Old coal-fired and low efficiency oil-fired power plants are becoming increasingly uneconomic to operate and plants have been mothballed or decommissioned as the first step in plans for demolition.

Arup is responding to the challenges of demolishing large scale structures and facilities by bringing a broad range of experience and skills from the power engineering and heavy civil engineering sectors, combined with planning and environmental experience to the demolition process.

Our understanding of the planning and environmental issues, together with our experience of the demolition process, gives us an opportunity to help clients successfully deliver their projects.

Our Services

Planning Advice
Environmental Impact Assessments (EIA)
Planning law
Relationships with Local Authorities / DECC

Site
Asset valuation
Mothballing or demolition advice
Security

Contracts
CDM including Principal Designer
Evaluation of existing information
Pricing
Tender preparation

Surveys
Environmental and ecology
Ground investigation
LiDAR
Noise mitigation
Pollution

Advice
Asbestos
BREEAM and CEEQUAL
Redevelopment options
Site value
Transport studies
How can we help

The complete decommissioning and demolition of a coal or oil fired power station includes numerous stages, from asset valuation and deconstruction studies, to site remediation and evaluating redevelopment options. Arup brings knowledge of this whole process, starting with a decommissioning strategy that will optimise the recovery of plant and machinery, and recovery and reuse of valuable scrap.

Environment and Waste
We will look at the possible reuse of waste materials for redevelopment options. Environmental issues can be the most costly aspects of decommissioning. We have extensive experience of developing environmental clean-up and implementation plans for a wide range of industries which have hazardous wastes including asbestos, mineral fibres and mineral oil hydrocarbons which require special treatment and disposal.

Geotechnical Assessment
We will determine suitable options for decommissioning ashponds including plans for environmental monitoring and future use. Options for reusing ash, such as for foundations, will be considered to minimise waste disposal costs.

Health, Safety and Risk
Our specialist Health and Safety advisors will ensure that all works are planned in a safe manner including CDM advice. Tracking and managing risks is crucial across the whole process and our Risk Management experience in complex projects will develop an approach based on sound understanding of the potential outcomes.

Demolition Methodology
We can define the scope of the demolition works, recommend demolition methodology (taking advantage of parametric design techniques), assess quantities of materials to be dismantled and demolished and prepare tender and contract documents.

Stakeholder Management
Overarching the decommissioning, demolition and redevelopment process, we can provide stakeholder engagement based upon our extensive experience for complex multi-stakeholder utility and infrastructure projects, including permitting and planning.

Logistics
Power stations are invariably located in prime sites alongside rivers, have good rail and road access, and connections to power transmission lines, water, sewers and other utilities. We can evaluate options for redevelopment of the site for commercial or industrial purposes to take advantage of the existing infrastructure and access to transport networks.
Experience

E.ON Ratcliffe, 3D LiDAR Data Technology

Ratcliffe Power Station has exceeded its original design life and the capital investment for plant upgrade in the current economic climate needed to be considered. With terrestrial LiDAR data collection, even the most complex of environments are captured in high detail and navigated freely to allow for visual analysis.

At Ratcliffe the data has been used for feasibility studies, engineering design, clash detection and has avoided putting people at risk through unnecessary working at height. This has led to cost savings throughout a project life cycle, avoiding unforeseen construction costs and programme delays.

Lancashire Shale Gas Exploration

The focus of our work for Cuadrilla is two new sites in Lancashire. Arup has undertaken Environmental Risk Assessments, EIAs, stakeholder and public consultations and submitted planning applications. We have provided clear, technically robust and objective information to ensure all key stakeholders make informed decisions. We also assisted DECC in clarifying its technical guidance for the induced seismic impacts of drilling and hydraulic fracturing and advised how these can be monitored, controlled and mitigated. Environmental Operating Standards are also being produced which will define how to develop and operate the projects to the required regulatory conditions.

West Ham Power Station

Arup was geotechnical design adviser to the groundworks contractor to carry out a desk study and qualitative risk assessment of the contamination history of this former power station site. We carried out a pre-acquisition appraisal of contamination and ground conditions, commissioned an environmental site investigation and prepared and implemented the remediation strategy for the site prior to construction of ten single storey portal frame warehouses, adjoining offices and storage yards. Works included assessment for reuse of existing foundations.

