

**HORIZON**

NUCLEAR POWER

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A UK company of E.ON and RWE

NOT PROTECTIVELY MARKED

# Horizon Nuclear Power

A Presentation to the Minerals Engineering Society

15 October 2010

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NOT PROTECTIVELY MARKED

## Horizon Nuclear Power



- Formed in January 2009 – a 50:50 joint venture between E.ON UK and RWE npower. Office opened November 2009.
- Land acquired at Oldbury-on-Severn and Wylfa (privately, and from NDA). Staggered development and construction programme with Wylfa commencing first
- Mission to develop around 6,000MW of new nuclear capacity by 2025. At least £15bn investment.
- Initial staff resources drawn from UK nuclear development projects of RWE and E.ON
- Plan for significant growth during 2010 - 2011
- Safety First culture

# HORIZON

## NUCLEAR POWER

A UK company of E.ON and RWE



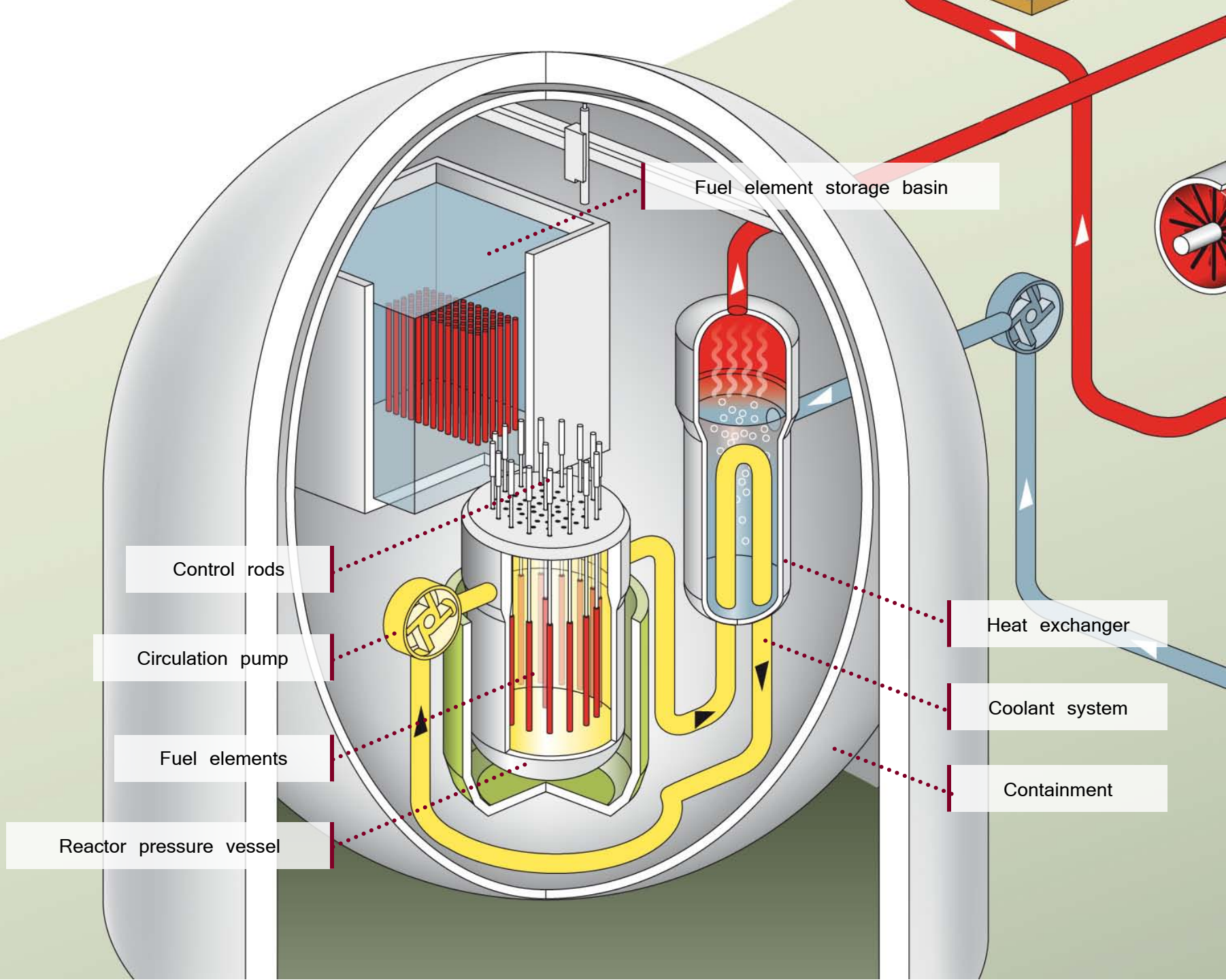
22 units in operation

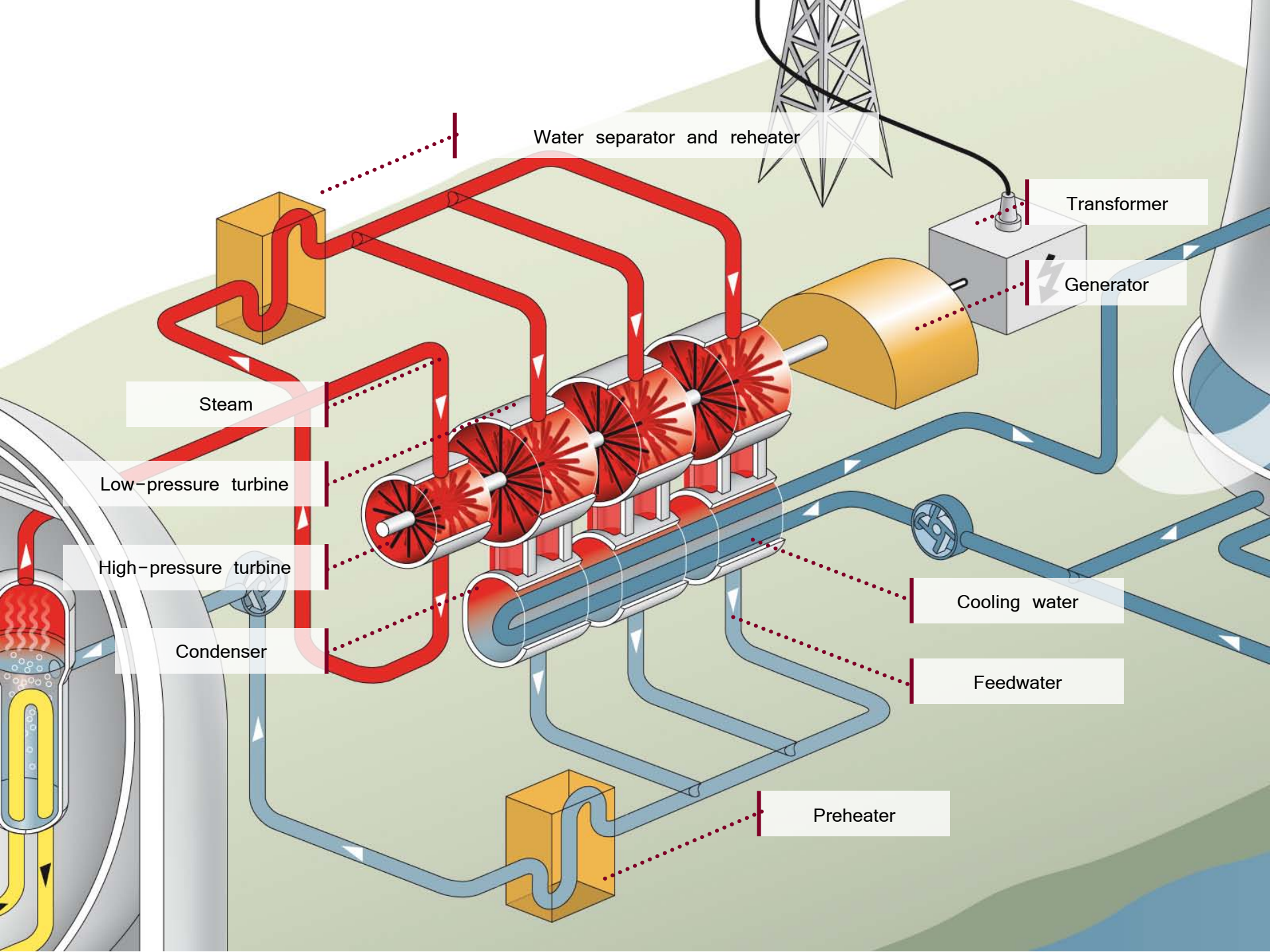
6 units undergoing decommissioning and dismantling



