

Tuesday, February 25, 2025

Keynote Session: Global Trends in Energy and Advanced Manufacturing - Indian Wells LM

7:00 AM	Breakfast - the 18th Terrace		
8:30 AM	Welcome Address John Shingledecker	1980-2024: 40+ Years of Global Progress in Advances in Materials for Power Plants <i>Conference Chairman, Principal Technical Executive, Energy Supply & Low-Carbon Resources, EPRI</i>	
9:00 AM	Keynote 1 Jeffery Preece	Global Energy Transformation and the Future of Energy Supply <i>Vice President, Fleet Development and Fuels Energy Supply, Electric Power Research Institute (EPRI)</i>	
9:30 AM	Keynote 2 Suresh Babu	Democratization of Advanced Manufacturing <i>Clark Distinguished Chair Professor of Materials Science and Engineering, University of Maryland, College Park</i>	
10:00 AM	Break - The 18th Terrace		
	Component Manufacturing Process Development Indian Wells I 60612	Welding & Weld Repair Innovations in Weld Fabrication Indian Wells J 60432	Stainless Steels Properties and Microstructure Indian Wells K 60541
10:30 AM	Final Results of United States Advanced Ultra-Supercritical Component Test Project for 760°C Steam Conditions Horst Hack Electric Power Research Institute (EPRI) 63130	Industrialising Local Vacuum Electron Beam Welding for Nuclear Applications Jesus Talamantes-Silva Sheffield Forgemasters Engineering Ltd. 60297	Fatigue and Creep-Fatigue Evaluation of Alloy 709 at 760 and 816°C Yanli Wang Oak Ridge National Laboratory 60553
10:55 AM	US A-USC ComTest Demonstration of Large Superalloy Forging John deBarbadillo NiTech, LLC (formerly Special Metals) 60377	Development and Commercialization of Adaptive Feedback Welding Technology for Fabrication and Repair Applications Jon Tatman Electric Power Research Institute (EPRI) 60624	Metal Temperature Estimation in High-Strength Austenitic Stainless Steels through Precipitation Analysis Ko Arisue Mitsubishi Heavy Industries, Ltd. 60575
11:20 AM	Full-Scale Industrial Instrumented Induction Bending Experiment on Inconel® Alloy 740H® Firdosh Kavarana Tulsa Tube Bending Co. 63131	Demonstration of Thick Section Welding of Haynes® 282® to Steel Arun Mohan Siemens Energy, Inc.	Understanding the kinetics of sigma phase evolution in Super 304H using lab creep tested heats and long-term service aged components Tapasvi Lolla Electric Power Research Institute (EPRI) 60235
11:45 AM	Study of the Properties of Thick Section Nickel Alloys for High Temperature Application Josh Wildgoose Goodwins Steel Casting		Creep Deformation and Rupture Properties of Long-term Used Super 304H Steel Boiler Tubes Shengde Zhang Central Research Institute of Electric Power Industry
12:05 PM	Lunch - The 18th Terrace & Lawn		
	Advanced Manufacturing Powder Bed Fusion Indian Wells I 60548	Welding & Weld Repair Process Development Indian Wells J 60489	Qualifications/Codes & Standards Addressing Gaps in Stainless Steels Indian Wells K 60546
