 12:15 pm, King's 2

REGULATORY VIEWS ON THE USE OF PROBABILISTIC FRACTURE MECHANICS ASSESSMENTS IN THE NUCLEAR INDUSTRY

Symposium on Probabilistic Assessments and Risk Management—Co-Sponsored by Codes & Standards, Materials & Fabrication and Operations, Applications & Components Technical Committees

Developed by: B. Carroll, Canadian Nuclear Safety Commission, Ottawa, ON, Canada; A. Reich, Streamline Automation LLC, Huntsville, AL, USA
Chair: B. Carroll, Canadian Nuclear Safety Commission, Ottawa, ON, Canada
Co-Chair: A. Reich, Streamline Automation LLC, Huntsville, AL, USA
Panelists:
D. Rudland, U.S. Nuclear Regulatory Commission, Frederick, MD, USA
J. Jin, Canadian Nuclear Safety Commission, Ottawa, ON, Canada
S. M. Lee, Korea Institute of Nuclear Safety, Daejeon, Korea (Republic)

SESSION 4.2F (CS-3-6)

Thursday, July 20, 10:30 am – 12:15 pm, King's 3

ENVIRONMENTAL FATIGUE ISSUES—VI

Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: S. Asada, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; C. Faidy, CF Integrity Engineering, Tassin, France; S. Mohanty, Argonne National Laboratory, Lemont, IL, USA; H. Mehta, GE Hitachi Nuclear Engineering, San Jose, CA, USA
Chair: H. Mehta, GE Hitachi Nuclear Engineering, San Jose, CA, USA
Co-Chair: S. Asada, Mitsubishi Heavy Industries, Ltd., Kobe, Japan

PVP2017-65787: EFFECT OF HOLD PERIODS ON THE CORROSION FATIGUE CRACK GROWTH RATES OF AUSTENITIC STAINLESS STEELS IN LWR COOLANT ENVIRONMENTS
N. Platts, D. R Tice, A. Panteli, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom; S. Cruchley, Rolls-Royce, Derby, United Kingdom

PVP2017-65645: FURTHER VALIDATION OF THE WEIGHTED STRESS INTENSITY FACTOR RATE (WKR) METHOD FOR STAINLESS STEEL PRESSURISED WATER REACTOR FATIGUE CRACK GROWTH CALCULATIONS
J. Emslie, S. Cruchley, C. Currie, K. Wright, Rolls-Royce, Derby, United Kingdom

PVP2017-66029: EFFECT OF VARIABLE TEMPERATURE ON THE FATIGUE LIFE AND CRACK GROWTH RATES OF AUSTENITIC STAINLESS STEELS IN PWR COOLANT ENVIRONMENTS
N. Platts, P. J. Gill, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom; S. Cruchley, E. Grieveson, M. Twite, Rolls-Royce, Derby, United Kingdom

PVP2017-66233: STUDY ON EFFECTS OF NON-ISOTHERMAL CONDITION ON ENVIRONMENTALLY ASSISTED FATIGUE IN PWR PRIMARY WATER ENVIRONMENT (STEP II)
S. Asada, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; D. Takagoshi, Y. Fukuta, Mitsubishi Heavy Industries, Ltd., Takasago, Japan; K. Tsutsumi, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; K. Ahluwalia, Electric Power Research Institute, Livingston, NJ, USA

SESSION 4.2G (MF-30-2)

Thursday, July 20, 10:30 am – 12:15 pm, Queen's 4

BRITTLE FRACTURE OF CARBON STEEL FITTINGS, FLANGES, AND PIPING—II

Developed by: M. Brongers, DNV GL, Dublin, OH, USA; J. Penso, Shell Projects and Technology, Houston, TX, USA
Chair: M. Brongers, DNV GL, Dublin, OH, USA
Co-Chair: J. Penso, Shell Projects and Technology, Houston, TX, USA

PVP2017-66179: FLANGE QUALITY INVESTIGATION TO PREVENT BRITTLE FRACTURE
S. Zhu, J. Bouman, D. Raghu, Shell Global Solutions US Inc., Houston, TX, USA

PVP2017-65848: IMPACT TOUGHNESS AND BRITTLE FAILURE OF CARBON STEELS
K. Xu, Praxair, Tonawanda, NY, USA; M. Rana, Consultant, Niantic, CT, USA

PVP2017-65893: THE EFFECT OF RECLASSIFICATION OF CARBON STEEL FITTINGS DURING FITNESS-FOR-SERVICE ASSESSMENTS (Presentation Only)
K. Subramanian, Stress Engineering Services Inc., Metairie, LA, USA; J. Penso, Shell Projects and Technology, Houston, TX, USA

SESSION 4.2H (DA-10-5)

Thursday, July 20, 10:30 am – 12:15 pm, Queen's 5

INTERNATIONAL LIAISON AND PCC-1 APPENDIX A SESSION—II

Developed by: C. Rodery, BP p.l.c, League City, TX, USA; W. Brown, Integrity Engineering Solutions, Dunsborough, WA, Australia
Chair: C. Rodery, BP p.l.c, League City, TX, USA
Co-Chair: W. Brown, Integrity Engineering Solutions, Dunsborough, WA, Australia
Panelists:
R. Noble, Asset55 Ltd., Hebburn, Tyne and Wear, United Kingdom
W. Brown, Integrity Engineering Solutions, Dunsborough, WA, Australia
J. Barnard, Hydratight, Darlaston, United Kingdom

SESSION 4.2I (CS-19-2)

Thursday, July 20, 10:30 am – 12:15 pm, Queen's 6

INTEGRITY OF CAST STAINLESS STEEL PIPE—II

Developed by: K. Hojo, Mitsubishi Heavy Industries Ltd., Kobe, Japan
Chair: K. Hojo, Mitsubishi Heavy Industries Ltd., Kobe, Japan
Co-Chair: D. J. Shim, Structural Integrity Associates, San Jose, CA, USA

PVP2017-65612: COMPARISON OF PREDICTION MODELS FOR MECHANICAL PROPERTIES OF THERMALLY AGED CAST AUSTENITIC STAINLESS STEELS
T. Hirota, M. Ochi, Mitsubishi Heavy Industries Ltd., Takasago, Japan; K. Hojo, W. Nishi, Mitsubishi Heavy Industries Ltd., Kobe, Japan; S. Hayashi, Mitsubishi Heavy Industries, Ltd., Takasago-Shi, Japan

PVP2017-66100: TECHNICAL BASIS FOR FLAW ACCEPTANCE CRITERIA FOR CAST AUSTENITIC STAINLESS STEEL PIPING
D. J. Shim, N. Cofie, D. Dedhia, D. Harris, T. Griesbach, Structural Integrity Associates, Inc., San Jose, CA, USA

PVP2017-66111: FLAW EVALUATION PROCEDURE FOR CAST AUSTENITIC STAINLESS STEEL MATERIALS USING THERMAL AGING MODELS
M. Uddin, G. Wilkowski, S. Pothana, F. Brust, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA

SESSION 4.2J (MF-33-1)

Thursday, July 20, 10:30 am – 12:15 pm, Kona 1

3D CRACK GROWTH SIMULATIONS USING FEA

Developed by: D. J. Shim, Structural Integrity Associates, San Jose, CA, USA; Y. Li, Japan Atomic Energy Agency, Ibaraki-Ken, Japan
Chair: D. J. Shim, Structural Integrity Associates, San Jose, CA, USA
Co-Chair: Y. Li, Japan Atomic Energy Agency, Ibaraki-Ken, Japan

PVP2017-65347: EVALUATION OF FATIGUE CRACK PROPAGATION BEHAVIOR CROSSING INTERFACE IN CLADDED PLATES USING XFEM
M. Nagai, Central Research Institute of Electric Power Industry, Yokosuka-Shi, Japan; K. Murai, T. Nagashima, Sophia University, Tokyo, Japan; N. Miura, Central Research Institute of Electric Power Industry, Yokosuka, Japan

PVP2017-66140: FRACTURE MECHANICS ASSESSMENT OF A DISSIMILAR METAL BUTT WELD CONTAINING RESIDUAL STRESS (Presentation Only)
M. N. Tran, M. R. Hill, University of California, Davis, Davis, CA, USA

PVP2017-65548: BENCHMARK ANALYSIS OF DUCTILE FRACTURE SIMULATION FOR CIRCUMFERENTIALLY CRACKED PIPES SUBJECTED TO BENDING
N. Miura, T. Kumagai, Central Research Institute of Electric Power Industry, Yokosuka-shi, Kanagawa-ken, Japan; M. Kikuchi, A. Takahashi, Tokyo University of Science, Noda-shi, Chiba-ken, Japan; Y.-J. Kim, Korea University, Seoul, Korea (Republic)

PVP2017-65691: MODE I DUCTILE CRACK GROWTH OF CT SPECIMEN UNDER LARGE CYCLIC LOADING
K. Hojo, Mitsubishi Heavy Industries Ltd., Kobe, Japan; S. Kawabata, Ryoyu System Gijutsu, Kobe, Japan

SESSION 4.2K (MF-7-4)

Thursday, July 20, 10:30 am – 12:15 pm, Kona 2

MATERIALS AND TECHNOLOGIES FOR NUCLEAR POWER PLANTS—IV

Developed by: W. Ren, Oak Ridge National Laboratory, Oak Ridge, TN, USA
Chair: W. Ren, Oak Ridge National Laboratory, Oak Ridge, TN, USA
Co-Chair: R. Nanstad, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-65522: EVALUATION AND EXTENSION OF ALLOWABLE STRESS VALUES FOR GR.91
K. Kimura, National Institute for Materials Science, Tsukuba, Ibaraki, Japan

