

Advanced Monitoring

On-Line Monitoring - Mature Technology
 Wireless Equipment Monitoring – Demonstrated
 Condition Based Monitoring - Demonstrated
 Prognostic Health Management – Prototype

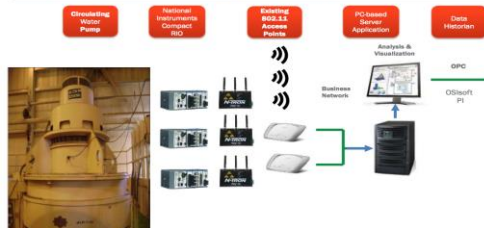
- Diagnostic Advisor
- Asset Fault Signature Database
- Remaining Life Advisor
- Remaining Useful Life Database

Artificial Intelligence – The Future

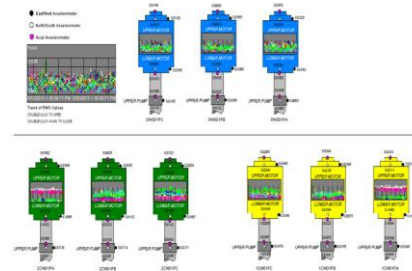
Benefits

- Reduced Burden on System/Component Engineers
- Move from Time Based Preventative Maintenance to Condition Based Maintenance
- Improved Equipment Reliability
- Reduced Outage/Online Maintenance Resources
- Reduced Outage Time

Wireless Monitoring Architecture



Mohammed Yousuf IAEA Case Study



Robotics

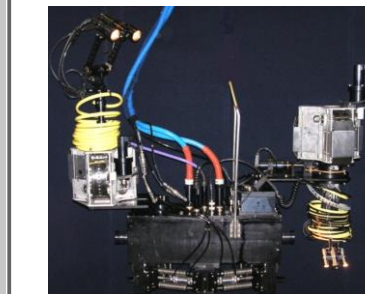
BWR Internal – Mature Technology
 BWR Torus – Mature Technology
 Tank Inspection – Mature Technology

Benefits

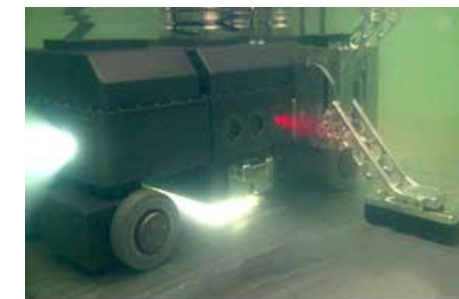
- Reduced Radiation Exposure
- Improved Data Collection
- Reduced Resources/Critical Path



BWR Torus Inspection Robot



BWR Internals Inspection Robot



Tank Inspection Robot

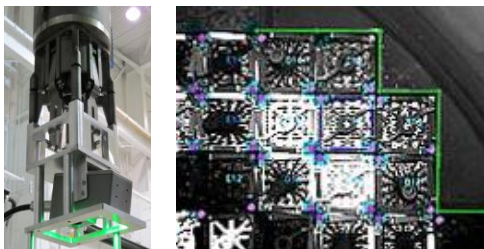


Machine Vision

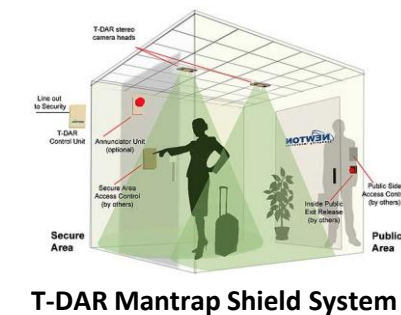
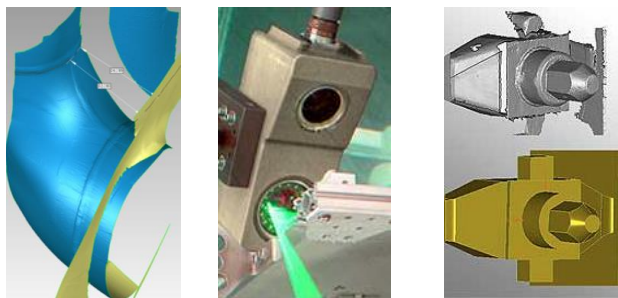
PWR Core Mapping – Mature Technology
 BWR Rx Internal Scanning – Mature Technology
 Security – Mature Technology
 FME Avoidance - Developed

Benefits

- Reduced Outage Time
- Highly Accurate



Underwater Machine Vision



T-DAR Mantrap Shield System

Advanced Control Centers

Coupled with Mobile Device - Mature Technology
 Coupled with Mobile/Fixed Cameras – Mature Technology
 Coupled with Robotics – Mature Technology
 Coupled with GPS/Rfid – Mature Technology
 Coupled with 3D Plant Model – Mature Technology
 Coupled with Vendor Interface – Mature Technology
 Coupled with Design Basis/Inspection Data Base – Mature Technology

Benefits:

- Reduced Radiation Exposure
- Reduced Personnel
- Improved Communication
- Improved Security
- Reduced Critical Path



Global Nuclear Associates Concepts