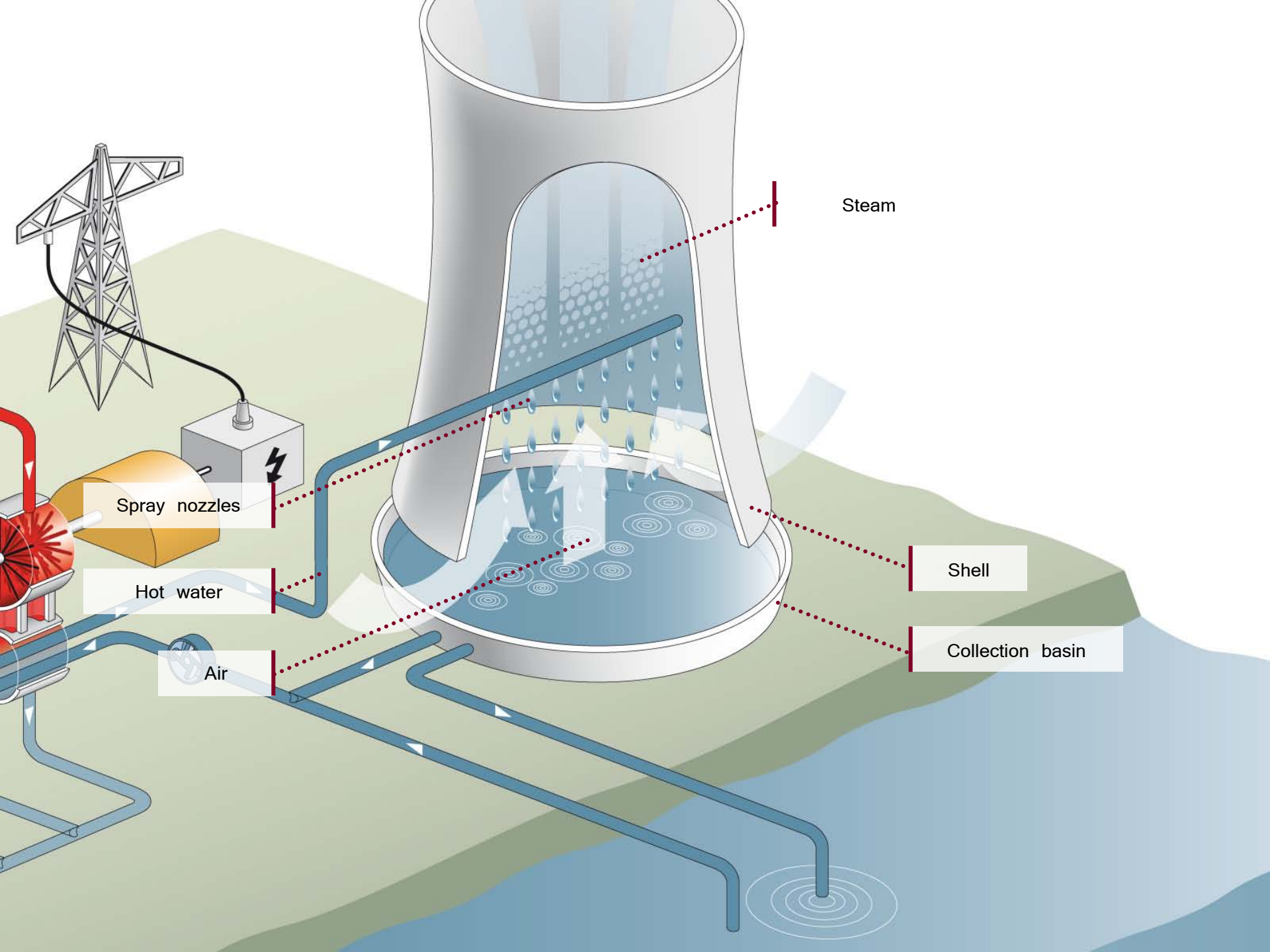
# Leading in safety and performance

1980	Unterweser	9,81 bn kWh (world record)	1995	Grohnde	11,36 bn kWh
1981	Unterweser	9,54 bn kWh	1996	Philippsburg 2	11,47 bn kWh
1982	Biblis B	9,74 bn kWh	1997	Grohnde	12,53 bn kWh (world record)
1983	Grafenrheinfeld	9,96 bn kWh (world record)	1998	Grohnde	11,76 bn kWh
1984	Grafenrheinfeld	10,15 bn kWh (world record)	1999	Isar 2	12,27 bn kWh
1985	Grohnde	11,48 bn kWh (world record)	2000	Isar 2	11,94 bn kWh
1986	Grohnde	10,79 bn kWh	2001	Isar 2	12,40 bn kWh
1987	Grohnde	10,21 bn kWh	2002	Isar 2	12,17 bn kWh
1988	Palo Verde	10,86 bn kWh	2003	Isar 2	12,32 bn kWh
1989	Grohnde	10,86 bn kWh	2004	Isar 2	12,24 bn kWh