PVP2017-65579: FRACTURE TOUGHNESS EVALUATION OF CARBON STEELS IN PIPING AND VALVE FOR REACTOR PRIMARY SYSTEM
Y. Uemoto, D. Hirasawa, A. Hirano, Hitachi-GE Nuclear Energy, Ltd., Hitachi-shi, Ibaraki-ken, Japan

PVP2017-65842: FATIGUE BEHAVIOR OF SPENT NUCLEAR FUEL RODS IN SIMULATED TRANSPORTATION ENVIRONMENT
H. Wang, J. Wang, H. Jiang, Oak Ridge National Laboratory, Oak Ridge, TN, USA

PVP2017-66033: DEVELOPMENT OF SECONDARY STRESS WEIGHTING FACTOR AND PLASTIC REDUCTION FACTOR FROM MOMENT-ROTATION CURVES OF SC PIPE TESTS
S. Pothana, G. Wilkowski, S. Kalyanam, Y. Hioe, G. Hattery, Engineering Mechanics Corporation of Columbus, Columbus, OH, USA

SESSION 4.2L (SE-6-1)

Thursday, July 20, 10:30 am – 12:15 pm, Kona 3

SEISMIC ANALYSIS AND DESIGN OF PIPING SYSTEMS—I

Developed by: G. Slagis, G C Slagis Associates, Roseville, CA, USA; T. Hassan, North Carolina State University, Raleigh, NC, USA
Chair: G. Slagis, G C Slagis Associates, Roseville, CA, USA
Co-Chair: T. Hassan, North Carolina State University, Raleigh, NC, USA

PVP2017-65516: THE OECD-NEA PROGRAMME ON METALLIC COMPONENT MARGINS UNDER HIGH SEISMIC LOADS (MECOS): TOWARDS NEW CRITERIA
P. Sollogoub, PSConsultant, Clamart, France

PVP2017-65300: ON CATEGORIZATION OF SEISMIC LOAD AS PRIMARY OR SECONDARY
P. Labbé, EDF, Paris, France

PVP2017-65099: LOAD CLASSIFICATION FOR DYNAMIC RESPONSES ON SINGLE MASS CANTILEVER STRUCTURE WITH BI-LINEAR MATERIAL PROPERTY
S. Kai, A. Otani, IHI Corporation, Yokohama, Japan

SESSION 4.2M (MF-21-4)

Thursday, July 20, 10:30 am – 12:15 pm, Waikoloa Suite 1

STAINLESS STEELS AND NI-BASE ALLOYS

Developed by: C. San Marchi, Sandia National Laboratories, Livermore, CA, USA; A. Duncan, Savannah River National Laboratory, Aiken, SC, USA
Chair: C. San Marchi, Sandia National Laboratories, Livermore, CA, USA
Co-Chair: A. Duncan, Savannah River National Laboratory, Aiken, SC, USA

PVP2017-65106: EFFECTS OF CHATTERING ON SURFACE INTEGRITY IN ROBOTIC MILLING OF ALLOY 690
A. Maurotto, L. T. Tunc, The University of Sheffield, Catcliffe, United Kingdom

PVP2017-65536: DEVELOPMENT OF FIT-FOR-PURPOSE AUSTENITIC STAINLESS STEELS (347AP AND 317AP) WITH HIGH POLYTHIONIC ACID STRESS CORROSION RESISTANCE
T. Osuki, M. Seto, H. Okada, M. Sagara, S. Matsumoto, Nippon Steel & Sumitomo Metal Corporation, Amagasaki, Japan

PVP2017-65806: DEVELOPMENT OF PROCESS INDUCED RESIDUAL STRESS DURING FLOW FORMING OF TUBULAR 15-5 MARTENSITIC STAINLESS STEEL
S. Khayatzadeh, S. Rahimi, S. R. Moturu, Advanced Forming Research Centre, Glasgow, United Kingdom; J. Kelleher, ISIS Pulsed Neutron & Muon Source, Didcot, United Kingdom

PVP2017-65971: MODIFIED GTAW ORBITAL TUBE-TO-TUBESHEET WELDING TECHNIQUE, AND THE EFFECT OF A COPPER WELD RETAINER DURING WELDING OF ALLOY 825
A. Krustev, Kelvion Thermal Solutions, Germison, South Africa; B. Alexandrov, J. Kovacich, The Ohio State University, Columbus, OH, USA

SESSION 4.2N (DA-7-2)

Thursday, July 20, 10:30 am – 12:15 pm, Waikoloa Suite 2

THERMAL STRESSES AND ELEVATED TEMPERATURE DESIGN—II

Developed by: S. Iyer, Candu Energy, Mississauga, ON, Canada; A. Segall, Penn State University, University Park, PA, USA
Chair: S. Iyer, Candu Energy, Mississauga, ON, Canada
Co-Chair: A. Segall, Penn State University, University Park, PA, USA

PVP2017-65923: CREEP LIFE PREDICTION OF HR3C STEEL USING CREEP DAMAGE MODELS
H. Lee, S.-J. Kang, J. B. Choi, M. Kim, Sungkyunkwan University, Kyungi-do, Korea (Republic)

PVP2017-66267: THERMAL-PRESSURE COUPLING ANALYSIS FOR CHROMIUM COATED GUN BARREL DURING AUTOMATIC FIRING PROCESS
G. Xuehao, Z. Kedong, H. Lei, Nanjing University of Science and Technology, Nanjing, China

SESSION 4.2O (DA-15-2)

Thursday, July 20, 10:30 am – 12:15 pm, Waikoloa Suite 3

EVALUATION AND COUNTERMEASURE FOR BDBE—II

Developed by: N. Kasahara, University of Tokyo, Tokyo, Japan; B. Li, AMEC Foster Wheeler, Toronto, ON, Canada
Chair: N. Kasahara, University of Tokyo, Tokyo, Japan
Co-Chair: T. Yamazaki, Japan Nuclear Safety Institute, Tokyo, Japan

PVP2017-65666: THE FORMULATION OF MATERIAL CHARACTERISTICS OF AUSTENITIC STAINLESS STEELS AT EXTREMELY HIGH TEMPERATURE
K. Shimomura, T. Onizawa, S. Kato, M. Ando, T. Wakai, Japan Atomic Energy Agency, Ibaraki, Japan

PVP2017-66214: INVESTIGATION ON EFFECT OF ANALYSIS VARIABLES ON STRUCTURAL INTEGRITY OF THE NUCLEAR PIPING UNDER BEYOND DESIGN BASIS EARTHQUAKE
J. Kim, S.-H. Lee, Sejong University, Seoul, Korea (Republic); H. D. Kweon, Korea Hydro & Nuclear Power Co., Ltd., Daejeon, Korea (Republic)

PVP2017-65226: EXPERIMENTAL DEMONSTRATION OF FAILURE MODES ON BELLOWS STRUCTURES SUBJECT TO INTERNAL PRESSURE
M. Ando, H. Yada, K. Tsukimori, Japan Atomic Energy Agency, Fukui-Ken, Japan; M. Ichimiya, Y. Anoda, Fukui University, Fukui, Japan

PVP2017-66283: CANDU NUCLEAR POWER PLANT MITIGATING STRATEGIES ON BEYOND DESIGN BASIS EVENTS (BDBE) (Presentation Only)
B. Li, AMEC Foster Wheeler, Toronto, ON, Canada

SESSION 4.2Q (EPRI-1-2)

Thursday, July 20, 10:30 am – 12:15 pm, Kohala 4

SESSION 2—DESIGN AND FABRICATION

Developed by: J. Parker, Electric Power Research Institute, Charlotte, NC, USA; E. Benton, Electric Power Research Institute, Charlotte, NC, USA
Chair: I. Perrin, Structural Integrity Associates, Huntersville, NC, USA
Co-Chair: V. Vodã¡Rek, VSB - Technical University of Ostrava, Ostrava - Poruba, Czech Republic

Panelists:
I. Perrin, Structural Integrity Associates, Inc., Huntersville, NC, USA
T. Fukahori
A. Pfeffer, GE
D. Bruno, GE

Block 4.3: Thursday, July 20, 2017 (2:00 pm – 3:45 pm)

SESSION 4.3A (DA-1-3)

Thursday, July 20, 2:00 pm – 3:45 pm, Kohala 1

OPTIMIZATION AND BENCH-MARKING IN THE DESIGN AND ANALYSIS OF PRESSURE VESSELS AND HEAT EXCHANGERS

Developed by: N. Barkley, Contract Fabricators, Inc., Holly Springs, MS, USA
Chair: S. Metwalli, Cairo University, Cairo, Egypt
Co-Chair: B. Gao, Hebei University of Technology, Tianjin, China

PVP2017-65120: STATISTICAL APPROACH TO ESTABLISHING TUNED SIMULATION PARAMETERS
G. Westwater, J. A. Mann, III, J. R. Speichinger, Emerson, Marshalltown, IA, USA

PVP2017-65287: APPLICATION OF SUB-MODELING IN THE FINITE ELEMENT ANALYSIS OF A LARGE FIXED TUBE-SHEET HEAT EXCHANGER
B. Gao, B. Liu, J. Dong, Hebei University of Technology, Tianjin, China; J. Shi, Amec Foster Wheeler, Gloucester, United Kingdom

PVP2017-65469: AN OPTIMIZATION FRAMEWORK FOR CURVILINEARLY STIFFENED COMPOSITE PRESSURE VESSELS AND PIPES
K. Singh, W. Zhao, R. Kapania, Virginia Tech, Blacksburg, VA, USA

PVP2017-65538: OPTIMUM DESIGN OF PRESSURE VESSELS USING HYBRID HGP AND GENETIC ALGORITHM
K. Abdelaziz, S. Metwalli, Cairo University, Cairo, Egypt

