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The Decommissioning Challenge

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Excellence in the safe
reliable delivery of
nuclear engineering



Safety is a Given
Multiple high hazard activities



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Bradwell Power Station
Essex



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Brief History

- Construction Started 1957
- Started Operation 1962
- Ended Operation 2002
- Finally Defueled 2005



Ownership

- 1962 – 1989 Central Electricity Generating Board (CSGB)
- 1989 – 1994 Nuclear Electric PLC
- 1994 – 1998 Magnox Electric PLC
- 1998 – 2004 British Nuclear Fuels PLC
- 2004 – Date Nuclear Decommissioning Authority

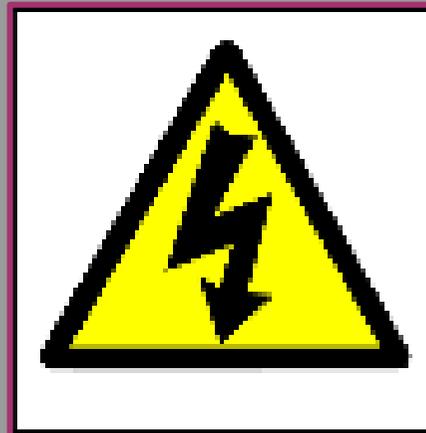
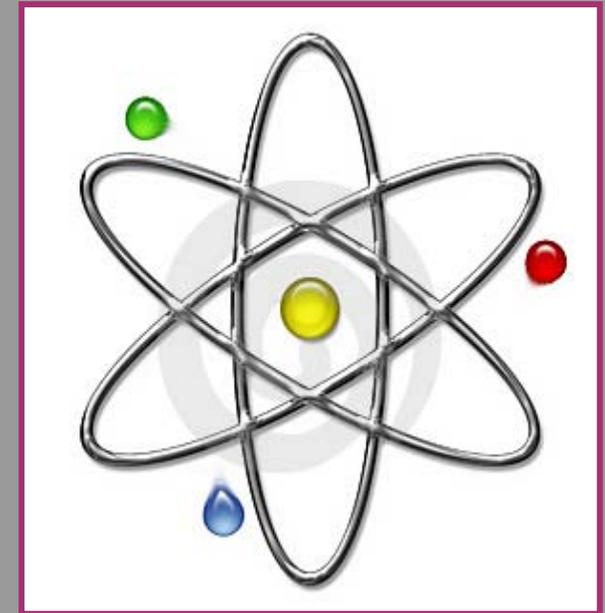
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Additional Information



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- Number of Reactors - 2
- Fuel Material - Natural Uranium
- Reactor Coolant - Carbon Dioxide
- Electrical Output - 242 MW Sent Out



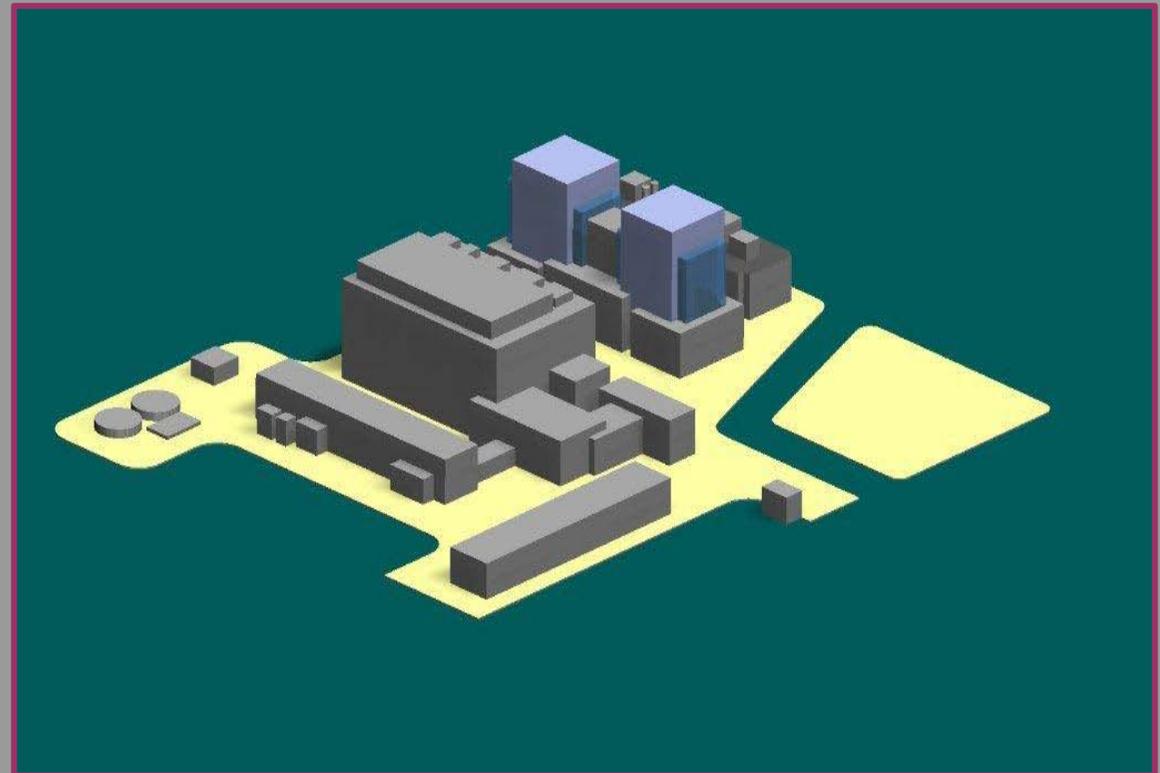
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Current Decommissioning Strategy



