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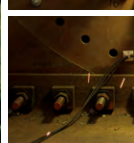
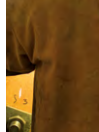
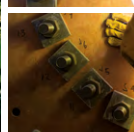


History



Our pedigree goes back to the birth of UK Nuclear power in the 1950's when the world's first commercial nuclear power station was built at Calder Hall, now Sellafield. Taylor Woodrow Construction (TWC) were the civil engineering contractors on this project and materials, specifically concrete, development and trials were carried out at their R&D laboratories.

In 2008 TWC were acquired by VINCI Plc and we subsequently became VINCI Technology Centre UK Limited. As of 1st March 2025 we have rebranded as Initivo Consultancy Limited.





Over 60 years in the nuclear industry

Station	Design	Construction
Calder Hall	No	Yes
Sizewell A	Yes	Yes
Wylfa	Yes	Yes
Hartlepool	Yes	Yes
Heysham 1	Yes	Yes
Heysham 2	Yes (as NDA)	Yes
Torness	Yes (as NDA)	No
Sizewell B	Yes (as NDA)	No

*Nuclear Design Associates - a Joint Venture between
Taylor Woodrow Construction and Sir Robert McAlpine



Overview

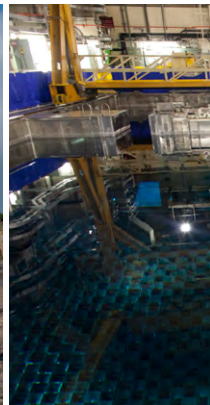
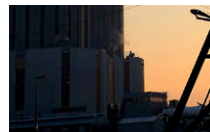
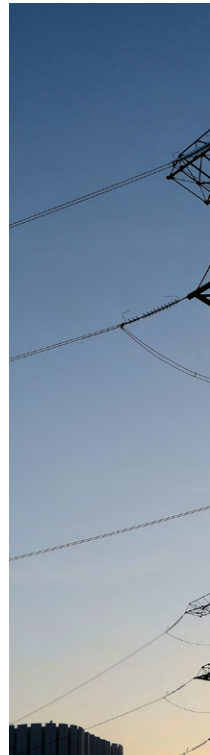


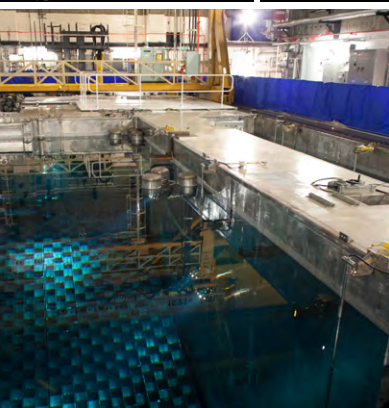
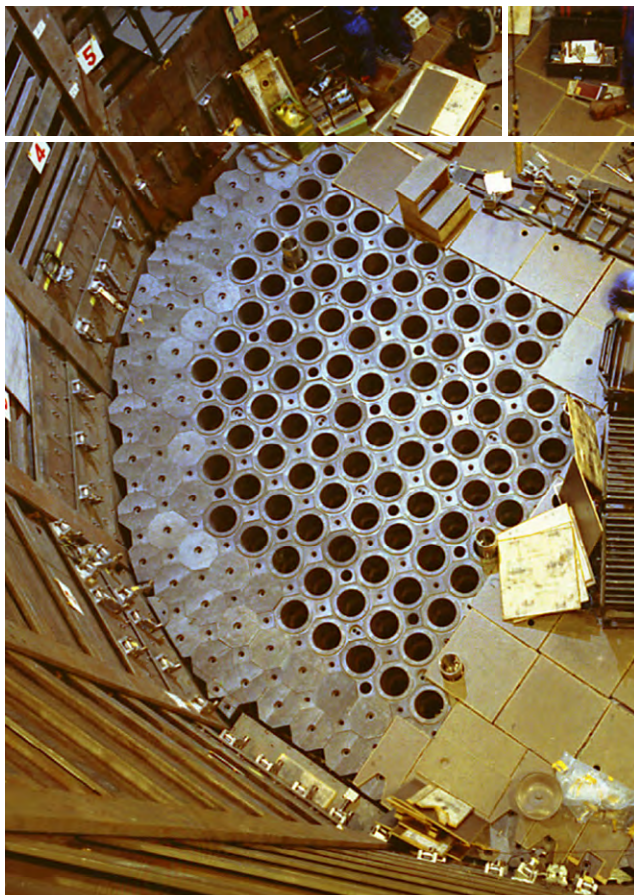
We have been involved with the nuclear industry from the start, having helped develop the first generation of UK nuclear power stations.

