





107th LLC Meeting Presentation Slides

Tuesday 25th April 2023

The AWE Rec Soc, Aldermaston



Agenda

- Introductions / Networking / Refreshments
- Chair's Opening Remarks
- Environment, Safety and Health Update
- Regulators' Update
- Operations Update
- **LUNCH / NETWORKING**
- Development Update
- Emergency Planning / REPIR
- Community Update
- External Technical Partnerships
- Any Other Business / Q&A / Networking
- Close



Chair's Opening Remarks

Janine Mantle

Corporate Affairs Director



Environment, Safety and Health Update

Nick Bolton
ESH&Q Service Delivery Lead



Personal Safety

19 people sustained Recordable Injuries in the 12 months to the end of February 2023

13 of the injured parties required time away from work to recover resulting in

228 working days lost

Most injuries were as a result of:

- Lapse in spatial awareness
- Manual handling issues

OSHA Injury Rate:

0.243

OSHA Rates per 200,000 hours worked

Injuries resulting in **BACK PAIN** (5)

Injuries to areas from the **FINGERS TO SHOULDER** (6)

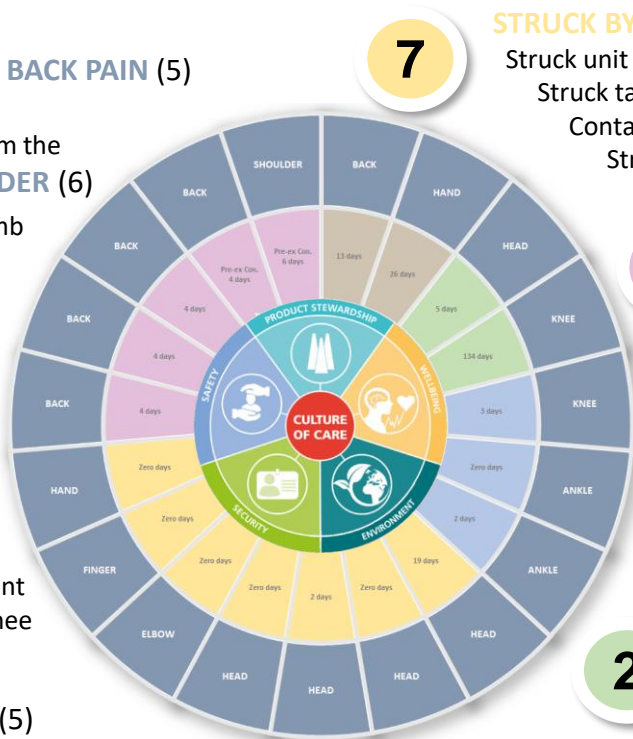
Soft tissue damage to thumb
Dislocated shoulder
Fractured elbow
Fractured wrist
Fractured finger
Sutured thumb

Injuries to areas from the **ANKLE TO KNEE** (4)

Included: A torn ligament
Fractured knee

Injuries to the **HEAD** (5)
resulting in: Loss of consciousness
Sutured and a glued cuts
Concussion

Note: Some injured parties sustained more than one listed injury



STRUCK BY / CONTACT WITH:

- Struck unit when standing up
- Struck table vice, struck racking, struck against wall
- Contact with burrs on the edge of casing
- Struck by unbalanced sack truck
- Struck by displaced tool bag

5 MANUAL HANDLING:

Resulting from lifting, pulling, pushing activities involving weight and / or effort. Two incidents involved the aggravation of a pre-existing condition

3 SLIP / MISSTEP / FALL:

- Slipped into a pothole
- Misstep in low lighting
- Slipped stepping to ground from a platform

2 TRIP / FALL OF PERSON AT SAME LEVEL:

- Tripped over hose
- Tripped over a bracket in low lighting

2 OBJECT DID NOT PERFORM AS EXPECTED:

- Bicycle slipped on mud causing cyclist to fall
- Chair move backwards causing a fall

Process Safety



Process Safety performance remains at an acceptable risk level. There have been no Process Safety events raised during the period. Process Safety training for supervisors continues to be an ongoing focus, increasing Process Safety knowledge across the organisation supporting supervisors who supervise in high hazard environments. The Leadership Process Safety training in partnership with Cogent Skills is now being delivered to leaders at AWE with an initial focus on Operations. The intention remains for this course to become a key course for all senior leaders at AWE.

The Process Safety Team are also continuing to develop virtual reality training that can be used to raise hazard awareness amongst staff at all levels of the organisation.

Number of Events Notified to the ONR by Calendar Year

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 to end of February
28	22	25	38	38	37	64	69	61	8

Our Commitment to Protecting the Environment & People



WASTE MANAGEMENT

The Environment Management target for diversion from landfill: **98%**

Total waste diverted from landfill: **98.7%**



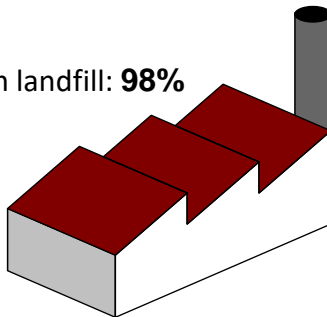
NUCLEAR WORKER

Annual UK Occupational Dose Limit: **20,000 μSv**

AWE Individual Radiation Dose: **1,510 μSv**

RADIATION DOSE PUT INTO CONTEXT:

Annual UK non-occupational radiation dose is 2,700 μSv .
This is the average level of radiation dose that a person resident in the UK will receive each year from background sources of radiation.



DISCHARGE TO AIR

Assessed Dose Aldermaston: **1.79 μSv**

Assessed Dose Burghfield: **< 0.0001 μSv**

TRADE EFFLUENT

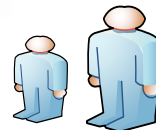
Assessed Dose Aldermaston: **0.0037 μSv**

Assessed Dose Burghfield: **< 0.0001 μSv**



DISCHARGE TO WATER

Assessed Dose Aldermaston Stream: **0.0001 μSv**



PUBLIC DOSE

The calculated doses above represent **minute fractions** of the dose constraint set by the Environment Agency of **500 μSv** per year for a nuclear site.

