

The Nuclear Workforce in Wales

24 June 2009

Prepared by Cogent SSC



Introduction

This document gives an outline of the current and future challenges facing the nuclear workforce in Wales. It has been produced by Cogent SSC to inform employers, the National Skills Academy for Nuclear and other stakeholders for the regional skills challenges.

Analysis in this report was drawn from the primary data gathered for the “Civil Nuclear Workforce 2009” report. **The findings presented in this report are preliminary and subject to revision until the full Nuclear LMI report is published.**

To assess the nuclear workforce in Wales, we have used available data on current and projected levels of employment by nuclear sites in Wales and amalgamated the data to form representation of nuclear workforce in Wales.

The nuclear workforce in Wales is presented as the employees at the Trawsfynydd and Wylfa sites. The Wylfa Site is an operational power station with two Magnox design nuclear reactors. It is scheduled to cease generating electricity in 2010. Trawsfynydd has been defuelled and been under decommissioning since 1995. Both sites are located in North Wales and collectively employ over 1,400 people in the localities. Magnox North is the management and operations contractor of the both sites in Wales under contract to the Nuclear Decommissioning Authority.

1. Overview of the Current Nuclear Workforce in the North West

The nuclear industry in Wales plays an important role in the UK economy, supplying around 40% of Wales's electricity needs and has the capability to produce 980MWe per annum.

Chart 1.1 Nuclear Energy Production Capabilities in the UK 2009

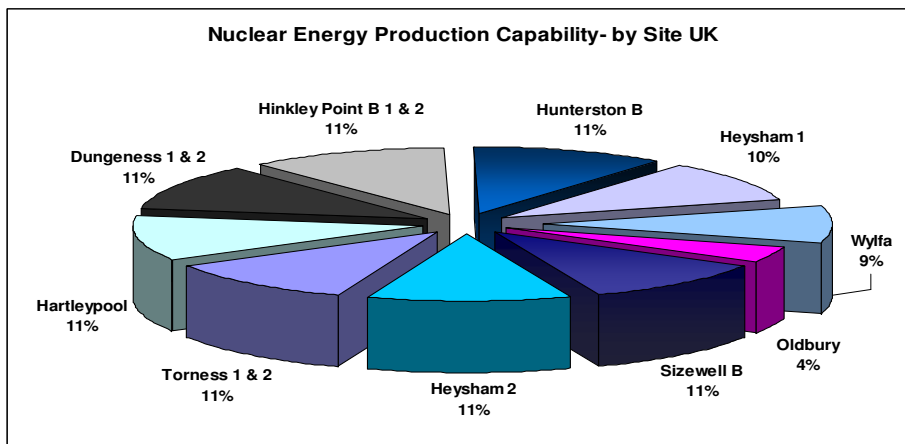
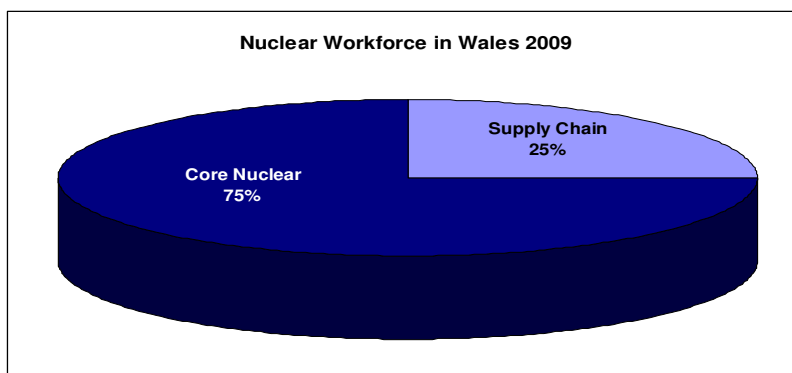


Chart 1.2 Nuclear Workforce in Wales



The combined civil nuclear workforce in Wales is in the order of 1,400. Those directly employed by the operators are around 1,100.