1990	Grohnde	10,69 bn kWh	2005	Brokdorf	11,99 bn kWh
1991	Emsland	10,83 bn kWh	2006	Isar 2	12,44 bn kWh
1992	Brokdorf	11,33 bn kWh	2007	South Texas 1	12,36 bn kWh
1993	Unterweser	11,40 bn kWh	2008	Chooz B1	12,84 bn kWh (world record)
1994	Isar 2	11,13 bn kWh			









Steam

Spray nozzles

Hot water

Air

Shell

Collection basin



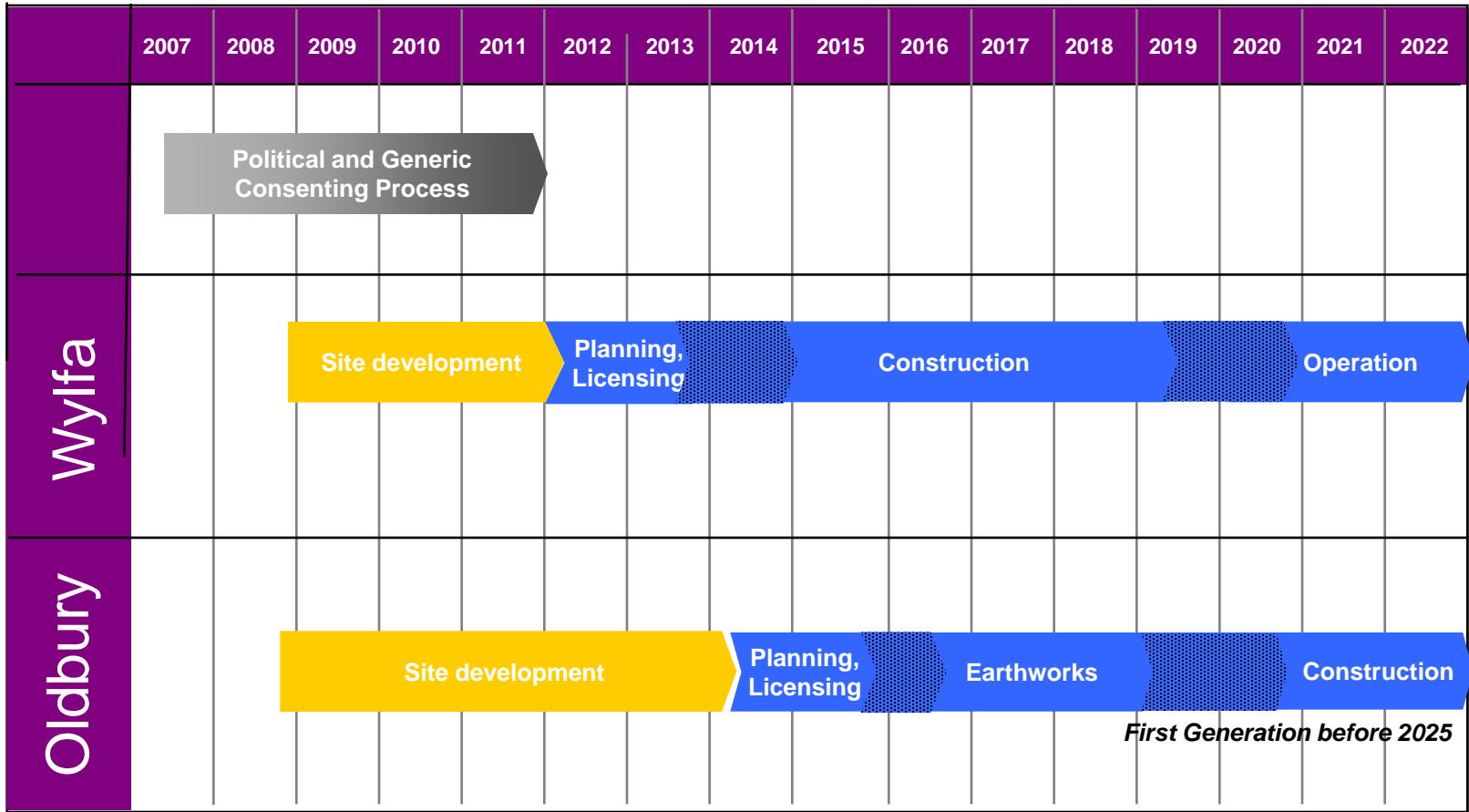
- Wylfa - Anglesey, North Wales
- Lead site
- Adjoins existing power station (closes 2010)
- includes grid connection offer acquired by EDF, plus GCA acquired by RWE npower
- Includes additional EDF owned land and RWE-owned land
- Direct cooling feasible, potential for >3 GW

