

QUALIFICATION OF INSPECTION SYSTEMS IN NUCLEAR POWER PLANTS. LOOKING FOR EXCELLENCE

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Inspection reliability is an area of growing interest. In particular, in certain industrial sectors involving critical structures, such as nuclear power plants for energy generation, reliability of Non-Destructive Examinations (NDE) has received special attention since more than 40 years. Many initiatives and projects (PISC, EPRI NDE, ENIQ, etc.) developed and generated new findings and results. In addition, the inspection systems are regularly optimized for improving the NDE reliability as much as possible. In the early 1990s, the European Network for Inspection Qualification (ENIQ) continued the PISC NDE reliability research and, few years later, issued the European Methodology for Qualification of Non-Destructive Testing. The methodology considers the NDE system following the modular model of reliability as well as complementary tasks to address human factors issues. Then, every country develops his own methodology based on the existing legal requirements and the ENIQ Methodology. This is the case of Spain, in which the CSN (the Nuclear Safety Body) requires the qualification of inspection systems before their application in the Nuclear Power Plants (NPP). This paper describes the main characteristics of the Spanish Methodology as well as examples to facilitate the understanding of the ideas behind the approach that currently applied in the Spanish NPPs since the mid-2000s. Keywords: NDE reliability, inspection qualification, ENIQ, methodology for qualification, modular model of reliability.