



# ENIQ POSITION ON

## Autonomous Remote Analysis

Potentially Unforeseen Consequences

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## Foreword

With the Covid-19 pandemic hitting Europe in the spring of 2020 many inspection companies extended their remote analysis from dedicated rooms for analysis teams to being conducted in solitude (e.g. home office of the individual analyst) – hereafter referred to as autonomous remote analysis.

Although understandable as percussion for the safety of individuals and countermeasure to global travel restrictions there may be some unforeseen consequences with autonomous remote analysis. This document aims to highlight them to allow for consideration by qualification bodies during on-going and future qualifications as well as for utilities / licensees and inspection companies to consider countermeasures on already qualified procedures.

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## 1. Introduction

For a number of years, remote analysis data rooms have been used in the European nuclear inspection community to allow inspection data to be analysed securely away from the plant. The use of these data rooms has been planned with analysis techniques and justifications taking into account the obvious benefits of having close access to expertise and documentation.

With the Covid-19 pandemic hitting Europe in spring 2020 many inspection companies extended their remote analysis from dedicated rooms for analysis teams to being conducted in solitude (e.g. home office of the individual analyst) – hereafter referred to as autonomous remote analysis (ARA).

Although understandable in terms of safety of individuals and as a countermeasure to global travel restrictions there may be some unforeseen consequences with ARA. This document aims to highlight them to allow for consideration by qualification bodies (QBs) during on-going and future qualifications as well as for utilities / licensees and inspection companies to consider countermeasures on already qualified procedures. The overarching objective first and foremost is to maintain the quality of inspections.

## 2. Considerations performing Autonomous Remote Analysis

### 2.1. Essential Parameters

Qualified procedures have a set of stipulated essential parameters. As an example, one European utility / licensee may have justified remote data room analysis by claiming the advantage of having access to other data analysts in the same room, but ARA does the opposite. When conducting ARA there are a number of issues to be considered:

- Is the inspection procedure (IP) built for or does it allow for ARA, including essential parameters?
- Is the correct hardware and software used at the location, e.g. monitor resolution and size?
- Are all necessary documents available at the location?
- If primary and secondary independent analysis is required, how is the independence verified?

### 2.2. Fitness for Duty

When a utility / licensee contracts an inspection the contracting company normally commits to follow certain terms and conditions related to fitness for duty when on site. These commitments normally apply also to the team working in the remote analysis data room for that project. When extending the analysis to ARA the inspection company needs to take some of the items below into account:

- How does the inspection company assure that the individuals adhere to regulated working hours?
- How does the inspection company administer random alcohol and drug tests, if required?
- What process is in place to check on individuals to see that they appear in good shape while working in solitude?

If there has been no “fitness for duty” check while performing ARA, does the inspection company have to call all ARA void if an individual is “caught in breach of fitness for duty procedures”? If so, is a re-analysis required and how long back?

As the integrity of the analyst is key, can a signed testimony that the individual has followed the applicable fitness for duty regulations be sufficient / acceptable?

## 2.3. Company Quality Programme and Accreditations

Do the quality programme and accreditations (i.e. work environment & safety, quality management) of the inspection company allow their staff to work unsupervised, e.g. working in solitude from home?

## 2.4. Data Security

Data security is a topic that needs to be addressed by the inspection company together with the utility / licensee. The data transfer and remote analysis systems need to replicate the security protocols usually imposed by the utility / licensee and also need to assure that only individuals with proper rights can access the data. Furthermore, the system needs to assure that the data has not been corrupted during data transfer. An additional data validation step may be required in the procedures. The following questions emerge:

- What data transfer protocol is acceptable for the customer, regulator and the inspection company?
- How is the data stored and protected at remote locations?
- How do you control who views the data?

## 2.5. Export Licenses

Information related to nuclear components may be classified as controlled technology depending on the legislation and regulation in the country of origin. Inspection data, procedures and drawings may contain controlled information and thus export licence is required between the remote analysis location and the country of origin. The following questions emerge:

- Is any of the information being exported classified as controlled technology?
- Does an export licence exist between the two locations?

## 2.6. Work Environment

Working in solitude has merits but also drawbacks. When analysing complicated data analysts frequently consult with peers. When performing ARA this possibility is lost or more complicated.

In dedicated data analysis rooms the work environment is controlled. The light, temperature and noise level is optimized to support the analysts and distraction are kept at a minimum. During ARA it is difficult to control the distraction level of the analyst. This may have a detrimental effect on the inspection quality.

## 3. Recommendations

ARA has both merits and risks and as such it needs to be justified. The essential parameters for performing unsupervised remote analysis need to be documented.

Deviations from an already qualified procedure needs to be managed as a procedure deviation and approved per local regulator and QB practices.

Inspection companies need to consider which fitness for duty protocol the work is following (as analysis might be in a different country) and how they verify adherence to the protocol.

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# ENIQ

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NUGENIA Technical Area 8

## ABOUT ENIQ AND NUGENIA

The **European Network for Inspection and Qualification (ENIQ)** is a utility driven network working mainly in the areas of qualification of non-destructive testing (NDT) systems and risk-informed in-service inspection (RI-ISI) for nuclear power plants (NPPs). Since its establishment in 1992 ENIQ has issued over 60 documents. Among them are the “European Methodology for the Qualification of Non-Destructive Testing” and the “European Framework Document for Risk-Informed In-Service Inspection”. ENIQ is recognised as one of the main contributors to today’s global qualification guidelines for in-service inspection.

ENIQ is the technical area 8 of NUGENIA, one of the three pillars of the Sustainable Nuclear Energy Technology Platform (SNETP) that was established in September 2007 as a R&D&I platform **to support technological development for enhancing safe and competitive nuclear fission in a climate-neutral and sustainable energy mix**. Since May 2019, SNETP has been operating as an international non-profit association (INPA) under the Belgian law pursuing a networking and scientific goals. It is recognised as a European Technology and Innovation Platform (ETIP) by the European Commission.

The international membership base of the platform includes industrial actors, research and development organisations, academia, technical and safety organisations, SMEs as well as non-governmental bodies.



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