SESSION 4.3C (CS-14-2)

Thursday, July 20, 2:00 pm – 3:45 pm, Kohala 3

REPAIR, REPLACEMENT AND MITIGATION FOR FITNESS-FOR-SERVICE RULES—II

Developed by: S. McCracken, Electric Power Research Institute, Harrisburg, NC, USA
Chair: S. McCracken, Electric Power Research Institute, Harrisburg, NC, USA
Co-Chair: J. O'Sullivan, Procon 1, LLC, Fort Myers Beach, FL, USA; H. Kobayashi, The Japan Atomic Company, Tokyo, Japan

PVP2017-65139: DEVELOPMENT OF LASER PEENING TECHNOLOGY FOR MITIGATION OF TENSILE RESIDUAL STRESS IN NUCLEAR REACTOR DMWS (Presentation Only)
W. G. Yi, K. S. Park, S. Cho, G. B. Ko, Doosan Heavy Industries & Construction, C. Won, Korea (Republic)

PVP2017-65427: REPAIR EFFECTIVENESS OF EPOXY STEEL SLEEVE ON PIPELINES GIRTH WELD CRACKS BY EXPERIMENTAL INVESTIGATION (Presentation Only)
Z. Cheng, B. Liu, SWJTU, Chengdu, China; Y. Zhang, Deyuan, Chengdu, China; M. Li, SWJTU, Chengdu, China

PVP2017-66065: TECHNICAL BASIS FOR CODE CASE N-865—PAD REINFORCEMENT REPAIR OF ASME CLASS 2 AND 3 ATMOSPHERIC STORAGE TANKS (Presentation Only)
E. Gerlach, Gerlach Engineering, LLC, Berwick, PA, USA; S. McCracken, Electric Power Research Institute, Harrisburg, NC, USA

PVP2017-66144: DEVELOPMENT OF SWPS FOR NUCLEAR POWER PLANTS (Presentation Only)
J. Jang, Korea Electric Association, Seoul, NA, Korea (Republic)

SESSION 4.3D (MF-6-2)

Thursday, July 20, 2:00 pm – 3:45 pm, King's 1

FITNESS FOR SERVICE AND FAILURE ASSESSMENT—II

Symposium on Fitness-for-Service—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: C. Jaske, HSI Group, Inc., Torrance, CA, USA; M. Cohn, Intertek, Santa Clara, CA, USA; B. Wiersma, Savannah River National Laboratory, Aiken, SC, USA
Chair: C. Jaske, HSI Group, Inc., Torrance, CA, USA
Co-Chair: M. Cohn, Intertek, Santa Clara, CA, USA

PVP2017-65113: DEFICIENT MATERIALS IN HOT REHEAT HIGH ENERGY PIPING
K. Coleman, S. Rosinski, Electric Power Research Institute, Charlotte, NC, USA; J. Foulds, Clarus Consulting, Llc, Charlotte, NC, USA

PVP2017-66022: RISK BASED INSPECTION METHODOLOGY FOR COMPONENTS SUBJECT TO HIGH-TEMPERATURE CREEP
C. Jaske, HSI Group, Inc., Torrance, CA, USA; P. Topalis, DNV GL, London, United Kingdom; S. L. Wong, DNV GL, Kuala Lumpur, Malaysia; A. S. M. Sidek, DNV GL, Singapore, Singapore

PVP2017-65815: AN ENHANCED CREEP LIFE EVALUATION METHODOLOGY FOR GRADE P91 CIRCUMFERENTIAL WELDMENTS
M. Cohn, Intertek, Santa Clara, CA, USA

PVP2017-65834: FITNESS-FOR-SERVICE CREEP LIFE EVALUATION OF A HOT REHEAT PIPING SYSTEM AT 400,000 OPERATING HOURS
M. Cohn, Intertek, Santa Clara, CA, USA

SESSION 4.3E (CS-41-1)

Thursday, July 20, 2:00 pm – 3:45 pm, King's 2

UPDATES TO THE 2017 EDITION OF THE ASME BOILER AND PRESSURE VESSEL CODE—PART I

Symposium on Recent Developments in International Codes and Standards—Sponsored by Codes & Standards Technical Committee

Developed by: R. Barnes, Anric Enterprises Inc., Etobicoke, ON, Canada
Chair: Richard Barnes, Anric Enterprises Inc., Etobicoke, ON, Canada
Co-Chair: T.-L. Sham, Argonne National Laboratory, Lemont, IL, USA

Panelists:
R. Hill, Hill Engineering Solutions LLC, Las Vegas, NV, USA
R. Barnes, Anric Enterprises Inc., Etobicoke, ON, Canada
J. Hall, Tannersville, PA, USA
W. Hembree, TVA, Signal Mountain, TN, USA

C. Rodery, BP p.l.c, Webster, TX, USA

SESSION 4.3F (DA-3-1)

Thursday, July 20, 2:00 pm – 3:45 pm, King's 3

FATIGUE I—MEMORIAL SESSION FOR FERNAND ELLYIN

Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: L. de Baglion, AREVA, Paris La Défense, Ile-de-France, France
Chair: L. de Baglion, AREVA, Paris La Défense, Ile-de-France, France
Co-Chair: D. Steininger, Electric Power Research Institute, Palo Alto, CA, USA

PVP2017-65386: THERMAL FATIGUE CRACK PROPAGATION IN LARGE SCALE YIELDING (LSY) CONDITIONS: PACIFIC EXPERIMENT ON A 316L QUASI-STRUCTURE

G. Leopold, EDF, Moret-sur-Loing, France; F. Curtit, EDF, Ecuelles, France; S. Courtin, AREVA, La Defense, Ile-de-France, France

PVP2017-65711: CONTINUITY OF ENVIRONMENTALLY ASSISTED FATIGUE AND STRESS CORROSION CRACKING BASED ON SHORT CRACK GROWTH BEHAVIOR OF 316 STAINLESS STEEL IN SIMULATED PWR PRIMARY WATER

C. Shim, Y. Takeda, T. Shoji, Tohoku University, Sendai, Miyagi-Ken, Japan

PVP2017-65995: COMPONENT TESTING PROPOSAL TO QUANTIFY THE SAFETY MARGINS IN EXISTING EAF RULES

D. Steininger, Electric Power Research Institute, Palo Alto, CA, USA; T. Metais, EDF, Villeurbanne, France; K. Wright, M. Twite, A. Morley, Rolls-Royce Plc, Derby, United Kingdom; G. Leopold, EDF, Moret-sur-Loing, France

PVP2017-65336: VALIDATION OF THE NEW POST-RCCM OPTION FROM CODE_ASTER THROUGH BENCHMARK COMPARISONS WITH OTHER INDUSTRIAL CODES

T. Metais, EDF, Villeurbanne, France; S. Plessis, EDF Lab Paris-Saclay, Palaiseau, Ile-de-France, France; J. Miralles, ATR Engineering, Villeurbanne, Rhône-Alpes, France

SESSION 4.3G (CS-9-2)

Thursday, July 20, 2:00 pm – 3:45 pm, Queen's 4

ASME SECTION XI CODE ACTIVITIES

Developed by: R. C. Cipolla, Intertek AIM, Santa Clara, CA, USA; F. Iwamatsu, Hitachi, Ltd., Ibaraki, Japan
Chair: R. C. Cipolla, Intertek AIM, Santa Clara, CA, USA
Co-Chair: F. Iwamatsu, Hitachi, Ltd., Ibaraki, Japan

PVP2017-65058: TECHNICAL BASIS FOR ASME CODE SECTION XI NONMANDATORY APPENDIX C UPDATE

C. Guzman-Leong, LPI, Inc., Richland, WA, USA; A. Udyawar, Westinghouse Electric Company, Cranberry Township, PA, USA

PVP2017-66150: SOLUTION OF A SAMPLE PROBLEM RELATED TO REVISION 1 OF CODE CASE N-830

M. Kirk, Nuclear Regulatory Commission, Rockville, MD, USA; S. Xu, Kinectrics Inc., Toronto, ON, Canada; C. Liu, Kinectrics Inc., Toronto, ON, Canada; M. A. Erickson, Phoenix Engineering Associates, Inc., Claremont, NH, USA; Y. Kim, GE Hitachi Nuclear Energy, Wilmington, NC, USA

PVP2017-66205: TECHNICAL BASIS OF FATIGUE CRACK GROWTH THRESHOLD FOR STAINLESS STEEL IN AIR ENVIRONMENT FOR ASME CODE SECTION XI

K. Hasegawa, Japan Atomic Energy Agency, Ibaraki-ken, Japan; S. Usami, Hitachi Ltd., Hitachi-shi, Japan

PVP2017-66169: FRACTURE TESTS OF FLAT PLATE AND PIPE WITH NONALIGNED MULTIPLE FLAWS

F. Iwamatsu, K. Miyazaki, Hitachi, Ltd., Ibaraki, Japan; K. Saito, Hitachi-GE Nuclear Energy, Hitachi, Ibaraki, Japan

SESSION 4.3H (CS-25-1)

Thursday, July 20, 2:00 pm – 3:45 pm, Queen's 5

INTEGRITY OF REACTOR PRESSURE VESSELS AND INTERNALS FOR CODES

Developed by: K. Hojo, Mitsubishi Heavy Industries Ltd., Kobe, Japan; R. C. Cipolla, Intertek AIM, Santa Clara, CA, USA
Chair: K. Hojo, Mitsubishi Heavy Industries Ltd., Kobe, Japan
Co-Chair: R. C. Cipolla, Intertek AIM, Santa Clara, CA, USA

