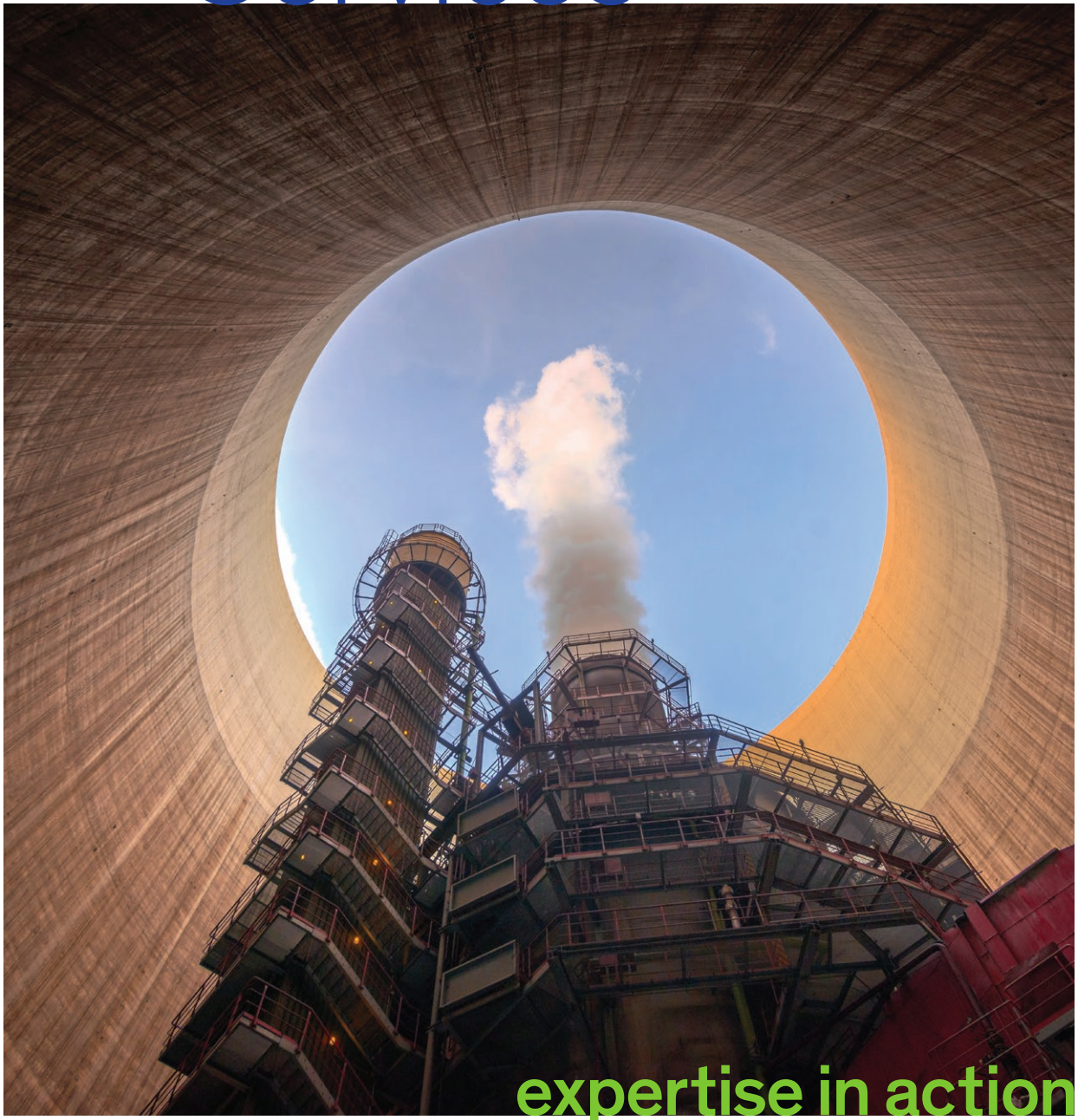


**hrl:**

# Thermal Power Generation Services



**expertise in action**

With over 60 years experience in thermal power, we are the leading technical experts in this space in Australia and Asia.



## Services

- Coal testing and combustion optimisation
- Risk based inspection
- Failure investigation
- Plant performance testing
- Performance advisory service

## Outcomes

- Availability of plant
- Increased power output
- Lower maintenance costs
- Fewer unplanned outages
- Improved efficiency, reduced greenhouse
- Extended operating life

# Meet our experts and their capabilities

## Engineering and materials capabilities

- Strategic review of plant inspection schedules
- Plant life extension and asset management
- Failure analysis and weld repair
- Plant inspection and code compliance
- Stress analysis, vibration analysis, temperature and strain surveys
- High pressure piping
- Fracture mechanics and structural integrity
- Corrosion investigation and mitigation
- Material selection and identification
- Advanced non-destructive testing (NDT) and RBI programs
- Mechanical testing and product compliance assessments
- Fitness for service and remaining life assessments
- Plant flexibility options
- Boiler fouling and run length optimisation

## Greenhouse and environment capabilities

- Mandatory greenhouse and energy reporting compliance (NGERS)
- Identifying efficiency improvement and CO<sub>2</sub> abatement opportunities
- Emissions reduction fund (ERF) assistance
- Renewables and alternative fuel utilisation energy auditing

## Plant performance services

- Independent boiler, gas & steam turbine performance testing
- Testing of major plant equipment performance (eg. condensers/fans/rotary air heaters/mills etc)
- Combustion optimisation and tuning
- Stack emissions testing and measurement of emissions

## Process engineering, design and project

- Process equipment design, specification, sourcing, tender specification and manufacturing QA

- Feasibility through to FEED and detailed design studies
- Process modelling (eg. ASPEN, Thermoflex and CFD)

- Capital and operating cost estimation
- Project implementation and project management

## Analytical capabilities

- **NATA accredited to ISO17025 – Quarantine approved – licenced to handle poisonous and toxic substances**
- Coal, ash and combustion by-product analysis
- Bore core coal programs including testing according to SECV schedule for lower rank coals
- Deposit and foreign material identification such as unknown deposits on turbines or in boilers
- Water treatment chemicals, water and waste water sampling and analysis
- Sampling services for collection of coal, ash and other combustible materials
- Resource evaluation including biomass, waste and alternative fuel characterisation

## Analytical techniques

- Coal analysis: moisture, ash yield, volatile matter, calorific value, ultimate analysis (C, H, N, S, Cl, O, F)
- Ash fusion temperatures, ash composition including major and trace elements
- Density (bulk, relative, apparent and true) to assist with coal royalty calculations
- Water analysis including pH, conductivity, TSD, TSS BOD, COD, turbidity, cations, anions, major and trace elements
- Mineral and foreign material identification (ICPOES, ICPMS, SEM-EDX, XRD, XRF, FTIR)
- Particle size analysis using laser or sieve techniques
- Ash fusion temperature analysis and thermogravimetric analysis using the TGA/DSC
- In situ gas analysis implementation

## Engineering and materials services

### Team leader

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## Our clients

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JAWA POWER



PAITON ENERGY



HRL has further capabilities providing services to a wide range of other Industries.

**For more information, please visit our website at [hrlt.com.au](http://hrlt.com.au)**

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