1:30 PM	Microstructure and mechanical properties of Ni-based alloys fabricated by laser powder bed fusion Sebastien Dryepont Oak Ridge National Laboratory 60365	Overview on development of Liburdi Turbine Services weldable Ni-based superalloys and technologies for repair and 3D am of turbine engine components Paul Lowden Liburdi Turbine Services 60081	Evaluation of the Mechanical Properties of Cast and Wrought CF8C-Plus Relevant to ASME Code Case Qualification Xiang (Frank) Chen Oak Ridge National Laboratory 60447
1:55 PM	Impact of Three Additive Manufacturing Techniques on Microstructure and Creep Damage Development in Alloy 718 Nikki Harless Electric Power Research Institute (EPRI)	On-Site Post Weld Heat Treatment for Grade 91 Stellite Main Steam Control Valve Seat Crack Problem Repairing Puwadech Veeranawin Electricity Generating Authority of Thailand (EGAT)	Statistical analysis and effect of product chemistry and grain size on the high-temperature creep properties of 316 stainless steels Shutong Zhang Electric Power Research Institute (EPRI) 60591
2:20 PM			Evaluating Quality of Diffusion Bonded Material Through Microscopy Measurement of Bondline Grain Growth Lukas Desorcy University of Wisconsin-Madison
2:45 PM	Break - The 18th Terrace		
	Advanced Manufacturing Creep Behavior Indian Wells I 60531	Welding & Weld Repair Repair Applications Indian Wells J 60376	Qualifications/Codes & Standards Codes and Standards Modernization Indian Wells K 60371
3:15 PM	Wire Arc Additive Manufacturing of creep strength enhanced ferritic steels and Nickel alloys Ronny Krein voestalpine Böhler Welding Germany GmbH 60563	Comparison of the ASME Welding Qualification Code Requirements for Power Plants Darren Barborak Electric Power Research Institute (EPRI) 60389	Tensile Property Measurement of AISI10Mg Additively Manufactured Lattice Structures Tony Fry NPL 60428
3:40 PM	Assessment of 316H Stainless Steel Produced by Directed Energy Deposition Additive Manufacturing for High Temperature Power Plant Applications Eun Jang Electric Power Research Institute (EPRI) 60382	Demonstration of Helium Measurement Capability to Support Repair of Irradiated Components Jean E. Collin Dominion Engineering, Inc. 60560	The Small Punch Creep Test - a tool to rank and qualify creep properties – comparison cast and additive manufactures 316 Stainless steels Karl-Fredrik Nilsson European Commission, DG-JRC 60422
4:05 PM	High-Throughput Creep Testing for Additively Manufactured 316H SS by Using Microstructurally-Graded Specimen John Snitzer Purdue University 60282	Evaluation of Highly Irradiated Stainless Steel and Inconel Materials Using Conventional Arc Welding Processes Kristian Johnson BWX Technologies Inc. 60599	A Novel In-situ Miniature Creep Tester for Evaluation of New Cladding Alloys Lucas M Lima North Carolina State University
4:30 PM	Microstructural models for the creep strength and ductility of diffusion-bonded 316H steel Mark Messner Argonne National Laboratory	Effect of HAZ Microstructure on HIC Failure Mechanism in SA-508 Steel Welds Fernando Romero The Ohio State University	
4:55 PM	Adjourn		
5:30 7:00 PM	Reception - The 18th Terrace		

