

Advanced Analysis of Nuclear Waste Dry Storage Canister Health



Connects Technology To Business...

Improving Reliability Through Health Monitoring and Predictive Maintenance

Our specific research areas include:

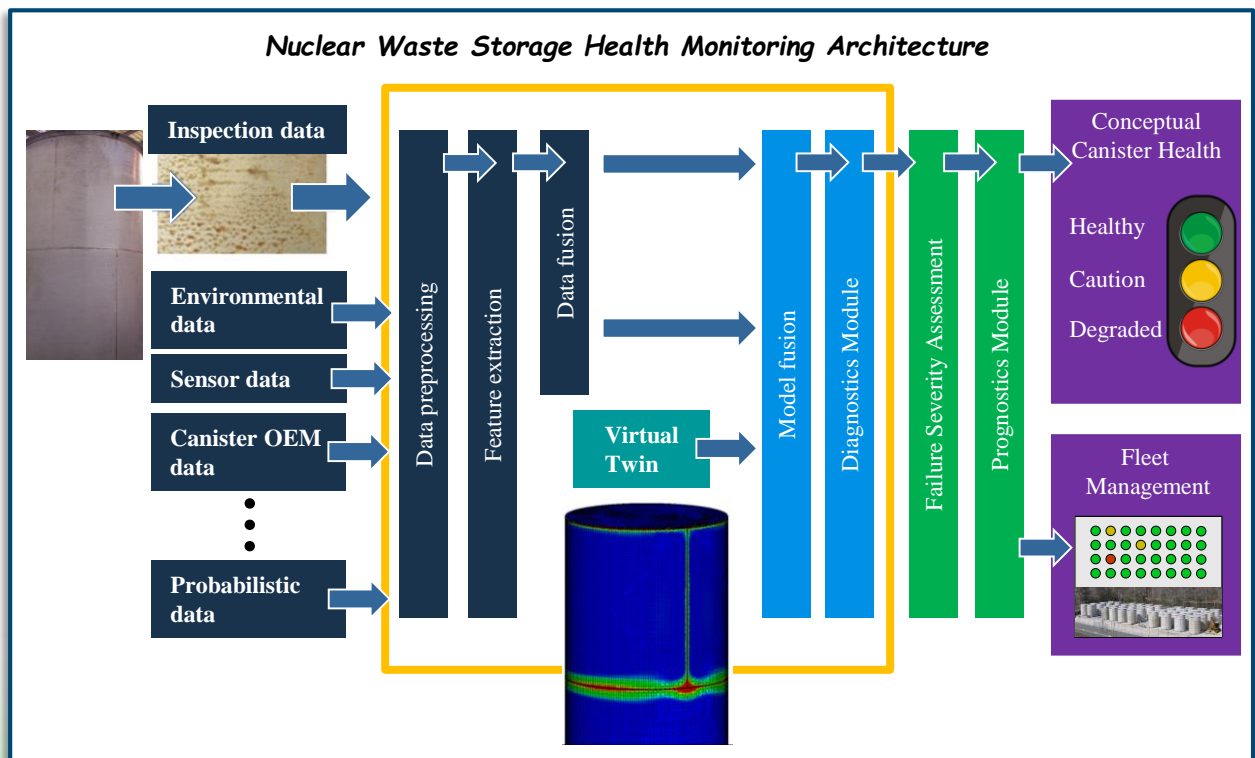
- **Corrosion Modeling** – there are a host of issues that cause corrosion to be the main actor of the degradation of canisters
- **Probabilistic Data-Analytics** – lack-of data will not stop development of the modeling, moreover shortage of inspection data also will not be an issue.
- **Reverse Simulation** – Verification of data derived from the digital-twin can help the reverse-simulation to infer the underlying parameters of importance from inspection data
- **NDE image data-fusion**
- **Multi-attributes Risk Management**

What can Advanced Analysis of Nuclear Waste Storage Health do?

- Detect and identify dry storage system failures
- Predict remaining useful life of dry storage systems.

Which technologies does Advanced Analysis of Nuclear Waste Storage Health use?

- Intelligent algorithms perform data fusion at the feature and sensor levels of abstraction.
- A physics-based virtual twin model is used to augment physical data.



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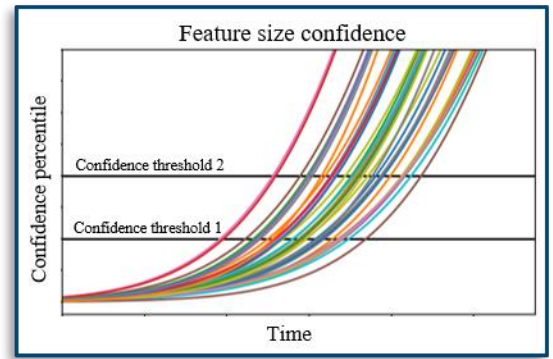
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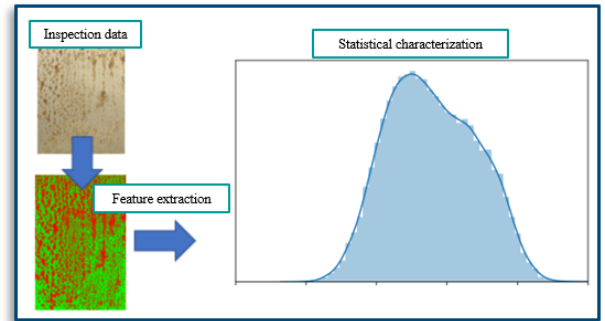
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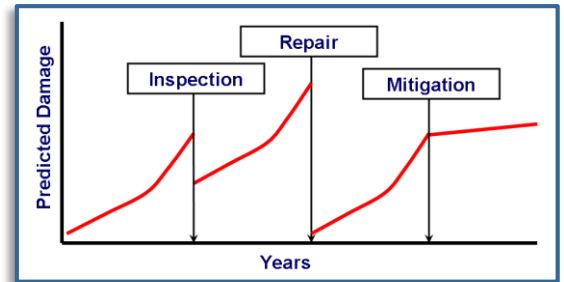
Predict the remaining useful life using a multi-algorithmic process analyzing chlorine induced stress corrosion cracking.



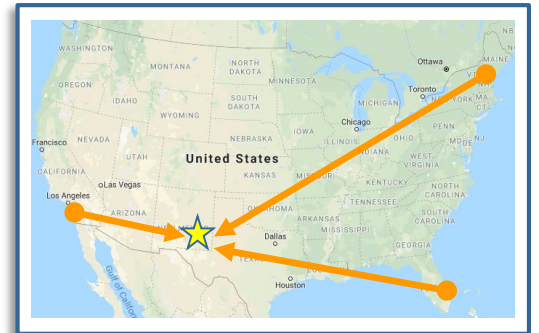
Detect pits and cracks from inspection data. Salient features are automatically extracted using embedded algorithms.



Repair and mitigation strategies reassess the canisters remaining useful life.



Transportation loading effects are applied to stress corrosion cracking.



Multi-location storage assessments factor the change in environment into the canister's remaining useful life.

Risk-based inspection planning utilizing dynamic risk profiles.