Chart 1.3 Workforce distribution in the Nuclear Sites in Wales (supply chain¹)

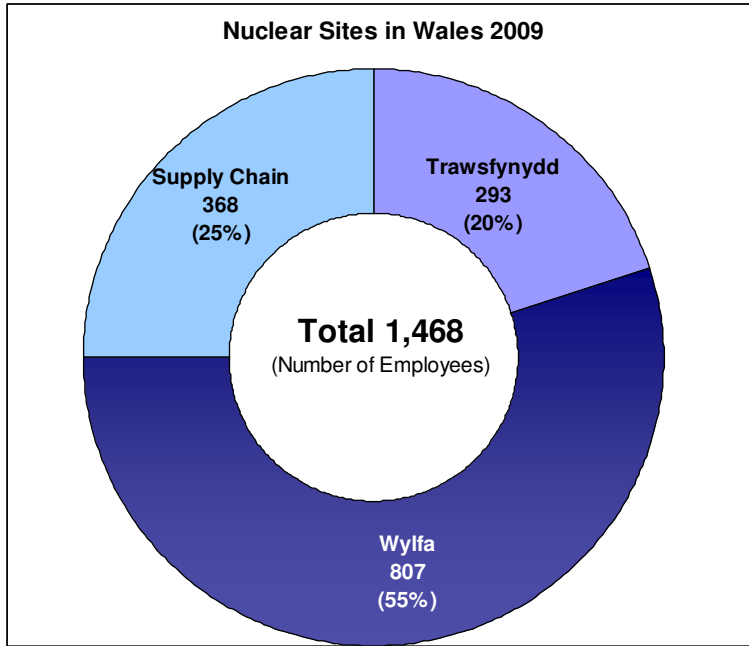
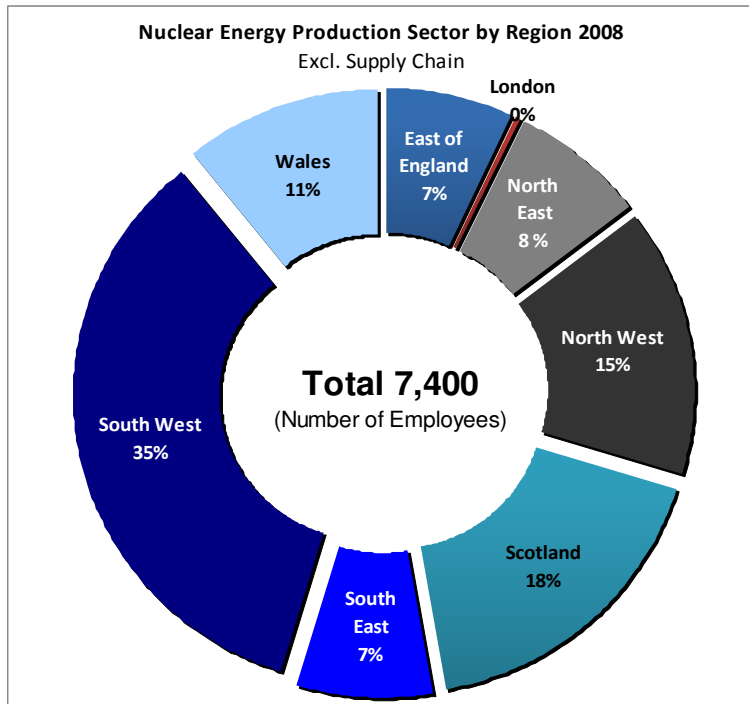