ASSESSED PUBLIC DOSE PUT INTO CONTEXT:

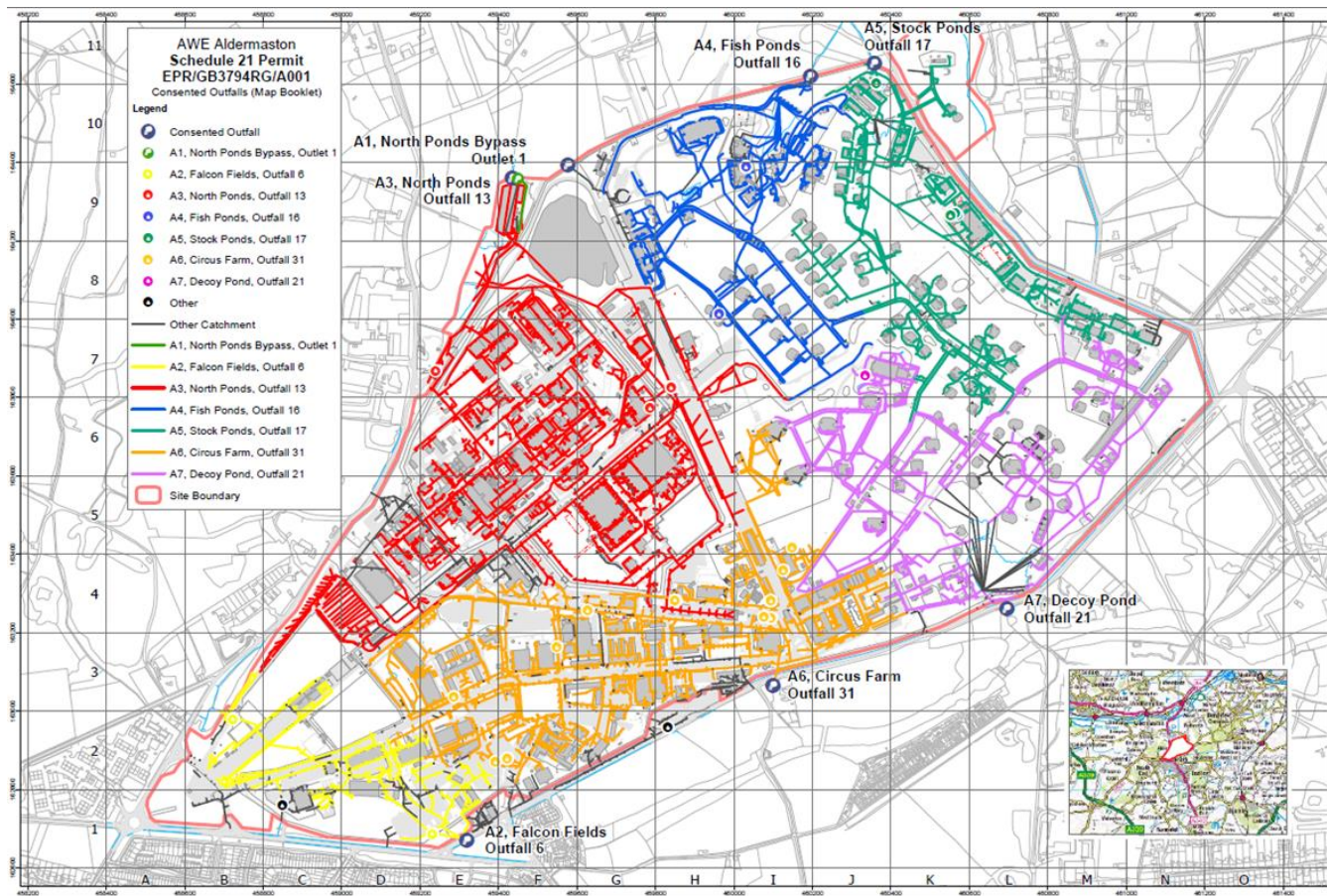
A dose of 10 μSv (microsieverts) is comparable to that expected to be received from eating a 100g bag of Brazil nuts.



Overview of Aqueous Discharges at AWE

Helen Maclean
Senior Environment Specialist

Surface Water Network Map Aldermaston





Surface Water Network Aldermaston

- Schedule 21 'new style' Environment Agency permit revised Oct 2017
- The permits were modernised inline with EPR to replace existing permits issued under the Water Resources Act 1991
- 7 permitted surface water discharge points (Each outfall serves an individual catchment area)
- Environmental monitoring at each outfall and the watercourses they flow into

Outfall 13: North Ponds



Outfall 16: Fish Pond



Outfall 17: Stock Pond



Outfall 21: Decoy Pond



Outfall 21: Decoy Pond



Outfall 31: Circus Farm

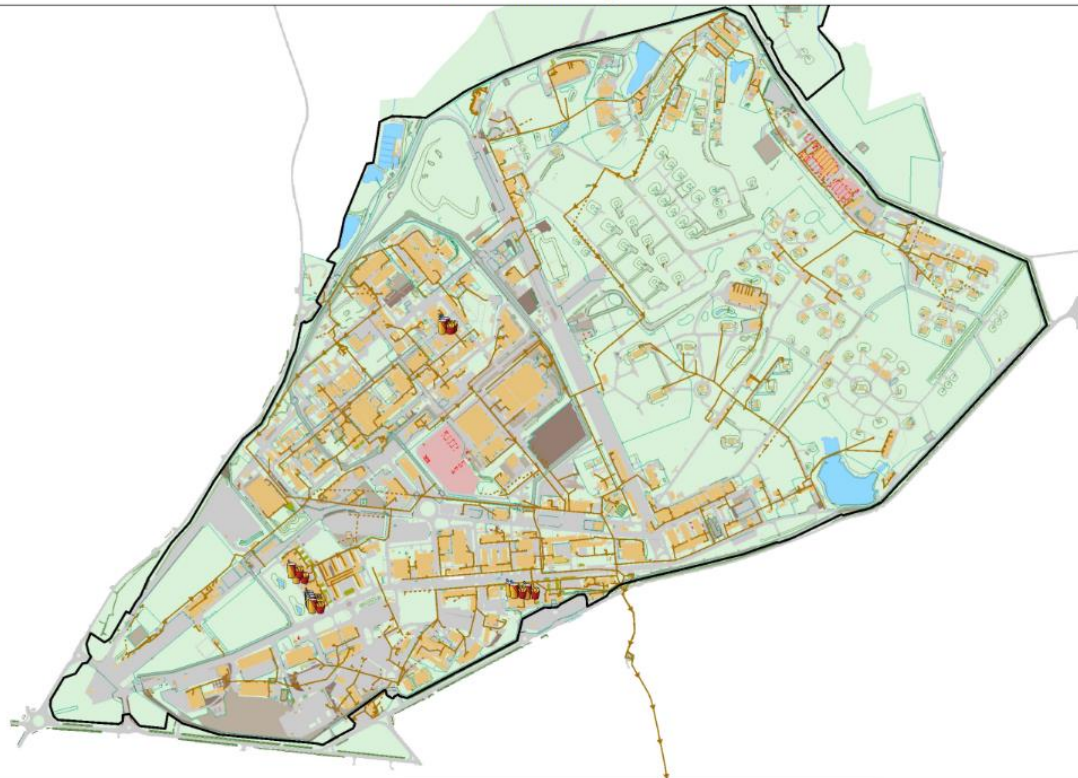


Outfall 6: Falcon Fields



Foul Waste Network Aldermaston

OFFICIAL
Foul Water Drainage



Legend

□ AWE Site Boundary

Foul Water Pipes

— FW Pipes - Gravity

— FW Pipes - Pumped

--- Foul Water Pipes - Abandoned

Fences and Gates

— Fence

— Gate

Water

Grass

Other Surfaces

Bark Chippings

Construction Area

Gravel

Shrubs

Unmade Ground

Buildings

Highways Sm Scale



Foul Waste Network Aldermaston

- AWE (A) is consented by Thames Water to discharge certain types of *Trade Effluent* via the Foul Drainage Network.
Thames Water Consent
- Discharges from the Trade Plant and discharges of trade effluent go directly into the Foul system
- This then discharges in to the Public Sewer, Silchester Wastewater Treatment

