

GlobalLogic

A Hitachi Group Company

AI + Metaverse: Cutting nuclear inspection time & costs at scale

Nuclear Energy Business Unit of Hitachi partnered with GlobalLogic to transform how nuclear facilities are inspected and managed. Combining Gen AI with a VR-enabled Digital Twin, the team enabled secure, remote access to critical plant data – **accelerating decision-making, reducing operational delays**, and laying the groundwork for **data-driven plant operations**.

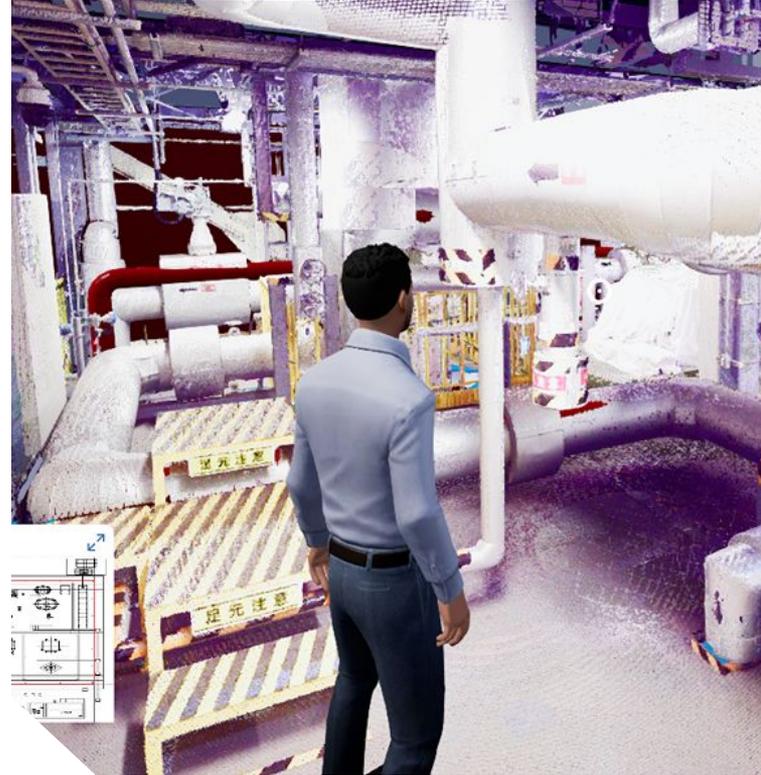
20%

reduction in manual effort
for plant operations

50%

faster data retrieval for
nuclear engineers

GlobalLogic's solution significantly reduced Hitachi-GE Nuclear Energy's on-site inspection time and travel costs



Challenge

Nuclear inspections are **high-risk, highly regulated, and logistically complex**.

Nuclear Energy Business Unit of Hitachi faced delays and inefficiencies due to limited on-site access, manual data search processes, and challenges coordinating across suppliers.

With technical documentation scattered across terabytes of legacy systems and engineering files, experts were losing time – and insight – navigating critical information. These inefficiencies **created risk and delayed key decisions** on plant design, construction, and maintenance.

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Value Created

- **Immersive Digital Twin:** A VR-enabled replica of the nuclear plant environment, built using point cloud and 3D CAD data
- **Generative AI Search:** Rapid access to technical documentation through AI-powered retrieval, contextualized by virtual plant environments.
- **Multi-User Collaboration:** Real-time collaboration across teams and suppliers inside a secure, virtual model of the plant.

Impact

- **20% reduction** in manual processes – Virtual workflows replaced repetitive data analysis and search
- **50% faster data retrieval** – Engineers accessed information contextualized to virtual plant environments
- Secure remote access **reduced inspection costs**, virtual design reviews improved supplier coordination
- **Real-time data capture** laid the foundation for a data-driven power plant.