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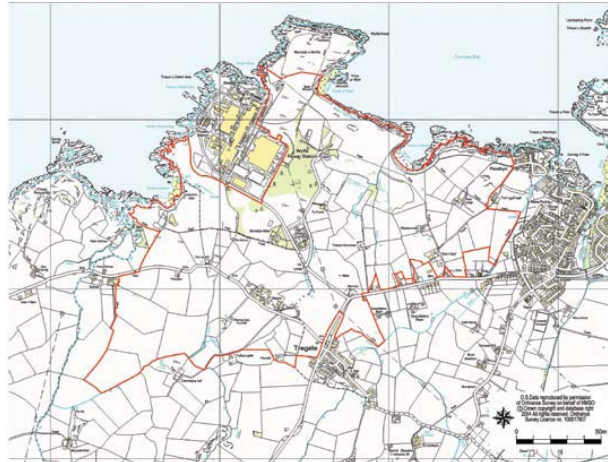
- Oldbury-on-Severn Gloucestershire
- Lagging site
  - NDA land north of existing station site
  - NDA land in the Severn estuary, including tidal reservoir important for cooling (NB cooling towers also needed)
  - Grid connection agreement
  - Land purchased by EON, potential for c3GW



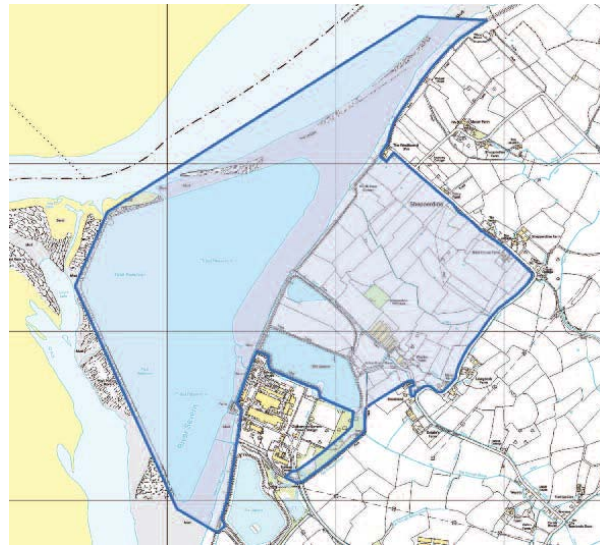
### A phased approach



- Wylfa nomination site



- Oldbury nomination site



## Site progress

- EIA preparation/consent programme
- Site characterisation/studies programme
- Engagement with stakeholders
- Continual and ongoing engagement with local residents
- Working with statutory bodies

# Technology Selection



- Formal procurement process underway. Technical, economic and logistical evaluation.
- Westinghouse's 1200 MW AP1000 PWR and Areva's 1700 MW EPR PWR
- Process will conclude in the first quarter of the new year.