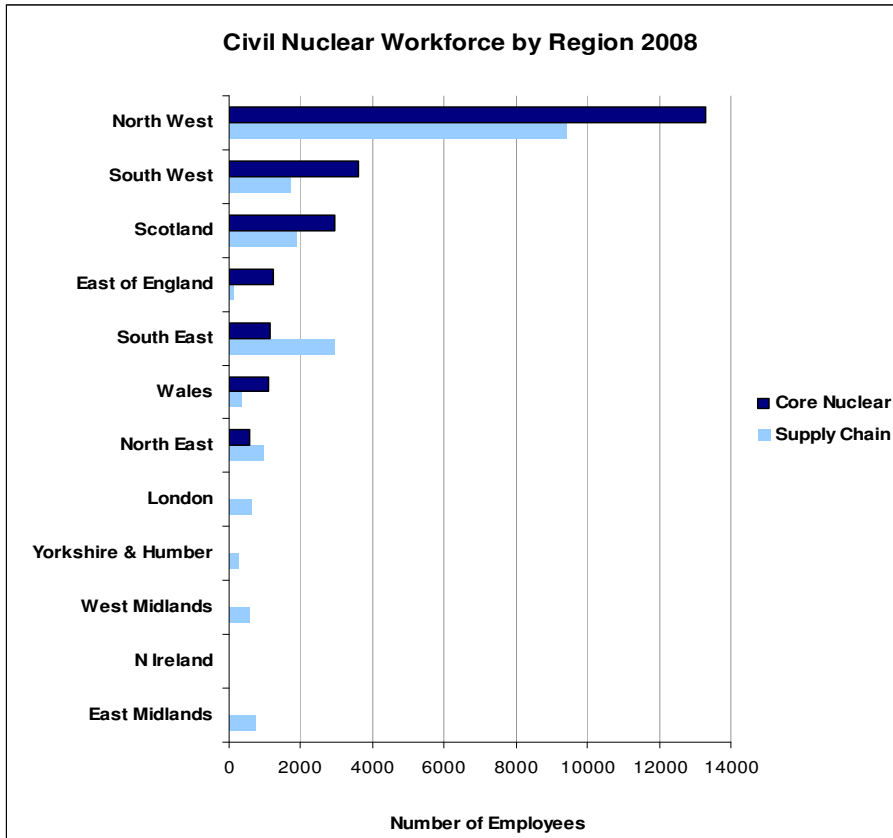
Chart 1.4 Nuclear Energy Production Sector



¹ The NIA supply chain data



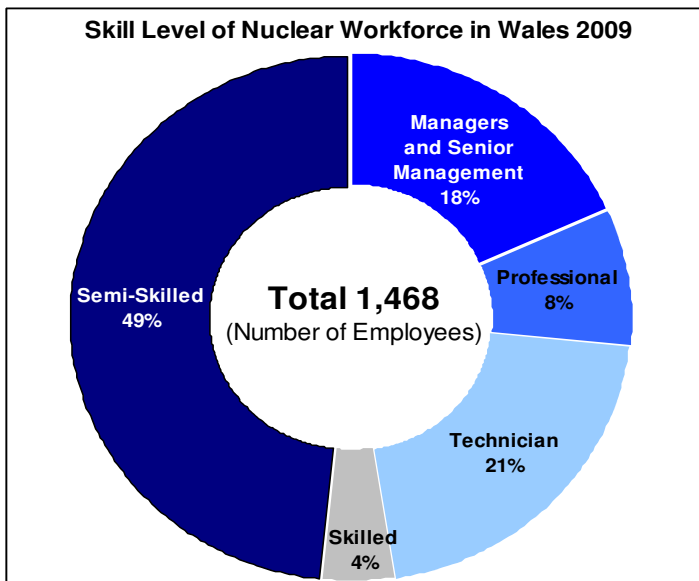
Chart 1.5 Civil Nuclear Workforce - Supply Chain¹ and Core Nuclear



2. Skill Level

The proportion of the workforce employed at levels 3 (technical) and level 4/5 (professional/senior managerial) is a combined 47%. The nuclear workforce in Wales has the highest (53%) proportion of level 2/3 (skilled and semi skilled) employees in comparison to the UK workforce (30%) and the civil nuclear workforce (27%).

