NDT

TWI

Nuclear Projects Development and Qualification

World Leading Capability

WORLD-LEADERS IN DEVELOPMENT OF ADVANCED INSPECTION SOLUTIONS, INCLUDING:

AUT	PAUT	FMC	ECAT
AUTOMATED ULTRASONIC TESTING	PHASED ARRAY ULTRASONIC TESTING	FULL MATRIX CAPTURE	EDDY CURRENT ARRAY TESTING

Validation and **qualification** of inspection procedures, equipment and personnel to comply with Nuclear regulatory bodies and standards

Third party audit services and **Level III NDT review** of inspection procedures and technical justifications

Code compliance guidance and support to working groups for the integration of new technologies for future deployment on nuclear plant

Bespoke inspection solutions and procedures for complex geometries, exotic materials and high temperatures

Design and certification of radiation resilient sensors and deployment platforms

Modelling for justification of selected NDT techniques

Training of qualified operators for site implementation of specific procedures

- TECHNICAL EXPERTISE
- REGULATORY COMPLIANCE
- VALIDATION & QUALIFICATION
- PROCEDURE DEVELOPMENT
- BESPOKE INSPECTION SOLUTIONS
- AUDIT/INDEPENDENT QUALIFICATION
- TRAINING & CERTIFICATION

Key Development Areas

- **Narrow gap, thick section weld inspection**
- **Inspection of austenitic and dissimilar welds**
- **Through weld cap inspection**
- **PAUT corrosion mapping**
- **Dry coupled PAUT**
- **ECAT in lieu of Magnetic Particle Inspection (MPI) / Dye Penetrant Inspection (DPI)**
- **Ultrasonics testing (UT) in lieu of Radiography Testing (RT)**

Long Term Strategy

- Advancement of TWI's state-of-the-art core technologies through R&D and stakeholder engagement
- In-process inspection solutions for immediate quality control of weld repair in high integrity components
- Material properties prediction: Using NDT data to predict material properties, likelihood of flaws and determination of residual stress/strain
- Systems integration: Integration of robotic scanning, NDT sensors and analysis systems
- Support for site deployment of advanced NDT techniques
- Digitalisation support through:
  - Development of UT in lieu of RT
  - ECAT in lieu of MPI / DPI
  - Digital radiography in lieu of film radiography

Code and Regulatory Compliance

- UK ASME BPVC III International Working Group with TWI NDT contribution
- BS 7910 Annex T: Guidance on the Use of NDT with ECA and Annex K: Probabilistic Assessment
- Developments in UK Defect Assessment Procedures R6 Revision 4, harmonising NDT guidance with BS 7910 and existing EDF Energy Capability Statements
- IIW Handbook on the Ultrasonic Inspection of Austenitic and Dissimilar Welds
- AFCEN Design and Construction Rules for Mechanical Components of PWR Nuclear Islands code (RCC-M)
- ASME Section III, Division 4 for requirements for the construction of fusion energy devices
- IIW Commission V: NDT and Quality Assurance of Welded Products

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Email us to get in touch with the NDT team for help with your NDT needs.