South Road Sewer (SRS): Foul Network Aldermaston





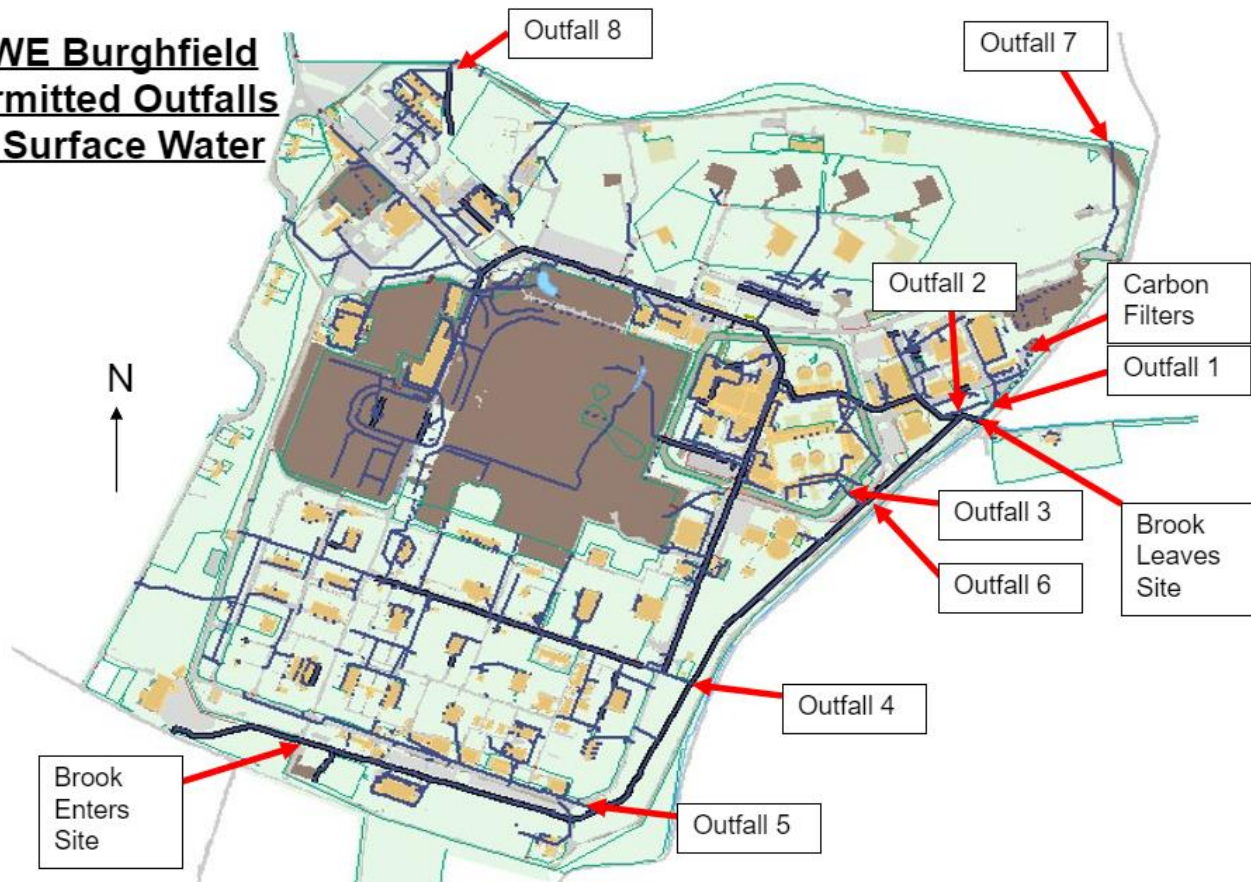
Trade Waste Network Aldermaston

- Environment Agency issued Permit for Trade effluent discharged off-site from Aldermaston
 - 6 monthly report to the EA to demonstrate discharges are within specified permit limits
- AWE has a consent with Thames Water to discharge Trade Effluent to the public sewer
 - Monthly returns to Thames Water, reporting 30 chemical determinants e.g. Lead, Mercury, Cadmium, pH, Beryllium including volume of effluent

Surface Water Network Burghfield



AWE Burghfield Permitted Outfalls to Surface Water



Surface Water Network Burghfield



- 8 Permitted Outfalls covered by EA Permits
- Gravity drainage from buildings and connected facilities
- Environmental monitoring of the surface water outfalls leaving site
- Automatic/proportional samplers collect a composite sample over a monthly period



Permits - Burghfield Outfalls

- Permit the discharge of trade effluent comprising: 'site drainage, steam condensate, compressor blowdown, cooling water, water tank drainage and other matter'
- With the exception of the permit for:
OF3 Burghfield which allows the discharge of 'treated sewage effluent and trade effluent' to the Burghfield Brook.

Burghfield Brook entering AWE Burghfield site



Outfall 1: Burghfield (currently closed)



Previous Outfall 1 sampling point



❌ Previous point of discharge into Brook

Outfall 2: Burghfield



Outfall 4: Burghfield



Outfall 5: Burghfield



Outfall 6: Burghfield



Outfall 7: Burghfield



Document reference:

OFFICIAL

Outfall 8: Burghfield



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Burghfield Brook leaving AWE Burghfield site



Waste Water: Outfall 3, Sewage Treatment Works Burghfield



Outfall 3 Sewage Treatment Works Burghfield



- Treated sewage effluent from the Burghfield Sewage Treatment Works is discharged via Outfall 3.
- This outfall discharges to the Burghfield Brook which in turn leads to the Foundry Brook that ultimately flows into the River Kennet.
- A continuous flow meter and recording system reports the daily volume (the volume of the discharge shall not exceed 2000 cubic metres per day)



Questions

Regulators' Update

Ian Rogers



Rob Green



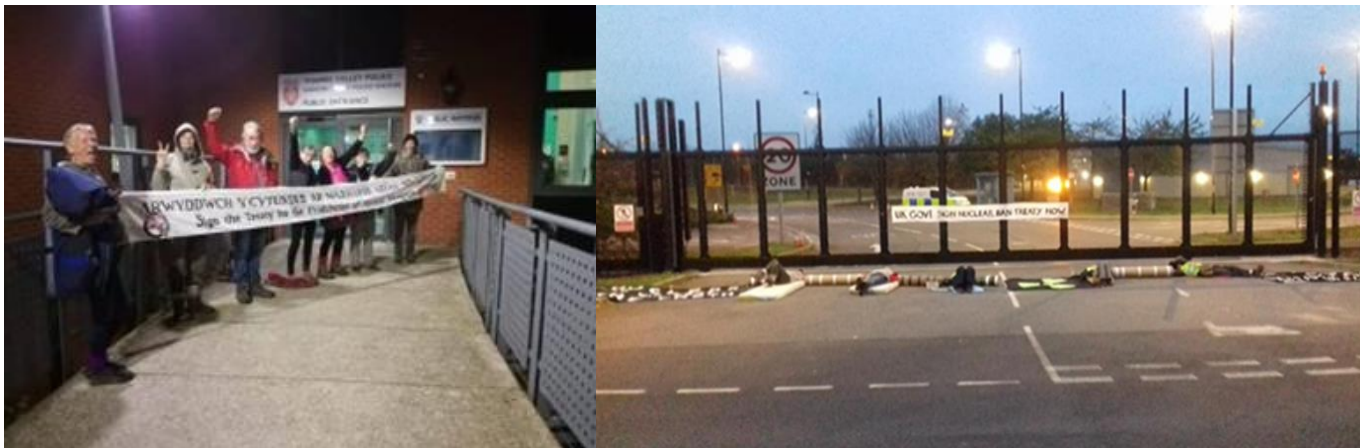


Estate Services Update

Johann Walker
Head of Estate Services

Protestor activity

- Regular monthly 'Women's Peace Camp' continues on 2nd weekend of each month.
- No upcoming planned activity