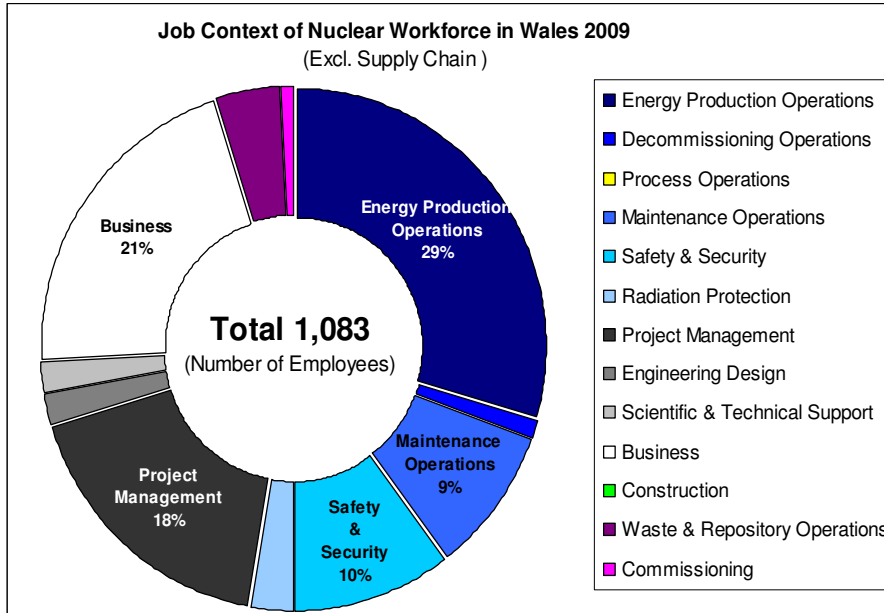
Chart 2.1 Skill Level of Nuclear Workforce in Wales



3. Job Contexts

The Job Contexts of the nuclear workforce in Wales shows that, around 80% of the workforce is value adding. Electricity generation operations at Wylfa currently employs the of the order of 300 people, the largest category.

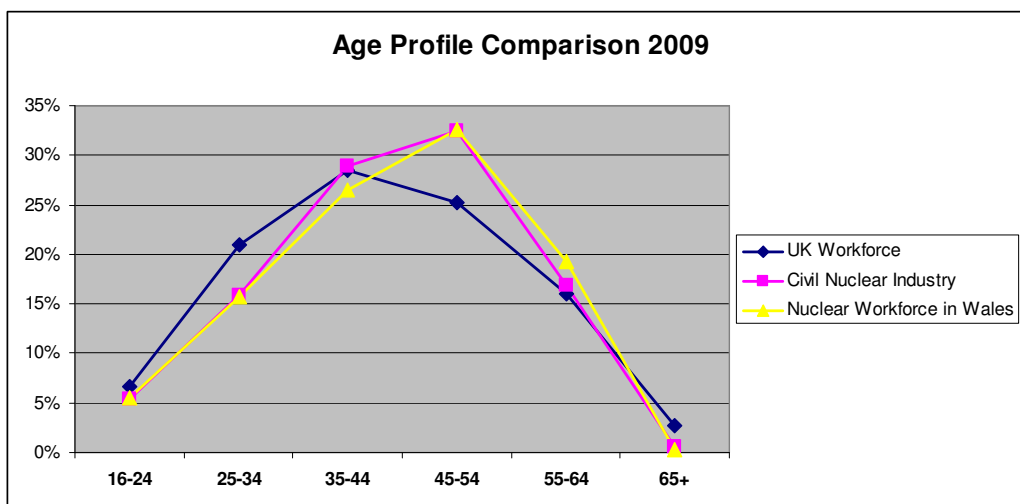
Chart 3 Job Context Population



4. Age Profile

Half of the nuclear workforce in Wales (52%) is 45 or older. This compares with 42% in the UK as a whole. Skilled and semi skilled workforce accounts for 53% of the all nuclear workforce in Wales.

