CYIENT

#DesigningTomorrowTogether

ENGINEERING THE FUTURE OF NUCLEAR ENERGY

Balance-of-Plant, Digital Transformation, and Multidisciplinary Engineering for a Safer, Smarter Tomorrow

POWERING THE NEXT ERA OF CLEAN ENERGY

The new era of nuclear energy is here! Beyond building new production capacity, operators are extending the life of existing plants by 20–30 years, modernizing systems, and upgrading equipment to meet the highest safety and performance standards. At the same time, cutting-edge technologies — from Small Modular Reactors (SMRs) to fusion initiatives — are redefining the potential of nuclear power. It's a transformative moment for the industry, and Cyient is ready to help shape its future.

What sets Cyient apart is our ability to deliver **Intelligent Engineering** — the fusion of precision engineering with digital innovation. With more than **15 years of nuclear expertise**, and as the **first Indian company to receive U.S. DOE 810 export authorization**, we combine regulatory credibility with practical, hands-on delivery. Our teams design smarter plants, optimize performance, and ensure compliance — while safeguarding intellectual property and cyber security in one of the world's most sensitive industries.

Across **3 million nuclear engineering hours and 20+ global projects**, we've proven our ability to partner for the long term. Whether it is extending the life of reactors, modernizing balance-of-plant systems, or enabling the clean energy transition through advanced fission and fusion, Cyient's mission is clear: to help the nuclear industry achieve more — safely, sustainably, and with confidence in the decades ahead.

OUR MISSION

To support the nuclear industry's resurgence through engineering excellence, regulatory compliance, and digital transformation.

OUR EDGE IN NUCLEAR ENGINEERING

Credibility & Compliance

DOE 810 approval, ASME NQA-1 compliant, DAE licenses renewed every five years.

Digital Advantage

560-core HPC cluster, advanced simulation tools, digital twin solutions, and predictive analytics.

Documentation Leadership

Nuclear documentation experts delivering compliant, regulator-ready documentation across global programs.

Proven Partnerships

Strategic alliances with U.S. nuclear majors, and European OEMs, with 10–15 year long-term collaborations.

Global Delivery & Experience

15+ years in nuclear, 3M+ engineering hours, 20+ projects executed, and dedicated engineers across 26 delivery centers worldwide.

PRECISION ENGINEERING & DIGITAL INNOVATION

- **Mechanical & Piping:** 600+ piping load reconciliations, ASME Section III evaluations, CFD/FEA simulations.
- **Civil & Structural:** Seismic, static, and dynamic analysis using GTStrudl, Tekla, PDS, Inventor.
- **Electrical & I&C:** Control room design, cabinet engineering, FAT testing, safety/non-safety hardware validation.
- **Documentation:** Full lifecycle management, spare part structures, compliance documentation, metadata verification.
- **Digital Innovation:** Integrating AI, automation, and analytics into the heart of collaborative engineering.

DEMONSTRATED EXCELLENCE IN NUCLEAR PROJECTS

1. U.S. 1000 MW Civil Nuclear Power Plant

Challenge: Deliver end-to-end engineering and lifecycle support for a 1000 MW reactor project while meeting stringent U.S. DOE 810 and DAE regulatory standards.

Our Approach: Provided multidisciplinary engineering — including structural design of auxiliary and turbine buildings, piping analysis, embedment design, containment calculations, and control room systems. Coordinated across global supply chains (UK, Czech Republic, Portugal) with secure IT and physical "bubble" infrastructure for compliance.

Outcome: 1.5 million+ engineering hours, 200+ FTEs mobilized, enabling safe and timely design, construction, and commissioning of a next-generation civil nuclear power plant.

2. European Nuclear Waste Treatment Facility

Challenge: Design and integrate reliable control systems for a facility handling solid radioactive waste, ensuring radiation safety and compliance.

Our Approach: Delivered control system engineering for sorting, compacting, HVAC, and auxiliary systems. Developed PLC logic, HMI integration, historian systems, and full NQA-standard panel engineering, BOM preparation, and commissioning documentation.

Outcome: Enhanced facility safety, regulatory compliance, and operational reliability, enabling secure treatment and storage of nuclear waste.

3. Mobile Boration System (Rockwell Automation)

Challenge: Ensure continuous supply of borated coolant to reactor systems during both normal operations and extreme events.

Our Approach: Designed and commissioned a trailer-mounted mobile boration skid. Developed PLC logic and implemented calculation-based controls to overcome limited instrumentation. Integrated safety and historian systems for real-time monitoring.

Outcome: Flexible, mobile solution enabling operators to maintain reactor safety margins under varied operating scenarios.

4. French Nuclear OEM – Documentation Excellence

Challenge: Improve quality and compliance of nuclear documentation and metadata management for a European reactor OEM.

Our Approach: Deployed 30+ experts over a six-year engagement to identify and rectify metadata issues, implement robust QA processes, and manage documentation lifecycle.

Outcome: 100,000+ workhours delivered, resulting in reliable, compliant documentation packages that improved efficiency, customer satisfaction, and audit readiness.

5. U.S. OEM Partnership – Long-Term Collaboration

Challenge: Support a 130-year-old U.S. nuclear leader with global engineering services across multiple projects.

Our Approach: Partnered since 2010 to provide asset management, connected equipment solutions, and engineering across mechanical, civil, structural, and I&C domains. Dedicated over 200 engineers and technicians to ongoing programs.

Outcome: 15+ years of collaboration, delivering hundreds of successful projects and reinforcing the customer's position as a global leader in nuclear innovation.

About Cyient

Cyient (Estd: 1991, NSE: CYIENT) delivers intelligent engineering solutions across products, plants, and networks for over 300 global customers, including 30% of the top 100 global innovators. As a company, Cyient is committed to designing a culturally inclusive, socially responsible, and environmentally sustainable tomorrow together with our stakeholders.

For more information, please visit https://www.cyient.com/energy/nuclear

Contact Us

North America Headquarters
Cyient, Inc.
99 East River Drive
5th Floor
East Hartford, CT 06108
USA
T: +1 860 528 5430
F: +1 860 528 5873

Europe, Middle East, and Africa Headquarters
Cyient Europe Limited
Apex, Forbury Road,
Reading
RG1 1AX
UK
T: +44 118 3043720

Asia Pacific Headquarters
Cyient Limited
L14, 333, Collins Street
Melbourne, Victoria, 3000
Australia
T: +61 4 7026 3817
F: +61 3 8601 1180

Global Headquarters
Cyient Limited
Plot No. 11
Software Units Layout
Infocity, Madhapur
Hyderabad - 500081
India
T: +91 40 6764 1000
F: +91 40 2311 0352

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