Community concerns*



Date	Category	Summary of concern	Outcome
13 th December 2022	Other	Concern reported for an imminent planning application for 4 buildings being proposed external to AWE.	Non AWE issue, caller advised to contact West Berks planning authority.
25 th January 2023	Other	Community concerns line called to advise AWE of private works taking place on the individuals property near Blacknest.	For AWE info only
22 nd February 2023	Other	Individual contacted the community concern line with regards to a restricted covenant on their property and wanted to discuss the issue or know who to best contact.	Roads and Grounds contacted by Shift Manager and contact details obtained for an Estate Surveyor in the Defence Infrastructure Organisation. Estate Surveyor contacted to confirm correct route for query and contact details. Local resident contacted and details passed on. Local resident was very grateful for the quick response.

*Dec 2022 - Apr 2023



Solar Farms

- “AWE has a target to be Net Zero carbon emissions by 2040. One of the many activities in support of this target is to accelerate the decarbonisation of AWEs electricity supply by developing low carbon power generation sources such as solar.
- Several new facilities will have solar on the roof (e.g. Hub), however despite the large land area, AWE only has very limited space available for further solar installation; many of our larger roof spaces and green areas are not viable locations for solar in order to maintain safety requirements.
- To meet our Net Zero targets, AWE is actively engaging with potential supply chain partners to develop off-site solar farms for both AWE Aldermaston and AWE Burghfield.

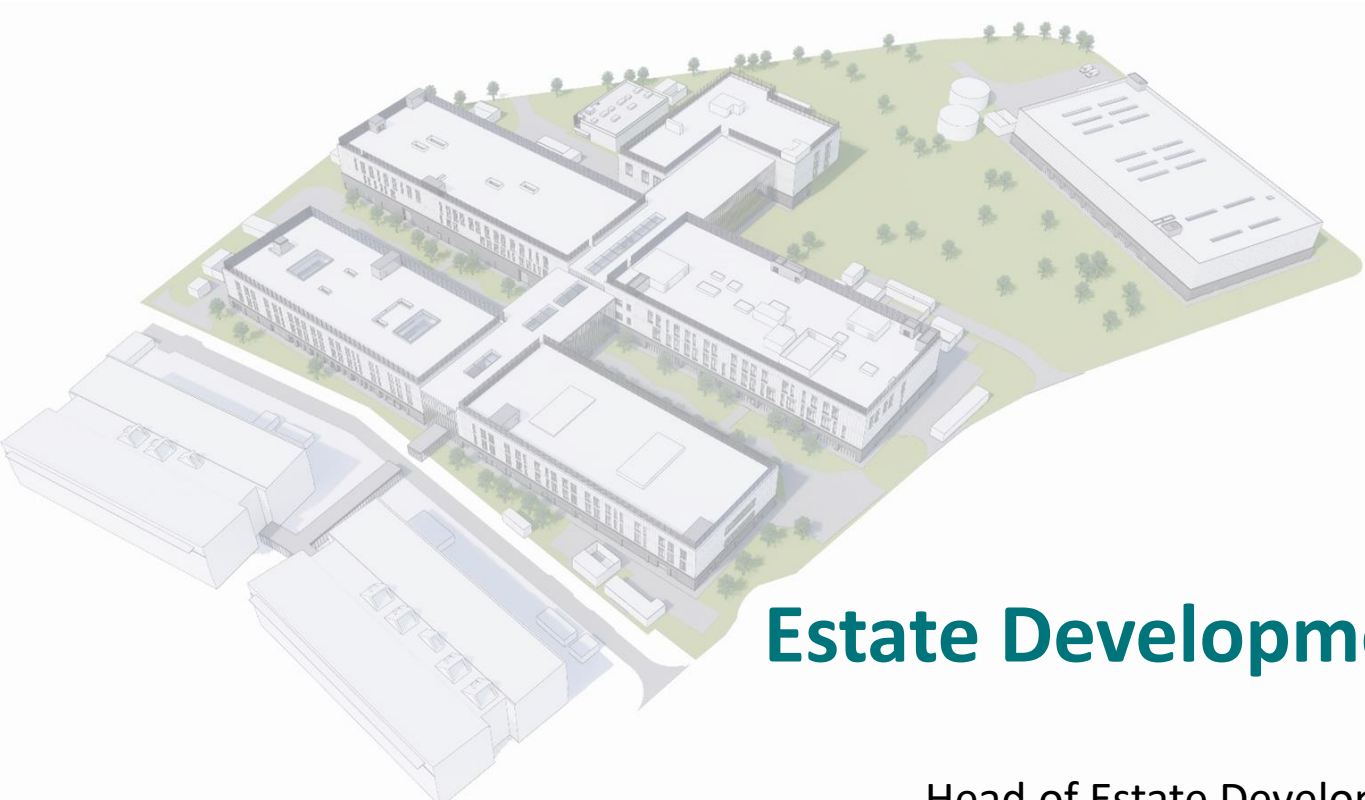


Decommissioning

- AWE's site strategy is to remove redundant facilities to both reduce the nuclear liability but also eliminate the costs of maintaining these facilities in a safe condition. Decommissioning is now being delivered in a holistic manner which provides AWE with both efficient hazard reduction, predictable performance and flexibility to address changing requirements or discoveries.
- Works are currently underway in a cluster of former production facilities and the Sites' former liquid waste treatment plant. Preparation is underway to bring all of the remaining redundant nuclear facilities into decommissioning as they transit through the Post Operative Clean Out (POCO) phase of their lifecycle.



LUNCH / NETWORKING (45 minutes)



Estate Development Update

John Steele

Head of Estate Development and Planning



AWE Emergency Planning & Preparedness

Carolyn Richardson

Service Manager – Joint Emergency Planning Unit

Off-Site Emergency Planning Update 25 April 2023

Carolyn Richardson

Service Manager – Joint Emergency Planning Unit
Bracknell Forest, RBWM and West Berkshire Councils



West Berkshire
COUNCIL

Key Activities

- ❑ DEPZ determination as part of 3 yr cycle completed - Jan 23
- ❑ AWE Off-Site Emergency Plan revised- Mar 23
- ❑ Training sessions on the new plan – Mar 23
- ❑ Revised schools guidance issued - Mar 23
- ❑ Testing of the plan - Aldex 23 - Apr 23
- ❑ No incident responses relating to AWE
- ❑ Embedding new staff into the team.

