Curriculum Vitae

Personal information

First name(s) / Surname(s)	**Neil MITCHELL**
Address(es)	I
Telephone(s)	
Fax(es)	
E-mail	
Nationality	
Date of birth	
Gender	
Family status	

Management and organisational skills

Proven track record of project management over the last 13 years: responsible for bringing the Iter magnets from design through procurement arrangements with the domestic agencies to the present advanced stage of construction, substantially to schedule and to budget. Implementation of structural changes within organisation to respond to changing needs. Experienced and successful negotiator. Improvisation to maintain schedule and costs in partially developed organisations without sacrificing quality. Staff management and delegation. Staff motivation and building up from scratch a successful and motivated division of 70 staff and 30 contractors. Cost monitoring and cost control, in both industrial contracts and R&D. About 30 years of experience with the International Fusion Programme. International tendering and follow up of large contracts with Industry. Successful strategic planning and execution of complex procurements.

Technical skills

Wide knowledge of fusion machines (mainly tokamaks, but also pinches and stellerators) going back over 35 years, ranging from design, manufacture through to assembly and commissioning. Experienced in industrial quality procedures and their implementation. Acknowledged expert in the field of low temperature superconductor performance and magnet design and construction. Very familiar with structural analysis (methods, as well as codes and standards).Familiar with ITER power supplies and cryoplant. Experience with tokamak plasma modelling, understanding of machine-plasma interfaces. Good knowledge of major tokamak systems, experience of DEMO reactor conceptual designs. Experienced in industrial manufacture and assembly of complex systems (such as the ITER magnets and their auxiliaries), tolerance management and correction. Familiar with fusion safety issues and interactions with nuclear regulator.

Work experience

Dates	**Jan 2020 – May 2021 (17 months)**
Occupation or position held	Senior Advisor to DG
Main activities and responsibilities	Expert input to Machine Construction Department in areas related to magnet manufacture and assembly, System Integration RO for magnets, coordinator for magnet commissioning interface to operations department. Review of NCRs and remedial actions, completed Pre-Compression Ring manufacture and test as IO TRO. Training to TAC contractors and new IO staff. DDD update to as built configuration.
Name and address of employer	ITER Project, Cadarache, France
Type of business or sector	International Organisation, Engineering
Dates	**May2017-Jan 2020 (30 months)**
Occupation or position held	Deputy Head of Central Team for Tokamak Assembly, Magnet Division Head

Main activities and responsibilities	Responsible for finalising assembly procedures for the ITER magnets, in particular magnet special processes, and for supporting the magnet related parts of the technical specifications for the ITER Tokamak Assembly. Contributed to the drafting, negotiation and successful placing of the two main contracts for ITER machine assembly (250M€ each). Contributed to the logistic organisation of ITER construction including transport, deliveries and on site support building
Name and address of employer	ITER Project, Cadarache, France (seconded by European Commission)
Type of business or sector	International Organisation, Engineering
Dates	**May2006-Jan 2020 (160 months)**
Occupation or position held	Head of ITER Magnet Division
Main activities and responsibilities	Responsible for design and successful procurement of ITER magnet system (total value ~2000M€). Manage local ITER magnet division (peak in 2017 about 70 permanent staff and 30 contractors). Initiate R&D and development contracts with industry and institutes to provide support to Domestic Agency procurement activities. Supervise design and manufacturing activities, agree budget and maintain control. Maintain project schedule. Supervise interfaces between magnet components, pro-actively solve inter DA issues relating to the magnet component assembly. Monitor procurement quality and resolve quality issues, working with Domestic Agencies and Industry. Negotiate and manage 21 procurement contracts with ITER DAs (China, EU, Japan, Korea, Russia, USA) for in-kind procurement of ITER magnets and 20 industrial contracts for direct procurement of components, monitor quality and progress of industrial contracts placed by the DAs. Oversee qualification testing of components, initiate and implement corrective actions where needed. Manage interfaces within ITER project and with ITER DAs.
Name and address of employer	ITER Project, Cadarache, France (seconded by European Commission)
Type of business or sector	International Organisation, Engineering
Dates	**January 2006-November2006 (11 months)**
Occupation or position held	***Head of Naka (Japan) ITER Joint Work Site***
Main activities and responsibilities	Administration of Naka Japan site staff (40 people) Head of EU Naka Delegation, administration of EU staff (7), financial responsibility for imprest Account (salaries and missions). Supervised site closure and redeployment of staff to Cadarache.
Name and address of employer	European Commission (delegation at Naka)
Type of business or sector	International Organisation, Administration
Name and address of employer	European Commission (delegation at Naka)
Type of business or sector	International Organisation, Engineering
Dates	**January2003-January2006 (36 months)**
Occupation or position held	***Head of Superconducting Coils and Structures Division, Head of Power Supply Division***
Main activities and responsibilities	Responsibility for design and analysis of the ITER Superconducting Coils and Power Supplies and managing ITER SC&S Division (10 staff) in Naka, Japan. Technical duties include •Completion of magnet design documentation for the project, including: electrical, mechanical and superconducting design criteria; structural analysis and structural assessment; magnet safety assessment; superconductor design and analysis •Completion of Pulsed Power Supply design •Monitoring of superconducting magnet R&D in US, Japan Russia, China, Korea and EU. Work involved development of procedures for large metal component fabrication, welding and testing and magnet component testing (mechanical, electrical and superconducting) •Preparation for ITER construction. Drafting component procurement specifications (critical fabrication routes, quality control, tolerances), project scheduling
Name and address of employer	European Commission (delegation at Naka)
Type of business or sector	International Organisation, Engineering, Mechanical Engineering, Electrical Engineering, Physics
Dates	**June 1993-December2002 (115 months)**
Occupation or position held	***Head of ITER Conductor and Analysis Group***, Naka, Japan

