



A Portfolio of Knowledge Management Initiatives to Derive Business Benefit

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Development of our business

- Originally formed from an amalgamation of the companies that designed and built all the UK commercial nuclear power stations
- Our wide portfolio of skills and technologies has enabled us to diversify into operational support, waste management & decommissioning, defence and non-nuclear consultancy services
- Growth achieved by acquisition and recruitment, increasing turnover at 15% per annum over the last five years
- Increasing export portfolio and investment in international markets
- AMEC NNC is the UK's premier technical nuclear engineering service provider to domestic and international clients

Market overview

- We deliver solutions to the Nuclear and Defence market place:
 - Through our Suitably Qualified and Experienced Personnel (SQEP) resource base:
 - recognised as an international authority in nuclear safety
 - strong, proven management team
 - knowledge and experience of virtually all existing and potential new reactor types worldwide

Highlights

- AMEC NNC is the largest provider of technical engineering and safety consultancy to British Energy
- We have won more nuclear work in Eastern Europe than any other UK company
- AMEC NNC operate the UK's largest radiochemistry laboratory
- We are the largest provider of engineering and safety consultancy to British Nuclear Group
- AMEC NNC provide safety and engineering support to major defence facilities and naval platforms for over 15 years

Core technical skills

■ Safety

- Safety case production
- HAZOPs, HAZANs
- Probabilistic Analysis
- Deterministic Analysis
- Reliability Analysis
- Human Factors
- Safety management systems

■ Physics and Performance

- Reactor physics, Criticality
- Radiological/shielding
- Fluid flow/heat transfer
- Computational fluid dynamics
- Health Physics (RPA/RPS)

■ Systems Engineering

- Systems design
- Safety requirements & assessment
- Simulation

■ Plant Engineering

- Mechanical
- Civil
- HVAC
- Process
- Chemical

■ Licensing

- Development of guidelines
- Interface with regulators
- Compliance demonstration and audit

■ Electrical and C&I

- Power systems
- Computer control systems
- Conventional C&I

■ Structural Assessment

- Seismic engineering
- Stress/fracture analysis
- Structural Analysis

■ Technology

- Chemistry & Corrosion
- Materials testing
- Rigs
- Leak sealing
- Radiological Assessment
- Radiochemical Laboratories
- Waste Management

■ Environmental and Radiological

- Environmental Impact Assessment
- Environmental Management Systems
- BPEO / BPA
- Stakeholder Engagements

■ Through Life Support

- Integrated Logistic Support
- Safety and Risk Assessment
- RCM / condition monitoring

■ Information Management

- Information/data Management
- Publications Services

■ Advanced Oil and Gas

- Well engineering
- Safety engineering
- Advanced materials and corrosion

■ Project Management and QA

- Risk Management
- Planning and programme management
- Quality systems, ISO 9000

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Geographic positioning

■ AMEC NNC in the UK

■ AMEC NNC Overseas



Warrington	Dounreay	Hinkley	Canada	USA	South Africa	Czech Republic	E Europe
Westlakes	Faslane	Dungeness	Toronto	Houston	Cape Town	Brno	Lithuania
Aberdeen	Torness		Brampton	Paris	Pretoria		Russia
Knutsford	Hunterston		Bruce Site	Japan			Ukraine
Gloucester	Heysham		Chalk River	Tokyo			
Thatcham	Harwell		Broussard				
Milton Keynes	Aldermaston						
Winfrith							

Key
 AMEC NNC separate offices
 AMEC NNC at customer sites
 NNC Canada Limited (Sister company)
 Overseas Offices and Representatives

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What we offer our clients

- More than 50 years experience of the nuclear industry both within the UK and abroad
- Intimate understanding of regulatory requirements
- Pragmatic and innovative approach to safety and engineering
- Flexible commercial approaches
- Track record of providing solutions to our clients in the nuclear, defence and non-nuclear industries
- Committed to long term relationships with our customer base

'We add value through our knowledge'

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Our people

- The most important assets that AMEC NNC has are the know-how, experience and knowledge of its staff
- Predominantly Engineers and Scientists
- Many have PhD's , second degrees or masters
- High level of Chartered Engineers
- Strong Graduate Training programme
- Low proportion of agency staff (<15%)
- Small blue collar workforce
- Strong safety culture