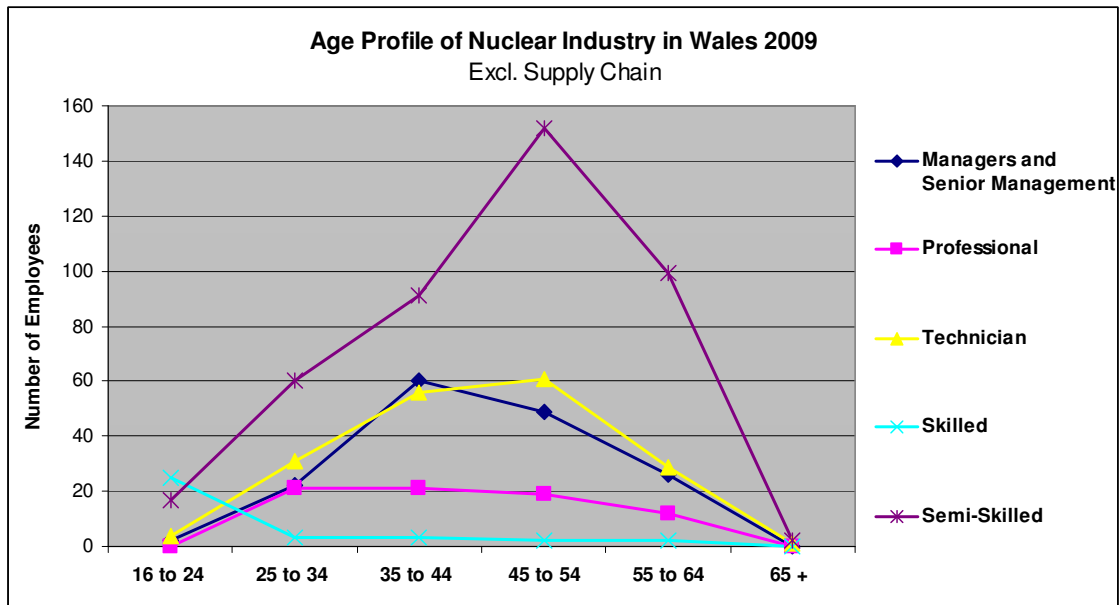
Chart 4.1 Age Profile Comparison (UK workforce², Civil nuclear workforce, Nuclear workforce in Cumbria)



² Age profile of the UK workforce - Labour Force Survey (LFS) 2008. In order to demonstrate data comparability, age distribution of the UK workforce was analysed by the same 5 skill levels used in civil nuclear industry data analysis.



Chart 4.2 Age Profile by Skill Level - Nuclear Workforce in Wales



5. Retirement

Half of the technical (level 3) and 60% of the semi skilled (level 2/3) workforce will be retiring by 2025. A significant proportion (52%) of the overall nuclear workforce in Wales is retiring over the period 2009-2025