We continue to work in the generation, decommissioning and defence sectors.

Our Nuclear services team are fully SQEP and security cleared. We provide comprehensive support:

- Specialist engineering maintenance
- Decommissioning – Drop testing of flasks for nuclear waste (specialist indoor facility)
- Testing on safety critical issues
- Structural repairs design and implementation – Plant Life Extension programmes
- Full scale mock-up testing and trials
- Concrete – mix design development and production trials
- Condition/structural surveys and inspections including corrosion





Our team work across the UK and beyond and comprise c.90 engineers, scientists and consultants based on a 5.5 hectare campus with a 3,600m² indoor facility plus additional facilities in the north west of England.

Our experience puts us in an excellent position to support decommissioning programmes and new build in the UK and beyond.



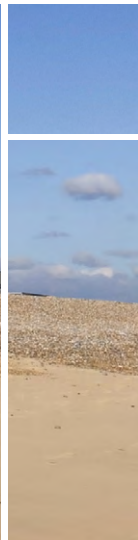
New Build



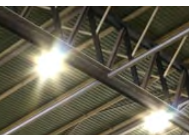
Our past history and today's expertise, particularly around major construction projects puts us in a strong position to support the new nuclear programme.

Support services include:

- Large scale mock-ups and trials
- Envelope testing
- Concrete mix design trials and UKAS accredited project/production quality assurance testing
- Seismic testing



Our philosophy is “we can build and test anything”.



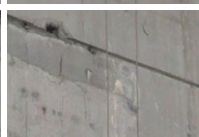
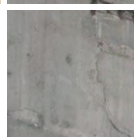
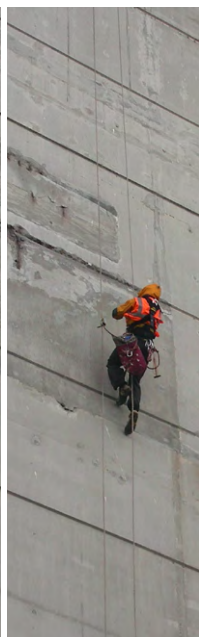
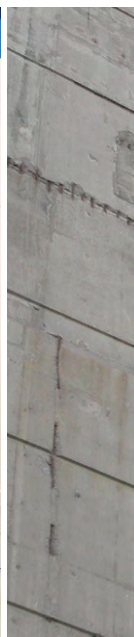
1/10th scale model of the Sizewell B (the last nuclear power station to be constructed in the UK) secondary containment structure. Design validation testing carried out.

Decommissioning

The legacy of over 60 years of nuclear power generation coupled with R&D and defence materials creates huge challenges.

Our team working in collaboration with other industry partners can help in the areas of:

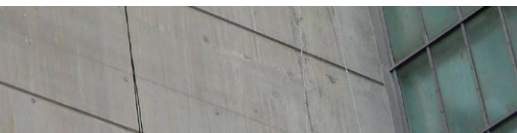
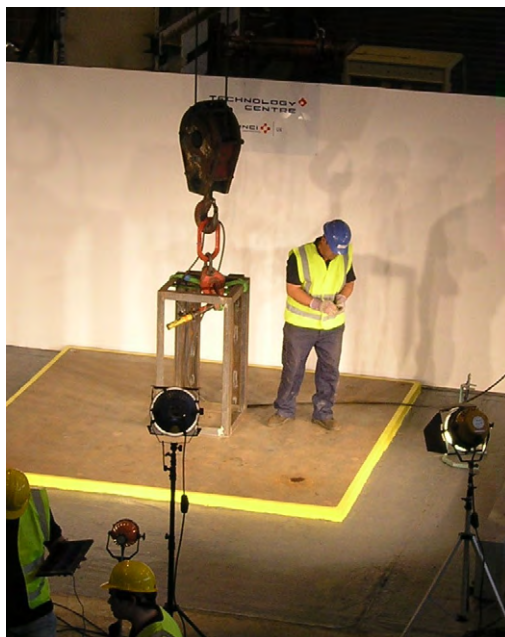
- Waste handling & storage
- Long term care & maintenance of structures