PVP2017-66054: STUDY ON QUANTITATIVE MODELS OF WPS EFFECT WITH THE USE OF EXPERIMENTS OF JAPANESE RPV STEELS (Presentation Only)

H. Takamizawa, T. Tobita, K. Iwata, Y. Yamaguchi, J. Katsuyama, Japan Atomic Energy Agency, Ibaraki, Japan

PVP2017-66248: SWELLING CHARACTERISTICS OF A TYPE 304SS BAFFLE PLATE IRRADIATED UP TO 50DPA IN PWR AND VALIDATION OF A SWELLING EQUATION

Y. Mogami, T. Matsubara, S. Yaguchi, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; T. Tsuda, K. Fujimoto, Nuclear Development Corporation (NDC), Ibaraki, Japan

PVP2017-66116: EXPLORATORY ANALYSIS OF ESTIMATING AXIAL FRACTURE TOUGHNESS FOR ZR-2.5NB PRESSURE TUBES USING TEST DATA FROM SMALL CURVED COMPACT SPECIMENS

S. Xu, Kinectrics Inc., Toronto, ON, Canada; K. Wallin, VTT Technical Research Centre of Finland Ltd., Espoo, Finland

SESSION 4.3I (CS-12-1)

Thursday, July 20, 2:00 pm – 3:45 pm, Queen's 6

RECENT DEVELOPMENTS IN EUROPEAN CODES AND STANDARDS

Developed by: J. Sharples, Amec Forster Wheeler, Warrington, United Kingdom; J. Shi, Amec Foster Wheeler, Gloucester, United Kingdom; C. Faidy, CF Integrity Engineering, Tassin, France
Chair: P. J. Gill, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom
Co-Chair: A. Horn, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom

PVP2017-65067: PRESENTATION OF NEW EDITION OF AFCEN RCC M CODE IN 2017

P. Malouines, M. Fabre, AFCEN, Maurepas, France

PVP2017-66073: QUALIFICATION OF THE NOTCH STRESS APPROACH FOR THE FATIGUE ASSESSMENT OF WELDED PRESSURE EQUIPMENT AND POWER PLANT COMPONENTS

J. Rudolph, AREVA GmbH, Erlangen, Bavaria, Germany; R. Trieglaff, TÜV NORD EnSys GmbH & Co.KG, Hamburg, Germany; R. Stößlein, FHWS Schweinfurt, Haßfurt, Germany; F. Hauser, Technische Hochschule Nürnberg Georg Simon Ohm, Nürnberg, Germany

PVP2017-66199: METHOD FOR UNIFIED SAFETY ASSESSMENT WITH RESPECT TO PLASTIC COLLAPSE IN DESIGN AND IN-SERVICE DEFECT ANALYSES

P. von Unge, Inspecta, Stockholm, Sweden; B. Brickstad, Swedish Radiation Safety Authority, Stockholm, Sweden

SESSION 4.3K (MF-9-1)

Thursday, July 20, 2:00 pm – 3:45 pm, Kona 2

STRESS INTENSITY FACTOR SOLUTIONS

Developed by: D. J. Shim, Structural Integrity Associates, San Jose, CA, USA; Y. Li, Japan Atomic Energy Agency, Ibaraki-Ken, Japan
Chair: D. J. Shim, Structural Integrity Associates, San Jose, CA, USA
Co-Chair: Y. Li, Japan Atomic Energy Agency, Ibaraki-Ken, Japan

PVP2017-65198: CLOSED-FORM STRESS INTENSITY FACTOR SOLUTIONS FOR DEEP SURFACE CRACKS IN CYLINDERS SUBJECTED TO GLOBAL BENDING

K. Azuma, Y. Li, K. Hasegawa, Japan Atomic Energy Agency, Ibaraki-ken, Japan; D. J. Shim, Structural Integrity Associates, San Jose, CA, USA

PVP2017-65381: STRESS INTENSITY FACTOR SOLUTIONS FOR CRACK-LIKE ANOMALIES IN ERW SEAM WELDED PIPE

J. O'Brian, R. Olson, B. A. Young, Battelle Memorial Institute, Columbus, OH, USA

PVP2017-65646: STRESS INTENSITY FACTORS OF PIPE-IN-PIPES WITH CIRCUMFERENTIAL THROUGH-WALL CRACKS BASED ON ELASTIC FINITE ELEMENT ANALYSES

S.-C. Kim, Sungkyunkwan University, Suwon, Korea (Republic); N.-S. Huh, Seoul National University of Science and Technology, Seoul, Korea (Republic); J. B. Choi, Sungkyunkwan University, Kyungi-do, Korea (Republic)

SESSION 4.3L (SE-6-2)

Thursday, July 20, 2:00 pm – 3:45 pm, Kona 3

SEISMIC ANALYSIS AND DESIGN OF PIPING SYSTEMS—II

Developed by: G. Slagis, G C Slagis Associates, Roseville, CA, USA; I. Nakamura, National Research Institute for Earth Science and Disaster Resilience, Ibaraki, Japan
Chair: G. Slagis, G C Slagis Associates, Roseville, CA, USA
Co-Chair: I. Nakamura, National Research Institute for Earth Science and Disaster Resilience, Ibaraki, Japan

PVP2017-66161: BUCKLING STRENGTH EVALUATION OF LOCALLY WALL THINNING ELBOW
M. Sakai, S. Matsuura, Central Research Institute of Electric Power Industry, Chiba, Japan; R. Morita, F. Inada, Central Research Institute of Electric Power Industry, Kanagawa, Japan; S. Onishi, Chubu E.P., Nagoya, Aichi, Japan

PVP2017-65454: BUCKLING BEHAVIOR OF BURIED STEEL PIPELINE UNDER COMPRESSION STRIKE-SLIP FAULT MOVEMENT
X. Liu, H. Zhang, M. Xia, M. Li, China University of Petroleum-Beijing, Beijing City, China

PVP2017-65596: EVALUATION METHOD FOR SEISMIC FATIGUE DAMAGE OF PLANT PIPELINE
F. Inada, Central Research Institute of Electric Power Industry, Kanagawa, Japan; M. Sakai, Central Research Institute of Electric Power Industry, Abiko-shi, Chibaken, Japan; R. Morita, Central Research Institute of Electric Power Industry, Kanagawa, Japan; I. Tamura, The Chugoku Electric Power Company, Hiroshima, Japan; S. Matsuura, Central Research Institute of Electric Power Industry, Chiba, Japan

PVP2017-65847: INFLUENCE OF INITIAL AND WELDING RESIDUAL STRESSES ON LOW CYCLE FATIGUE AND RATCHETING RESPONSE SIMULATIONS OF ELBOWS
N. Islam, T. Hassan, North Carolina State University, Raleigh, NC, USA

SESSION 4.3M (MF-21-5)

Thursday, July 20, 2:00 pm – 3:45 pm, Waikoloa Suite 1

THERMOMECHANICAL TREATMENT AND HOT ISOSTATIC PRESSING

Developed by: M. Brongers, DNV GL, Dublin, OH, USA; A. Duncan, Savannah River National Laboratory, Aiken, SC, USA
Chair: M. Brongers, DNV GL, Dublin, OH, USA
Co-Chair: A. Duncan, Savannah River National Laboratory, Aiken, SC, USA

PVP2017-65320: EFFECT OF POSTWELD HEAT TREATMENT CONDITIONS ON MECHANICAL PROPERTIES OF 9CR-1MO-V STEEL WELDS FOR PRESSURE VESSEL
T. Tanaka, M. Abe, Hitachi Zosen Corporation, Kumamoto, Japan; M. Nakatani, Hitachi Zosen Corporation, Osaka, Japan; H. Terasaki, Kumamoto University, Kumamoto, Japan

PVP2017-65331: EFFECT OF POSTWELD HEAT TREATMENT CONDITIONS ON MICROSTRUCTURE OF 9CR-1MO-V STEEL WELDS FOR PRESSURE VESSEL
H. Terasaki, Kumamoto University, Kumamoto, Japan; T. Tanaka, M. Abe, Hitachi Zosen Corporation, Kumamoto, Japan; M. Nakatani, Hitachi Zosen Corporation, Osaka, Japan

PVP2017-65751: DEVELOPMENT OF NB-BEARING HIGH STRENGTH STEEL PLATES FOR 150000 M3 OIL STORAGE TANK BY TMCP AND TEMPERED PROCESS
Z. Gao, Q. Ding, H. Yang, J. Li, Jiangyin Xingcheng Special Steel Works Co., Ltd., Jiangyin, China; G. Zhu, National Local Joint Engineering Laboratory of Oil and Gas Storage and Transportation Technology, Zhoushan, China

PVP2017-65776: ASSESSMENT OF POWDER METALLURGY-HOT ISOSTATIC PRESSED NOZZLE-TO-SAFE END TRANSITION JOINTS
B. Sutton, D. Gandy, Electric Power Research Institute, Charlotte, NC, USA

SESSION 4.3N (DA-9-1)

Thursday, July 20, 2:00 pm – 3:45 pm, Waikoloa Suite 2

PIPING AND EQUIPMENT DYNAMICS—I

Developed by: P. Van Beek, TNO, Delft, Netherlands; M. Porter, Porter McGuffie, Inc., Lawrence, KS, USA
Chair: P. Van Beek, TNO, Delft, Netherlands
Co-Chair: M. Porter, Porter McGuffie, Inc., Lawrence, KS, USA

PVP2017-65079: STUDY OF CONTROL ROD DEVICE MECHANISM MISSILE IMPACT ON PROTECTION PLATE
X. Ye, F.-R. Xiong, B. Zheng, N. Jiang, Nuclear Power Institute of China, Chengdu, China