Look forward

- ❑ Public Information Booklet and Website updates (May 23)
- ❑ Debriefing following Aldex 23 (Apr and May 23)
- ❑ Plan revision as necessary
- ❑ Multi-Agency Training on any new plan
- ❑ Developing a new Training and Exercise schedule
- ❑ Development Control - Local plan and applications
- ❑ Off-Site Emergency Planning Group Meetings
- ❑ Engagement with other LAs through the National LA Nuclear Working Group



Any Questions





AWE Emergency Planning and Preparedness Update

Scott Davies-Hearn

Manager Emergency Response

AC-LC11 Technical Lead

TA – Emergency Arrangements & Response



Recent / Upcoming Activities

December 2022 – AWE B (LEVEL 1 DEMONSTRATION EXERCISE) – Successfully delivered and assessed by the regulators as an adequate demonstration of the AWE emergency response arrangements

Provision of scenario information, AWE supporting response and general planning support to the WBDC ALDEX delivery team.

REPPIR DEPZ – re-determined by West Berkshire District Council (WBDC) following submission of AWE assessments.

Technical review and update to the public AWE (REPPIR) warning and informing leaflet, in support of WBDC.

No activations of the site emergency response arrangements requiring the off site emergency response (OSEP) or attendance of external fire and rescue service.

Update, expansion (increased head count) and re-structure of the on site emergency planning and preparedness team

On-going support and training provided in conjunction with Local Authority to stakeholders in respect to the OSEP



Community Update

Claire Lockwood

Senior Manager Community Engagement
Corporate Affairs

STEM Educational Engagement



St Swithun's School trip to Orion 10 January 2023

As deserved winners of the AWE Challenge at TeenTech, students from St Swithun's School in Winchester recently had a chance to see AWE's cutting-edge technology up close, with a visit to the world-leading Orion laser facility at Aldermaston.



Virtual Careers Information Event - 17 January 2023

Students in Years 10, 11, 12 & 13 from schools and college in Hampshire and West Berkshire, and their parents, were invited to attend to find out about all the apprenticeship and graduate opportunities that AWE has to offer.



AWE Virtual Careers Event - 17 January 2023

Get Inspired Basingstoke & GIB & Test Valley - 8/9 Feb 2023

Get Inspired Basingstoke and Get Inspired Basingstoke & Test Valley are both annual interactive careers events, held at the Apollo Hotel in Basingstoke. Over 50 employers across a wide range of sectors volunteered to showcase the opportunities their businesses offer.



Time to Give



Individual volunteering

Our people continue to utilise AWE's 'Time to Give' programme.

Our staff use their volunteering time to share their skills and support our local communities, either individually or as a team.



Team volunteering

Volunteering not only benefits the community, but allows staff to use their skills to make a difference and boost their wellbeing. The scheme has proved popular and has already seen staff supporting a wide range of community projects and charities.