Wednesday, February 26, 2025

Plenary Session: Materials & Manufacturing Innovations for Nuclear - Indian Wells LM			
7:00 AM	Breakfast - The 18th Terrace		
8:30 AM	60323	PM-HIP Development and Production of Large Nuclear Components – A Review David Gandy Electric Power Research Institute (EPRI)	
9:00 AM	60402	CEN WS064 Design and Construction Codes for Gen II to IV nuclear facilities – Code Evolution & pre-normative Karl-Fredrik Nilsson European Commission, DG-JRC	
9:30 AM	60538	Assessing the Impact of Molten Halide Salts on Creep of Structural Alloys at 650°-750°C Bruce Pint Oak Ridge National Laboratory	
10:00 AM	Break - The 18th Terrace		
	Advanced Manufacturing Process Development and Evaluation Indian Wells I	Welding & Weld Repair Weld Process Effects Indian Wells J	Environmental Degradation General Indian Wells K
10:30 AM	60286 Weld Metal Additive Manufacturing for Grade 91 Teresa Melfi Lincoln Electric Company 60430	TBD8 Alternative weld repairs in low alloy grade 22 steel John Siefert Electric Power Research Institute (EPRI) 60337	60341 Investigation of Novel Nickel-Based Alloys for High Temperature Molten Salt Reactor Structural Applications Vijay K Vasudevan University of North Texas 60220
10:55 AM	Weldability Evaluation of Computationally Designed Filler Wires for Wire-Arc Additive Manufacturing of Functionally Graded Materials in Harsh Service Environments Giacomo S. Melaragno The Ohio State University 60615	Sigma embrittlement evaluation test for dissimilar welding between F6NM and FXM-19 Ryoji Osafune IHI Corporation 60577	Nitridation Resistance of Several Modern High Temperature Ni- and Co-Based Alloys Brett Tossey Haynes International Inc. 60353
11:20 AM	Evaluation of Directed Energy Deposition 316LSi Stainless Steel Pressure Boundary Parts Stephen Tate Electric Power Research Institute (EPRI) 60312	Quantification of Carbide Precipitation and Local Recrystallization and Their Relation to Imposed Mechanical Energy and Ductility Dip Cracking in High Chromium Nickel Alloy Groove Welds Anil Singh The Ohio State University 60572	Effect of Ni content on hydrogen embrittlement of conventional Ni-based alloys Yutaro Oki Daido Steel Co., Ltd. 60278
11:45 AM	Characterization of build parameters and microstructure in low heat input WAAM of Ni-based superalloy Haynes 282 Benjamin Adam Oregon State University	ICWE modeling based design and optimization of a gradient composite transition joint Wei Zhang Oak Ridge National Laboratory	Flow Accelerated Corrosion Investigation and Mitigation in a Heat Recovery Steam Generator Sarayuth Limpanichkul Electricity Generating Authority of Thailand (EGAT)
12:05 PM	Lunch - The 18th Terrace & Lawn		
	Advanced Manufacturing New Materials and Processes Indian Wells I	Advanced Materials General Indian Wells J	Environmental Degradation Oxidation Indian Wells K
1:30 PM	60328 Material Synthesis and Advanced Manufacturing Without Melting – the Advantages of Bulk, High-Shear Processing Mageshwar Komarasamy Pacific Northwest National Laboratory 60506	60388 Characterization of precipitation-strengthening heat-resistant austenitic stainless steels for life-prediction modeling Yukinori Yamamoto Oak Ridge National Laboratory 60378	60536 Summary of Structural Alloy Compatibility in Supercritical CO2 at 450°-800°C Bruce Pint Oak Ridge National Laboratory 60424
1:55 PM	Qualifying additively manufactured Eurofer97 reduced activation steel for fusion David Crudden Alloyed 60439	Fiber-jacketed creep resistant pipes for high-temperature applications Maximilian Friedrich MPA University of Stuttgart 60523	Creep behavior of austenitic steels in CO2 and the effect of specimen thickness Kyle A. Rozman National Energy Technology Laboratory
2:20 PM	Development of PWHT-Free, Reduced Activation Creep-Strength Enhanced Bainitic Ferritic Steel for Large-scale Fusion Reactor Components Yukinori Yamamoto Oak Ridge National Laboratory	Additive Friction Stir Deposition of High Entropy Alloys for Nuclear Applications Subhashish Meher Pacific Northwest National Laboratory	
2:45 PM	Break - The 18th Terrace		
	Nickel-Based/Superalloy General Indian Wells I	Life Assessment Ferritic Steel/CSEF Condition Assessment Techniques Indian Wells J	
3:15 PM	60354 Homogenization during solution heat treatment of Ni-base single-crystal superalloy TMS-238 Naoki Ohno Waseda university 60401	60247 Estimation of Creep Strength of ASME Grade 91 Type Steel in Actual Service Conditions Nobuyoshi Komai Central Research Institute of Electric Power Industry 60551	
3:40 PM	Investigating the Microstructural Evolution of Inconel 718 under a Controlled Thermal Gradient Tony Fry National Physical Laboratory TBD6	Assessment of a Grade 91 Steel Forging and Seamless Pipe Section after 141,000-hours of Operation in a Superheat Outlet Header Yiyu Wang Oak Ridge National Laboratory TBD5	
4:05 PM	Leveraging Electron Beam AM for Repair in GTD-111 DS Superalloy using ABD@900-AM Alex Bridges Electric Power Research Institute (EPRI)	Root causes regarding widespread cracking in tee fittings John Siefert Electric Power Research Institute (EPRI)	
4:30 PM	Adjourn		

