

TESTS AND DIAGNOSTICS

The main activity of the Tests and Diagnostics department is the performance of guarantee and verification tests of boilers, their accessories, emissions measurement, and inspection activities on customer premises. Using its long-term experience and verified methodology, the department investigates basic characteristics of the main components of the boilers, their accessories, and also entire units located in the power and heating plants.

Main instrumentation

- Flue gas analyzers Horiba, Beckman, Rosemount, Testo
- Pressure and differential pressure transmitters Rosemount
- Pt-100 thermometers class A (length 0.3 ÷ 2 m)
- Thermocouples type K, various lengths
- Ultrasonic flowmeter UNIFLOW 994
- Prandtl and S-type isokinetic velocity Probes

Scope of activities

We offer a wide range of services to its customers, including:

Guarantee and verification tests of boilers and accessories, steam turbines and gas turbines (combined cycles)

- Tests of steam generators including HRSGs, their performance, water and steam parameters and boiler efficiency
- Steam turbine measurement
- Plant and combined cycle performance
- Test of mill performance and milling fineness
- Boiler accessories performance (regenerative air preheaters, burners, fans etc.)



Gaseous and solid emission measurements

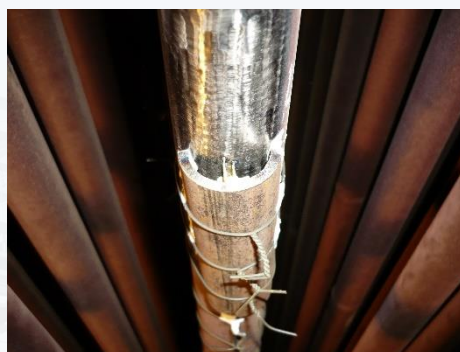
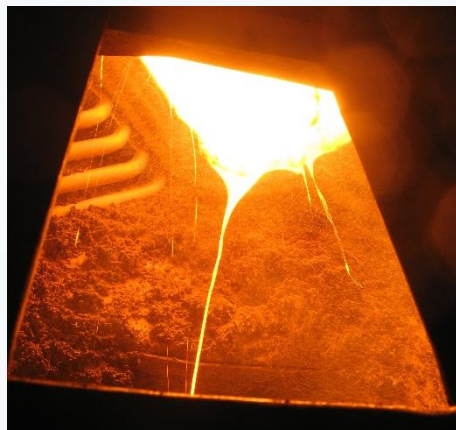
- Gaseous emission concentration (CO, SO₂, NO_x)
- Flue gas analysis (O₂, CO₂)
- Gravimetric measurement of solid emissions

Combustion process optimization

- Technical parameters of combustion air
- Fineness of mill grinding and mill output adjustment

Specialized testing and measurement

- Internal inspection of drums, headers, tubes, turbine casing, etc. by videoscope
- Tube surface temperature measurement inside flue gas stream
- Measurement of acoustic pressure level
- Inspection of pressure and non-pressure parts of boilers, life-time assessment



Technical instrumentation and staffing

The main team of representatives of the Tests and Diagnostic department is certified by the Czech Institute of Accreditation as an Inspection body of type C for boiler testing in accordance with standard EN ISO/IEC 17020:2005. The accreditation is periodically updated.

The measuring team is equipped with a measuring car for the data logger (ca. 200 sampling points with 1 reading per sec.) and flue gas analyzers together with calibration gases. Data logger Solartron allows on-line results calculation (each measured interval), for example steam (water) quantity calculation according to IAPWS-IF 97.



The Appendix is an integral part of Certificate of Accreditation No. 267/2021 of 13/05/2021

Accredited entity according to ČSN EN ISO/IEC 17020:2012

UNIS Power, s.r.o.
Inspection Body of the Tests and Diagnostics Department
Sochorova 3232/34, Zábovtveský, 616 00 Brno

Order number ¹⁾	Inspection field	Inspection type and scope	Procedure identification
1.1)	Inspection of steam and hot-water boilers and their accessories for the assessment of compliance of their parameters with contractually guaranteed parameters.	Assessment and certification of compliance of actual operating parameters of steam and hot-water boilers and their accessories by comparing the data measured by measuring instruments during the operation of the equipment with the parameters specified in the technical specifications or with the contractually guaranteed values set out by the contract between the supplier and the customer, including the assessment of the conformity of conditions, for which the contractually guaranteed parameters are specified.	IP-20RISO-QI-AB0.001 - Guarantee and reliability compliance tests of boilers and accessories (01/04/2021)
2.1)	Inspection of operated steam and hot-water boilers for the optimization of combustion process.	Assessment of compliance or difference of combustion process parameters of operated steam and hot-water boilers in comparison with the values specified in the technical specifications, measured by measuring instruments during the operation of the equipment.	IP-20RISO-QI-AB0.003 - Boiler and accessories operation optimization (01/04/2021)
3.1)	Inspection of new or operated boiler and combustion equipment for the assessment of compliance of measured values of gaseous emissions in combustion products and noise emissions with legally or contractually guaranteed values.	Assessment of compliance of measured values of gaseous emissions and noise emissions in combustion products of new or operated boiler and combustion equipment with legally or contractually guaranteed values.	IP-20RISO-QI-AB0.002 - Emissions Measurement (01/04/2021)

Explanations and abbreviations:
IP – Internal Procedure

¹⁾ Superscript at the ordinal number identifies that within the scope of accreditation, the Inspection Body is allowed to include new updated/revised normative documents from time to time. Updated list of activities provided within the flexible scope of accreditation is available at the Inspection Body (from the Inspection Body Manager).

Page of 1