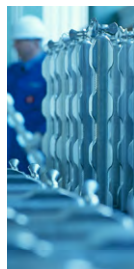
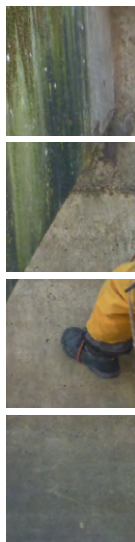
Services provided:

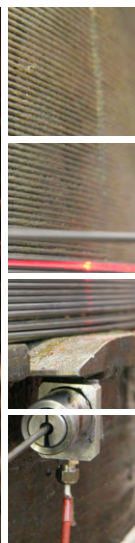
- Drop tests of waste flasks (indoor facility)
- Concrete investigation, mix designs and production trials
- Large/full scale mock-ups and trials
- Condition surveys including UAVs
- Non-destructive and non-intrusive testing and inspection



Generation

- Supporting the safety case with specialist inspections
- Building condition surveys
- Innovative equipment design and supply
- Full-scale trials to enable “switch on” after unplanned outage





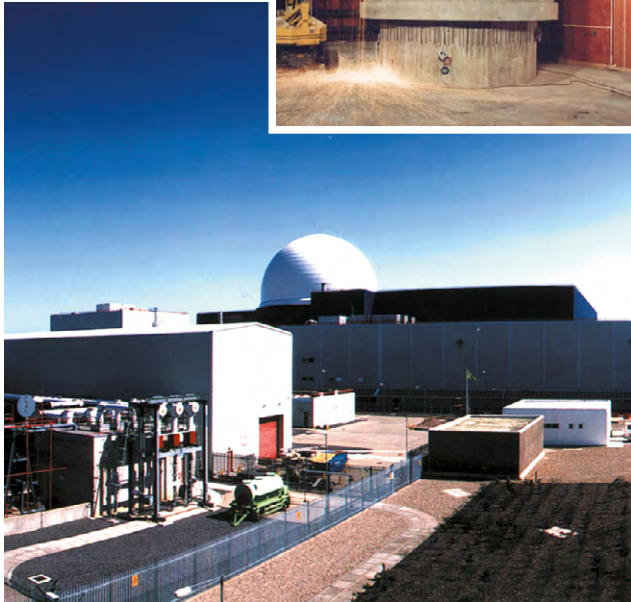


Case Study | New Nuclear

SIZEWELL B 1/10TH SCALE MODEL

During the design process for Sizewell B, we designed a 1/10th scale model of the secondary containment building was designed and constructed by Taylor Woodrow Construction (now Initivo). The fully instrumented miniature model of concrete, scaled reinforcement and prestress was pressurised to failure in order to validate the design analyses for the full scale version.

This model was the last of a series of pressure vessel models designed and tested to support the UK power stations – all undertaken by Initivo.



Nuclear Safety

Design verified to satisfaction of the regulator.

Programme

Lessons learned applied.