PVP2017-65230: SHOCK WAVES, VIBRATIONS, AND RESONANCE IN ELASTIC BEAMS
R. Leishear, Leishear Engineering, LLC., Aiken, SC, USA

PVP2017-65728: TRANSIENT IMPACT OF VALVE CLOSURE TIMES—DISAGREEMENTS BETWEEN DESIGN AND APPLICATION
I. Telci, S. Koirala, Bechtel Oil, Gas & Chemicals Inc., Houston, TX, USA

PVP2017-65804: WATER HAMMER CAUSED BY FAST CLOSING VALVES
S. Koirala, I. Telci, Bechtel Oil, Gas & Chemicals Inc., Houston, TX, USA

PVP2017-65973: ADVANTAGES OF AIR BLOW CLEANING OF STEAM PIPES FOR COST AND SCHEDULE SAVINGS
J. Jarvis, M. Brenner, Bechtel Corporation, Reston, VA, USA; M. Hall, Bechtel Corporation, Richland, WA, USA; P. Babel, Bechtel Corporation, Reston, VA, USA

SESSION 4.3O (DA-17-1)

Thursday, July 20, 2:00 pm – 3:45 pm, Waikoloa Suite 3

COMPANY STANDARDS AND DESIGN PHILOSOPHY

Developed by: J. Taagepera, Chevron ETC, Richmond, CA, USA
Chair: J. Taagepera, Chevron ETC, Richmond, CA, USA
Co-Chair: L. Antalffy, Fluor, Sugar Land, TX, USA
Panelists:
L. Antalffy, Fluor Enterprises, Inc., Houston, TX, USA
S. Kataoka, JGC Corporation, Yokohama, Japan
C. Rodery, BP p.l.c, Webster, TX, USA
J. Taagepera, Chevron ETC, Richmond, CA, USA

SESSION 4.3Q (EPRI-1-3)

Thursday, July 20, 2:00 pm – 3:45 pm, Kohala 4

SESSION 3—DISSIMILAR WELDS IN FERRITIC STEELS

Developed by: J. Parker, Electric Power Research Institute, Charlotte, NC, USA; E. Benton, Electric Power Research Institute, Charlotte, NC, USA
Co-Chair: J. Henry, ApplusRTD Canada, Chattanooga, TN, USA
Chair: P. Mayr, TU Chemnitz, Chemnitz, Germany
Panelists:
J. Parker, EPRI, Charlotte, NC, USA
V. Vodarek, VŠB-Technical University of Ostrava, Ostrava, Czech Republic
R. Krein, Voestalpine, Linz, Austria

Block 4.4: Thursday, July 20, 2017 (4:00 pm – 5:45 pm)

SESSION 4.4A (DA-1-4)

Thursday, July 20, 4:00 pm – 5:45 pm, Kohala 1

THERMO-MECHANICAL DESIGN AND ANALYSIS OF PRESSURE VESSELS AND HEAT EXCHANGERS

Developed by: N. Barkley, Contract Fabricators, Inc., Holly Springs, MS, USA
Chair: J. Taagepera, Chevron ETC, Richmond, CA, USA
Co-Chair: Rakesh Kapania, Virginia Tech, Blacksburg, VA, USA

PVP2017-65091: NUMERICAL INVESTIGATION ON HEAT TRANSFER PERFORMANCE OF A NEW ANTI-VIBRATION SUPPORTING STRUCTURE OF A TUBE-SHELL HEAT EXCHANGER WITH LONGITUDINAL FLOW OF SHELL-SIDE
C. Yu, Z. Ren, M. Zeng, Xi'an Jiaotong University, Xi'an, China

PVP2017-65607: EXPERIMENTAL INVESTIGATION ON CONDENSATION IN CORRUGATED LOW FINNED TUBES IN PRESENCE OF NONCONDENSABLE GAS
B. Ren, X. Tang, H. Lu, D. Fu, P. Song, Shanghai Institute of Special Equipment Inspection and Technical Research, Shanghai, China

PVP2017-65423: ENGINEERING AND SIMULATIONS TO INVESTIGATE AND PREDICT THE FAILURE OF THE FOUR COMMONLY USED FLAT HEAD DESIGNS IN HEAT RECOVERY STEAM GENERATORS
M. Asadi, ApplusRTD Canada, Surrey, BC, Canada; J. Henry, ApplusRTD Canada,

Chattanooga, TN, USA; S. Torkildson, Retired, Greer, SC, USA; M. T. Kashani, M. Smith, ApplusRTD Canada, Surrey, BC, Canada

PVP2017-66093: THE EFFECT OF MATERIALS AND DESIGN GEOMETRY ON TUBE PLUGS AT HIGH PRESSURE STEAM SUPER HEATER

M. Alsaud, G. Van Zyl, A. D. Al-Dakhil, SABIC, Industrial Jubail, Saudi Arabia

PVP2017-66138: WEIGHT-REDUCED OPTIMIZATION DESIGN OF LARGE NUCLEAR POWER LOW PRESSURE CYLINDER

Y. Hu, X. Ye, G. Chen, Shanghai Electric Power Generation Equipment Co., Ltd., Shanghai, China

SESSION 4.4D (MF-6-3)

Thursday, July 20, 4:00 pm – 5:45 pm, King's 1

FITNESS FOR SERVICE AND FAILURE ASSESSMENT—III

Symposium on Fitness-for-Service—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: A. Horn, P. James, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom
Chair: M. Cohn, Intertek, Santa Clara, CA, USA
Co-Chair: A. Horn, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom

PVP2017-65004: APPLICATION OF THE STRAIN ENERGY DENSITY CRITERION TO THE ESTIMATION OF FRACTURE LOADS IN STRUCTURAL STEEL S355J2 AT LOWER SHELF TEMPERATURES

S. Cicero, F. Ibañez, I. Procopio, University of Cantabria, Santander, Spain; V. Madrazo, Centro Tecnológico de Componentes, Santander, Cantabria, Spain

PVP2017-66095: VALIDATION OF THE PROPOSED R6 METHOD FOR ASSESSING NON-SHARP DEFECTS

A. Horn, Amec Foster Wheeler, Warrington, Cheshire, United Kingdom; S. Cicero, University of Cantabria, Santander, Spain; A. Bannister, Tata Steel, Rotherham, United Kingdom; P. Budden, EDF Energy, Barnwood, United Kingdom

PVP2017-65378: VALIDATION OF FATIGUE MODELS FOR ERW SEAM WELD CRACKING

B. A. Young, R. Olson, J. O'Brian, Battelle Memorial Institute, Columbus, OH, USA

SESSION 4.4E (CS-41-2)

Thursday, July 20, 4:00 pm – 5:45 pm, King's 2

UPDATES TO THE 2017 EDITION OF THE ASME BOILER AND PRESSURE VESSEL CODE—PART II

Symposium on Recent Developments in International Codes and Standards—Sponsored by Codes & Standards Technical Committee

Developed by: R. Barnes, Anric Enterprises Inc., Etobicoke, ON, Canada
Chair: R. Barnes, Anric Enterprises Inc., Etobicoke, ON, Canada
Co-Chair: S. Xu, Kinectrics Inc., Toronto, ON, Canada
Panelists:
R. McLaughlin, The National Board, Chattanooga, TN, USA
J. Henry, ATC, Inc., Chattanooga, TN, USA
D. Scarth, Kinectrics Inc., Toronto, ON, Canada
T. Adams, Jensen Hughes, Independence, OH, USA
R. Barnes, Anric Enterprises Inc., Etobicoke, ON, Canada

SESSION 4.4F (DA-3-3)

Thursday, July 20, 4:00 pm – 5:45 pm, King's 3

FATIGUE—II

Symposium on Fatigue Issues—Co-Sponsored by Design & Analysis, Codes & Standards and Materials & Fabrication Technical Committees

Developed by: T. Metais, EDF, Villeurbanne, France
Chair: T. Metais, EDF, Villeurbanne, France
Co-Chair: J. Rudolph, AREVA GmbH, Erlangen, Bavaria, Germany

PVP2017-65397: AN ASSESSMENT OF THE SAFETY FACTORS AND UNCERTAINTIES IN THE FATIGUE RULES OF THE RCC-M CODE THROUGH THE BENCHMARK WITH THE EN-13445 STANDARD

T. Metais, EDF, Villeurbanne, France; S. Courtin, AREVA, La Defense, Ile-de-France, France; F. Billon, ONET Technologies, Marseille, France; F. Bridier, DCNS, Bouguenais, France; R. Briot, Bureau Veritas, Brignais, France

PVP2017-65530: A COMPARATIVE FATIGUE ANALYSIS STUDY BASED ON RCC-M CODE AND EN-13445 STANDARD THROUGH ACTUAL TEST CASES

F. Billon, J. Halleguen, ONET Technologies, Marseille, France

PVP2017-66006: AN ANALYTICAL-BASED STRUCTURAL STRAIN METHOD FOR LOW CYCLE FATIGUE EVALUATION GIRTH-WELDED PIPES

X. Pei, University of Michigan, Ann Arbor, MI, USA; W. Wang, Harbin Engineering University, Harbin, Heilongjiang, China; P. Dong, University of Michigan, Ann Arbor, MI, USA

PVP2017-66071: COMPONENT LOW CYCLE FATIGUE BEHAVIOR BASED ON STANDARD CALCULATION PROCEDURE AND NON-LINEAR FEA

J. Rudolph, A. Willuweit, S. Bergholz, AREVA GmbH, Erlangen, Bavaria, Germany; C. Philippek, J. Kobzarev, Siemens AG, Erlangen, Germany

SESSION 4.4L (SE-8-1)

