framatome

In-Core Sipping for BWR Leaking Fuel Detection

Framatome's BWR in-core hood sipping delivers proven performance and reliability for detecting leaking fuel

Challenge

When performing outage services, how do you reliably detect leaking fuel within a core cost-effectively without handling fuel?

Solution

For more than 20 years, Framatome's BWR in-core hood sipping delivers proven performance and reliability for detecting leaking fuel. The dependable process detects leaking fuel in the core by sampling both water and gas from each assembly.

Framatome's in-core sipping tests up to eight BWR fuel assemblies simultaneously — without any fuel handling.

Our in-core sipping system interrupts the natural circulation of coolant through the bundle by using the sipping hood, and compressed air lowers the water level in the in the hood to the tops of the fuel channels to isolate each fuel assembly for individual testing. Sample probes are then lowered and water samples acquired after several minutes, or when the water temperature increases approximately 10°C due to decay heat. Individual water samples for each fuel assembly are analyzed to assess their integrity.

Water is reintroduced to the hood by venting the air and gases in the the hood that fills the void. As the air and gases are exhausted up the vent line they are routed to the detector. The analysis system assesses the integrity of venting gases, and an audible alarm identifies if leaking fuel assemblies are detected to the system operator.

The Cost-Effective Solution for Detecting Mid-Cycle Fuel Failures

Framatome's BWR in-core hood sipping delivers proven performance and reliability for detecting leaking fuel minimizing fuel handling.

Your performance
is **our** everyday **commitment**

Bottom view of sipping hood showing telescoping sample nozzles for eight fuel assembly positions

Customer benefits

- Proven technology utilized since 1992
- Experience? We have inspected more than 8,500 fuel assemblies
- Sips eight fuel assemblies simultaneously
- Can sample both water and gas
- Ascending sampling probes preclude cross-contamination of samples
- Short set-up time: Only one 12-hour shift
- Cycle time of only ten minutes for eight fuel assemblies
- Real-time results

Technical Information

Our in-core sipping can test up to eight BWR fuel assemblies simultaneously — without any fuel handling.

Minimal service support requirements — compressed air, primary grade water and electrical.

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