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- In – line with all UK Magnox Nuclear Power Stations
- Total site clearance around 100 years after cessation of generation
 - Minimises risk to Workers, Public & Environmental
 - Minimises Waste Volumes
 - Technically Straight Forward
 - Makes Financial Sense



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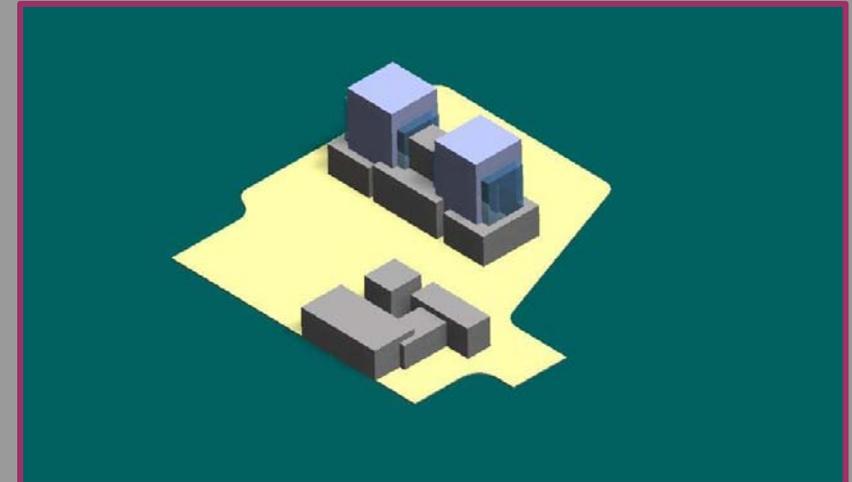
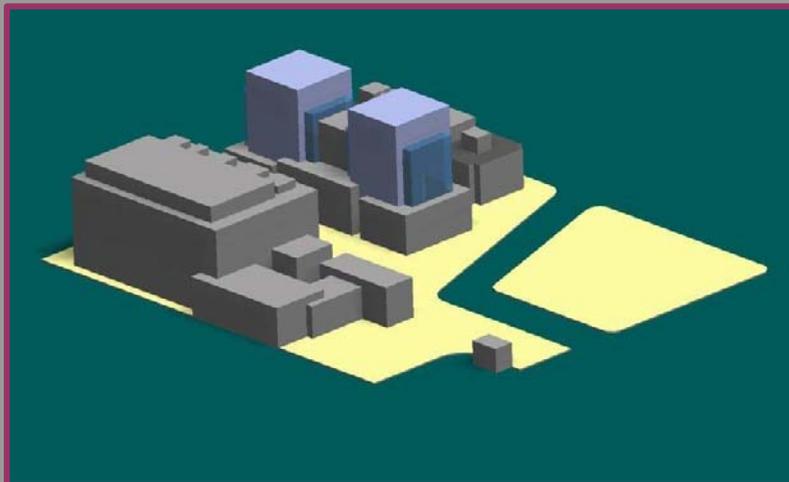
2010 – 2017 Preparation
for Care & Maintenance



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- Remove & Demolish non – active buildings
- Low – level waste transported to Repository
- Decommission Turbine Hall
- Erect temporary building to aide decommissioning and allow temporary storage of waste
- Clad remaining buildings to provide safe, secure and weather-proof
- Decommission pond building