Thursday, July 20, 4:00 pm – 5:45 pm, Kona 3

SEISMIC EVALUATION OF SYSTEMS, STRUCTURES AND COMPONENTS

Developed by: F. Paolacci, University Roma Tre, Rome, Italy
Chair: T. Fukasawa, Mitsubishi FBR Systems, Tokyo, Tokyo, Japan
Co-Chair: O. Furuya, Tokyo Denki University, Saitama, Japan

PVP2017-65293: A SPECTRUM-TO-SPECTRUM METHOD FOR CALCULATING UNIFORM HAZARD FLOOR RESPONSE SPECTRA

A. Lucchini, P. Franchin, F. Mollaioli, Sapienza University of Rome, Rome, Italy

PVP2017-65315: NONLINEAR DYNAMIC ANALYSIS OF RC SHEAR WALLS (Presentation Only)

D. Y. Kim, Y. H. Nam, Y. S. Lee, KEPCO E&C, Gimcheon-si, Gyeongsangbuk-do, Korea (Republic)

PVP2017-65740: SEISMIC DESIGN OF FREE STANDING RACKS IN JAPANESE NUCLEAR POWER PLANTS

Y. Takaki, K. Taniguchi, J. Kishimoto, Mitsubishi Heavy Industries, Ltd., Kobe, Japan; A. Iwasaki, Y. Nekomoto, Mitsubishi Heavy Industries, Ltd., Takasago, Japan

PVP2017-65814: NONLINEAR FINITE ELEMENT ANALYSIS OF UNANCHORED STEEL LIQUID STORAGE TANKS SUBJECTED TO SEISMIC LOADINGS

H. N. Phan, F. Paolacci, University Roma Tre, Rome, Italy, P. Mongabure, CEA Saclay, Paris, France

PVP2017-66198: SMART TECHNOLOGIES FOR INTEGRATED NATURAL RISK MANAGEMENT: INNOVATIVE METHODOLOGIES AND REMOTE SENSING

A. Marino, M. Ciucci, INAIL/DIT, Roma, Italy, F. Paolacci, University Roma Tre, Rome, Italy

SESSION 4.4N (DA-9-2)

Thursday, July 20, 4:00 pm – 5:45 pm, Waikoloa Suite 2

PIPING AND EQUIPMENT DYNAMICS—II

Developed by: M. Porter, Porter McGuffie, Inc., Lawrence, KS, USA; P. Van Beek, TNO, Delft, Netherlands
Chair: M. Porter, Porter McGuffie, Inc., Lawrence, KS, USA
Co-Chair: P. Van Beek, TNO, Delft, Netherlands

PVP2017-65448: VIBRATION CONTROL OF PIPING SYSTEMS AND STRUCTURES USING TUNED MASS DAMPERS

S. Rechenberger, D. Mair, Advisian, Melbourne, VIC, Australia

PVP2017-66066: SUPPORT COMPLIANCE OF PIPE MOUNTED THERMOWELLS

D. S. Bartran, Becht Engineering, Saint Louis, MO, USA

PVP2017-66222: THE MAIN DRIVING SYSTEM VIBRATION ANALYSIS UNDER DIFFERENT ROTATING SPEED OF TBM CUTTERHEAD

J. Huo, H. Wu, Dalian University of Technology, Dalian/Liaoning, China

PVP2017-66246: DESIGN AND MATERIAL SELECTION FOR ACOUSTIC ISOLATED PIPE SUPPORTS

M. Eijgenhuijsen, G. Masand, Chevron Australia Pty Ltd., Perth, Australia

SESSION 4.4Q (EPRI-1-4)

Thursday, July 20, 4:00 pm – 5:45 pm, Kohala 4

SESSION 4—DISSIMILAR WELDS BETWEEN FERRITIC AND AUSTENITIC STEELS

Developed by: J. Parker, Electric Power Research Institute, Charlotte, NC, USA; E. Benton, Electric Power Research Institute, Charlotte, NC, USA
Chair: A. Pfeffer, GE, Windsor, CT, USA
Co-Chair: F. Masuyama, Kyushu Institute of Technology, Kitakyushu, Japan

Panelists:
F. Masuyama, Kyushu Institute of Technology, Kitakyushu, Japan
J. DuPont , Lehigh University, Bethlehem, PA, USA
J. Siefert, EPRI, Charlotte, NC, USA
B. Alexandrov, The Ohio State University, Columbus, OH, USA

FRIDAY, JULY 21

Block 5.1: Friday, July 21, 2017 (8:30 am – 10:15 am)

SESSION 5.1Q (EPRI-1-5)

Friday, July 21, 8:30 am – 10:15 am, Kohala 4

SESSION 5—CASE STUDIES 1; IN-SERVICE EXPERIENCE

Developed by: J. Parker, E. Benton, Electric Power Research Institute, Charlotte, NC, USA
Chair: K. Coleman, Electric Power Research Institute, Charlotte, NC, USA
Co-Chair: S. Huysmans, SH MatWeld Consulting, Belgium, Belgium
Panelists:
B. Cane, Independent Consultant,, Thailand
B. Shelton, Dominion Energy, USA
F. Timmons, Dominion Energy, USA
T. Totemeier, Structural Integrity Associates, Inc., Boulder, CO, USA

Block 5.2: Friday, July 21, 2017 (10:30 am – 12:15 pm)

SESSION 5.2Q (EPRI-1-6)

Friday, July 21, 10:30 am – 12:15 pm, Kohala 4

SESSION 6—CASE STUDIES 2; IN-SERVICE EXPERIENCE

Developed by: J. Parker, E. Benton, Electric Power Research Institute, Charlotte, NC, USA
Chair: J. Siefert, Electric Power Research Institute, Charlotte, NC, USA
Co-Chair: B. Cane, Dr Brian Cane Ceng, FIMMM, Prachuap Khiri Khan, Thailand
Panelists:
K. Coleman, EPRI, Charlotte, NC, USA
S. Huysmans, Engie Lab-Laborelec, SH MatWeld Consult, Belgium

