

# Nuclear and environmental services

Delivering trusted, end-to-end solutions that ensure safety, compliance and long-term confidence in nuclear operations.

In nuclear operations, there's no margin for error. A single misstep can lead to regulatory findings, licensing delays or safety cases rebuilt from scratch.

Calian is a trusted partner in critical environments, supporting utilities, vendors, regulators and government bodies across licensing, safety analysis, operations, decommissioning and environmental stewardship. Our team brings over 25 years of experience in highly regulated projects that stand up to scrutiny, with a clear understanding of the standards, expectations and risk factors from day one.



## Our solutions

### Environmental protection

Comprehensive environmental services ensure nuclear projects meet strict regulatory requirements while reinforcing public trust. A balanced approach combines detailed scientific assessment with practical, field-ready implementation, including:

- Environmental and impact assessments
- Effluent and emissions management programs
- Environmental monitoring and reporting
- Radiological and non-radiological impact assessments
- Environmental risk assessments

### Radiation protection

Protecting workers, the public and the environment requires precision and discipline. Advanced modelling, monitoring and program design are applied to maintain compliance and uphold industry best practices.

- Health physics support
- Dose assessments (workers and public)
- Shielding analysis and design support
- Radiation protection program development
- ALARA program implementation
- Radiological hazard assessments



## Project controls and project management

Effective project delivery depends on structured oversight and disciplined execution. From early concept through commissioning, integrated controls ensure alignment across scope, schedule, cost and risk.

- Concept-to-commissioning lifecycle oversight
- Regulatory, stakeholder and Indigenous engagement support
- Integrated risk, schedule and cost controls
- Vendor coordination and milestone accountability
- Quality-first execution embedded in every phase

## Decommissioning and waste management

Safe decommissioning and responsible waste management demand careful planning and technical expertise. We ensure that the activities are carried out in alignment with regulatory expectations, ensuring protection of both people and the environment. That means:

- Preparation of decommissioning plans
- Site characterization in support of decommissioning
- Waste characterization
- Clearance of materials and equipment from regulatory controls
- Development of conditional clearance levels for site release from regulatory controls
- Field surveys

## Nuclear safety and licensing

Our expertise in deterministic and probabilistic safety analysis enables safe, compliant project delivery across a wide range of nuclear applications.

Services provided to support safety and regulatory compliance include:

- Regulatory and licensing support
- Hazard screening assessments
- Probabilistic Safety Assessment (PSA)
- Deterministic Safety Analysis (DSA)
- Event identification and classification (EI&C)
- On-site and off-site dose consequence assessments



# Emergency preparedness and training

Readiness across all phases of an emergency program is critical. Capabilities span planning, training, response and continuous improvement—ensuring organizations are equipped to act with clarity under pressure.

## Programmatic

- Governance
- Emergency management plan roadmaps
- Licensing activities
- Impact assessments
- Safeguards and Nuclear Material Accountancy programs

## Evaluation and validation

- Drills and exercises
- Gap assessment
- Program audits
- After action reviews (post-event and post-exercise)
- ResponseReady®



## Planning

- HRVA / HIRA / TRA
- Business impact analysis
- Plan development
- Procedure development
- Business continuity planning management
- Technical planning basis
- Violent incident response planning
- Workplace safety planning
- Malevolent acts assessments
- Site selection threat and risk assessments
- Security business process development

## Training

- Position-specific training
- Nuclear event decision making
- Crisis communications
- Emergency Operations Centre (EOC) training
- Incident Command System training
- Nuclear Emergency Response
- Train-the-Trainer

## Operations

- On-call technical response
- Surveying and sampling





## Quality management and assessment

Consistent performance in nuclear environments requires strong quality systems and ongoing evaluation. Alignment with leading standards ensures both compliance and continuous improvement.

- Gap assessments against CSA, ISO and CNSC standards
- Internal audit program support and independent reviews
- Management system and process audits
- Compliance with standards including CSA N286, ISO 9001, ISO 14001, ISO 45001
- Standards for management systems and process audits
  - CSA N286-12, N299.1-4, N286.7
  - ISO 9001
  - ISO 14001
  - ISO 45001
  - CSA Z1600, N1600
  - CNSC REGDOCs

## Systems engineering and robotics

Complex nuclear projects benefit from a systems-level perspective. Multidisciplinary engineering and advanced robotics solutions support integration, efficiency and operational safety from design through deployment.

- Cradle-to-grave systems engineering
- Industry collaboration and integration support
- Remote tooling and robotics solutions
- Field support and technical implementation

## Indigenous and public engagement

Long-term project success depends on meaningful relationships with communities and stakeholders. Engagement approaches are designed to foster dialogue, build trust and support informed participation in decision-making. These include:

- Indigenous and stakeholder engagement programs
- Public consultation and communication strategies
- Workshops, open houses and community forums
- Digital engagement platforms
- Impact assessment and social risk mitigation support

### Build confidence into every phase of your nuclear project.

Partner with Calian to navigate complexity, meet regulatory expectations and deliver with certainty.

Email us at [nuclear@calian.com](mailto:nuclear@calian.com) or visit [calian.com/energy-utilities/nuclear-services/](https://calian.com/energy-utilities/nuclear-services/)



For over 40 years, Calian has delivered mission-critical solutions when failure is not an option. Trusted worldwide, we empower organizations in critical industries to overcome obstacles, manage risks and drive progress. By combining the expertise of our people, proven industry insight, cutting-edge technology, bold innovation and global reach, we deliver tailored solutions that solve complex challenges. Headquartered in Ottawa, Canada, with over 6,000 people around the world, Calian's solutions protect lives, strengthen security, foster global connectivity and drive economic progress, making a lasting impact where and when it matters most.