European HRSG Forum (EHF2026) Highlights and Press Release

The twelfth annual IAPWS European HRSG Forum was held on the 19th – 21st May 2026 in Prato, Italy. It was chaired by Barry Dooley of Structural Integrity, UK and Bob Anderson of Competitive Power Resources, USA. EHF2025 attracted 105 participants from 22 countries and included 38 users.

EHF2026 was developed and continues to be supported by the International Association for the Properties of Water and Steam (IAPWS) and is held in association with the Australasian Boiler and HRSG Users Group (ABHUG). The EHF2026 event was organized by Mecca Concepts, Australia and had 15 sponsors: Precision Iceblast Corporation, Bang & Clean, Tuff Tube Transition, Dekomte, Fuel Tech Srl, Metroscope, New Componit Srl, Testex, Emerson/Flexim, Ionix Technologies, Freudenberg Flow Technologies, Cormetech, Kurita, Arnold Group and NEM.

This year the EHF included 20 presentations including a Workshop on attemperators. The meeting provided a forum for the presentation of new information and technology related to HRSGs, case studies of plant experiences and solutions, and for open discussion among the plant users, equipment suppliers, and industry consultants. The mix of the different topics (materials, cycle chemistry, operation, valves, tube failures and assessment techniques, inspection and remaining life aspects, and HRSG gas-side cleaning) kept the attendees interested, alert and participating. EHF again provided a unique opportunity for plant users to discuss questions relating to all aspects of HRSG operation with the industry's international experts. These discussions underlined once more the urgent need for the international exchange of information, which is excellently provided by this IAPWS forum.

Major Highlights from EHF2026 included:

- International updates were provided on HRSG cycle chemistry and thermal transients to indicate why the main areas of HRSG failure and damage continue to occur:
    - The latest chemistry influenced reliability statistics collected over 20+ years from over 400 HRSGs worldwide, referred to as Repeat Cycle Chemistry Situations (RCCS), indicates that 85% of plants have ineffective corrosion products monitoring programs, 77% have reduced cycle chemistry instrumentation when compared to IAPWS, 80% don't monitor drum carryover and about 74% are not challenging the status quo. During 2026 IAPWS is planning to incorporate this information into a Benchmarking process so plants can assess their cycle chemistry and flow-accelerated corrosion (FAC) programs and compare themselves with other plants worldwide.
    - The latest thermal transient influenced reliability statistics collected since 2009 continue to show only moderate overall improvement with most problems continuing to be associated with attemperators and drains. This international data base indicates that only 21% of plants routinely inspect attemperator hardware, 86% experience leaking attemperator spray water of

which 93% use block valve/control valve sequencing logic that encourages leaking, 39% experience attemperator overspray conditions in the superheater and 17% in the reheater, 29% allow operators to manually control attemperators, and 35%/41% effectively drain the HPSH/RH during startup.

- The expected growing demand in Europe for NOx reduction for new and existing power plants was presented, indicating that Selective Catalytic Reduction (SCR) solutions are available, but it will require detailed investigations into how these SCR solutions can be integrated into new and existing HRSG designs. The anticipated changes (increases) in plant operating and maintenance costs were explored based on experiences in countries like the USA that has mandated the use of SCR for many years. Also presented were state-of-the art designs for SCR catalysts.
- Effective attemperator implementation for steam temperature control remains one of the key elements in HRSG design. Improper operation/maintenance or incorrect implementation in the design can result in cracks in critical HRSG parts, causing unsafe operating conditions and unplanned outages. A workshop on attemperators served as a useful primer for those new to the industry as well as a valuable reminder to experienced plant personnel of the risks that they present to component integrity. The narrative provided an overview of attemperator design principles and types, highlighted the potential for severe thermal transients due to shortfalls in design, control or maintenance, and explained upgrade options to combat some of these deficiencies.
- Safety valve vent pipe silencers are a critical yet often overlooked piece of equipment. A presentation was provided highlighting the importance of through-life inspection and maintenance in managing the risks presented by atmospheric corrosion; this was reinforced with examples of debris being ejected and posing a potential safety hazard during safety valve lift events.
- An update was provided on commissioning of an engineered system to automatically drain condensate from HP Superheater and Reheater harps during the pre-start purge using ultrasonic technology. The system is intended to minimize drum pressure loss and blowdown system damage while mitigating the risk of condensate migration and thermal shock of downstream components during start-up. It also shortens the delay in providing cooling steam to the HP Superheater and Reheater, hence shortening the startup.
- An update was provided on the industry exemption being sought from draft regulations which would prohibit the use of PTFE in expansion joints and bellows, along with the implications of each possible outcome.
- A presentation discussing the benefits and limitations of various HRSG layup methods (wet and dry) highlighted the importance of not overlooking this non-operating period responsible for many corrosion damage events. Discussions following the presentation noted a recently demonstrated procedure to electrically heat evaporator modules during wet layup to maintain moderate pressure in the HP drum at moderate cost with benefits being faster startup, lower HP drum fatigue damage on startup, freeze protection, and corrosion protection in water-side and gas-side surfaces.

- European legislation, in particular PED and EN 12952, that will impose additional requirements for testing and certification of new combined cycle plants in Europe was discussed.
- Recent developments in non-destructive testing techniques were explained, including the ability to detect internal or external tube corrosion through the external tube fins and via use of a robotic crawler deploying tooling into evaporator/economizer tubes from inside the upper header.
- HRSG tube failures (HTF) remain the major reliability concern. Tube leak root cause assessment (RCA) and tube leak management (tube leak reduction programs and procedures) are essential for reliable HRSG operation. The need for upper management's declaration that all tube leak events will be followed by an RCA, the 1st step of which is removal of the failure site for metallurgical laboratory determination of the failure mechanism, was presented by a combined cycle plant General Manager who has implemented an effective tube leak reduction program).
    a) FAC was again identified as the most important and largest tube failure mechanism worldwide and was discussed with clarification of the effect of pH in addressing two-phase FAC and oxidizing power in preventing single-phase.
    b) UDC (Hydrogen Damage) was highlighted and related to the transport and deposition of corrosion products. Alleviation here relates directly to the removal of HP Evaporator tubes and their analysis to identify heavy deposits as compared to the IAPWS Deposition Map.
    c) Some discussion was focused on increased corrosion products relating to the use of a reducing agent in the cycle.
    d) An update on the application of Film Forming Substances (FFS) (both amine (FFA) and non-amine (FFP) based) was provided.
    e) Information on the latest IAPWS cycle chemistry Technical Guidance Documents for combined cycle/HRSG plants was provided to illustrate that these address each RCCS.
- The latest developments and case studies on two of the fireside cleaning processes (Ice Blasting and Pressure Waves) remain hot HRSG topics. For HRSGs with badly fouled finned tubes, cleaning remains one of the fastest ROI for the combined cycle plant recovering generating capacity loss due to gas-side pressure drop.
- A conference dinner, generously hosted by Precision IceBlast, was held in the Conservatorio San Niccolo in central Prato. This enabled all delegates and sponsors to enjoy each other's company over a wonderful dinner in a beautiful setting.

The twelfth EHF conference (EHF2027) will be held in May 2027 in Prato, Italy.

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