

Perform your full 10-year, intermediate and follow-up surveillance inspections with minimal disruption of outage activity in support to your Aging Management Reviews

### The Challenge

The Reactor Pressure Vessel (RPV) is a critical, irreplaceable, and potentially life-limiting component of the Nuclear Steam Supply System. Within the scope of long-term operation and license renewal, RPV surveillance and in-service inspections are vital for Aging Management Programs. As they are carried out during outages, inspections must also minimize vessel occupation time.

### The Solution

Framatome's global business entity, "Framatome NDE-Solutions" brings innovation, reliability and efficiency to RPV inspection thanks to its long standing experience in automated non-destructive examination of nuclear reactor primary components.

Thanks to extensive qualifications under various national codes, Framatome has built the broadest global perspective and know-how to this challenging examination worldwide.

Framatome offers tailored inspection solutions for:

- Shell and bottom-dome welds
- Core-belt & under-clad defects
- Nozzles including inner radius (NIR) and Dissimilar Metal Welds (DMWs)
- Radial Support Lugs (including wear)
- Threaded area of flange plus studs and nuts
- Bottom Mounted Nozzles (BMN)

Consequently, Framatome is ideally positioned to provide responsive solutions as new degradation concerns arise in aging components.

### Framatome's Manipulators

#### TWS

- Meets all ASME PDI regulatory requirements thanks to the most complete range of qualifications
- Enhanced inspection accuracy on complex surfaces thanks to dedicated UT analysis features

#### MIS

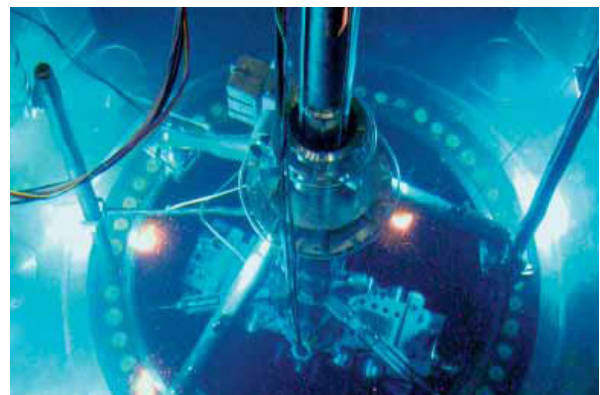
- Sole inspection solution to provide full set of RSEM and ASME (Belgium) RPV qualifications
- High inspection versatility since enabling immersion focused UT, ET, VT and RT techniques
- Unmatched, demonstrated sensitivity and position repeatability in characterizing large number of indications.

#### CMM

- Large qualification sets on German, Nordic and European national codes
- Very high accuracy with UT phased array technology

#### Nozzle Manipulator

- Enables independent inspection of RPV nozzles and associated welds
- Short inspection time compared to full manipulator deployment



Framatome MIS Inspection

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

## Framatome References:

### Unique experience

“Framatome NDE Solutions” has performed hundreds of RPV, RPVH (Reactor Pressure Vessel Head) and BMN inspections worldwide.

Today, “Framatome NDE-Solutions” leverages its global experience and resources to deliver longterm standard or customized inspection solutions to local codes and inspection criteria in:

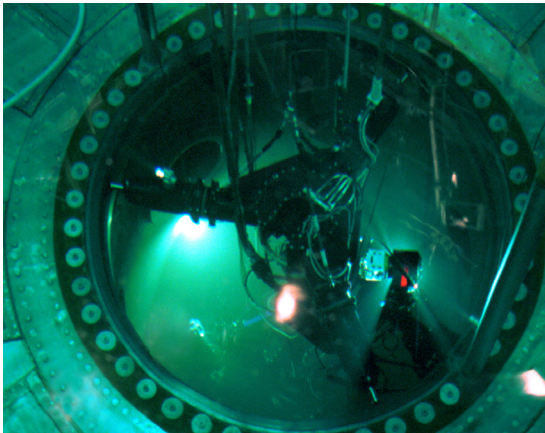
- Europe: Belgium, Finland, France, Germany, Slovenia, Sweden, Switzerland, United Kingdom
- Americas: Brazil, United States
- South Africa
- China

### Safe, predictable, and fast RPV inspection capabilities

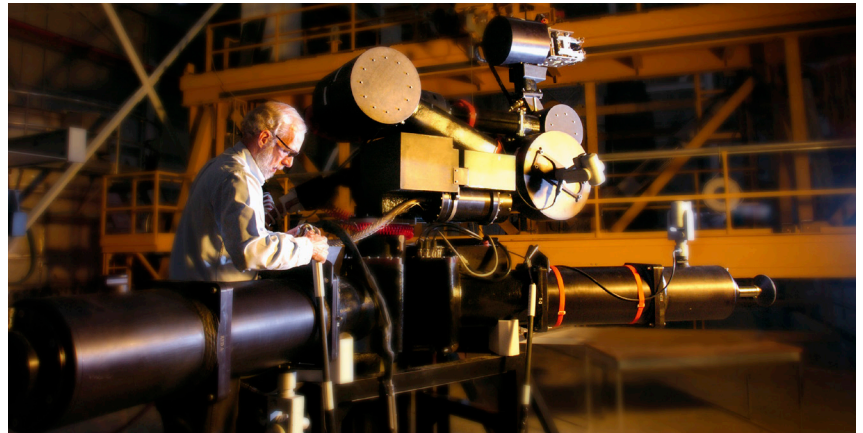
Highly skilled personnel, wide qualification set of methods according to various codes and robust though accurate equipment and techniques. Maintenance of extensive mockups for validation and qualification of new techniques associated with training facilities

### Your benefits at a glance

- Global and long-standing experience in RPV inspection
- Field-proven tools and techniques reliability and repeatability
- Optimized solutions for minimization of vessel occupation time
- Easy set-up & rigging considering safety and ALARA practice
- Adaptable solutions to your unique plant criteria



*Framatome Trans-World System (TWS)*



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