PLANNING TO ACHIEVE THIS BY 2014



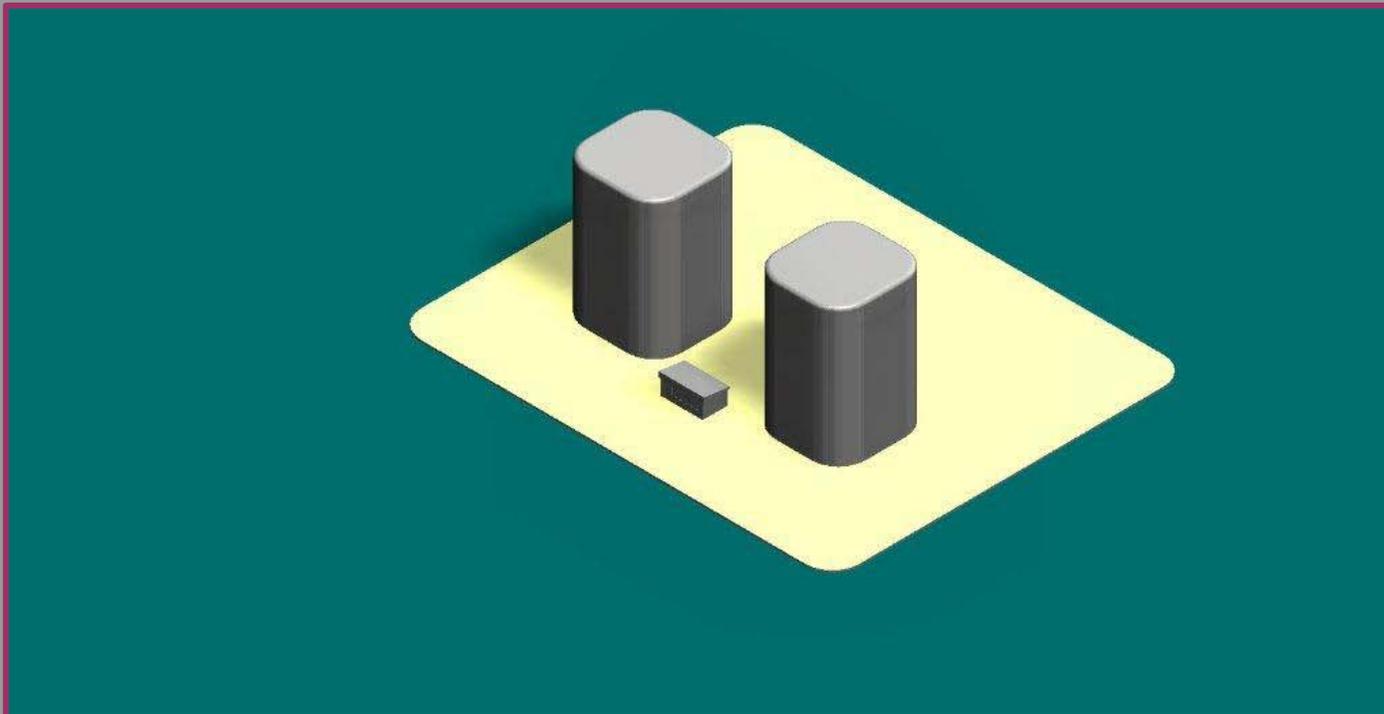
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2017 – 2095 Care and Maintenance



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- Site monitored for reactor conditions and security, as radioactivity naturally decays
- Radiological and Environmental monitoring
- Maintenance of facilities where necessary



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2095 – 2104 Final Site
Clearance



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- Activity low enough to be accessed and dismantled using routine equipment
- Waste treated and packaged for final disposal
- Site is relicenced or delicensed and returned clean & safe for a new purpose





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- Smarter, cheaper accelerated decommissioning with safety and environmental performance paramount
- Degraded Legacy Plants with high hazard nuclear inventories, some of which are UK highest priority
- Diverse and highly constrained decommissioning environments
- Requirement to upgrade and improve aged facilities prior to retrieval and decommissioning activities
- Stewardship of some of the UK's most hazardous nuclear waste demands world class operational performance – Focus of major regulatory attention
- Meticulous level of planning and interface management with a multitude of stakeholders
- For many projects dealing with legacy plants the biggest challenge is “THE UNKNOWN”

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