## Supply chain engagement

- Early Days
  - Building the organisation
  - Developing the projects at site
- Engaging at a national and regional level
  - Supplier drop-in days at Wylfa and Trawsfynydd in last year
  - Registrations of interest via [www.horizonnuclearpower.com](http://www.horizonnuclearpower.com)
- Graded approach:
  - Contracting party likely to be WEC or Areva
  - Direct relationship with Horizon where appropriate
- Quality is key, for conventional and nuclear supply chain

## Recruitment activity

### Required:

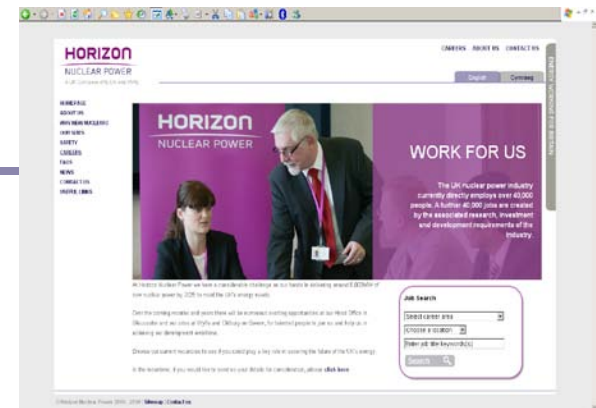
- Nuclear specialists – safety, licensing, radiological, design
- Project and site development engineers
- Legal & company secretariat support
- PAs / Admin staff
- Finance / Risk Management
- Learning & development
- Procurement and commercial staff
- Communications team

### 2010-2013:

- ~100 more general project management and project development staff
- 30-40 nuclear specialists for licensing and engineering of designs

### 2013 onwards:

- construction workforce on sites and mobilise operations staff
- HQ corporate functions will have long term presence at Valiant Court





## Industry Skills - Challenge and Opportunity

- UK must retain and invest to remain a sustainable world class nuclear sector in the UK
  - Collective industry effort needed for nuclear workforce planning against the backdrop of challenging demographic forecasts, including skills transfer
  - UK New Build will create 1000's of new job opportunities across the entire nuclear value chain (projects, licensing, safety, construction and operations)
  - New blood (and possible returners) essential
  - 2015 is a watershed year for nuclear skills
  - Regional locations need local skills strategies and relationships with local communities and partner organisations
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# Industry Skills Challenge and Opportunity

## Today

- 44,000 nuclear sector employees in the UK
- 24,000 employed directly by the nuclear operators
  - Decommissioning: 12,000
  - Generation: 7,500
  - Fuel processing: 4,500

## Tomorrow

- Assuming 12GWe by 2025: 1000 new industry recruits pa, mostly graduates and apprentices
- 4,600 new jobs in generation sector alone (with further impact on supply chain)
- Age profile, retirement of plant, need for operational skills from 2017 onwards points to 2015 as key date for recruitment and training to be underway

# The Challenge and the Opportunity

- Technically and commercially challenging projects to develop
- UK remains an important NNB market
- Early need for skills and education initiatives
- Need industrial confidence to invest in UK supply chain
- Still much work to be done on facilitative actions
- But the prize is huge. Each new station (3000 MW)
  - will cost around £8bn
  - will require up to 5000 construction staff
  - will create around 800 new jobs when operational
  - plus hundreds of additional jobs and supply chain benefits in the communities around each site
  - providing continuity of employment for a skilled nuclear workforce for around 60 years and opportunities for future generations to develop skills, through apprenticeships and access to skilled employment