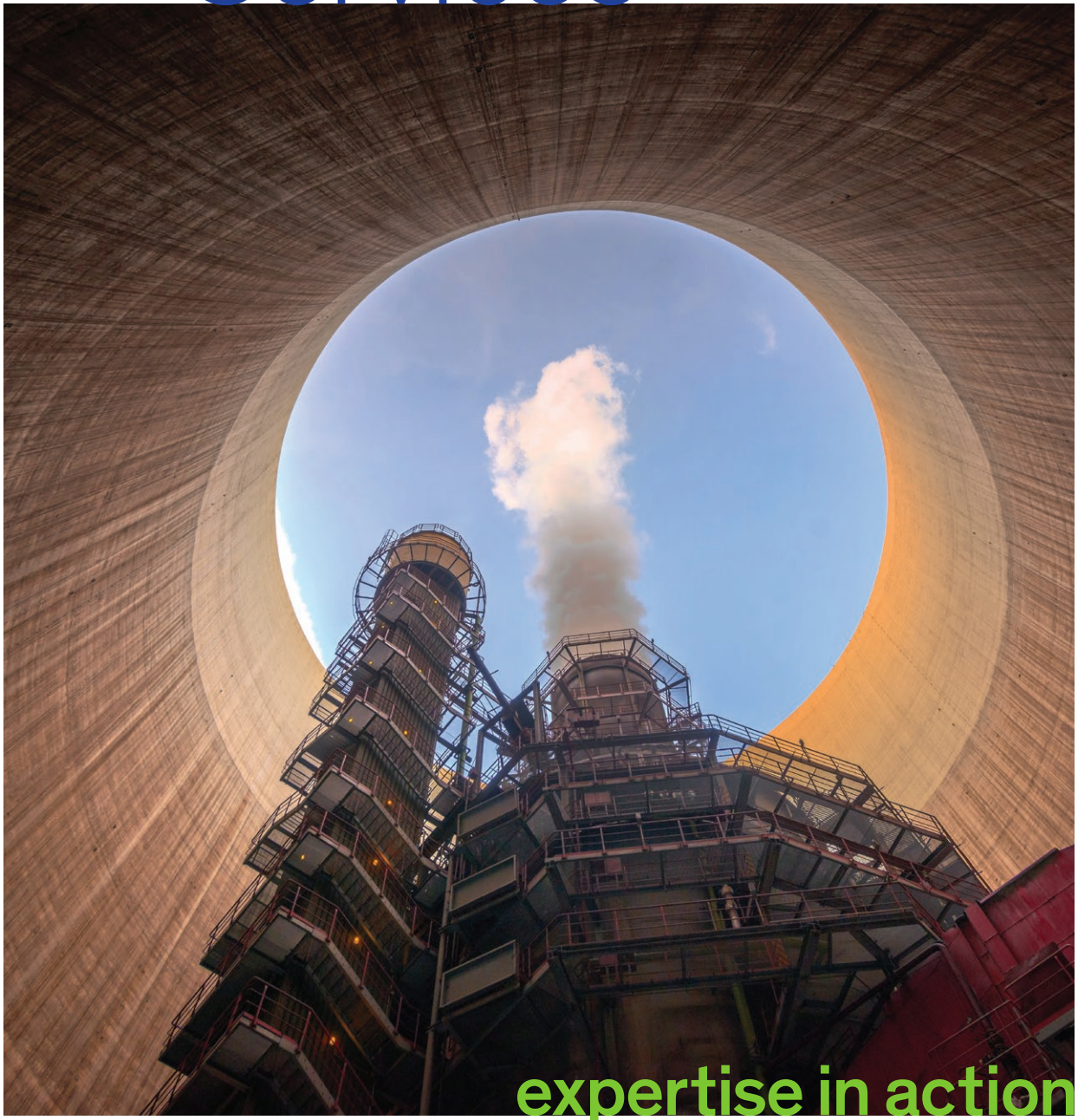


**hrl:**

# 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

Trevor Layzell | +614 0781 6896  
tlayzell@hrl.com.au

### Principals

James Taylor | +614 3886 2702  
taylor@hrl.com.au

Harry Better | +614 1932 8805  
hbetter@hrl.com.au

Dick Coldham | +614 1934 5715  
dcoldham@hrl.com.au

Russell Coade | +614 1934 5711  
rcoade@hrl.com.au

Richard Odgers | +614 3842 7224  
rodgers@hrl.com.au

John Edgley | +614 1934 5717  
jedgley@hrl.com.au

Matthew Baxter | +614 0952 8589  
mbaxter@hrl.com.au

## Process improvement, projects and environmental services

### Team leader

Alex Blatchford | +614 0831 9842  
ablatchford@hrl.com.au

### Principals

David Shoesmith | +614 1700 4683  
dshoesmith@hrl.com.au

Glenn Innes | +614 3910 0704  
ginnes@hrl.com.au

Sam Clayton | +614 0701 5763  
sclayton@hrl.com.au

Chris Patterson | +614 1791 3558  
cpatterson@hrl.com.au

Dao Nguyen | +614 2718 4907  
dnguyen@hrl.com.au

## Analytical services

### Team leader

Nick Miller | +614 0755 5330  
nmiller@hrl.com.au

### Principals

Michelle Muhl nickel | +613 9565 9757  
mmuhlnickel@hrl.com.au

Marius Harmse | +614 0146 7390  
mharmse@hrl.com.au

Les a Griffiths | +613 9565 9879  
lgriffiths@hrl.com.au

John Hamilton | +613 9565 9879  
jhamilton@hrl.com.au

## General enquiries

Ken Sidharta (Indonesian – Bahasa)  
ksidharta@hrl.com.au | +614 8810 2842

## Managing Director

Paul McPhee | +614 1812 3443  
pmcphee@hrl.com.au





## 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 [hrl.com.au](http://hrl.com.au)**

## Melbourne

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Level One Unit 4  
677 Springvale Road  
Mulgrave VIC Australia 3170

Phone +613 9565 9888  
Fax +613 9565 9879

## Morwell

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Tramway Road  
Private Bag No. 1  
Morwell VIC Australia 3840

Phone +613 5132 1500  
Fax +613 5132 1580

## Queensland

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Unit Two 33 – 37 Rosedale Street  
PO Box 139 Coopers Plains  
QLD Australia 4108

Phone +617 3423 4300  
Fax +617 3345 5937