CHAIR/CO-CHAIR, DEVELOPERS, PLENARY SPEAKERS, TUTORIAL SPEAKERS

NAME	TITLE	SESSION
Adibiasl, R.	Co-Ch, Dev	2.2F
Adibi-Asl, R.	Dev	3.3I
Agarwal, V.	Ch, Co-Ch, Dev	2.4A, 3.1A, 3.2A
Aida, K.	Ch, Co-Ch	2.3L, 3.3L
Anami, K.	Co-Ch	3.2B
Antalffy, L.	Co-Ch, Dev	1.3H, 2.3H, 4.3O
Asada, S.	Ch, Co-Ch, Dev	2.1C, 2.4F, 3.1F, 3.2F, 3.3F, 4.1F, 4.2F
Baek, U. B.	Co-Ch	1.4K
Baliga, R.	Ch, Co-Ch, Dev	3.1N, 3.2N, 3.3A
Baranyi, L.	Dev	3.2B
Barkley, N.	Ch, Dev	4.1A, 4.2A, 4.3A, 4.4A
Barnes, R.	Ch, Dev	1.1C, 4.3E, 4.4E
Baulch, Joel	Ch	2.2I
Bausman, A.	Ch, Co-Ch, Dev	2.2I, 2.4I
Becht V, C.	Ch, Dev	1.1M
Bedoya, J.	Ch, Co-Ch	1.3A, 2.1A
Bees, W.	TS	0.2Q
Belfroid, S.	Co-Ch	2.4B
Benson, M.	Ch, Co-Ch, Dev	1.1E, 1.3E, 1.4E
Benton, E.	Dev	4.1Q, 4.2Q, 4.3Q, 4.4Q, 5.1Q, 5.2Q
Bergholz, S.	Co-Ch	2.3F
Bezdikian, G.	Ch, Co-Ch, Dev	2.4H, 3.3H
Blanton, P.	Co-Ch	2.1J
Blasset, S.	Co-Ch	2.3E
Blevins, R. D.	Ch	1.4B
Bortot, P.	Ch	2.3K
Bouzid, A.-H.	Co-Ch, Dev	2.1I
Broc, D.	Ch	2.2B
Brongers, M.	Ch, Co-Ch, Dev	4.1G, 4.2G, 4.3M
Brown, W.	Ch, Co-Ch, Dev	1.1I, 1.3I, 1.4I, 4.1H, 4.2H
Brumovsky, M.	Co-Ch, Dev	3.1J, 3.2J
Cane, B.	Co-Ch	5.2Q
Caputo, A. C.	Co-Ch	2.1L, 2.4L
Carroll, B.	Ch, Dev	4.2E
Chadda, T.j S.	Co-Ch	2.2A
Chao, Y.	Co-Ch, Dev	1.3G, 2.1E, 2.2E
Chen, H.	Ch	1.3F
Chen, X.	Ch, Dev	2.4C
Cheng, G.	Ch, Dev	3.1C
Cheta, A.	Ch, Dev	2.2H, 3.1D
Cipolla, R. C.	Ch, Co-Ch, Dev	4.3G, 4.3H
Cohn, M.	Ch, Co-Ch, Dev	4.2D, 4.3D,
Coleman, K.	Ch	5.1Q
Cory Jr., J. F.	Dev	1.1S, 1.2S, 1.3S, 1.4S, 2.1S, 2.2S, 2.3S, 2.4S
Coules, H.	Co-Ch	1.1G
Davies, C. M.	Ch, Co-Ch, Dev	1.1F, 1.3F, 1.4F, 3.2M
de Baglion, L.	Ch, Dev	4.3F
Deng, G.	Co-Ch	2.3C, 3.3C
Dennis, R.	Co-Ch, Dev	1.1F, 1.3F, 1.4F
Deri, E.	Co-Ch	3.3B
Dermenjian, A.	Dev	0.3Q
Doddihal, P.	Ch, Dev	1.4G, 2.1G
Donato, G. H. B.	Dev	1.3G, 1.4G
Dong, P.	TS	2.3Q, 2.4Q
Doré, M. J.	TS	2.3Q, 2.4Q
Dugan, S.	Ch, Co-Ch, Dev	2.4A, 3.1A, 3.2A
Dulieu, P.	Co-Ch	3.3G
Duncan, A.	Ch, Co-Ch, Dev	1.1J, 1.1Q, 1.4J, 3.2M, 3.3M, 4.2M, 4.3M
Edel, M.	Ch, Co-Ch, Dev	1.1D, 1.3D, 1.4D, 2.1D
Erickson, M. A.	Dev	3.1E
Ezekoye, L. I.	Ch, Dev	3.1J, 3.2J
Faidy, C.	Ch, Co-Ch, Dev	3.1F, 2.4F, 3.2F, 3.3F, 4.1F, 4.2F, 4.3I
Fan, Z.	Co-Ch	2.4C
Finneran, S.	Ch, Co-Ch, Dev	2.2G, 2.3G
Franchin, P.	Co-Ch	4.1L
Frith, R.	Co-Ch	4.1A
Fujita, K.	Ch, Ch, Dev	3.3L, 4.2B
Fujita, S.	Ch, Dev	1.3L
Fukasawa, T.	Ch	4.4L
Fukuoka, T.	Co-Ch, Dev	3.1I
Furuya, O.	Ch, Co-Ch, Dev	1.3L, 1.4L, 3.1L, 4.4L
Gao, B.	Co-Ch	4.3A
Garud, Y.	Ch, Dev	4.1E
Gill, P. J.	Ch, Dev	3.3Q, 4.3I
Gilman, T.	Co-Ch	2.3F
Goyder, H.	Ch, Dev	2.1B, 3.3B, 4.2B
Gross, D.	Ch, Co-Ch, Dev	1.1D, 1.3D, 1.4D, 2.1D
Hall, J. B.	Ch	3.1G
Hamelin, C.	Ch, Dev	4.1M
Han, Z.	Ch, Dev	2.2J
Hantz IV, B.	Co-Ch	2.3A
Hasegawa, K.	Co-Ch	4.1C
Hassan, M.	Ch, Dev	2.4B, 3.1B
Hassan, T.	Co-Ch, Dev	1.3N, 4.2L
Henry, J.	Ch	4.3Q
Hensel, S.	Ch, Dev	2.1J
Hoch, Z.	Co-Ch	3.3J
Hojo, K.	Ch, Co-Ch, Dev	4.1I , 4.2I, 4.3H
Horn, A.	Ch, Co-Ch, Dev	2.3E, 3.3Q, 4.1M, 4.3I, 4.4D
Huysmans, S.	Co-Ch	5.1Q
Inaba, K.	Dev	2.3N
Ishizaki, Y.	Co-Ch, Dev	2.1H
Iwamatsu, F.	Ch	1.1K, 1.3E, 4.3G
Iyer, S.	Ch, Co-Ch, Dev	2.4O, 3.1O, 3.2O, 3.3O, 4.1N, 4.2N
James, P.	Co-Ch, Dev	1.1N, 2.3E, 4.4D
James, W.	Co-Ch	2.1K
Janzen, V. P.	Ch, Co-Ch, Dev	1.1N, 1.3B, 2.2B
Jaske, C.	Ch, Co-Ch, Dev	1.1S, 1.2S, 1.3S, 1.4S, 2.1S, 2.2S, 2.3S, S.4S, 4.2D, 4.3D
Jesus, A.	Dev	1.4G, 1.4J
Jia, G.	Ch, Dev	2.3C, 3.3C
Jiang, H.	Ch, Dev	1.1J
Jin, J. C.	Ch, Co-Ch	1.1E, 2.4E, 3.3E
Jo, J. C.	Ch, Co-Ch, Dev	1.4N, 2.1N, 2.2N, 2.3N, 2.4N
Jones, R.	Ch, Co-Ch	1.3J, 1.4J
Jordan, J.	Co-Ch	2.3J
Kaculi, J.	Ch, Dev	2.3M
Kaiktsis, L.	Co-Ch	4.1B
Kalyanam, S.	Ch, Dev	2.4D
Kapania, R.	Co-Ch	4.4A
Karpanan, K.	Ch, Co-Ch, Dev	1.1H, 1.3M, 1.4M
Kasahara, N.	Ch, Co-Ch, Dev	4.1O, 4.2O
Kataoka, S.	Ch, Co-Ch, Dev	2.2G, 2.3G
Kaye, A.	Co-Ch	2.1A
Keim, E.	Ch, Co-Ch, Dev	2.3E, 2.4K , .1K
Kerr, M.	Ch, Dev	2.1F
Kim, Y.-J.	Dev	1.4J
Kirk, M.	Co-Ch, Dev	3.1E
Kobayashi, H.	Ch, Co-Ch, Dev	2.3I, 4.2C, 4.3C
Kojima, N.	Co-Ch	3.2L
Kopriva, R.	Co-Ch	3.2J
Korinko, P.	Ch, Dev	3.2M
Kurfess, T.	PS	1.2P
Lacroix, V.	Ch, Dev	3.3G, 4.1C
Lam, P.-S.	Ch, Co-Ch, Dev	1.1G, 1.1Q, 1.3G, 1.3J, 1.4J, 2.1E, 2.2E
Leen, S. B.	Dev	2.1E

