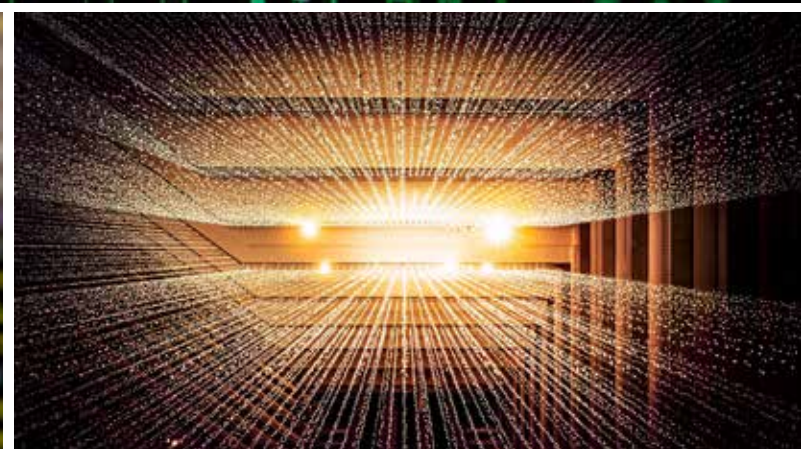
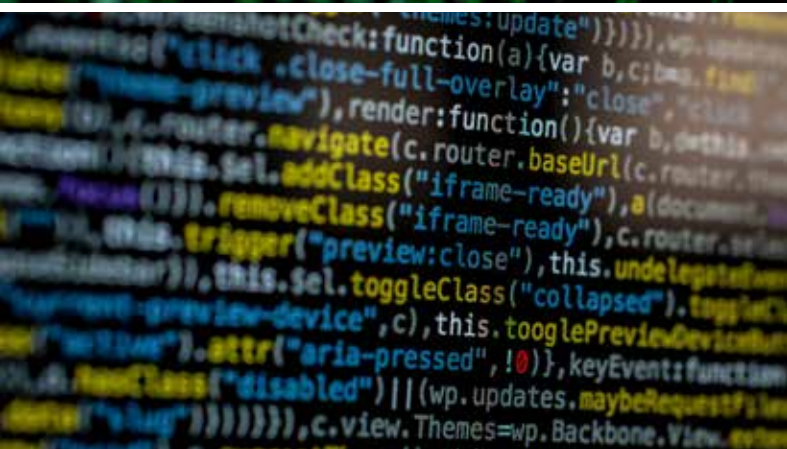


Information Pack

Implementing Digital Innovation in a Nuclear Environment

Thursday 28th November 2019

Institute of Physics, 37 Caledonian Rd, Islington, London N1 9BU



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Venue

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Implementing Digital Innovation in a Nuclear Environment

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1. Chairman's Welcome

Welcome to the Nuclear Institute's 2019 'Go Digital' conference.

This year's Conference is titled 'Implementing Digital Innovation in a Nuclear Environment'. The aim of the conference is to provide practical advice to improve digital utilisation and adoption.

Massive leaps have been made in digital technologies which have driven social change, transformed industrial and business practices, and also enabled collaboration and efficiency on a scale that was unimaginable 20 years ago. On the flip side of this, great digital technologies implemented less well can also bring risk and poor adoption can lead to safety or data security issues.

As the UK nuclear sector is forecast to undergo significant near-term investment so the opportunities to deploy digital technologies and approaches are presenting themselves. Today we will hear leading professionals in the field sharing their knowledge and experience of implementing digital across radioactive waste management, asset support and in reactor design and nuclear new-build.

Nuclear power remains a key element of the Government's strategy for low carbon energy. However, to enable optimal deployment, technological advances are required to reduce both capital construction costs and operational costs; as well as support safety functions. A critical enabler to the Nuclear Sector Deal is cost reduction hence delegates will hear how technology advances are designed to standardise and simplify approaches within such a regulated environment.

We are delighted that Accenture Industry X.0 is the headline sponsor of our event this year, their representatives will be very pleased to talk to you. We are also extremely grateful to all our participating speakers and their associated companies for taking time out of very busy schedules to be here today.