Thursday, February 27, 2025

Plenary Session: Understanding Materials Performance in Thermal Power Plants - Indian Wells LM

7:00 AM	Breakfast - the 18th Terrace		
8:30 AM	60426	Creep ductility of 9Cr creep strength enhanced ferritic steels – Part I, structural response Ian Perrin Triaxis Power Consulting LLC	
9:00 AM	60421	Creep ductility of 9Cr creep strength enhanced ferritic steels – Part II, microstructural observations John Siefert Electric Power Research Institute (EPRI)	
9:30 AM	60336	Component Testing under cyclic operation modes for martensitic steels and Ni-based alloys in the HWT3 power plant Andreas Klenk MPA Stuttgart	
10:00 AM	Break - The 18th Terrace		
	Materials: General	Ferritic Steels/CSEF Grade 91 Steel Performance	Damage Mechanisms Damage and Failure Mechanisms
	Indian Wells I	Indian Wells J	Indian Wells K
	60345	60292	60379
10:30 AM	Innovative Design of Advanced Nb alloys for Extreme High-Temperature Applications Menglei Jiang QuesTek Innovations LLC 60542	Effect of manufacturing process parameters on long-term microstructural evolution and accumulation of creep damage in Grade 91 material Roberto Locatelli Tenaris 60245	Damage of Rankine Cycle Components in Concentrated Solar Power Plants Steven C. Kung Electric Power Research Institute (EPRI) 60436
10:55 AM	High temperature mechanical behavior of refractory alloys and novel manufactured specimens with digital image correlation Samuel Bernat Walker Bell Oak Ridge National Laboratory 60317	Effects of Chemical Composition and Heat Treatment on Creep Properties of ASME Grade 91 Type Steel Nobuyoshi Komai Central Research Institute of Electric Power Industry 60574	Failure analysis of cracked 304 stainless steel conduit of PWR incore instrumentation system Alejandro Mejia Imperia Engineering Partners 60557
11:20 AM	Steam oxidation resistance in a long term exposures of the modified Laser Power Bed Fusion 699XA alloy at high temperatures Tomasz Dudziak Lukasiewicz - Krakow Institute of Technology 60508	An Engineering Approach For Weld Creep Lifetime Assessment based on Local Property Measurement Wei Zhang Oak Ridge National Laboratory 60435	Machining methods and their effect on the fatigue performance of SA508 Gr3 Class 2 and 316L steels Lee Waterhouse The University of Sheffield TBD7
11:45 AM	Weld Process Effects on Fatigue Performance in the Repair of Coke Drums Ronald Payne AZZ WSI LLC	Creep Crack Growth of Interrupted High and Low Creep Ductility Grade 91 Steel Troy R Hanes University of Idaho	Damage development during creep in diffusion bonds for high-efficiency heat exchangers John Shingledecker Electric Power Research Institute (EPRI)
12:05 PM	Lunch - The 18th Terrace & Lawn		
	Nickel-Based/Superalloy Developments	Ferritic Steels/CSEF Grade 92 and Weld Performance	Claddings, Coatings & Surface Modifications
	Indian Wells I	Indian Wells J	Indian Wells K
	60423	60269	60320
1:30 PM	Materials Technology for Innovative Thermal Power Generation System toward Carbon Neutrality in Japan Masao Takeyama Tokyo Institute of Technology 60318	Creep rupture strength and ductility of Gr. 92 steel Nobuyoshi Komai Mitsubishi Heavy Industries, Ltd. 60540	Investigation of Cold Spray Performance for Cleaning and Repair of Dry Cask Storage System (DCSS) Canisters within a Characteristic Confinement JP Lacy Electric Power Research Institute (EPRI) 60372
1:55 PM	Investigation into creep strength of INCONEL® alloy 740H® thin-walled welded tubing for CSP applications Eeva Griscom Electric Power Research Institute (EPRI) 60394	The Effect of Post Weld Heat Treatment on the Microstructure and Creep Damage Susceptibility in Grade 92 Steel Geoff D West University of Warwick 60544	Metallurgical Principle of Alloy J513 PTA Cladding for Elevated Temperature Applications C. Paul Qiao L.E. Jones Company 60273
2:20 PM	Effect of Grain-boundary TCP P (oP56) Phase on Creep in Ni-Cr-Mo Alloys at Elevated Temperatures Takehiko Yanagiya The Japan Steel Works 60339	Cracking of Grade 91 Steel Welds in Longer-Term Service – Case Studies Terry C Totemeier Structural Integrity Associates, Inc. 60386	Cold Spray Application onto Stainless Steel Dry Cask Storage Canisters Marie Gillespie Central Plateau Cleanup Company 63133
2:45 PM	Exploring Options for Simultaneously Reducing Cost and Improving Weldability of Nickel-Based Alloys for Advanced Power Generation Paul Sanders Michigan Technological University	Creep Strength and Microstructure in Welded Joints of ASME Gr.91 Type 1 and Type 2 Steels Masatoshi Mitsuahara Kyushu University	Repair of Dividing Plane of High-pressure Turbine Vessel using mobile Cold Spray technology Stanislav Martinek VZU Plzen
3:10 PM	Adjourn for break before conference dinner and awards		
5:30 7:30 PM	Conference Dinner and Awards Banquet - The Grove		