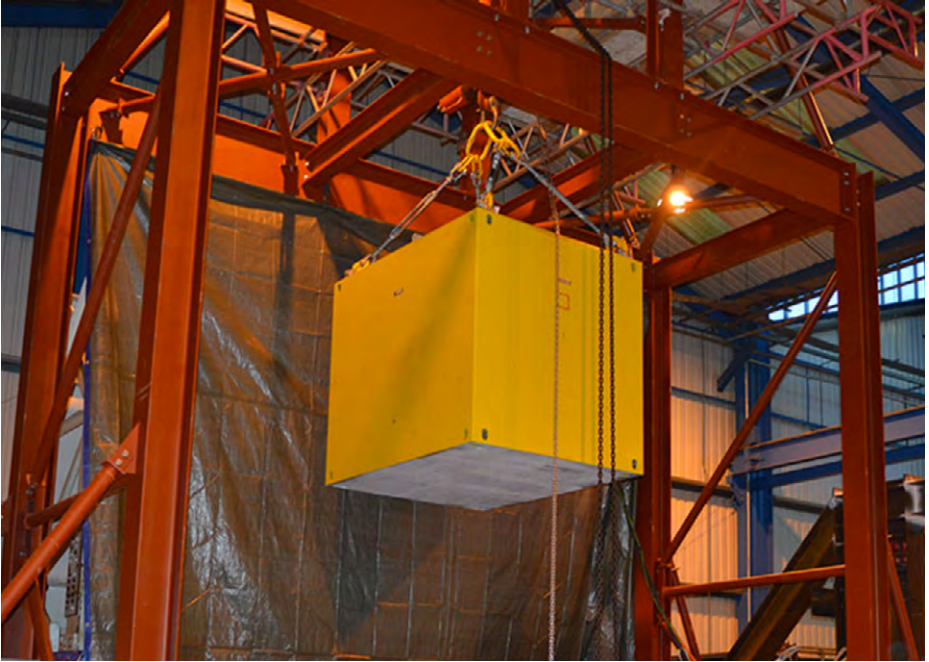
Value Added

The value was in the confidence that was gained and the approval of the regulator to accept the design.

The test to failure proved that the failure mechanism was as predicted by the theory and this could then be applied to the full scale structure.

Case Study | Decommissioning

DCIC DROP TEST



Initivo were commissioned to carry out specialist testing for the Nuclear industry. The project involved dropping an 18 tonne flask from 5 metres and was carried out at our indoor laboratory.

The flasks are used for storage and transportation of Intermediate Level Waste (ILW) and the tests are performed to verify extensive pre-test analysis by our client and their consultants. To this end measurements are recorded at high speed using accelerometers, strain gauges and high speed video.

Confidentiality precludes us from providing more detail but we can confirm that the testing went very well.

Our team have a long history of performing drop tests, past tests have included:

- 6 tonne flask from 10 metres
- Various 3m³ 7 tonnes boxes from 25 metres
- 12 tonne boxes from 15 metres

Case Study | Decommissioning

SELLAFIELD FRICTION TEST

Our structural testing team have worked with another VINCI company, Nuvia Ltd, to support demolition of a chimney stack at Sellafield nuclear site.

The demolition work was many years in the planning due to the numerous challenges posed by its location on top of the First Generation Reprocessing Plant which carried out the first stage of reprocessing fuel from the Windscale pile reactors.

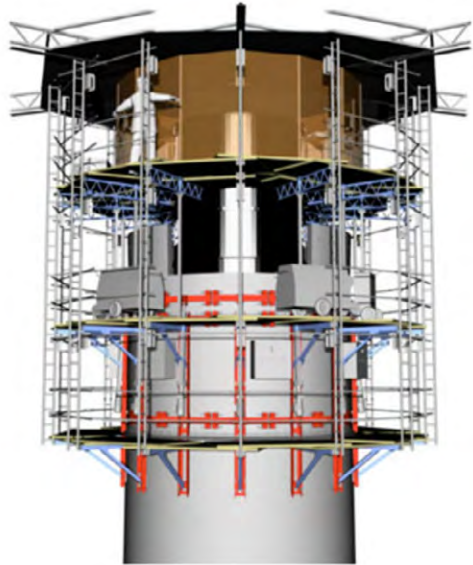
The stack was demolished using an innovative self-climbing platform (SCP), which was trialled on a mock 8m high stack in Oldham.

The SCP provided a platform for access to remove the concrete windshield and internal stainless steel flue liner, and provided the stack with a very visible steel cloak, as physical demolition started.

Keiron Clarke, sub-project manager, said:
"The technology we are using is new to the Sellafield site, but is also being used as part of the demolition of chimneys at the iconic Battersea Power Station in London."

"We've worked closely with that project to ensure we learn from their experience, before we bring this technology onto a nuclear licensed site. In addition, we've ensured stringent safety standards have been met."

"We know that this is a visible project that will interest people both on and off the Sellafield site, so we're keen to ensure people know just what is going on and how important this is to the site's clean-up mission."