Main activities and responsibilities	•ITER magnet analysis (finite element stress analysis, eddy current analysis, thermohydraulic analysis and system performance modelling) and superconductor design. Up to 2001, managing group of 9 professional engineers. •Development of new analysis techniques for the thermal and electrical behaviour of large superconducting cables and application to interpretation of experimental results. •Responsible officer in ITER for construction, installation and test of Toroidal Field Model Coil by EU (total value of construction part of project about 20M€) •Responsible officer in ITER for construction of conductor for ITER CS and TF model coils. Initiation and co-ordination of programme for conductor development. Production for model coils (total value of conductor 50M€) as a joint collaboration between US, Japan, Russia and EU industries and research institutes. Programme for s/c strand production, cabling and jacketing, completed Oct 97. •Participation in the ITER CS model coil manufacture, assembly, commissioning and successful test
Name and address of employer	European Commission (delegation at Naka)
Type of business or sector	International Organisation, Engineering, Mechanical Engineering, Physics
Dates	**January 1988-May 1993 (65 months)**
Occupation or position held	***Head of Magnet Group***
Main activities and responsibilities	•NET magnet design and analysis (12 professional engineers). Analysis included finite element stress and thermal analysis, electromagnetic analysis of eddy currents in structures and thermohydraulic analysis of helium flow in superconducting cables. Production of design and analysis reports for reference design. •Superconducting strand, conductor and coil winding development (in European Industry and Research Associations), annual budget 10M€. Negotiation of technical objectives, maintaining costs and schedule •Initiation of industrial production of conductor in EU for ITER test magnets. Detailed aspects of the work included: -design and analysis of the fabrication route -obtain project approval through EU steering committees -conduct call for tender, select industrial companies, place contracts for strand supply, cabling and conductor forming. •Member of ITER CDA Poloidal Field Group plasma equilibrium and control modelling for ITER •Member of ITER CDA Magnet Group magnet design for ITER •Member of steering group for W7X magnet design and testing •Contribution to Asdex Upgrade design and assembly through NET/IPP collaboration
Name and address of employer	UKAEA Culham Lab, seconded to Next European Tokamak, Munich, Germany
Type of business or sector	International Organisation, Engineering, Mechanical Engineering, Physics
Dates	**July 1983-December 1987 (54 months)**
Occupation or position held	***Member of Tokamak Engineering Group (and partially at Culham Lab)***
Main activities and responsibilities	Responsible for (among others): •Management of NET industrial development of 40 kA superconductor (2M€ project) •Installation and use of software and VAX based computer hardware for CAD system for NET project (one of the first CAD systems introduced in the fusion area) •Structural and thermal analysis (including finite element analysis) of various NET magnet configurations. •Tokamak plasma electromagnetic confinement analysis for NET •Work in the areas of Nuclear Engineering for fusion including Tritium Breeding Blanket Design, Tokamak Design, Accelerator Design. Copper magnet design, analysis and fabrication. Vacuum vessel design, analysis and test. •Work on DITE, RFX and COMPASS fusion experiments, manufacturing, assembly and commissioning. NBI grids and vessel port analysis for JET VV.
Name and address of employer	UKAEA Culham Lab, seconded to Next European Tokamak, Munich, Germany
Type of business or sector	Computer engineering, Electrical engineering, Mechanical engineering
Dates	**1981-1983**
Occupation or position held	***Professional Engineer***
Main activities and responsibilities	Mechanical design and analysis of components for NBI systems for JET and Culham industrial laser systems.
Name and address of employer	UKAEA Culham Lab, UK
Type of business or sector	Computer Engineering, Mechanical Engineering
Dates	**1979-1981**

