

## Press Release



### EPRI 12<sup>th</sup> International Conference on Cycle Chemistry in Fossil and Combined Cycle HRSG Plants (ICCC12): Details Advances in R&D

Another immensely successful International Conference on Cycle Chemistry in Fossil and Combined Cycle HRSG Plants was conducted June 26–28, 2018, in Arlington, Virginia, by the Electric Power Research Institute (EPRI). Pre- and post-conference workshops were conducted on cycle chemistry program treatment and optimization and on neutralizing amines and film-forming products (FFP).

The conference was attended by more than 130 professionals from 11 countries including Australia, Brazil, Canada, Columbia, Guatemala, Japan, Malaysia, Mexico, Singapore, Switzerland, and the United States.

The EPRI Boiler and Turbine Steam and Cycle Chemistry R&D program (Program 64) conducts collaborative research led by Program Manager Steve Shulder and Senior Technical Leaders Brad Burns and Jeffery Demattos. The collaborative program is a global leader in comprehensive research in power plant steam and water cycle treatment to minimize corrosion and deposition.

The conference is hosted by EPRI every three years. This latest event featured 35 presentations by international experts, equipment manufacturers, chemical suppliers, and power plant chemistry users. A panel discussion on FFP research and applications was held on the final day. It showcased EPRI's comprehensive research to advance the state of knowledge about these products by evaluating their inhibition of various corrosion mechanisms and developing optimized application strategies for a diverse set of unit designs and modes of operation. Discussions on a wide range of cycle chemistry-related topics added participation value to plant users, equipment and chemical suppliers, and researchers. Highlights of ICC12 included:

- A keynote address summarized the technological advancements in cycle chemistry monitoring and control over the last 30 years, and pointed out key knowledge gaps in the areas of science-validated, action-level cumulative exposure limits, FFP residual monitoring and optimization, impacts of FFPs on condensate polishers, and online instrumentation. The address also discussed challenges to implementing an effective chemistry program under flexible operations.
- Two presentations highlighted the importance of incorporating human performance science into the cycle chemistry control scheme at power plants. Best practices from a US utility were shared, including communicating risk to control room operators, management of alarms, and how to write better chemistry procedures.
- The impacts of flexible operation on cycle chemistry were discussed, and there were several presentations from HRSG/boiler and turbine chemistry experts on deposition risks and potential corrosion impacts.
- Experience reports on corrosion product transport monitoring were presented to show the potential value of assessing treatment effectiveness with an online iron and copper analyzer and by measuring corrosion product transport indirectly using a nephelometer.
- Several case studies highlighting best practices in implementing EPRI guidelines were provided by power plant users, focusing on phosphate treatment control in a multi-pressure HRSG, neutralizing amine application in an air-cooled condenser (ACC), iron transport monitoring, risk management, and optimization of condensate polisher operation.
- Thorough reviews of some of EPRI's key research projects were provided in the areas of corrosion in ACCs, single- and two-phase flow-accelerated corrosion (FAC) control, and processing chemical cleaning waste. Much of EPRI's current research is centered around FFPs, and presentations were also given on corrosion testing to determine impacts of FFPs on underdeposit corrosion and offline pitting, crack growth rate testing to evaluate the impacts of FFPs on corrosion fatigue, the influence of FFPs on FAC mitigation, and evaluation of filming amine residual, decomposition, and volatility.