

Vacuum Canister Sipping for PWR-BWR Leaking Fuel Assembly Detection

Proven performance and reliability for detecting leaking fuel in PWRs or BWRs

Challenge

During outage services, detecting leaking fuel in PWR and BWR fuel assemblies during off-loading operations or when preparing for dry cask storage is essential to performing services efficiently and in a timely manner.

Solution

Vacuum sipping identifies leaking assemblies by isolating each one in a sipping canister. The process starts by flushing the canister with primary grade water. Next, the system forms a void in the top of the canister. A vacuum pump is then used to evacuate the canister and draw fission gases from leaking fuel rods. These gases are recirculated through the system and routed to the detectors. An analysis system assesses the integrity of each fuel assembly and identifies leaking assemblies to the operator.

Operators control the sampling process from freestanding electrical control consoles. A single multi-conductor cable connects these consoles to the valve stations. Plus, they are designed and set up to operate from a non-contaminated area.

Special Features Ensure Safe and Reliable Operations

- Visible and audible alarms indicate loss of service water or compressed air, high canister temperature, insufficient vacuum or loss of the canister lid seal.
- Loss of services will cause the canister lid to open and the system will return to the flush mode to prevent fuel assembly damage.
- The electronic console includes a built-in diagnostic program to improve troubleshooting capabilities and in-field servicing.



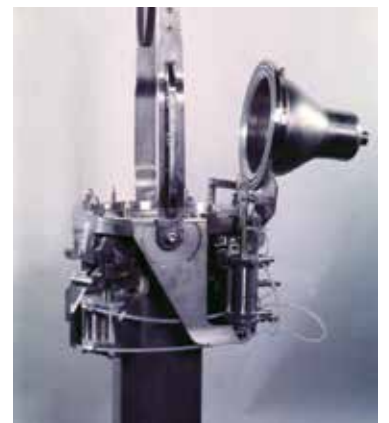
Sipping canister shown with handling bail and lid configuration in closed position

Customer benefits

- Adapted for both BWR and PWR fuel
- Framatome is an experienced vendor having inspected more than 15,000 fuel assemblies
- Uses two canisters with cycle times of only ten minutes per canister
- Capability to test up to eight fuel assemblies per hour, depending on fuel movement time
- Control consoles can be set up 75 feet from the in-pool components to lower personnel dose areas



Framatome can install vacuum sipping canisters in guide tube/ blade guide storage cells or in our customized support stands.



Scan to learn more or visit
http://www.framatome.com/EN/us_platform-812/framatome-u-s-fuel-reliability.html

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