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### Profile of ARTHUR CARLISLE BSc (Hons) CEng MIMechE

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**Chartered Mechanical Engineer** with over 30 years' experience in all areas of Energy, Power Generation, Industrial Plant, Project Development and Operations. I have many years' experience working at senior level and apply my knowledge and engineering expertise to conducting investigations, advising on matters for international arbitrations, and have fulfilled the role of Expert Witness on numerous occasions.

My work experience includes: Major Coal, Oil and Gas Fired Energy Plants; Chemical Plants; Repair and Maintenance Facilities; and Renewable Energy Facilities including Wind, Solar and Biomass.

I have worked on the following plant:

- **Large rotating machinery**, including steam and gas turbines, compressors, pumps, motors, and generators.
- **Reciprocating engines**, liquid and gas fired.
- **High-pressure steam and water systems**, including heat recovery steam generators, boilers, water and steam reticulation networks.
- **Large electrical equipment**, including transformers, motors, switchgear, electrical networks and electrical safety protection equipment and systems.
- **Renewable energy producers**, including wind turbines, solar farms, digestive and combusting biomass.
- **Mechanical equipment**, including compressors, pumps, gearboxes, heat exchangers, pressure vessels, valves, cranes, and control systems.
- **Materials handling**, including conveyors, crushers, silos, tanks, stackers and reclaimers, chutes, and ducts.

Having been **Project Manager and Owner's Engineer** for various multi-disciplinary projects, I have a proven track record in successful completion of complex construction projects, on time and within budget.

As **Plant Manager** of major energy facilities I have been responsible for all; staff and equipment, daily operations, scheduling and planning of maintenance outages, emergency repairs, environmental management, fuel supply and electrical interface. My duties included: staff development and training, health and safety, quality control and monitoring programs, procurement of supplies and parts for outages and operations, and coordination with government agencies.

My appointments have included: fault investigations, root cause analysis, damage assessments, recovery, repairs, restoration, and cost management. Appointments have encompassed vibration analysis, metal fatigue, corrosion, creep, wear and tear, misuse, assessing maintenance and operating practices, environmental factors, operational data extraction and analysis, and drafting of Expert Reports.

I have carried out many root cause investigations into major failures, accidents, reduced life cycle and premature end-of-life of equipment. Investigations have included physical examination of plant, collection of evidence, and interviewing plant staff and witnesses to the event. I have participated and led multi-disciplinary teams in conducting theoretical and laboratory analysis into failure events. On conclusion of the investigations, I issue my report with details of the incident, my findings, analysis, and opinions. Where necessary, my reports follow legal formats, and are used by legal professionals in conducting court cases.