

# BMI Nozzle and J-Weld Examination

Simple Reliable Delivery Tools

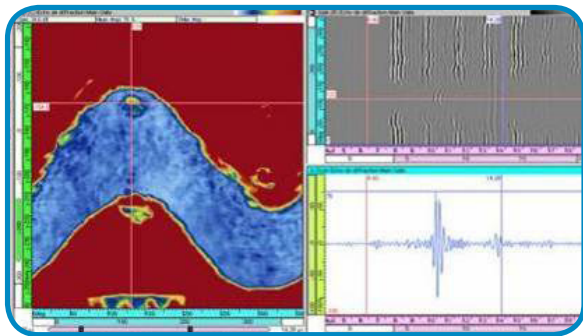


Comprehensive inspection capability for both mandatory as well as voluntary inspections within the Bottom Mount Instrumentation (BMI) Nozzle or J-weld.

## Wide range of technologies

Global requirements for BMI nozzles and J-weld examination vary widely. Our broad experience can efficiently deliver technologies including:

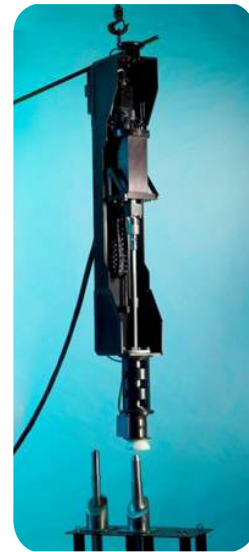
- UT of the nozzle and nozzle-weld interface from nozzle ID
- ET of the nozzle ID
- Bare-metal visual of the vessel OD
- J-Weld EVT and Eddy Current



UT Data



TOFD probes



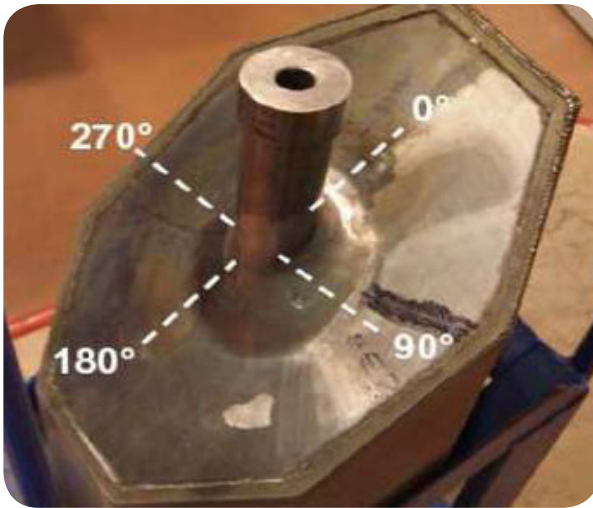
UT nozzle tool

## Nozzle UT: Features and Benefits

- Simple, reliable delivery using poles handled from refuel or auxiliary bridge
- Two tools operating in parallel minimize inspection time to provide best vessel occupation time of approximately 12 hours
- Qualification credentials include EPRI demonstration and EDF qualification
- TOFD technique supports detection and sizing
- In-line calibration standard verifies signal quality with each nozzle examined
- Experience with more than 1,500 nozzles inspected

## J-Weld ET: Features and Benefits

- Pole-delivered tool from the re-fuel bridge: manually-controlled sweep of weld is simple and reliable
- Mouse probe allows full J-Weld coverage with only two passes
- Detects and determines orientation (circular vs. radial) of anomalies
- Unit contains PTZ camera for VT inspections of the OD of the nozzle and the J-groove weld area
- Quick setup
- Lessons learned from previous deployment incorporated in enhanced tool



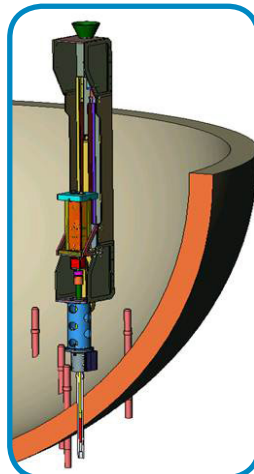
Mockup for technique demonstration



Manual Mouse-Probe scanner for BMI J-Weld



Nozzle IDET probe



Drawing of tool on BMI nozzle inside vessel



Bare-Metal Visual image of boron deposits from confirmed leaking BMI.

➤ **AREVA has the broadest experience with BMI/BMN inspection and repair within the industry.**

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