

Enterprise Asset Management for Nuclear Plants

- with IBM Maximo for Nuclear Power industry add-on



Nuclear plants operate within a challenging and changing energy market. In the UK, the government's British Energy Security Strategy policy paper proposes a significant acceleration of nuclear energy, with up to 24GW of generation by 2050. This would represent up to around 25% of electricity demand¹. It is intended that Small Modular Reactors will form a key part of the nuclear generation capacity, which will introduce more operators to the nuclear generation market.

This means that existing power generation businesses may need to implement a range of new systems, and skill up their management teams, in order to handle the considerable additional complexities that nuclear power generation entails.

Management in the nuclear industry faces a constant dichotomy of maintaining a totally risk-free generation environment, while still achieving an optimum level of financial performance. This applies to both the construction phase, and during the operational lifetime of the plant.

IBM Maximo, the leading Enterprise Asset Management solution, has an industry add-on specifically for the nuclear industry, which includes several tools to make the balance between these competing requirements easier to achieve.

Nuclear power plants have a working life which exceeds any individual person in the company. The UK's original AGR reactors are now approaching 70 years in service, and the new generation of PWR reactors are expected to operate for even longer, perhaps for 100 years.

The combination of the highly challenging technical environment, the exceptional public safety requirement, and the extreme longevity of the plants, make it absolutely essential that all assets within plants are maintained to the very highest levels. The *IBM Maximo for Nuclear Power* industry add-on has been designed to help management achieve this.

Ensuring continuity of expertise

The exceptional longevity of nuclear assets means that they will far outlast any members of the engineering team who originally install and maintain them. So it is absolutely critical to ensure that knowledge and data from maintenance is captured accurately, transparently and completely, and stored in an Enterprise Asset Management system for future engineers to access.

This helps to maintain the highest level of safety and efficiency. And it also means that when the time comes for decommissioning, management has access to a full record of the performance and condition of the plant.

Maximo Application Suite also includes Maximo Assist, which can log any notes and exchanges between engineers, which helps to build up the knowledge bank for future users, to guarantee the continuity of expertise beyond the initial team. And maintenance processes can be strictly enforced, so that engineers must perform all actions in a precise order, and every action they take is logged in Maximo. This provides a full digital audit trail, and new data can be combined with historical data, and sensor-based automatic anomaly detection to spot potential issues, and prevent them becoming problems.



Regulatory compliance

Title 10 of the Code of Federal Regulations (CFR) Part 52, and NIA 1965 in the UK, require “reliability assurance programs” (RAP) for nuclear safety-related equipment.

To satisfy this requirement, nuclear plants must essentially be able to answer the question: “What activities are being carried out to ensure all equipment is reliable?”

IBM Maximo for Nuclear Power can help you fulfil your regulatory requirements by enabling you to:

- Manage the equipment lifecycle, including purchasing, configuration, work management, and maintenance
- Tracking LCO actions
- Manage shift operations
- Generate duty station shift records using advanced capabilities
- Promote nuclear safety by using clearances, impact plans, permits, condition reports, and corrective actions
- Automate processes for condition reporting and service request management by configuring predefined workflow content that is based on the Standard Nuclear Performance Model.
- Configure predefined report content based on industry KPIs, to suit your needs

Advanced features & apps

IBM Maximo for Nuclear Power also includes several advanced features to help with the complexities of rounds and clearances in a nuclear environment:

- features for managing clearances and temp lifts
- mathematical formulas for reading calculations, for management of duty stations
- Clearances (Nuc) application - ensures that conflicts do not exist when multiple tags are in place on a component
- Narrative Log Templates (Nuc) - enables you to create narrative log templates
- IBM Maximo for Nuclear Power Operator Rounds mobile app, which guides operators through the required time and sequence of readings needed to monitor equipment performance and condition at nuclear installations

For more information about IBM Maximo for Nuclear Power, a no-obligation discussion or a demonstration, contact us now on info@peluk.org.

¹ <https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>

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About Peacock Engineering

Peacock Engineering Ltd was established to deliver a diverse range of Asset and Service Management solutions to asset intensive industries.

Our consulting team is made up of long standing IBM Maximo professionals, each with an average of 12 years' experience in the product and who, together, have amassed over 400 man-years of Maximo systems implementation experience.

From this knowledge and practical application, a proven and trusted process-driven methodology has emerged. With the methodology in place, the ongoing challenge is to improve delivery efficiency and provide affordable solutions, using a mix of services and systems provisioning models, to meet a broad range of industry verticals.