The Nuclear Institute aspires to be a home to all Nuclear Professionals; I welcome you all to this event and hope that you are able to participate and contribute to a successful day.

Alastair Laird
Nuclear Institute, Conference Chair

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2. Conference Programme

09:00 – 10:00	Registration / tea and coffee on arrival
10:00 – 10:15	Welcome from the Chair / housekeeping Alastair Laird FNucl, Nuclear Institute Trustee
10:15 – 11:00 30 min presentation +15 min Discussion	Session 1a Driving Innovation through Sector Deal Collaboration Alex Lubbock, Head of Digital Construction, Infrastructure and Projects Authority
11:00 – 11:45 30 min presentation +1 5 min Discussion	Session 1b Opportunities for Innovation in Nuclear Energy Programmes Neil Smart, Director Research and Innovation, NIRO
11:45 – 12:30 30 min presentation + 15 min Discussion	Session 1c Digital Transformation and Big Data (Cross industry knowledge) Mark Enzer, Chief Technical Officer, Mott MacDonald
12:30 – 13:30	Lunch/Exhibition
13:30 – 14:30	Panel Session 1 - Digital Examples Panel Chair - Ray Chegwin Innovate UK, Knowledge Transfer Network Nuclear. <i>with:</i> <ul style="list-style-type: none"> John Robison, Head of Digital Engineering Capability, Sellafield Ltd Stacey Shepherd, Innovation Coordinator, EDF Energy Hinkley Point C Mark Bankhead, Technology Manager, National Nuclear Laboratory
14:30 – 15:30	Panel Session 2 - Engaging Solutions with people! Chair Diane Daw – Nuclear Business Development Director, Altran <i>with:</i> <ul style="list-style-type: none"> Andrew Johnson, Director, Longdogs Consulting Carsten Becker, Head of Corporate Centre Innovation, TÜV NORD Mark Greatrix, Associate Director, Waldeck Consulting
15:30 – 15:50	Refreshment break – tea and coffee
15:50 – 16:50	Panel Session 3 - Asset Management Panel Chair – Colin Ellam, Managing Director, Accenture Industry X.0, <i>with:</i> <ul style="list-style-type: none"> Peter Van Manen, Service Development Consultant, Frazer-Nash Consultancy James Harris, Chief Executive Officer, Turner Harris Tim Ingram, Technical Director Strategic Asset Management, Atkins
16:50 -17:05	Plenary session: Digital today and digital for the future – the perspective of the next generation Alys Gardner, Business Development Manager, Cavendish Nuclear Philip Isgar, Chair of NI Digital Special Interest Group
17:05 – 17:50	Conference Close/Networking

All speakers confirmed at the time of publishing this programme. Circumstances may occur that prevent as published participation and could lead to a speaker or topic alteration.

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3. Summary of Panel Sessions

Panel Session 1: Digital Examples

Session Chair: Ray Chegwin, Innovate UK, Knowledge Transfer Network Nuclear
with

John Robison, Head of Digital Engineering Capability, Sellafield Ltd

Stacey Shepherd, Innovation Coordinator, EDF Energy Hinkley Point C and

Mark Bankhead, Technology Manager, National Nuclear Laboratory

The first panel session for Go Digital 2019 will look at real-life examples of how the continued introduction of digital technologies across all aspects of nuclear are transforming working practices, from new-build to digital reactor control systems and waste management.

With panel experts who are leading the drive on digital implementation in new-build from EDF Energy's Hinkley Point C Project, the scientific perspective of digital technologies being introduced to reactor design from the National Nuclear Laboratory, and how digital is making a difference in radioactive waste management at Sellafield, the panel will discuss shared learning on implementation, how adoption of digital technology is changing the way people think and work, and give an insight into what we might expect to see in the not-too distant future...

Panel Session 2: Engaging Solutions with people!

Chair – Diane Daw, Nuclear Business Development Director, Altran
with

Andrew Johnson, Director, Longdogs UK Ltd

Carsten Becker, Head of Corporate Centre Innovation, TÜV NORD and

Mark Greatrix, Associate Director – Waldeck Consulting

The driving theme of the second session is all about engaging people to innovate; how do you manage the innovation process? How do you bring together the depth of expertise of operators and maintainers with the breadth of technologists to deliver positive change? Board-led vs Ground-up, Technology-led vs Business-led...what are the right choices? What considerations lead to those choices?