Chart 5.1 Accumulated retirement Profile- Nuclear Workforce in Wales

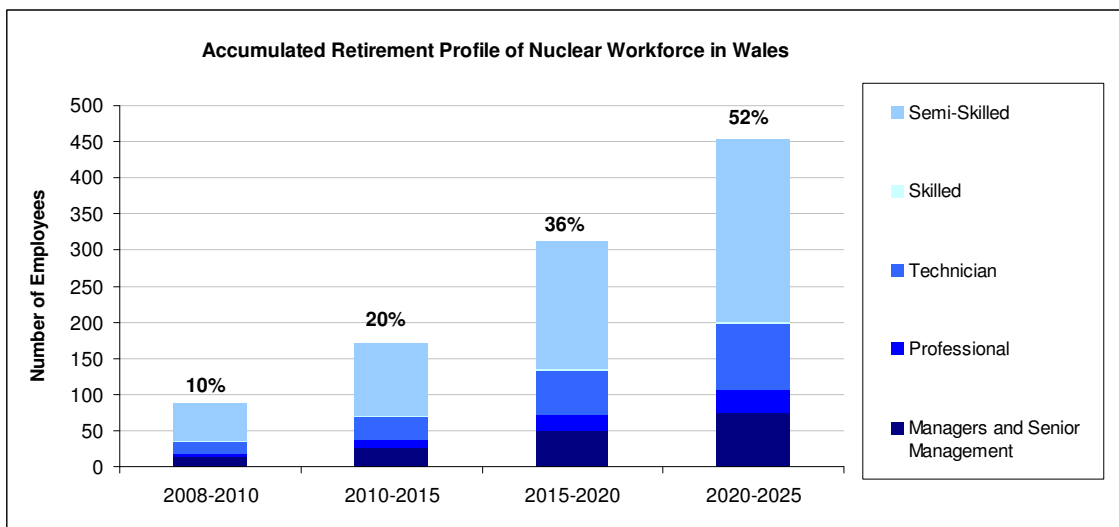
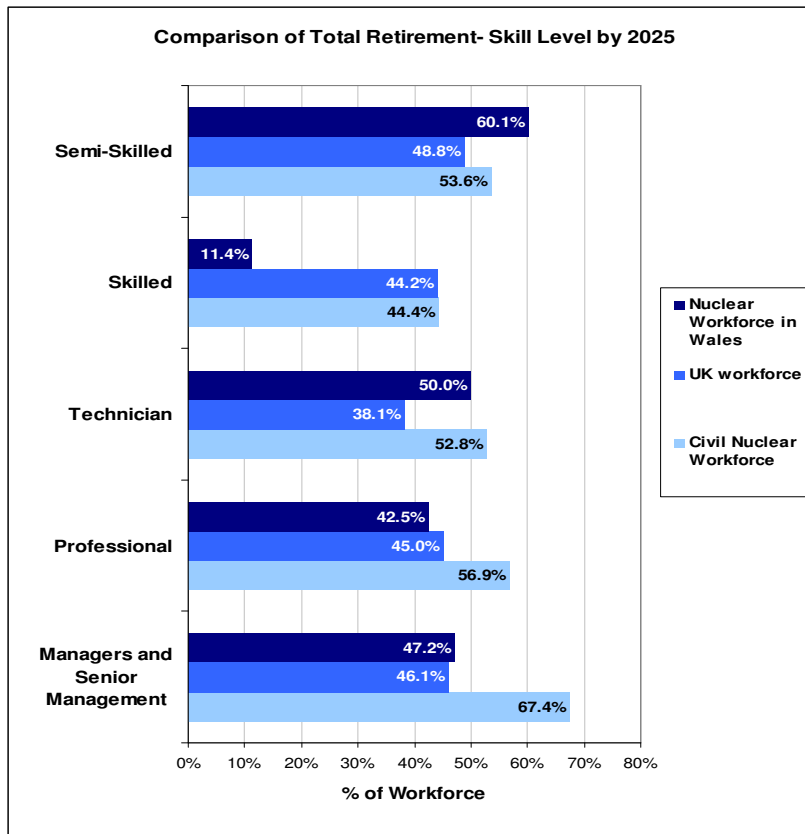


Chart 5.2 Age Profile Comparison - Nuclear Workforce in Wales



6. Demand

The main shift in activity from electricity generation to decommissioning has begun and will continue.

A new-build site has been nominated for North Wales which may give rise to new long-term employment and local supply chain markets (see next section). Without a new build programme, a significant decline in overall operations is unavoidable.

The demand forecast for Wales is based on the detailed analysis of the Wylfa and Trawsfynydd's life time plan. Overall, the demand forecast reflects planned industry operations such as;

Wylfa³

- Cease of electricity generation 2010
- Defuelling 2010-2012
- Care and Maintenance Preparations 2012 - 2015
- Care and Maintenance 2015- 2025

Trawsfynydd⁴

- Care and Maintenance Preparations 2015
- Care and Maintenance 2015- 2025 etc.

Although 52% of the overall nuclear workforce in Wales is retiring over the period 2009-2025, projections point to likely surplus of 200-300 labour due to slowing down of industry operations. These planned stages bring a net decline of 92% in employment by 2025.