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Problem Statement

- The ability to develop and maintain the specialised skills and related expertise required by the UK industry for the operation of existing units and beyond is a major concern to AMEC NNC and it's partners in the nuclear community

Approach

- Carried out detailed benchmarking studies with other organisations/other sectors to ascertain best practice
- Integrated Approach to Training & Development
- Use of the Qualifications and Experience Register
- Retention of Corporate Knowledge through documentation
- Process Modelling to Capture Knowledge
- Establishment of Communities of Practice

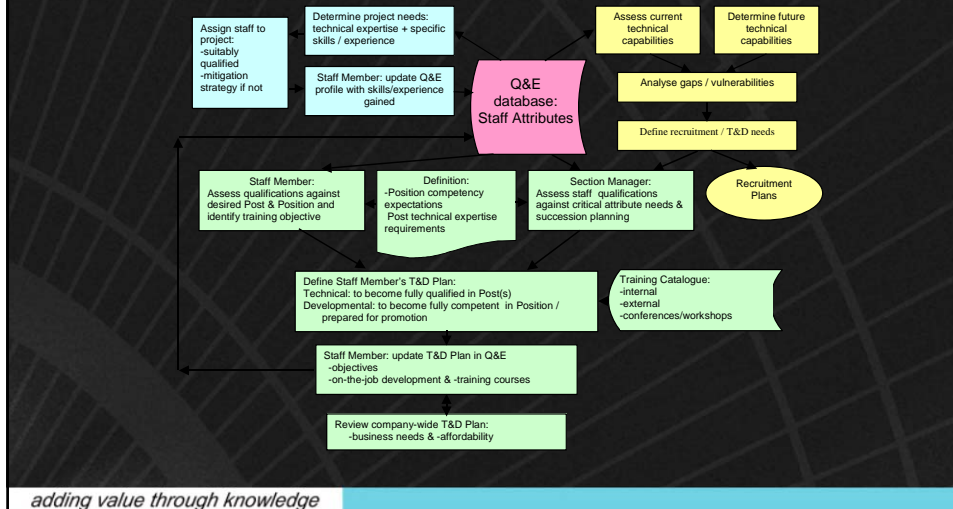
Integrated Approach to Training & Development

- Ensure SQEP staff are assigned to project tasks
- Ensure sufficient numbers of appropriately qualified staff for current and projected needs
- Ensure each staff member's development and utilisation
 - Relies on the use of supporting tools, such as the Q&E Register:

Use of the Q&E Register

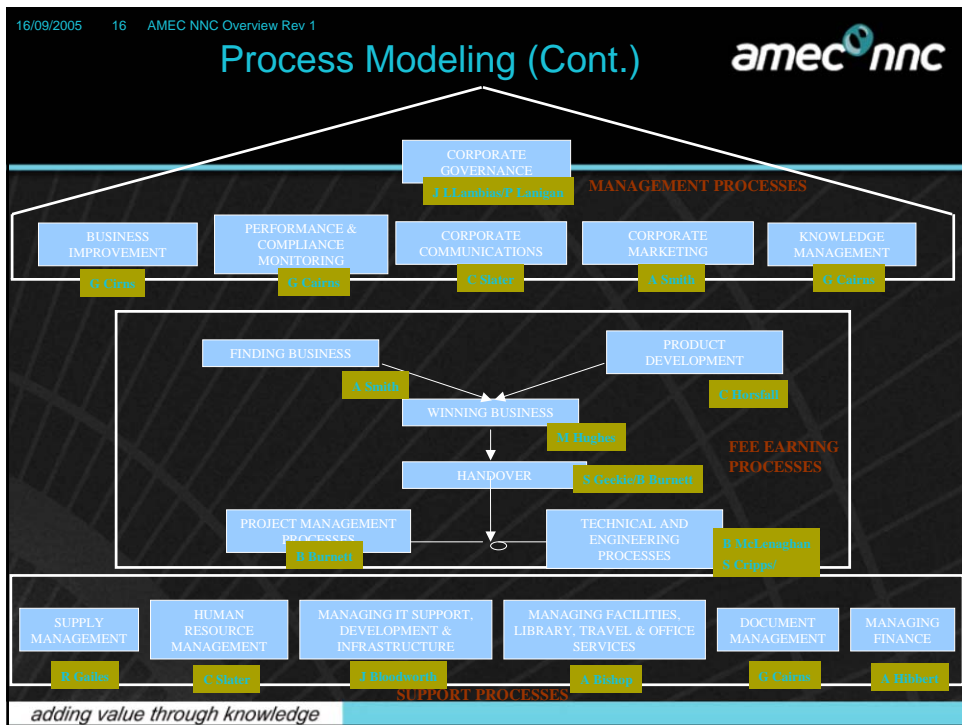
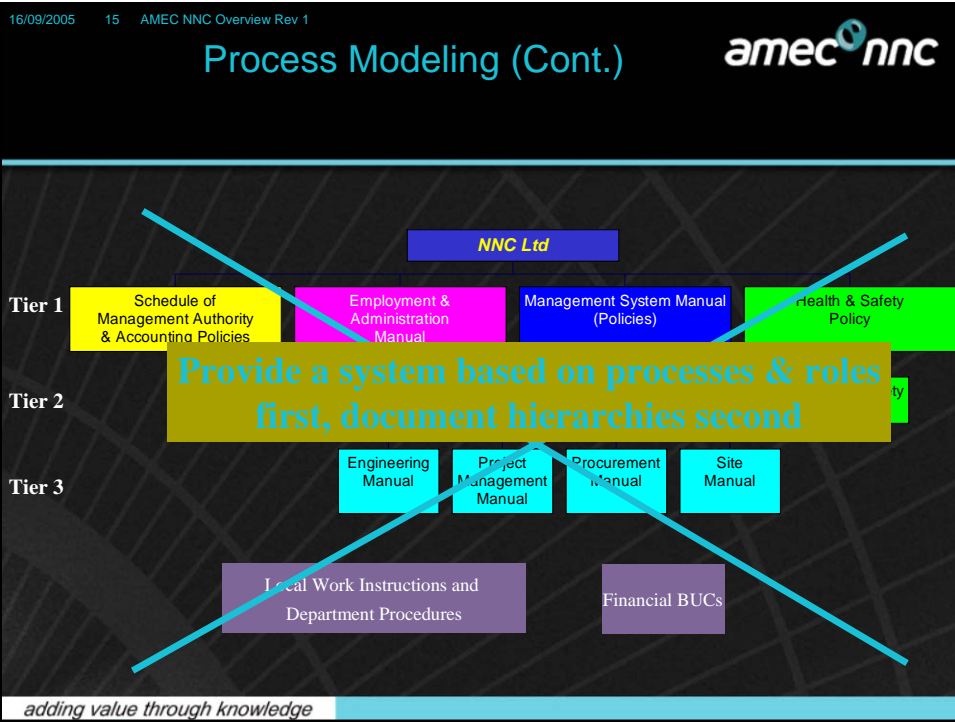
- Issue relates to the ability an Organisation to demonstrate SQEP staff are assigned to do work, and has become a significant part of Quality Audits
- To assist Project Managers in identifying suitable staff, AMEC NNC has populated the Q&E Register
- Amongst other attributes the Q&E database enables searches on skills and will provide the names of staff along with their assessed level of experience/expertise in the required skill
- The Q&E database is particularly effective at highlighting capability across an organisation, and also holds training programs and time scales which provides senior management with prompts to ensure planned staff development is carried out

Use of the Q&E Register (cont'd)



Retention through documentation

- Necessity to document all work, thoughts and arguments in a work file (or Calculation Note) as a job is progressing is a fundamental part of AMEC NNC QA System
- Verification of this work file provides an opportunity for some training and development
- This approach is the cornerstone of our Corporate knowledge retention process, supplemented by other documentation maintained in a Electronic Data Management System (EDMS)



Establishment of Communities of Practice



- Set up "Heads of Profession" for each discipline area
- Communities set up for mechanical engineering, EC&I, process engineering, civil engineering, chemistry/materials, physics, safety, procurement, tendering, project management
- Terms of reference include establishing best practice, individual performance reviews, leading discussion groups & workshops, share lessons learned
- Communities extend to the customer wherever possible
- Hold sessions every month

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Summary



- Recognise successfully achieving knowledge transfer to the same extent as individual contributions by experts currently
- Knowledge Management is a complex, expensive but vital function for the continuing success of any business. We should all strive to retain past knowledge in a recallable and readily useable form, and endeavour to develop and maintain necessary skills for current and future industry needs

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