Community communications

Press releases

Social media

Portal

Focus & Connect

Marketing Collateral

Vimeo



External Technical Partnerships

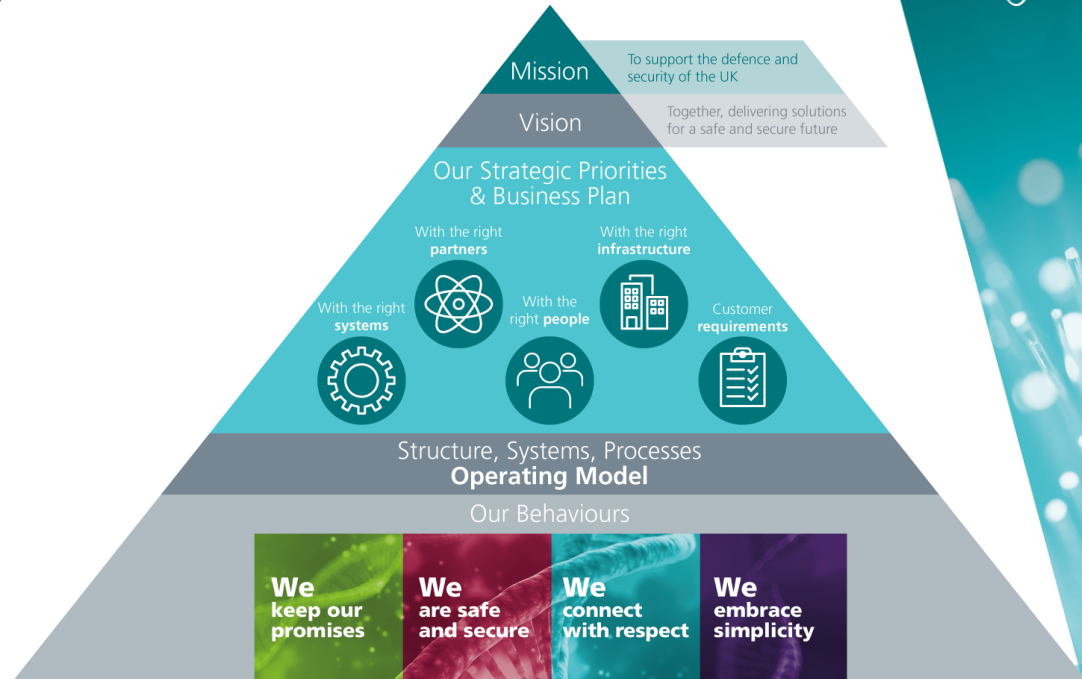
Dr Toni Lilly

SET Principal Operations Manager

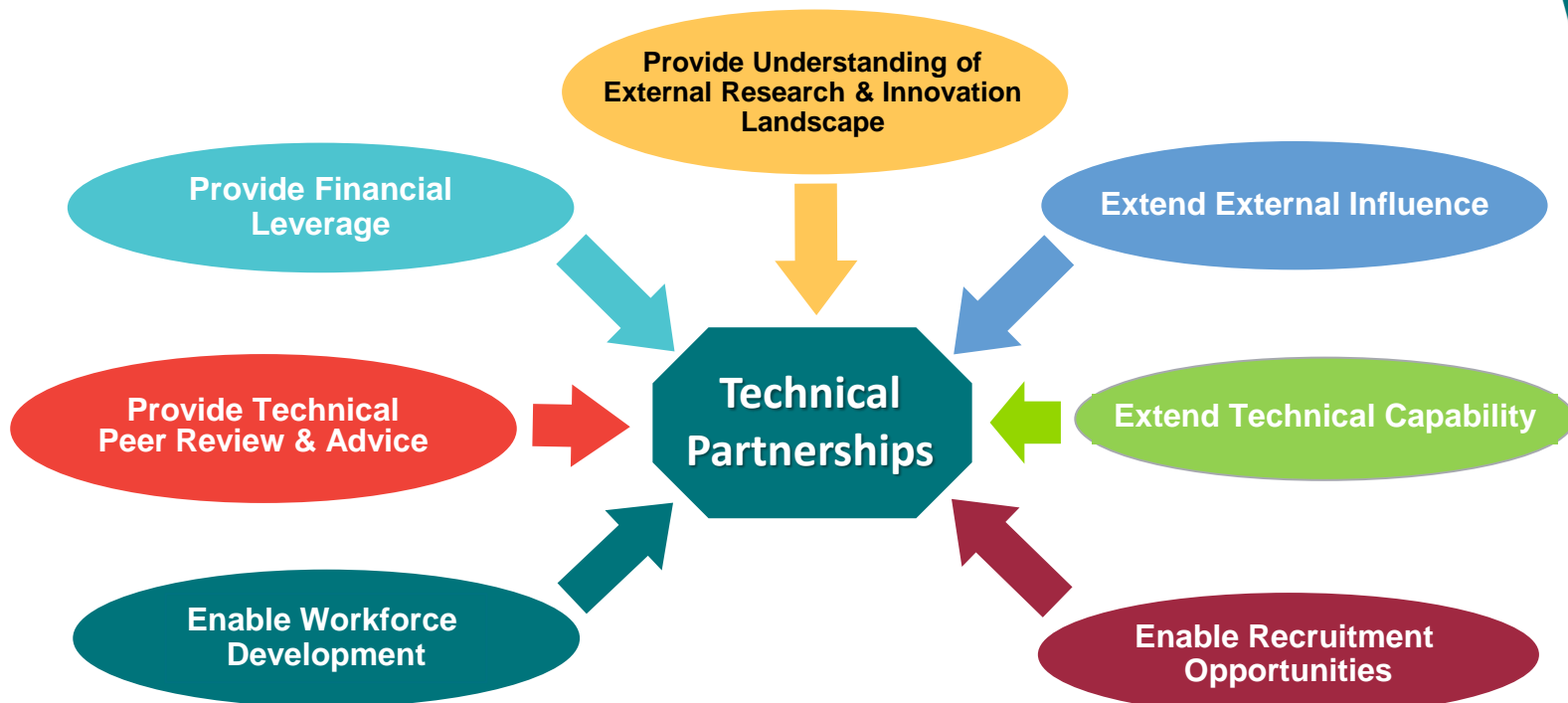
Introduction and Context



- The Business Plan identified key strategic priorities to enable AWE to be successful
- This included the need to partner with industrial and academic collaborators to innovate our ways of working, accelerate our delivery and access additional talent pipelines
- There is a recognition that we need to be a UK wide business to access different talent pipelines



Aims



External Technical Partnerships



Supporting Studentships

AWE funds doctoral level studentships, where applicable, through established Centres for Doctoral Training (CDTs) across academia (specialist training, sharing experience and knowledge within cohort).

Industry Partners

These interactions are vital in utilising existing UK facilities effectively, securing investment in future projects and ensuring an integrated approach, to help address the national skills agenda across the nuclear enterprise.

William Penney Fellows

An established scheme that creates and fosters a strategic link between the company and selected academics. William Penney Fellows, highly respected leaders in their fields, act as ambassadors for AWE in technical communities.

Strategic Relationships

Mutually beneficial enduring academic, industry and professional collaborations, enabling our people to acquire, share and transfer knowledge, promoting a diverse and skilled workforce enabling access to specialised resources & unique facilities.

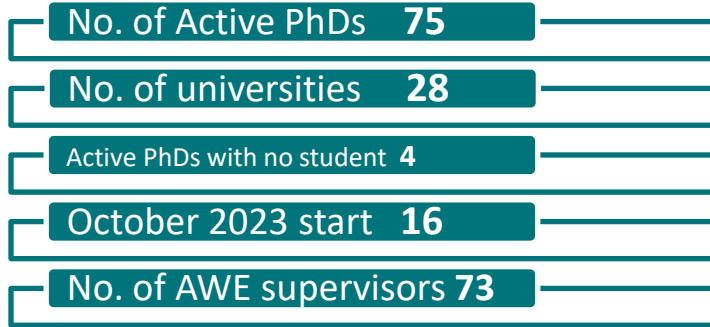
Centres of Excellence (CoE)

AWE funds CoEs at universities across the UK, providing strategic long-term research and key services. The centres deliver research and support through academic, postdoctoral, and postgraduate activities and engagement in specific disciplines.

Strategic Alliances

AWE has Strategic Alliances with a number of universities that providing specialist technical expertise. Strategic Alliances deliver opportunity for further work in various fields that is of interest to the university, AWE and wider academia.