Occupation or position held	***Professional Engineer***
Main activities and responsibilities	Performance predictions for gas turbines and turbochargers
Name and address of employer	GEC Gas Turbines Ltd, UK
Type of business or sector	Energy generation, aerospace

Education and training

Dates	1976-1979
Title of qualification awarded	PhD, Fluid Flow in Turbomachinery
Principal subjects/occupational skills covered	Aeronautical and aerospace engineering
Name and type of organisation providing education and training	Cambridge University, Cambridge, United Kingdom
Level in national or international classification	University level education - Third stage
Dates	1973-1976
Title of qualification awarded	Bachelors degree, first class honours
Principal subjects/occupational skills covered	Engineering Science
Name and type of organisation providing education and training	Cambridge University, Cambridge, United Kingdom

Personal skills and competences

Mother tongue(s): English

Other language(s)

Self-assessment	Understanding		Speaking		Writing
European level (*)	Listening	Reading	Spoken interaction	Spoken production	
German	Very good	Very good	Good	Good	Good
French	B2 Good	B2 Good	B2 Fair	B2 Fair	B2 Fair
Japanese	Basic	Basic	Basic	Basic	Basic

(*) Common European Framework of Reference for Languages

Organisational skills and competences	Experienced project manager, especially of large and complex systems. Familiar with cost monitoring and cost control, in both industrial contracts and R&D. Experienced in implementing industrial quality systems. Experienced with managing complex construction and assembly activities, and in interface management. Good organisational abilities, particularly for manufacturing interface issues. Familiar with managing the staff problems associated with rapid upsizing (for example, ITER, 2006-2009) of organisations, and downsizing (for example, ITER 2001-2005).
Technical skills and competences	Very knowledgeable about tokamak systems and functionality. Expert mechanical engineer regarding magnets and other mechanical systems. Acknowledged expert in the field of low temperature superconductor performance. Very familiar with structural analysis (methods, as well as codes and standards). Experienced in superconducting thermohydraulic analysis. Experience with tokamak plasma modelling, understanding of machine-plasma interfaces. UK Chartered Engineer, elected Fellow of the Institution of Mechanical Engineers in 2011.
Computer skills and competences	Competent with standard office systems. Capable of programming and using analysis software packages such as Ansys (finite element analysis) and Gandalf (thermohydraulic analysis). Familiar with project management tools such as MS project and Primavera

Other skills and competences	During the 13 years I have been working at ITER for the construction phase, I have had extensive negotiating experience with both Industry and the Domestic Agencies. I believe that the results, in terms of cost control, finalising procurement arrangements and driving the construction with pro-active solution of problems to keep to schedule, demonstrate my skills in this area.
Driving licence	UK, German, French

Additional information

Over 200 published papers in the fields of Fluid Flow, Gas Turbine Performance, Magnet Coil and Conductor (Normal and Superconducting) Design, Analysis and Testing, Plasma Engineering, Tokamak Design. Single author of several original papers in the field of superconductor performance prediction published in refereed journals. Awarded Elsevier 'Best Paper in Cryogenics Journal' 2001. Most recently, technical editor and lead author on 'Superconductors for Fusion: a Roadmap', major roadmap article shortly to be published in Superconductor Science and Technology (IoP).

Invited plenary presentations at 2018 International Conference on Cryogenic Materials and 2020 Applied Superconductivity Conference

2021 IEEE Award for Continuing and Significant Contributions in the Field of Applied Superconductivity, Large Scale

Organised the 22nd International Magnet Technology Conference in Marseille (2011), as chairman of the conference and of the International Organising Committee. Selected as Conference Chair of 28th Conference in 2023, to be hosted by IO & CEA.

Member of the editorial board of 'Superconducting Science and Technology'(published by IoP) 2012-2018