The panel will look at how best to embrace new business models which lead to revolution - not just evolution - and also consider the different roles and challenges associated with each of the themes. They will give their insight to both the blockers and enablers they have experienced of managing a human workforce through implementing a digital approach whilst maintaining the highest standards of safety, security and GDPR.

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Panel Session 3: Asset Management

Session Chair: Colin Ellam, Accenture Industry X.0

with

Peter Van Manen, Frazer-Nash Consultancy

James Harris, Turner-Harris and

Tim Ingram, Atkins Global

The final panel session in this year's conference will focus on how digital technology is being used to drive higher productivity during the operations and maintenance of complex assets.


We will explore the opportunities that building new assets presents, examine how digital can be adopted on ageing assets to increase productivity, and how deeper knowledge of the assets supports life extension and decommissioning activities.

Summary of Closing Plenary

The final session in the 2019 Go Digital programme is hosted by Alys Gardner, Business Development Manager, Cavendish Nuclear and member of both the NI's Young Generation Network and Women in Nuclear sections in the company of Philip Isgar, Chair of the Nuclear Institute's Digital Special Interest Group.

They will reflect on the topics and issues covered during the day, and provide their perspectives on the journey to date of implementing digital innovation in a nuclear environment, its introduction in past years through to where we see it today, and what lies ahead for the further implementation and integration of digital technologies in nuclear for future generations, to whom digital technology is an integrated part of their daily lives.

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4. Speaker Profiles (Alphabetical)



Mark Bankhead

Technology Manager

National Nuclear Laboratory

Dr Mark Bankhead is a technology manager in chemical modelling and High Performance Computing at the National Nuclear Laboratory.

He is a chartered chemist with over 17 years' experience working in nuclear R&D. He has led a number of initiatives in digital for NNL, including an ongoing £2m investment in computing infrastructure, and Nuclear Innovation Programme activities in digital integration and in digital manufacture.



Carsten Becker

Head of Corporate Centre Innovation

TÜV NORD

Carsten gained his Masters in Industrial Engineering from the University of Louisville, Kentucky, USA and lives with his wife and child in the North German city of Hamburg, Germany.

After completing his studies in technical engineering, he moved on to manage service departments at various software companies and led development teams within those organisations.

From 2010-2016 Carsten worked with SAP as Programme Manager for the business development of S/4 Hana, before taking up his current position at TÜV NORD, where he is focussed on building up innovation management.

Key topics being addressed in this role - along with new business models - include the transformation of the existing business. With technologies such as AI, VR, IoT or smart sensors, solutions are being built that will catapult TÜV NORD firmly into the digital age.



Ray Chegwin

Knowledge Transfer Manager Nuclear

Innovate UK – Knowledge Transfer Network

Ray joined the Knowledge Transfer Network in 2014 and is responsible for facilitating technological collaborations and innovation between industry and research for the nuclear energy sector.

He works closely with government departments, R&D managers and SME product developers, both within the sector and across other technology communities.

Ray has a background in mechanical engineering, and started his career with the UKAEA, working in R&D and project management roles. He subsequently undertook various business development roles working for AEAT's Nuclear Engineering business.

Prior to joining the Knowledge Transfer Network he worked at the National Physical Laboratory (NPL), where he was responsible for growing the commercial business across all energy sectors.

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Diane Daw

Nuclear Business Development Manager

Altran UK

Diane is an experienced Head of Energy with a demonstrable history of working in safety-critical sectors within the engineering services industry.

She is a strong research professional skilled in developing digital solutions for clients, to improve productivity, change business models and deliver benefit.

With a Computer Science background and business acumen Diane is able to bring together technical knowledge with business acumen to identify digital solutions which have a value and are deliverable



Colin Ellam

Managing Director, Industry X.0

Accenture

Colin's role in Accenture's Resources business unit concentrates on bringing digital innovation to clients operating in highly regulated industrial markets such as Oil & Gas, Mining, Chemicals, Utilities and of course, Nuclear.

