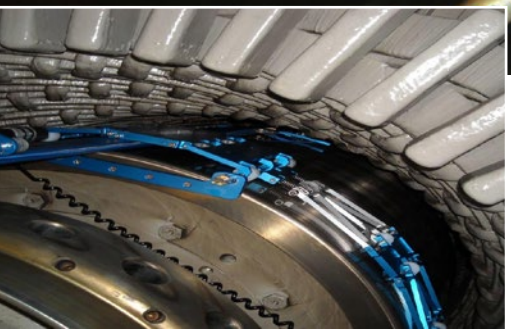
Retaining Ring Inspection







In-Situ Phased Array NDT: The Cost-Effective Alternative

Establish retaining ring condition without removing the rotor. Minimise outage time while comprehensively verifying the integrity of this high-criticality component.

Retaining rings are one of the most highly stressed components of your generator and are particularly susceptible to damage resulting from a combination of chemical, mechanical and electrical influences. Even the smallest defects or flaws detected within the retaining ring can pose a serious safety risk and lead to extremely costly consequential damage.

Traditionally, retaining ring inspections have required the rotor to be unthreaded and the rings fully removed for fluorescent NDT testing. Whilst effective, this is a time-consuming, disruptive and expensive exercise.

Our In-Situ Phased Array NDT inspection offers a cost-effective alternative, enabling comprehensive evaluation of retaining ring condition without the need for ring removal. This allows owner/operators to make informed decisions on ring replacement based on actual condition rather than fixed maintenance intervals.

When combined with Robotic air-gap crawler inspection, the process provides a comprehensive assessment of generator condition, helping identify emerging issues, minimise outage time and reduce the risk of unexpected failure.

Key Benefits

- Condition of retaining rings established
- Identifies if replacement necessary
- Disassembly of rotor / retaining rings avoided
- Minimised downtime through quick testing process
- Combine with robotic air gap testing for additional benefits

MULTIPLE BENEFITS THROUGH OPTIMISING NON-DESTRUCTIVE TESTING

Delivering in depth reports that give the asset owner the information to make informed decisions to best suit their business needs.

System Capabilities

Designed for generators with a retaining ring diameter greater than 600mm and a minimum gap of 8mm between the retaining ring and stator, our adjustable inspection system can be adapted to suit specific equipment configurations. Combined with our extensive field experience, we can develop a tailored inspection plan on-site with minimal advance information required.

Our comprehensive inspection scope includes:

Ultrasonic Crack Detection: Targeting high-stress shrink-fit locations and wall thickness transitions to identify stress corrosion cracking, tooth cracking and other defect indications.

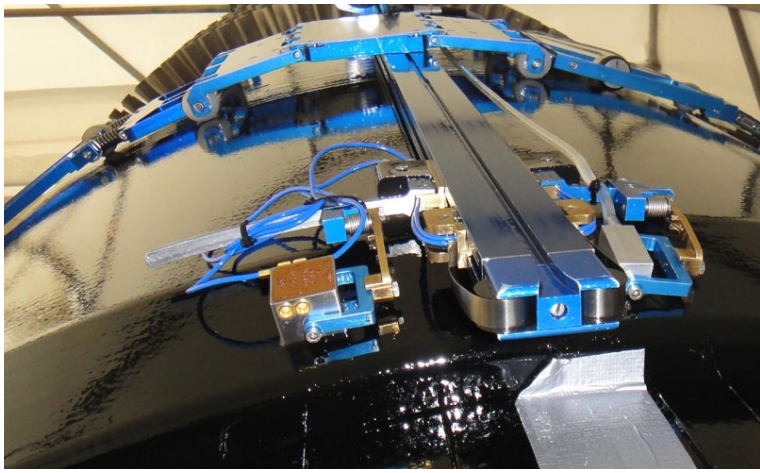
Eddy Current Scanning: Provides detailed mapping of the retaining ring outer surface condition while maintaining the integrity of existing protective coatings.

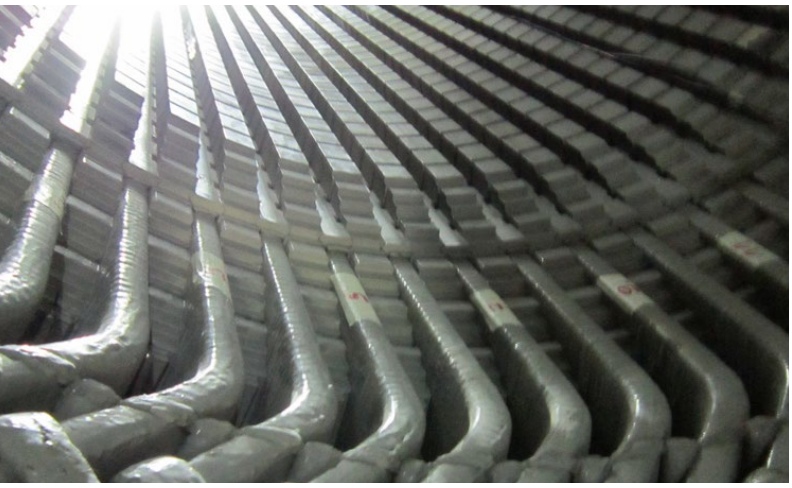
Residual Life Assessment: Where flaw indications are detected, ring geometry and inspection data can be incorporated into finite element analysis (FEA) models to determine the remaining operational life.

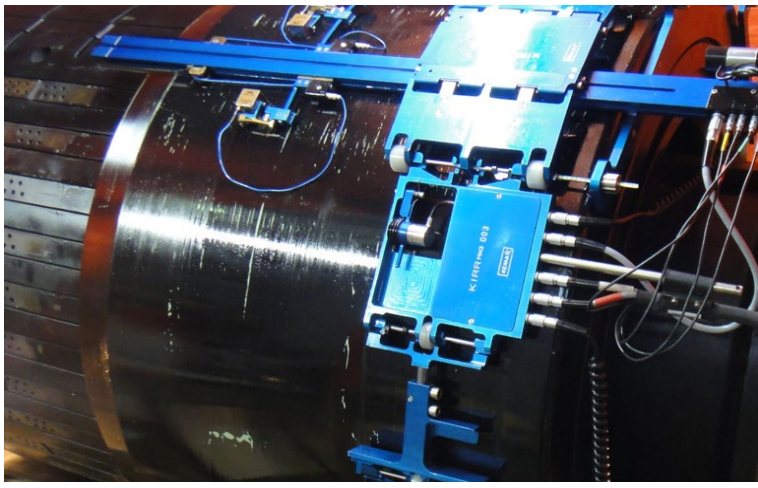
Condition Monitoring Strategy: Supporting the development of data-driven inspection intervals to enable safe, reliable and continued generator operation.

Specifications

- Minimum gap between retaining ring and stator: 8mm
- Technique: UT-TOFD, UT-TRL and ET scanning
- Surface: 360° circle and 1-10mm pitch
- Defect heights of 0.5 mm+ can be detected







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