ENSREG
European Nuclear Safety Regulators Group

1st Topical Peer Review
Public event – 22nd November 2018
Brussels

Ian Bramwell
Project Manager, Thematic group on CONCEALED PIPEWORK

TG4: Concealed pipework

Concealed Pipework

European Nuclear Safety Regulators Group

Scope of review:

concealed pipework important to safety for all pipework designs where the pipework is:

* Buried in soil;
* Encased in concrete; or
* In covered trenches.

Review Process:

Project Manager	Office for Nuclear Regulation – UK
Rapporteur	Authority for Nuclear Safety and Radiation Protection – Netherlands
Experts	Autorité de Sûreté Nucléaire – France (2)
	Institute for Environmental Protection and Research, Italy
	Office for Nuclear Regulation – UK
	UJV Group – Czech Republic
Radiation	State Scientific and Technical Centre for Nuclear & Safety – Ukraine
	State Nuclear Power Safety Inspectorate (VATESI) – Lithuania

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Total of 280 questions related to concealed pipework raised, of those 138 from thematic group

Areas of focus for TPR Workshop

- Ageing management strategy
- Inspection
- Maintenance strategies
- Repair strategies
- Mitigation strategies
- Materials selection
- Reinstatement of buried systems
- Use of operating experience

- Country-specific approaches / variations

- Research reactors vs Nuclear Power Plants (NPP).

Good Practice

Good Practice: In addition to providing information on soil and building settlement, the results from regular monitoring of the condition of civil structures are used as input to the ageing management programme for concealed pipework.

Good Practice: In order to establish the integrity of new or novel materials, sections of pipework are removed after a period of operation and inspected to confirm the properties are as expected.

Expected Level of Performance

Expected level of performance: Inspection of safety-related pipework penetrations through concrete structures are part of ageing management programmes, unless it can be demonstrated that there is no active degradation mechanism.

Expected level of performance: The scope of concealed pipework included in ageing management includes those performing safety functions, and also non-safety-related pipework whose failure may impact SSCs performing safety functions.

Expected level of performance: Opportunistic inspection of concealed pipework is undertaken whenever the pipework becomes accessible for other purposes.

Challenge for Inspection

Strong interest was shown in reports of novel and non-invasive inspection techniques but there was no clear evidence available on the efficacy and resolution of these techniques, or their applicability for detecting localised corrosion. As a result, the following challenge was raised:

Challenge: Non-invasive inspection methods for detection of local corrosion, suitable for use on long lengths or complex geometries of concealed piping, are not well established. Research and development of such methods would enhance the tools available for demonstrating the integrity of concealed pipework and increase the overall safety of nuclear installations.

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Thank you for your attention!