Blackburn Meadows Power Station: Demolition of Tinsley Towers

The station was decommissioned in the 1980’s but at that time the knowledge available precluded safe demolition for fear of damage to adjacent structures. By 2008 the increased deterioration of the towers and new skills and knowledge meant the towers could be demolished. As a part of our CDM role, Arup advised on safety issues including the poor condition of the towers, the proximity of the motorway viaduct and a multitude of other services. In August 2008 the towers were safely brought down. There were no known injuries or accidents throughout the project.

Didcot Power Station

A noise and air quality evaluation was undertaken at Didcot Power Station in respect of demolition noise and explosion effects of demolition. We needed to address both business continuity and regulatory compliance issues to protect the assets at the station and to set out the likely measures of control which might be imposed on the proposed deplanting and demolition works.

We reviewed relative risks to Didcot B equipment and provided indicative vibration risk contours. Understanding relative levels of risk was valuable for strategic planning and optioneering.

Trawsfynydd Safestore Project

The station was closed in 1993 and is in the process of being decommissioned. Due to levels of radioactivity, the site will enter a period of care and maintenance until it can be safely cleared. Arup was lead consultant, providing design services and site investigations for height reduction of existing reactor buildings and construction of new weather tight cladding. Our approach included passive safestore ventilation. Internal environmental analysis determined predicted temperatures and specialist software created a model, used to predict performance over a four year period.
Des Correia,  
Director,  
Energy Consulting

Des is a professional engineer with over 36 years’ experience of delivering major projects in the UK and Africa in the energy, infrastructure, mining and transport fields. He is now a Director of Arup’s Energy business and currently involved in the development of Unconventional Gas and HVDC Interconnectors markets in the UK.

Robin Lee,  
Director,  
Geotechnical

Robin has managed and directed geotechnical and environmental assessments, surveys and design for a broad range of projects. Recently he provided a range of advice on the investigation, decommissioning and/or construction of structures at Sellafield. He was Project Director, supporting the life extension of the Ratcliffe Power Station, has worked on due diligence for the re-use of old power station sites and also advised on the reuse of Magnox Founds.

Helen Davis,  
Associate Director,  
Environmental Consultant

Helen is an environmental and sustainability consultant with 18 years’ experience across a wide range of sectors including Energy. Her EIA experience includes leading and managing scoping studies, baseline surveys, preliminary and full EIAs. Helen has extensive experience in client facing roles on major infrastructure projects and working across multi-disciplinary teams.

Peter Hulson,  
Associate Director,  
Leader of Energy Consents

Peter has expertise in the delivery of consents (for new power project build and decommissioning) for nuclear, thermal, and renewable projects. Peter has wide ranging experience of due diligence on power projects in the UK and internationally. He is fully conversant with planning and environmental legislation applicable to power project development and decommissioning, and has advised Central, Welsh and Scottish Government on energy matters as well as many utility clients.

Peter Thompson,  
Associate,  
Civil and Structural Engineer

Peter has over 28 years’ experience in management, design and site supervision of civil and structural projects in the UK, Europe, North Africa and Asia. He has worked on the decommissioning of oil and coal fired power stations and is currently design manager and Principal Designer on a decommissioning project at Sellafield.

David Ross,  
Associate,  
Thermal O&M Expert

David is a power plant specialist with over 35 years’ experience. He has experience of due-diligence, managing project development, construction and re-commissioning / de-mothballing plant. He is also experienced in project management of coal-fired plant retrofit, major repair and maintenance projects and significant plant operations and maintenance (O&M) management of both CCGT and coal-fired plant.
Contact Us

We are an independent firm of designers, planners, engineers, consultants and technical specialists offering a broad range of professional services. Through our work, we make a positive difference in the world.

92
Offices around the world including:

London
Düsseldorf
Copenhagen
Madrid
Milan

Over
13,000
Staff working in 40 countries

Over
69 years
delivering successful engineering design projects around the world

MCA Awards 2015
Commercial Excellence Award – Highly Commended

Creating a best practice cost estimating hub | National Grid

2014 IJ Awards
Global Infrastructure Technical Advisor of the year

2014 Partnership Awards
Best Technical Advisor

2013 Partnership Awards
Best Technical Advisor

2012 IJ Awards
Global Technical Advisor + Global Energy Advisor of the year

Arup online community

Join the discussion, or just catch up on the latest sector news with Arup staff at:

thoughts.arup.com
@ArupGroup
www.linkedin.com/company/arup

Contact us:

Peter Thompson
The Arup Campus
Blythe Gate
Blythe Valley Park
Solihull
West Midlands, B90 8AE

e: energy@arup.com
t: @ArupGroup