His focus is across the full lifecycle of large and complex assets from design, through the build stage and into successful operations, not forgetting the life extension and decommissioning of these assets at the back end.

He started his career at 16yrs old as a UKAEA Risley Apprentice and has worked across all the UK's nuclear sites while with NNC, AMEC,

Morgan Sindall and Accenture.

Before re-joining Accenture in June 2019, Colin was the Information & Management Systems Director at Horizon Nuclear Power and was on the project for three years until the project's suspension in March 2019.



Mark Enzer

Chief Technical Officer

Mott MacDonald

In Mark's role at Mott MacDonald, he is accountable to the Group Board for technical excellence globally, which he drives chiefly via Mott MacDonald's internal professional networks.

Mark is a keen champion of innovation in the context of collaborative delivery models and he is particularly interested in transformational change in infrastructure engineering, including the application of digital transformation, Smart Infrastructure, low-carbon sustainable solutions, platform-based delivery and design for manufacture and assembly (DfMA).

Mark is currently the chair of the Digital Framework Task Group, which is part of the Centre for Digital Built Britain. Mark was the leader of the Digital Transformation workstream as part of "Project 13" for the Infrastructure Client Group, which represents the UK's major infrastructure client organisations and he was the Lead Author of the Infrastructure Carbon Review, published by HM Treasury.

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Alys Gardner
Business Development Manager
Cavendish Nuclear

Alys looks after the Cavendish accounts with Sellafield Ltd and LLWR Ltd. Prior to joining Cavendish Nuclear in February 2018, she worked for Abbott Risk Consulting as a senior safety consultant and has been based on a variety of civil nuclear and defence sites in the UK, providing safety case and assurance advice as well as compliance and auditing activities.

Alys graduated from the University of Manchester with a masters in Physics with Business Management, and joined the Atkins graduate scheme where she spent 5 years working in radiation shielding and safety case.

Alys has been heavily involved as a volunteer for the Nuclear Institute's Young Generation Network (YGN) and chaired the organisation in 2016.

She remains a member of the YGN's strategic committee and also sits on the Nuclear Sector Deal's Legacy Cost Reduction Steering Group.



Mark Greatrix MSc
Associate Director
Waldeck Consulting

Mark is a digitally and technology focused professional with a Master of Science (MSc) focused in Building Information Modelling Management from Middlesex University.

Having over 20 years' experience working closely with project teams delivering innovative and technology focused solutions for blue chip clients from within specialist multi-disciplinary design organizations in the AEC industry,

Mark has a demonstrated history, skilled in Strategic BIM consultancy, observing all facets of BIM principles and associated deliverables.

His role within Waldeck as the Research & Development Lead sees him providing strategic advisory services, supporting organizational and project strategies, as well as developing and embedding innovative and disruptive digital technology solutions to support business work streams.



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James Harris MBA, MIET

Chief Executive Officer and Head of Digital Practice

Turner Harris

James works regularly with private and public sector clients including operators, developers, supply chain organisations and Government bodies on engagements covering corporate strategy, energy policy, transformational change, mergers & acquisitions, global growth and digital value strategies.

With specific expertise in nuclear power and East Asian markets, James is a contributor to the World Economic Forum's Energy Harnessing Taskforce, a member of the World Nuclear Association's working groups on economics and new-build and is the Enablers Workstream Lead for CDBB's National Digital Twin Programme.

Recent nuclear sector engagements have included advising the UK Government and the Energy Technologies Institute on the financial and policy readiness for Small Modular Reactor development in the UK, the National Nuclear Laboratory on global insight strategies, and Sellafield, on enterprise digital transformation for capital asset introduction. He was lead author on a Turner Harris study paper for CDBB on the future of digital through life asset management in the UK.

Turner Harris is a leading UK management consulting firm advising the energy, infrastructure and technology sectors.



Tim Ingram

Technical Director Strategic Asset Management

Atkins Global

Tim is a Chartered Engineer experienced in delivering value as an Asset Manager, System Engineer, and Management Consultant for clients in a variety of sectors including Defence, Nuclear, Power Generation, Infrastructure, Transportation, Oil & Gas, and Renewables. His work ranges from operational analysis, through to advising government bodies and international bodies. Recently he has been supporting the development of guidance on the economic benefits of Asset Management with the IAEA.