Friday, February 28, 2025			
Plenary Session: Materials & Advanced Manufacturing for Superalloys and Gas Turbines - Indian Wells LM			
7:00 AM	Breakfast - the 18th Terrace		
8:30 AM	60547	LCF and TMF of Superalloys Used for IGT Blades and Vanes Richard W. Neu Georgia Institute of Technology	
9:00 AM	63134	From Powder to Power: Advancing Gas Turbines with 3D Printing Gregory Vogel Power Systems Manufacturing	
9:30 AM	60550	Acceleration of Material Acceptance and Industry Adoption of an Additively Manufactured Nickel-base Superalloy Alex Bridges Electric Power Research Institute (EPRI)	
10:00 AM	Break - The 18th Terrace		
	Nickel-Based/Superalloy Gas Turbines Indian Wells I	Ferritic Steels/CSEF Legacy & Emerging CSEF Steel Performance Indian Wells J	
10:30 AM	60485 ABD®-1000AM: A highly processible superalloy for additive manufacturing, computationally designed for 1000°C applications Dominic D. Peachey Alloyed 59751	60294 Updated evaluation of creep damage tolerance in THOR® 115 parent material and weldments Matteo Ortolani Tenaris 60525	
10:55 AM	Life Extension Experience with GT blades made of Nickel Based Superalloys Vamadevan Gowreesan Sulzer Turbo Services 60392	Damage and Cracking in 1CrMoV Casings: Why and How to Repair Joshua Burgess Tennessee Valley Authority 60384	
11:20 AM	Creep Behaviors of Alloy 718 Type Ni-based Superalloys Satoru Kobayashi Tokyo Institute of Technology 60309	Creep Resistant Martensitic Steels for Operation at High-Temperatures in Power Generation Applications Martin Detrois National Energy Technology Laboratory 60356	
11:45 AM	The role of heat treatment on creep rupture ductility and its underlying metallurgical mechanism of forged Ni-based superalloy Ko Arisue Mitsubishi Heavy Industries, Ltd.	Improvements in Creep Ductility of the UK Cast MarBN steel, IBN1 Scott A Lockyer Uniper Technologies Limited	
12:05 PM	Adjourn Conference		