



Acoustic Emission Inspection of RPV Lift & Internals to Meet NUREG-0612

NUREG-0612 guidelines (Control of Heavy Loads at Nuclear Power Plants) and other applicable regulations require that the head and internals of lifting rigs be periodically tested by overload or non-destructive examination (NDE). NDE is commonly preferred, but the surface inspection technique recognized in ANSI NI 4.6-1978 presents significant problems associated with surface preparation, radiation exposure to inspection personnel and disassembly/reassembly of the lifting rigs.

AE TECHNOLOGY OVERVIEW

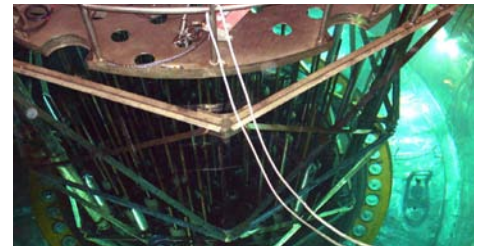
Acoustic Emission (AE) testing on lifting rigs was introduced by TVA (Tennessee Valley Authority) and EPRI (Electric Power Research Institute) at TVA's Sequoyah Units 1 & 2 in 1990. This was after AE monitoring was successfully demonstrated on select pressure boundary test areas during hot functional pre-service testing at TVA's Watts Bar Unit 1. As a result of these and other tests for the Nuclear Regulatory Agency (NRC), their staff concluded that the alternative AE monitoring of the PRV head and internals lifting rigs met the guidelines of NUREG-0612. Since then many plants have successfully used this technique.

INSPECTION SOLUTION

AE inspection is an easy, fast, economical and approved technique used to meet the inspection requirements of NUREG-0612. No other NDT method can match the benefits gained thru the use of AE for this type of inspection. Coupled with the fact that there is no overload of the lifting device and significant cost savings due to the elimination of contaminated waste produced by other NDT methods, AE is viewed as the preferred inspection method of many nuclear plants at this point.

MISTRAS EXPERIENCE

MISTRAS has been involved in the use of AE testing on lifting rigs in nuclear power plants since 1990 and conducts the majority of the AE testing on head and internal lifting rigs performed in the United States. As a result of multiple testing, MISTRAS has gained critical path and technical experience as is evident by our reference list (available upon request). With our personnel working to the highest standards, they are able to supply the nuclear industry with complete and thorough lifting rig inspection available today.



BENEFITS

- No disassembly of rigs
- 100% inspection coverage of entire lifting rig components
- No 150% overload required
- Minimizes radiation exposure
- Eliminates contaminated waste associated with other inspection techniques
- Meets NUREG-0612 requirements

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