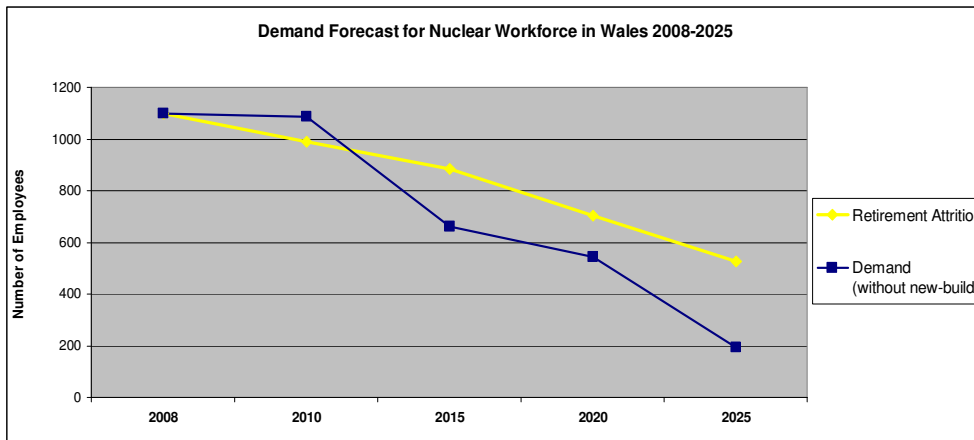
It is expected that there will be a shift in the occupational structure of the workforce from energy production operation to decommissioning operations.

³ Wylfa Lifetime Plan 2007/2008

⁴ Trawsfynydd Lifetime Plan 2007



Chart 6 Demand Forecast



7. New Build Scenario

In 2009, 11 sites were nominated to government for new-build assessment. One of the nominated location is Wylfa in Wales, Anglesey. Future new-build capacity would elevate workforce demand.

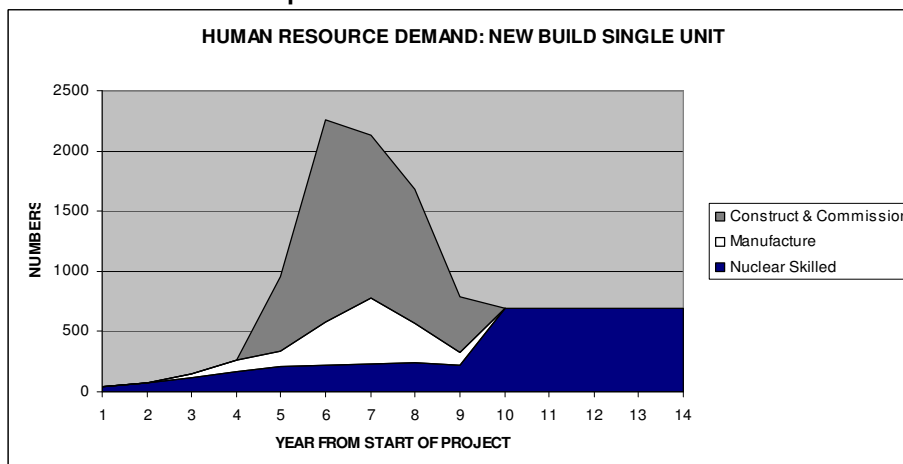
Construction and operation of nuclear new-build is likely to draw from the local labour pool. Early estimates are shown below for a single PWR unit; many of the construction jobs will be required for the period of construction only. The operator and operator contractor jobs will be long-term for the life of the plant.

An estimate of the workforce required to operate the new build unit is of the order of 1,000. This is made up of 500 per PWR unit and a further 500 within the contractor sector. Nuclear power stations typically require 350-400 on site and a further 50-150 in other functions, not necessarily on site. A site may contain two or three PWR units and may therefore require up to 2,000 employed staff in total across operators and supply chain.

New-build construction will draw significant employment into the region, especially for the construction period. The intensity and extent of this is unlikely to be clear until 2010. Chart 7.1 illustrates the latest estimation of the demand for each PWR unit. Construction is estimated at 1,500 person-years across civil, mechanical and electrical trades and professions. Depending on the phasing of new build, and the number of PWR units installed at each site, the total number of construction jobs will be higher and the period of new-build activity extended to a decade or more.

The new-build manufacturing workforce demand is likely to be of the order of 500 person-years per PWR unit but in this area global capability (e.g. large forgings and reactor pressure vessels) will be a determinant. Most of this manufacture is unlikely to be in North Wales but many UK component manufacturers in the supply chain are likely to be sourced nationally through the client and vendor companies.

Chart 7.1 Workforce Requirements for 1 PWR



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