NATIONAL ENERGY TECHNOLOGY LABORATORY

Evaluation of Welding Issues in High Nickel and Stainless Steel Alloys for Advanced Energy Systems
Virtual Meeting Agenda
March 10, 2021

Wednesday, March 10, 2021

*All times designated in Eastern Standard Time

11:00 AM **Meeting Introduction - Scope and Objectives**
Chairs:
Kamala Raghavan, DOE Office of Energy Efficiency and Renewable Energy
Rich Dennis, National Energy Technology Laboratory

Session I - Materials Application in DOE Energy Systems
Moderators: Anthony Zinn and Vito Cedro III, National Energy Technology Laboratory

11:10 AM **Overview of DOE Energy Systems**
Fossil Energy Power Systems
Nathan Weiland, National Energy Technology Laboratory

11:25 AM **Energy Efficiency and Renewable Energy Power Systems**
Rajgopal Vijaykumar, DOE Office of Energy Efficiency and Renewable Energy

11:40 AM **Recent Developments in the Welding of Alloy 740H**
Jack Debarbadillo, Special Metals

12:05 PM **STEP Heater Fabrication: Welding of Inconel 740H**
Matt Hauth, Optimus Industries LLC

12:30 PM **Question & Answer Session**

12:40 PM **BREAK**

Session II - Invited Presentations on Welding
Moderator: Kamala Raghavan, DOE Office of Energy Efficiency and Renewable Energy

1:10 PM **Mechanical Failure Risk Analysis and Management for In-Service CSP Nitrate Hot Tanks**
Judith Vidal, National Renewable Energy Laboratory
Zhenzhen Yu, Colorado School of Mines

1:40 PM **Power Generation Industry Experience: Relaxation Cracking and Strain Induced Precipitation Hardening (SIPH) Failures**
John Shingledecker, EPRI
John Seifert, EPRI

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2:05 PM **Challenges Obtaining and Implementing Welding Alloys for High Temperature Stainless and Super Nickel Steel Weldments**
Bill Newell, Euroweld Ltd.

2:20 PM **Microstructure and Mechanism Based Lifetime Predictions in Stress Relief Cracking of SS347 Weldment Under Complex Thermomechanical Conditions**
Zhili Feng, Oak Ridge National Laboratory

2:35 PM **Metallurgical Phenomena Related to the High Temperature Performance of Dissimilar Metal Welds Between Austenitic and Ferritic Alloys**
Boian Alexandrov, Ohio State University

2:50 PM **Performance of Dissimilar Metal Welds in Supercritical CO2 Power Cycle Conditions**
Omer Dogan, National Energy Technology Laboratory

3:10 PM **Session III - Panel Discussion – Assessment of Weldability Issues and Potential Pathways to Cracking Control**
Moderator: Zhenzhen Yu, Colorado School of Mines

Panelists:
Michael Phillips, Aecon-Wachs
John Shingledecker, EPRI
Zhili Feng, Oak Ridge National Laboratory
Boian Alexandrov, Ohio State University
Judith Vidal, National Renewable Energy Laboratory
Bill Newell, EuroWeld Ltd.

4:10 PM **Next Steps**
Rich Dennis, National Energy Technology Laboratory
Kamala Raghavan, DOE Office of Energy Efficiency and Renewable Energy

4:20 PM **Concluding Remarks**