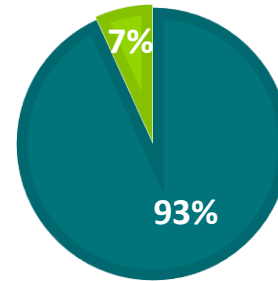
Students by numbers



Year 1	Year 2	Year 3	Year 4+
15	17	24	15

BREAKDOWN BY SUB-FUNCTION

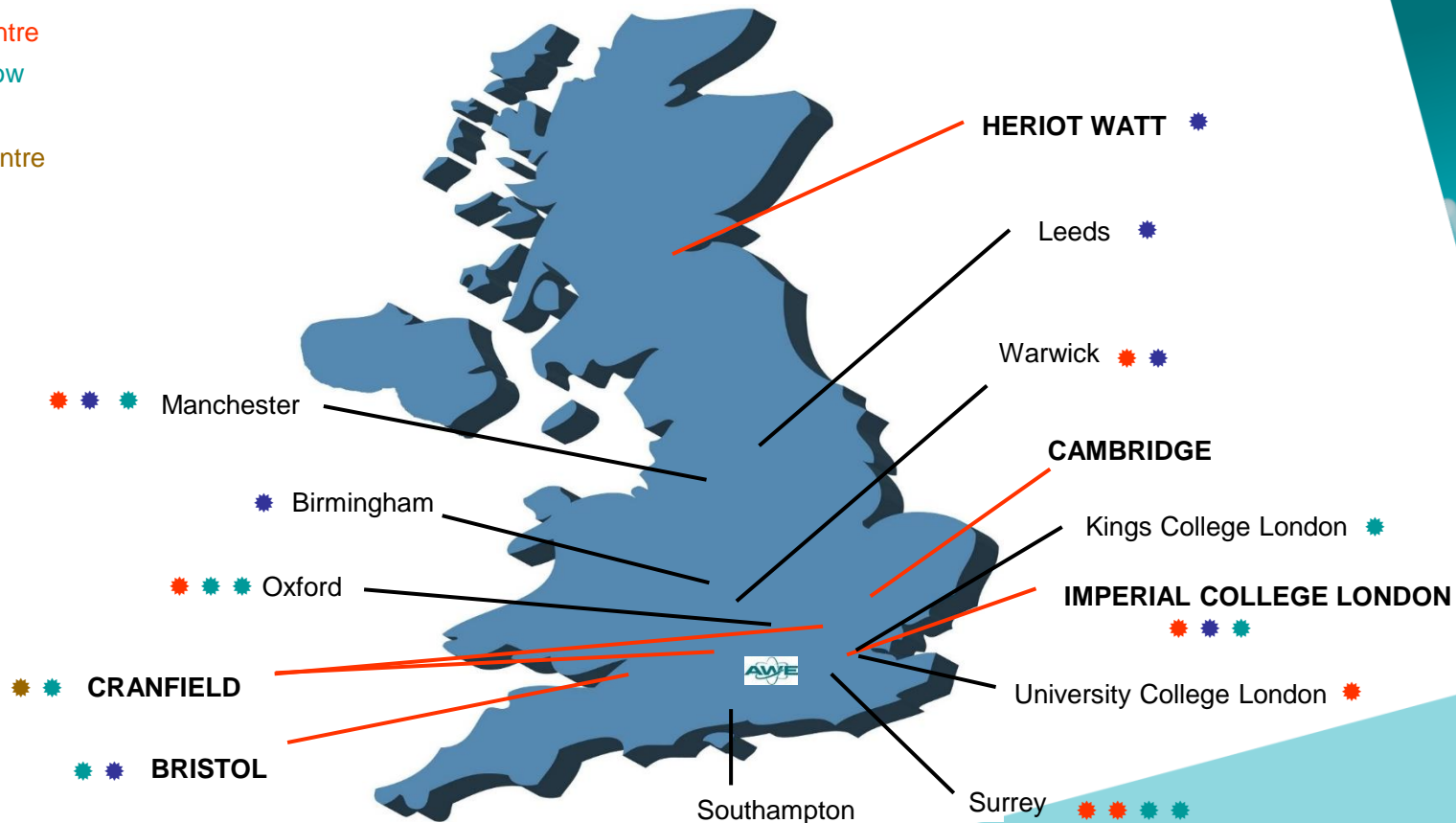
■ Science ■ Engineering



Key academic interactions with AWE



- ✱ AWE centre
- ✱ WP Fellow
- ✱ CDT
- ✱ Other centre





Technical Centres

AWE Sponsored Centres of Technical Excellence

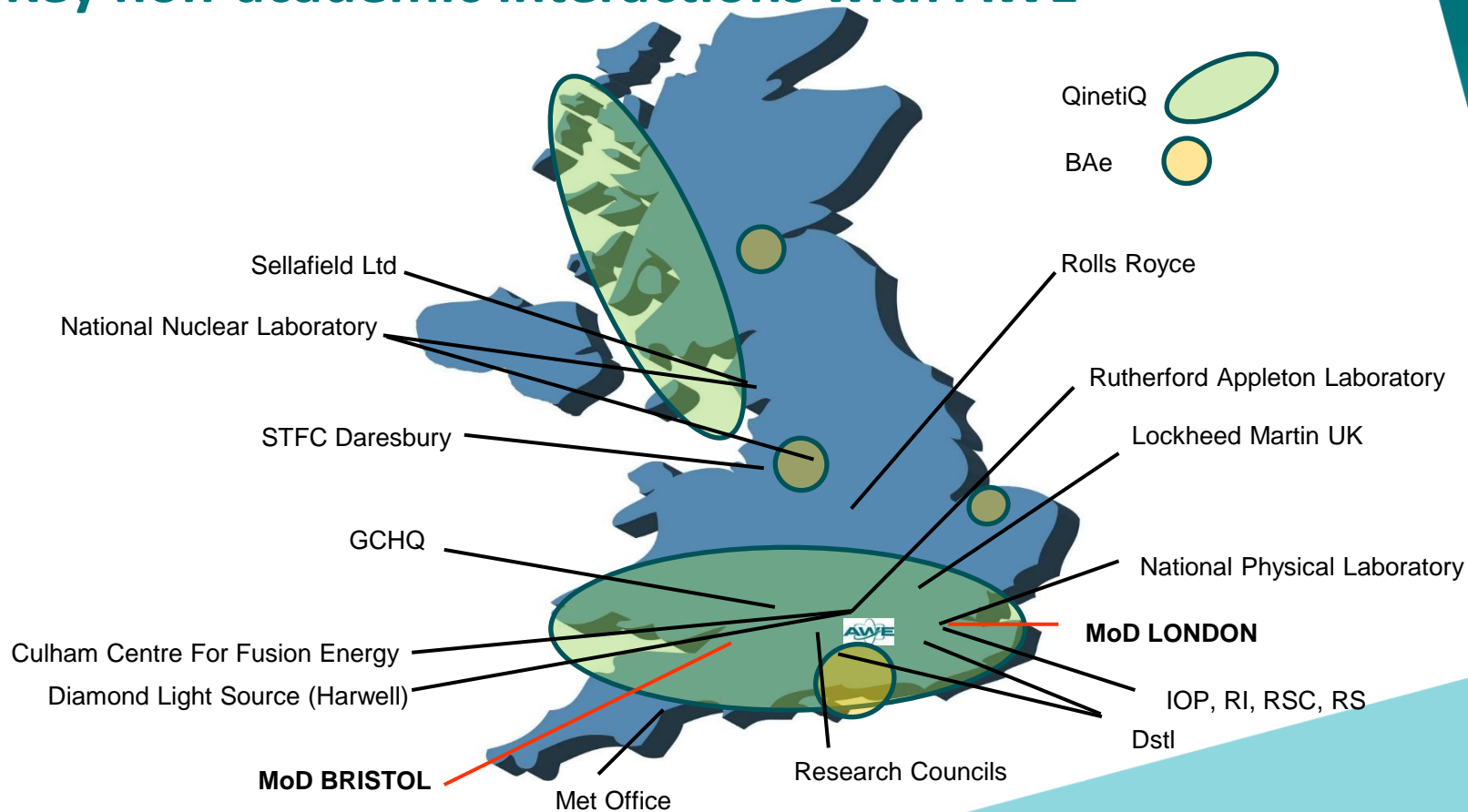
CCMS	Centre for Computational Materials Science	University College London
CCPP	Centre for Computational Plasma Physics	University of Warwick
CIFS	Centre for Inertial Fusion Science	Imperial College London
CNSD	Centre for Nuclear Security Detection	University of Surrey
CoEEM	Centre of Excellence in Energetic Materials	Cranfield University + Dstl & DE&S
CoEMAPLA	Centre of Excellence in Materials, Ageing, Performance and Life Assessment	University of Surrey
MHMSM	Manchester Hub for Materials System Modelling	University of Manchester
OxCHEDS	Oxford Centre for High Energy Density Studies	University of Oxford