As the stack didn't meet modern design standards, the project was top priority for Sellafield Ltd, the Nuclear Decommissioning Authority and the Office for Nuclear Regulation.

Initivo carried out specialist testing to ensure friction co-efficient performance targets were met, durability trials were also performed. The testing was undertaken at our UKAS accredited laboratories. We designed the test rig and supplied the required calibrated test instrumentation. Our team included expertise in concrete technology and instrumentation specialists.

This was an example of excellent collaboration between VINCI companies.

Case Study | Generation

SIZEWELL B DRY STORE

Initivo provided expert concrete consultancy for the Sizewell B nuclear power station dry fuel store project which was constructed by VINCI Construction UK Limited.



One of the key elements of this project is the construction of the floor slab, which has a very demanding performance specification.

Our team delivered a comprehensive review of the mix design, while engineers carried out specialist testing on materials in our United Kingdom Accredited Service (UKAS) laboratories.

We also carried out specialist on-site monitoring during the laying of concrete to ensure that the “actual” met the design specification.



Case Study | Generation

BOILER CLOSURE UNIT (BCU) RECOVERY PROGRAMME

During a routine inspection of the wire windings of the BCUs some broken wires were identified, prompting a shutdown of the four reactors until a solution was found and implemented.

Our team's role in the Hartlepool and Heysham 1 BCU recovery project included optioneering, method selection, surveys, technical analysis, comprehensive testing, installation management and commissioning support.



Nuclear Safety

Our complex theoretical analysis and desk studies underpinned the safety case and provided additional confidence in the solutions proposed to the regulator.

The external bands that formed the solution were applied to full size mock-ups under site conditions by the teams that would eventually fit them on the stations.

We developed a thorough testing programme on the replicas which was fully witnessed by our client and the regulator. The success of the multi scenario laboratory tests, including seismic, provided confidence in the solution and satisfied the regulator that the stations could be safely returned to service.



Programme

As a notifiable event in the stock market the pressure was on from day one to get the stations back on line. The teamwork both within our team and with other supply chain partners was described as exceptional, responding to time constraints with an extremely accelerated programme.

Our team worked around the clock in conjunction with the APEX (Appointed Examiner) and civil engineering team, devising a method to fully record, interpret and analyse the findings.

Value Added

The right combination of skills within a large, fully integrated team ensured creative problem solving to satisfy client needs and their successful and safe implementation.

Within a month of identification of the problem, at which time

two of our team were involved in initial discussions, we had deployed over 100 technical and operational staff, full time, on the recovery project.



The project was described by British Energy's CEO Bill Coley as **"British Energy's most significant technical, engineering and management challenge."**



Our full engagement with the station and civil engineering teams meant we were ideally placed to provide support on this critical project.

Unique Facilities



- 5.5 hectare campus
- 3,600m² indoor workshop
- Team comprises c.90 engineers, scientists and technicians
- In-house steel working team
- Craneage and plant on-hand



- ISO 9001:2015 Quality Management System
- ISO 14001:2015 Environmental Management System
- BS OHSAS 45001: 2018
Occupational Health and Safety Management System



A Culture of Innovation



1950s

R&D labs set up to support construction of the world's first commercial scale nuclear reactor

1960s

Design and testing of specialist concretes to perform at elevated temperature and pressure

Design and construction of civil works for HPA, SZA, Wylfa and Dounreay

1970s

Design and construction of Wylfa nuclear power station, featuring the world's largest prestressed concrete spherical pressure vessels

First development of electronic method of measurement (EMM)

Design and construction of civil works at HYA and HRA

1980s

Design of second generation AGR

Construction of HYB

Design of civil works at TOR and HYB

Constructed 1/10 scale model of SZB containment vessel to validate design and satisfy regulator

1990s

Completion of SZB, design of civil work, design and install building services

AGR superheater restraints at DNB

Station-wide upgrade and repair at DNA

2000s

BCU recovery programme

2010s

18 tonne drop test of flask used for storage and transportation of Intermediate Level Waste (ILW) to verify extensive pre-test analysis

Sellafield friction test to ensure friction co-efficient performance targets were met

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