He has been supporting the development of standards and good practice as Chair of AMS1, the BSI mirror committee for ISO55000 suite of Asset Management standards, and in doing so, leading the UK response on the development of the ISO55011 Asset Management Government policy guidance standard. He is also providing support to the alignment of competency development internationally with the Global Forum on Maintenance and Asset Management.

In his role Tim seeks to bring together industry, government bodies and regulators to get well balanced support to the development of good & best practice, within a neutral, collaborative environment.

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Philip Isgar BSc, FIStructE, FICE

Nuclear Institute

Owner, Sunbeam Management Solutions

Philip has worked extensively over the last 40 years within both the Nuclear and Infrastructure sectors, covering three Regulatory environments - Nuclear, Rail and Water - and is highly experienced in developing, leading and managing multi-discipline high-profile Capital Investment Programmes and organisations within public and private sectors.

Amongst his many appointments, he sits on the Northern Nuclear Alliance Steering Group as Vice Chair, and is Chair of the Construction Industry Council NW, Chair of the Nuclear Institute Digital Special Interest Group and working with the Constructing Excellence Nuclear Theme Group.

Philip graduated from the Bolton Institute of Technology in 1976 with a BSc in Civil Engineering, and in 2017 was awarded an Honorary Doctorate of Engineering by the University of Bolton. He is also an Honorary Fellow of the APM, Honorary Member of the Major Projects Association, Fellow of the Institution of Civil Engineers and Fellow of the Institution of Structural Engineers.



Andrew Johnson

Director

Longdogs Consulting

A technology management consultant working with clients in a number of sectors including automotive, finance, pharma and nuclear, Andrew spent his early career in big 4 consultancy roles with IBM, BT Global Services and KPMG. For the last 8 years he has enjoyed delivering his own independent consultancy.

Andrew is a Business Change Management Professional with a track record in the delivery of operational, business and technology change related projects including digital. In his 20+ year career he has successfully delivered coaching in developing operating model definitions globally, including URENCO IT and Sellafield ISO portfolio management.



Alex Lubbock

Head of Digital Construction, Manufacturing and Technology Lead

Infrastructure and Projects Authority

Alex is the Head of Digital Construction for the UK Government reporting to the Cabinet Office and HM Treasury in the UK. He has been on secondment to the IPA for over 2 years supporting departmental delivery of the BIM Level 2 mandate and the Lead for adoption of Smarter Infrastructure including Digital and Manufacturing Technologies across Central Government through the Transforming Infrastructure Performance Programme. Alex's industry and technology expertise has played a key part in supporting IPA advice from a strategy and policy perspective.

Alex is also a member of the UK Government Construction Board, UK Industrial Strategy Challenge Fund Board for Clean Growth, which includes Transforming Construction and the delivery leadership group of i3P. Alex has a background across multiple sectors of asset delivery and operation and is on secondment from the global technology company BIM Object.

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Alastair Laird
Conference Chair

Alastair is the President of the European Nuclear Society and a Board member of the UK Nuclear Institute. He graduated from the University of Strathclyde in Glasgow with a degree in Nuclear Physics, and has over 30 years of experience in the nuclear sector, having worked on five nuclear licensed sites in various capacities, looking after waste and decommissioning projects and programmes for Sellafield, Magnox and the UK Nuclear Decommissioning Authority.



John Robison MSc, CEng, AMIStructE, FIET
Head of Digital Engineering Capability

Sellafield Ltd

John has 35 years' experience in the design and construction of chemical and nuclear facilities where, for the last ten years, he has focused on the use and development of design and information management systems.

He is currently the Head of Digital Engineering for Sellafield Ltd. where he is leading their implementation of digital project delivery within the wider business context of Sellafield's digital ambition.



Stacey Shepherd
Innovation Coordinator, Project Services
EDF Energy Hinkley Point C (HPC)

Stacey is currently responsible for the delivery of a first-of-kind innovation programme in a nuclear new build environment at HPC. As a part of that programme, she's delivering a number of exciting projects including the use of immersive technologies; the development of a 3D digital model of the HPC construction site updated in real time; and the testing of ground-breaking configuration management software.

