SencorpWhite

Case Study

Modernizing Mission-Critical Storage at a Nuclear Power Facility

Executive Summary

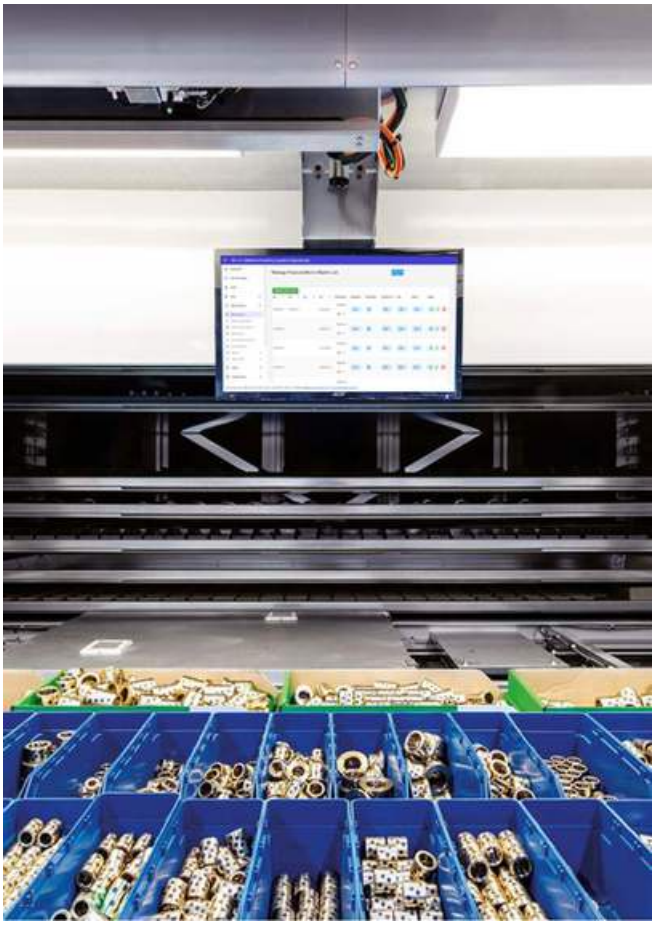
A large nuclear power facility faced growing operational and safety risks from outdated storage infrastructure. With over $120 million in MRO inventory—much of it mission-critical and requiring redundancy—the facility needed a solution to enhance safety, tighten inventory control, and ensure immediate access to critical spare parts.

The Challenge

The facility's static racking systems had deteriorated from repeated forklift strikes, creating safety hazards and risking structural failure. The existing setup also made inventory tracking difficult given the precision required for nuclear operations.

Key challenges included:

- **Safety Risks:** Damaged racking threatened personnel and inventory.
- **Inventory Value & Criticality:** Over $120M in parts must be available on demand.
- **Redundancy Requirements:** Regulations required duplicate components to be readily accessible.
- **Inventory Control:** Limited visibility risked misplacement or delays retrieving critical items.
- **Space Constraints:** Inefficient use of vertical space limited capacity and accessibility.



The Solution

The facility implemented Compact Double Vertical Lift Modules (VLMs), replacing traditional racking and eliminating forklifts from high-density storage areas. Two units were deployed initially; following proven success, a third was recently added.

Key features:

- Automated Retrieval: Goods-to-person delivery eliminates forklift traffic and accident risk.
- High-Density Storage: Maximizes vertical space within the existing footprint.
- Secure Access ("Vaulting"): Only authorized personnel can retrieve sensitive components.
- Inventory Management Integration: Real-time tracking improves accuracy and accountability.
- Redundancy Optimization: Duplicate critical components are always easy to locate.

Results & Benefits

1. **Enhanced Safety —** Eliminating forklift interaction dramatically reduced rack damage and injury risk.
2. **Improved Inventory Control —** VLMs provide a vault-like environment with controlled access and full transaction traceability.
3. **Increased Storage Density —** Vertical consolidation increased capacity within the same footprint.
4. **Faster Access to Critical Parts —** Automated retrieval minimizes downtime during maintenance or emergencies.
5. **Scalability for Future Growth —** The addition of a third VLM reflects confidence in the system's flexibility.

Conclusion

Faced with aging infrastructure and strict inventory requirements, this nuclear facility transformed its storage operations through automation. The Compact Double VLMs addressed immediate concerns while establishing a scalable, secure system built to support mission-critical operations for years to come.

Let's Connect:

- 508.771.9400
- sales@whitesystems.com
- whitesystems.com

Watch the system

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