CHAIR/CO-CHAIR, DEVELOPERS, PLENARY SPEAKERS, TUTORIAL SPEAKERS

NAME	TITLE	SESSION
Levine, H.	Dev	1.1D, 1.3D, 1.4D, 2.1D
Li, B.	Ch, Dev	2.1O, 2.2O, 2.3O, 3.1O, 3.2O, 4.1O, 4.2O
Li, Y.	Co-Ch, Dev	2.1C, 3.1L, 3.2E, 3.2L, 4.2J, 4.3K
Lissenden, C.	Dev	1.1Q, 1.3J
Liu, C.	Co-Ch	2.1G
Liu, Y.	Ch, Dev	2.2E, 3.2C
Lucon, E.	Co-Ch	3.1G
Ma, Q.	Ch, Dev	3.3A
Macejko, B.	TS	2.1Q, 2.2Q
Maekawa, A.	Dev	1.1L, 3.1L, 3.2L
Martin, C. S.	Dev	1.4N, 2.2N, 2.3N, 2.4N
Maslowski, A.	Ch, Dev	1.4M, 2.1M, 2.2M
Masuyama, F.	Co-Ch	4.4Q
Matsunaga, H.	Co-Ch	2.2K
Matsuoka, T.	Co-Ch, Dev	1.4L
Mayr, P.	Co-Ch	4.3Q
McCracken, S.	Ch, Dev	4.2C, 4.3C
McGuffie, S.	Ch, Dev, TS	1.3Q, 1.4Q, 3.3N
Mehta, H.	Ch, Co-Ch, Dev	2.4F, 3.1F, 3.2F, 3.3F, 4.1F, 4.2F
Mertiny, P.	Ch, Dev, Co-Ch, Dev	2.2D, 2.3D, 3.2D
Meskell, C.	Dev	2.3B, 3.3B
Messner, M. C.	Co-Ch	1.3C
Metais, T.	Ch, Co-Ch, Dev	3.2F, 4.1F, 4.4F
Metwalli, S.	Ch	4.3A
Metzger, D.	Ch, Co-Ch, Dev	2.2F, 3.3I
Meunier, S.	Co-Ch, Dev	3.2I
Millet, B.	Ch, Dev	1.3H, 2.1H
Minagawa, K.	Ch, Co-Ch, Dev	2.1L, 2.3L
Miura, N.	Co-Ch	2.1C
Mohanty, S.	Ch, Co-Ch, Dev	2.4F, 3.1F, 3.2F, 3.3F, 4.1F, 4.2F
Mohany, A.	Ch, Co-Ch, Dev	2.1B, 2.2B, 2.4B
Moinereau, D.	Dev	2.3E
Morita, R.	Co-Ch	4.2B
Mourad, A.-H. I.	Ch, Co-Ch, Dev	1.3G, 1.4A
Moussou, P.	Ch, Dev	2.3B, 4.2B
Mureithi, N.	Co-Ch, Dev	1.1B, 1.4B, 2.2B, 3.2B, 4.1B
Nagata, S.	Co-Ch, Dev	2.3I
Nakamura, I.	Ch, Co-Ch, Dev	1.1L, 3.1L, 3.2L, 4.3L
Nakamura, T.	Ch, Dev	2.2B, 3.1B, 4.1B
Nanstad, R.	Co-Ch	3.2K, 3.3K, 4.1K, 4.2K
Nassar, S.	Dev	3.1C
Neumann, M.	Ch, Dev	2.4J
Nibur, K.	Ch	1.4K
Nicak, T.	Dev	2.3E
Nikbin, K.	Ch, Co-Ch, Dev	1.4E, 2.4E, 4.1J
Nishida, A.	Ch	3.1L
Noble, R.	Ch, Co-Ch, Dev	1.3O, 1.4I, 1.4O
O'Sullivan, J.	Co-Ch	4.2C, 4.3C
Oka, J.	Co-Ch	2.4A
Omiya, Y.	Dev	2.2I
Paolacci, F.	Ch, Dev	1.3N, 2.2L, 4.1L, 4.4L
Paredes, M.	Co-Ch	2.4M, 3.1M
Park, D.-Y.	Ch, Dev	2.4M
Park, Y.	Ch, Dev	3.2I
Parker, J.	Ch, Dev	4.1Q, 4.2Q, 4.3Q, 4.4Q, 5.1Q, 5.2Q
Penso, J.	Ch, Co-Ch, Dev	1.1A, 1.3A, 1.4A, 2.1A, 2.2A, 4.1G, 4.2G
Perrin, I.	Ch	4.2Q
Peters, D.	Co-Ch, TS	2.2M, 2.3M, 3.1Q, 3.2Q
Petropoulos, C.	Ch, Dev	2.4L
Pettigrew, M.	Ch, Co-Ch, Dev	1.3B, 1.4B, 3.1B
Pfeffer, A.	Ch	4.4Q
Porter, M.	Ch, Co-Ch, Dev, TS	1.3Q, 1.4Q, 4.3N, 4.4N
Prueter, P. E.	Ch, Dev, TS	2.1Q, 2.2Q, 4.1D
Qian, G.	Ch, Co-Ch, Dev	2.1E, 2.2E
Qian, H.	Co-Ch, Dev	1.1F, 1.1O, 1.3F
Rana, M.	TS	0.2Q
Reich, A.	Ch, Co-Ch, Dev, TS	0.2C, 3.1H, 3.2H, 4.2E
Reinhardt, W.	Ch, Dev	2.2F, 3.1I, 3.3I
Ren, W.	Ch, Dev	3.2K, 3.3K, 4.1K, 4.2K
Ricciardi, G.	Ch	3.2B
Rice, D.	Co-Ch, Dev	2.4I
Rodery, C.	Ch, Co-Ch, Dev, TS	0.2Q, 1.1I, 1.1A, 1.3A, 1.4A, 2.1A, 2.2A, 2.3A, 4.1H, 4.2H
Ronevich, J.	Ch	2.2K
Rudland, D.	Ch, Co-Ch, Dev	2.1C, 2.4K, 3.1K, 3.2E, 3.3E
Rudolph, J.	Ch, Co-Ch, Dev	2.3F, 3.3I, 4.4F
Rush, P.	Co-Ch, Dev	2.4D
Sabattoli, L.	Co-Ch, Dev	2.3H
Samman, M.	Ch	2.2A
San Marchi, C.	Ch, Dev	1.1K, 1.3K, 1.4K, 2.1K, 2.2K, 2.3K, 4.2M
Sawa, T.	Ch, Dev	2.1I
Scarth, D.	Dev	2.1G
Schwarz, M.	Co-Ch	1.3K
Segall, A.	Ch, Co-Ch, Dev	4.1N, 4.2N
Server, W.	Ch, Co-Ch, Dev	2.4G, 3.1G, 3.2G
Sham, T.-L.	Ch, Co-Ch, Dev	1.1C, 1.3C, 1.4C, 4.3E
Sharples, J.	Dev	4.3I
Shavandi, M.	Co-Ch	1.3M
Shen, J.	Co-Ch	3.2C
Shi, Jia.	Co-Ch	2.2C
Shi, Jin.	Dev	4.3I
Shim, D. J.	Ch, Co-Ch, Dev	2.1F, 4.1I, 4.2I, 4.2J, 4.3K
Shoji, Y.	Ch, Co-Ch, Dev	1.3O, 1.4O, 2.2H, 3.1D
Siefert, J.	Ch	5.2Q
Sim, W. G.	Co-Ch	2.3B
Sims, J. R.	Co-Ch	2.1M, 2.2M
Sindelar, R.	Dev	1.3J
Slagis, G.	Ch, Dev	4.2L, 4.3L
Sokolov, M.	Co-Ch	3.2G
Spies, M.	Dev	2.4A, 3.2A
Stang, D. L.	Ch, Dev	O.2C, O.2Q, 0.3Q, 1.1S, 1.3Q, 1.4Q, 2.1Q, 2.2Q, 2.3Q, 2.4Q, 3.1Q, 3.2Q
Steininger, D.	Co-Ch	4.1E, 4.3F
Subramanian, K.	Ch, Co-Ch, Dev	1.1A, 1.1H, 1.1O, 1.3A, 1.4A, 1.4D, 2.1A, 2.1D, 2.1O, 2.2A, 2.2O, 2.3A, 2.3O, 2.4O, 3.3D, 3.3O
Taagepera, J.	Ch, Co-Ch, Dev	2.3A, 4.1A, 4.2A, 4.3O, 4.4A
Tahara, T.	Ch, Dev	1.4H, 2.1H, 2.3H
Takauchi, H.	Co-Ch, Dev	1.4H
Taniguchi, T.	Co-Ch, Dev	1.1L, 2.2L
Tarnowski, K.	Co-Ch	1.1F
Tijsseling, A.	Ch, Co-Ch, Dev	1.4N, 2.1N, 2.2N, 2.3N, 2.4N
Tipple, C.	Co-Ch, Dev	1.1M
Todd, J.	Co-Ch, Dev	3.3M
Uddin, M.	Ch, Co-Ch, Dev	2.2D, 2.3D, 3.2D, 4.1D
Van Beek, P.	Ch, Co-Ch, Dev	4.3N, 4.4N
Van Zyl, G.	Ch, Co-Ch, Dev	1.3I, 1.4I, 3.3D
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CHAIR/CO-CHAIR, DEVELOPERS, PLENARY SPEAKERS, TUTORIAL SPEAKERS

NAME	TITLE	SESSION	NAME	TITLE	SESSION
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SCHEDULE FOR SUBMISSION*

• **November 6, 2017**	**Abstracts are due**
• November 27, 2017	Abstract acceptance notification
• February 5, 2018	Draft papers due
• March 5, 2018	Peer review comments returned to authors
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** All final manuscripts must be submitted in the standard ASME format for publication. All presented technical papers will be published as citable documents available post-conference.*

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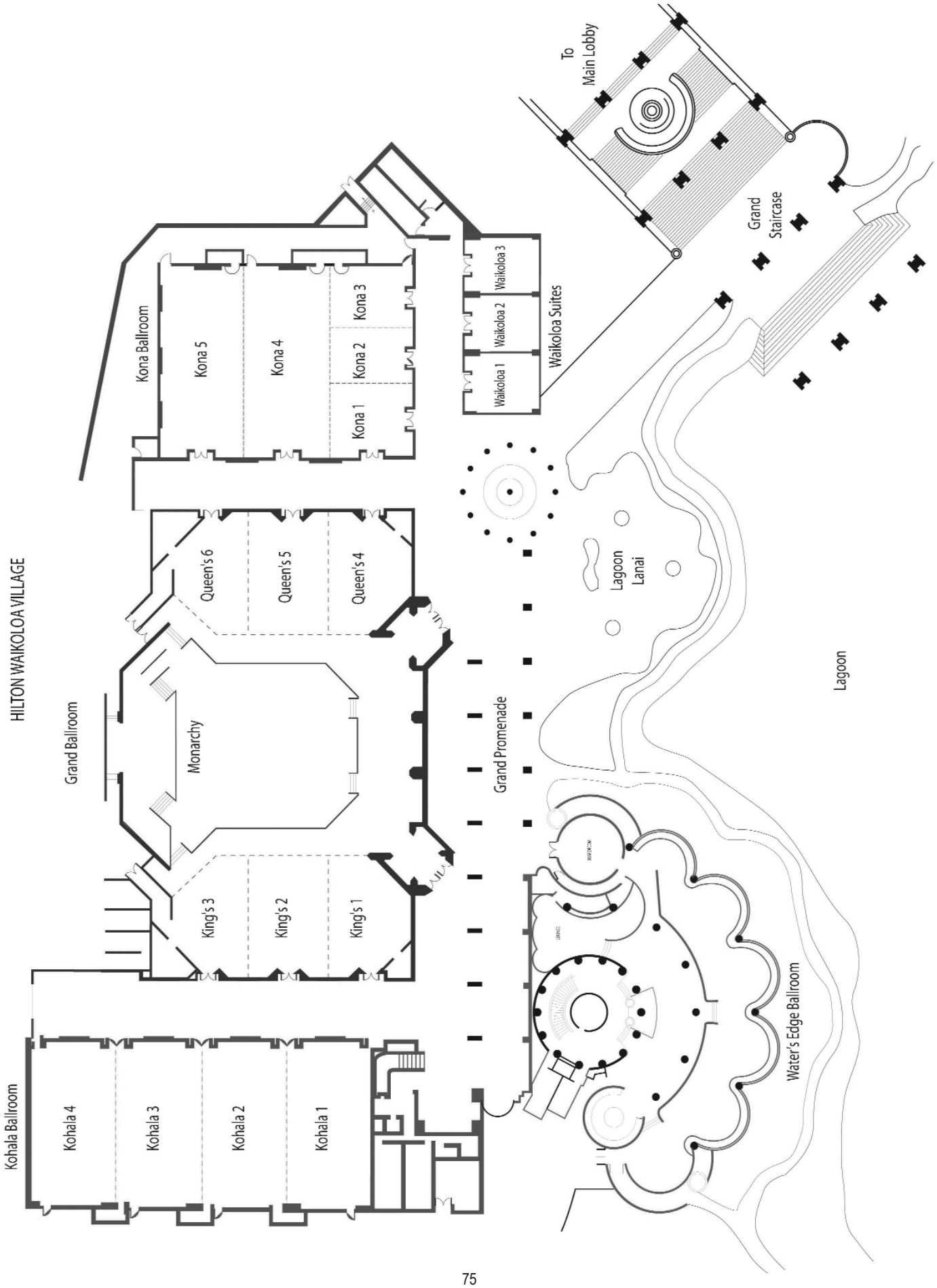

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