

Proven digital excellence for nuclear manufacturing

Innovation Awards 2025
– World Nuclear Exhibition

The Challenge

Nuclear component manufacturing remains heavily dependent on paper-based travelers, disconnected IT systems and manual quality records. This approach creates silos, delays and opportunities for human error – with major implications for **schedules, costs, and safety**.

- Paper records are vulnerable to manipulation and alteration
- Documentation deteriorates during long projects, becoming unreadable.
- Final dossier preparation can take weeks, delaying component delivery.

The Solution – iMESnu

iMESnu (Intelligent Manufacturing Execution System for Nuclear Applications) is a fully digital, field-proven solution designed specifically for nuclear industry requirements. It replaces paperwork and fragmented processes with an integrated, tamper-proof digital environment.

Three pillars of innovation:

- 01. Active compliance enforcement** – step-by-step digital guidance, real-time qualification checks, automatic NCR blocks.
- 02. Tri-partite transparency** – manufacturer, inspector, and client share the same real-time data; remote hold points enabled.
- 03. Immutable digital records** – every action time-stamped, auditable, and instantly accessible.

Measured Impact Time & Cost



Lead Time Reduction

Implementation of iMESnu has delivered measurable improvements in highly regulated industries and now adapted to nuclear.

- **Material checks:** minutes → seconds | Data transcription effort ↓50–75%
- **Non-conformance closure:** 7–21 days → 1–5 days | Up to 60–70% faster
- **Inspections:** 50–95% faster | Remote & virtual inspections
- **Final documentation:** 10–15 days → 24–48 h | Up to 75% faster
- **Overall project cycle time:** 15–25% faster

Cost Reduction

- **Paperless execution:** up to €120,000 savings per nuclear project
- **QA review:** 3 days → 4 hours – ↓85%
- **QA efficiency:** +40–50%
- **Reduced rework & scrap:** ↓1–2% of project cost
- **Client travel:** ↓35%
- **Audits:** from days to minutes ↓95%

Aggregate effect:

- 3–5% operational cost reduction
- 5–10% increase in total project value

iMESnu

Proven, mature and ready
to transform nuclear manufacturing.

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Safety & Security

iMESnu directly contributes to nuclear safety culture by embedding quality into every operation:

- Guided workflows prevent human error.
- Automatic blocking of unqualified operators (welding, NDE).
- Real-time traceability of materials, certificates and heat numbers.
- Immutable, tamper-proof quality records.
- Secure, role-based access.

Proven Maturity

- Over 20 years of AIC experience in ASME-compliant manufacturing.
- iMES platform in use since 2018.
- More than 10,000 production orders processed in 2025.
- TRL 9 – fully deployed, in daily production.
- Proven in ASME → adapted for nuclear.

Environmental Benefits

- Paperless execution eliminates millions of pages per project.
- Scrap minimization reduces CO₂ footprint.
- Supports LTO of zero-carbon nuclear plants.