William Penney Fellowships

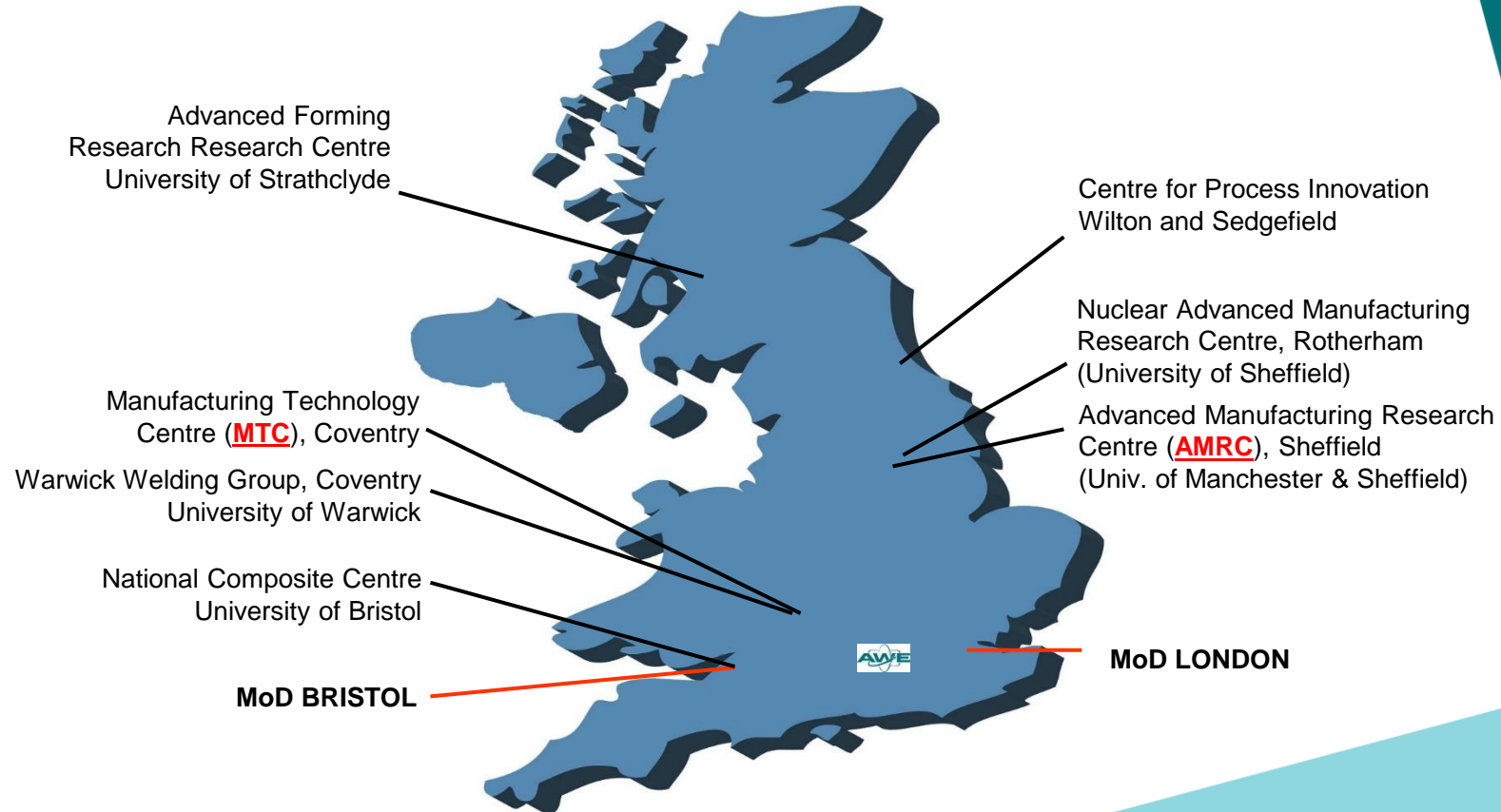


AWE Sponsored William Penney Fellows		
Wyn Bowen	Kings College London	Nuclear policy
Jerry Chittenden	Imperial College London	Plasma physics
Paul Stevenson	Surrey	Theoretical nuclear physics
Ian Hall	Manchester	Statistics
Tom Scott	Bristol	Actinide Science
James Marrow	Oxford	Material Fracture
Justin Wark	Oxford	High energy physics
Chris Stennett	Cranfield	Energetic materials

Key non-academic interactions with AWE



Production process interactions with HVM Catapults





AWE and Industry

- Current and planned engagements with industry enable
 - Developing technical SQEP (through secondments);
 - Upskilling benefits of partnering on engineering challenges;
 - Owning and placing complex technical requirements on industry;
 - For key technologies acting as UK technical authority and providing expert peer review;
 - Obtaining privileged information through NDAs;
 - Assistance with horizon scanning / keeping up with latest technologies;
 - Accelerating technology transfer;
 - Efficient optimised processes;
 - On-the-job training and refreshed skills for staff;
 - Fresh thinking through exposure to external agencies;
 - The opportunity to buy in expertise when there is insufficient long term demand;
 - Participating in UK programmes for capability resilience within the nuclear sector.

AWE and Industry Engagements



UKAEA

QQ

Sellafield

NPL

NNL

Dstl

Strategic Collaborations
National Alliances
Innovation Networks
Portfolios of Engagements
Science Opportunities
Programme Frameworks
Community of Practice
Commercial Arrangements
Enhancing Governance

Delivery Exploit Technology Innovation Added Value

AWE Heads of Profession



- Championing their professional disciplines at AWE (29 HOPs)
- Serving as AWE's senior professional ambassadors
- Supporting AWE staff in their professional aspirations
- Stimulating a stronger culture of lifelong learning and CPD
- Ensuring that professional mentoring works at AWE
- Raising the profile of their respective professions at AWE
- Outreach to Institutional, Industrial, and Academic professional communities
- Supporting AWE management in staff development
- Networking amongst themselves to ensure best practice

Accreditation



AWE's Development Programmes accredited with 9 institutions:



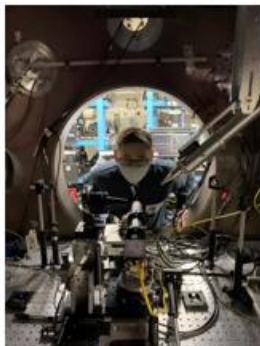
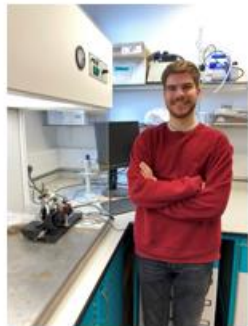
Inspiring the next generation



"I applied for the internship at Royce as I saw it as an excellent opportunity to gain experience and further engage with the field of material science. Following my degree, I aim to initially pursue a career in research, and the practical and communication skills this internship will develop will undoubtedly be of great importance."

Mika Davies | Royce Outreach Intern

Project: Outreach Exhibit: "Metals: pioneering materials" in collaboration with the Armourers and Brasiers Company and AWE
Supervisor: Dr Alice La Porta



Science at AWE



On his award, **Joe Mahmoud** says,

"I am very proud to be representing a radiochemistry project as the winner of the 2022 Prize as I think it serves as a great reminder as to the interdisciplinary nature of materials science and nuclear science and engineering more generally. I very much look forward to continued collaboration with both The Worshipful Company of Armourers & Brasiers and AWE in the future."

Congratulations, Joe!





Any other business / QA's

2023 Meeting Dates



18th October – AWE RecSoc, Aldermaston