



AHUG 2018

Australasian HRSG Users Group
Conference and Workshops

13-15 November 2018

Brisbane Convention & Exhibition Centre, QLD



AHUG2018 Highlights and Press Release

The eleventh annual meeting of AHUG was held on the 13th – 15th November 2018 in Brisbane, Australia chaired by Barry Dooley of Structural Integrity Associates. AHUG2018 attracted 50 participants from Australia, New Zealand, Thailand, UK, and USA. About 50% of the participants were Users which is the highest of the other HRSG forums worldwide.

AHUG is supported by the International Association for the Properties of Water and Steam (IAPWS) and is held in association with the European HRSG Forum (EHF), the US HRSG Forum (HF) and PowerPlant Chemistry. There were five exhibitors: ALS, Duff and Macintosh and Sentry, Flotech, and Optimum Control. Other sponsoring organizations included Suez and Lanxess.

The meeting provided a highly interactive forum for the presentation of new information and technology related to HRSGs, case studies of plant issues and solutions, and for open discussion among plant users, equipment suppliers, and industry consultants. AHUG again provided a unique opportunity for plant users to discuss questions relating to all aspects of HRSG operation with the industry's international experts.

Key highlights from AHUG2018 included:

- International updates on HRSG cycle chemistry, instrumentation and FAC as well as the recent IAPWS Technical Guidance Documents in these areas including the application of Film Forming Substances (FFS) and Air In-leakage.
- International updates on the HRSG thermal transient aspects associated with attemperators, condensate return and superheater/reheater drain management and by-pass operation.
- A very informative workshop/presentation on optimization of steam turbine bypass systems covering the arrangement, purpose and optimum methods for operating and maintaining bypass equipment. Presented by Bob Anderson, Competitive Power Resources, USA, and prepared with input from bypass experts from IMI-CCI, Fisher and KOSO. Discussions focused on how to identify and remedy the root cause of premature erosion in HP turbine bypass pressure control valves.
- Another workshop was presented on the important HRSG issue of Corrosion Under Insulation (CUI) by Dale Franke, Charles Perrie and Leighton Caldwell of ALS, Australia. Included were presentations/discussions on: understanding the mechanism of CUI; review of NDE inspection methods, and case studies/assessments of CUI. Of particular interest was the discussion on the use of moisture resistant hydrophobic insulation / blankets which interfaces nicely with the FFS activities.
- Experiences on return to service of a F-class combined cycle unit after three years of layup and the initial experience operating in a new Flexible



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Operations market. This provided an insight into what good layup practices look like.

- Presentation of a unique reheater tube failure mechanism that may be the precursor of many future mid-life failures in other HRSGs. The tube adjacent to the gap between modules had clearly overheated as recognized by the large internal oxide growth and exfoliation (OGE) data base.
- A great example of successful significant HRSG plant engineering projects was on a total HP Steam Drum replacement in a triple-pressure unit with the key learnings from the project outlined and shared with the AHUG group.
- Representatives from four power stations all with the same OEM were able to network with their peers as all are moving to the requirements for low load capabilities to become more flexible. AHUG has planted the seed that they work collaboratively on this issue. AHUG also provides opportunities for plant short updates.
- The importance of shutdown protection was discussed for a number of aspects. The AHUG group was most interested in the IAPWS developments and international conferences on FFS, and particularly how to apply these successfully. For steam turbine protection discussion focused on how a dehumidifier could be simply retrofitted onto steam turbines for improved layup practices.
- Extensive discussion and information on failure/damage mechanisms in HP drums and HP Main Stop valves, and the optimum approach for inspection of the increasing HP drum-to-downcomer cracking. Piping flexibility analysis was also covered.
- Complete case study of pressure vessel inspections of a combined cycle plant after four years of operation.
- The 2018 AHUG participants discussed that combined cycle failure and damage mechanisms are in a number of cases similar to those in fossil plants and that some joint activities in the future could add extensively to the benefits. Such activities could be boiler tube failures (BTF) and steam turbine damage and failure, as well as valves.
- The next meeting will be in Brisbane at the Convention Centre in November 2019. Plans will be implemented to expand the technical areas and to rename the event ABHUG2019.
- Please contact Barry Dooley (bdooley@structint.com or bdooley@IAPWS.org) for further information and with suggestions for ABHUG2019.