Her background within sectors such as health, finance and education has given her a unique insight into some of the challenges faced in the implementation of innovative ways of working within heavily regulated industries.

Stacey is passionate about Diversity and Inclusion, and as the lead of HPC's Bristol branch of EDF's Women's Network, is an active advocate for the advancement of women within the nuclear and construction industries



Neil Smart
Director of Research & Innovation
Nuclear Innovation and Research Office (NIRO)

Neil has over 25 years' experience in the field of nuclear technology and has held a number of senior technical roles within BNFL, NDA, RWM and Sellafield Ltd. He has a BSc in Applied Chemistry, PhD in Corrosion, a MSc in Technology management and is a Fellow of the Royal Society of Chemistry. Neil is currently the Director of Research and Innovation for the Nuclear Innovation and Research Office.

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Dr Peter van Manen
Service Development Consultant
Frazer-Nash Consultancy

Peter is a focal point and technical lead for a number of digital initiatives at Frazer-Nash relating to the development, deployment and operation of assets and infrastructure in the energy, transport and industrial sectors.

He has worked in a variety of high impact industries, including over 20 years at the highest levels of professional motor sport. He was Managing Director of McLaren Electronic Systems until 2015, supplying control and data systems to all competitors in Formula One, IndyCar and NASCAR. He was head of engineering at Living PlanIT AG until 2018, developing software, sensors and Artificial Intelligence for real estate and infrastructure.

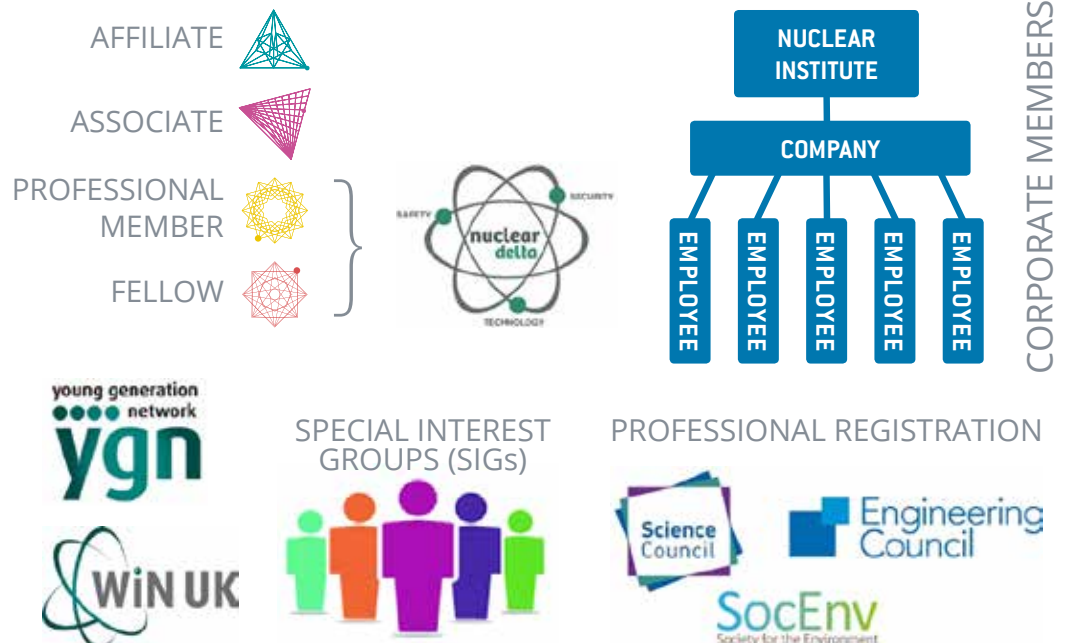
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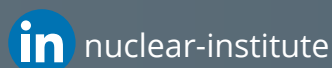


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5. Forthcoming Events

Women in Nuclear UK

Women in Nuclear UK Annual Conference

Wednesday 29 January 2020
Church House, Westminster, London
*Drinks reception 28 January 2020

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