Qualification of Concrete Inspection Systems for Bridges and Nuclear Power Plants

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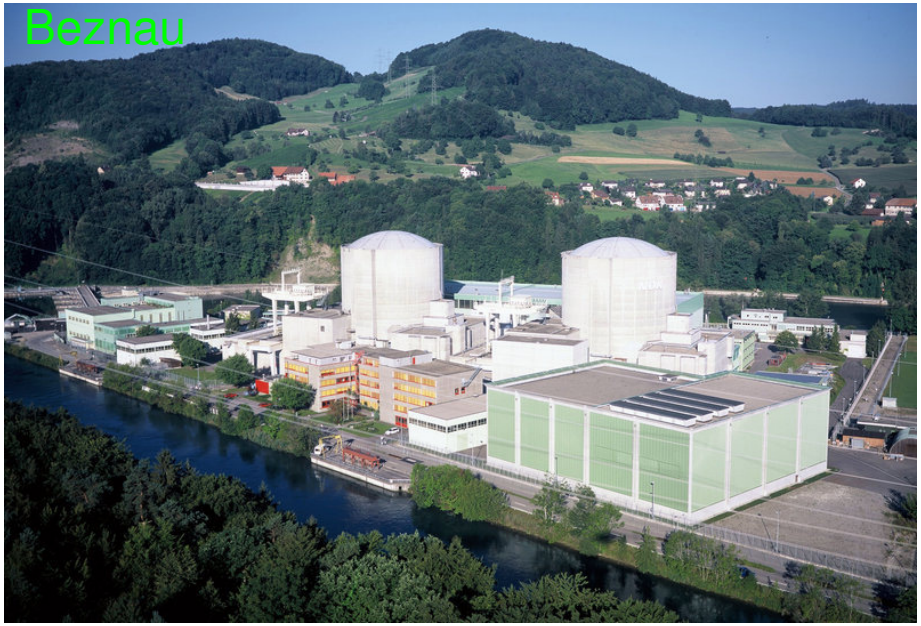
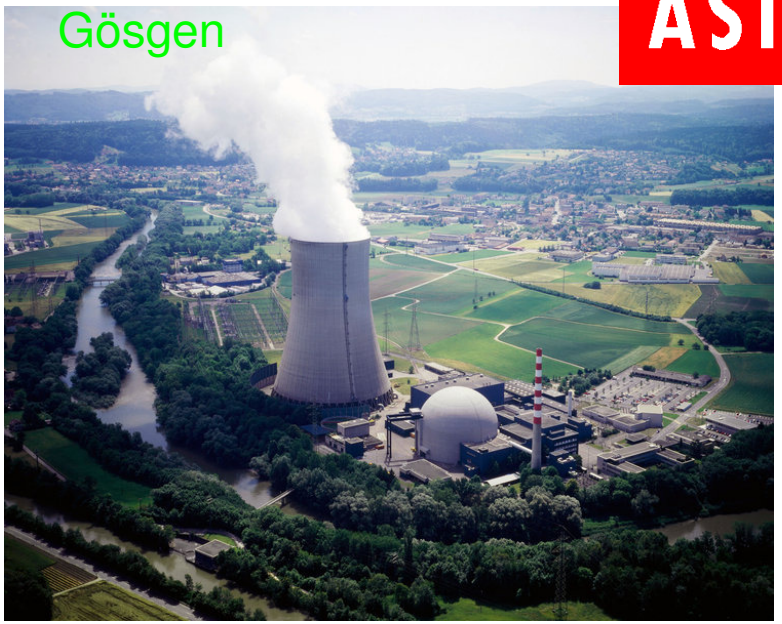
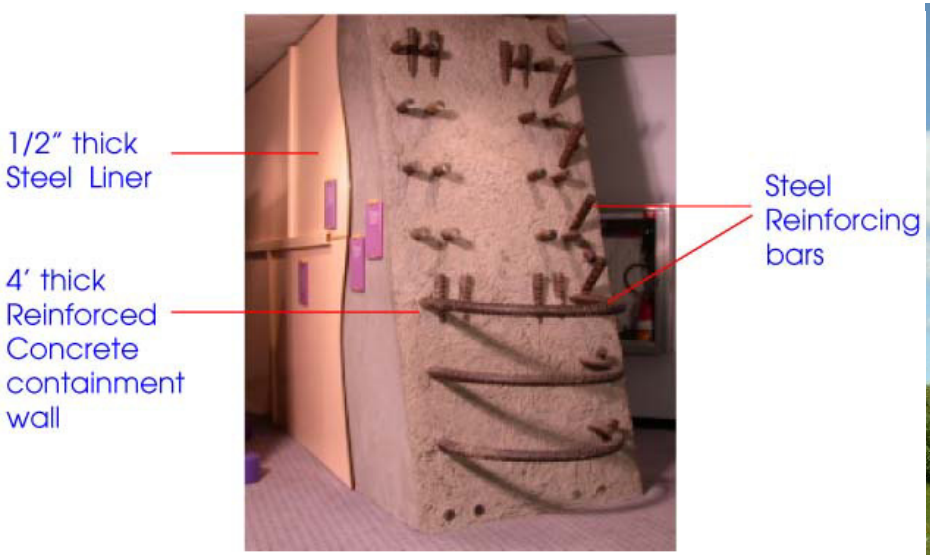
Nuclear Power Plants in Switzerland

SVTI
ASIT





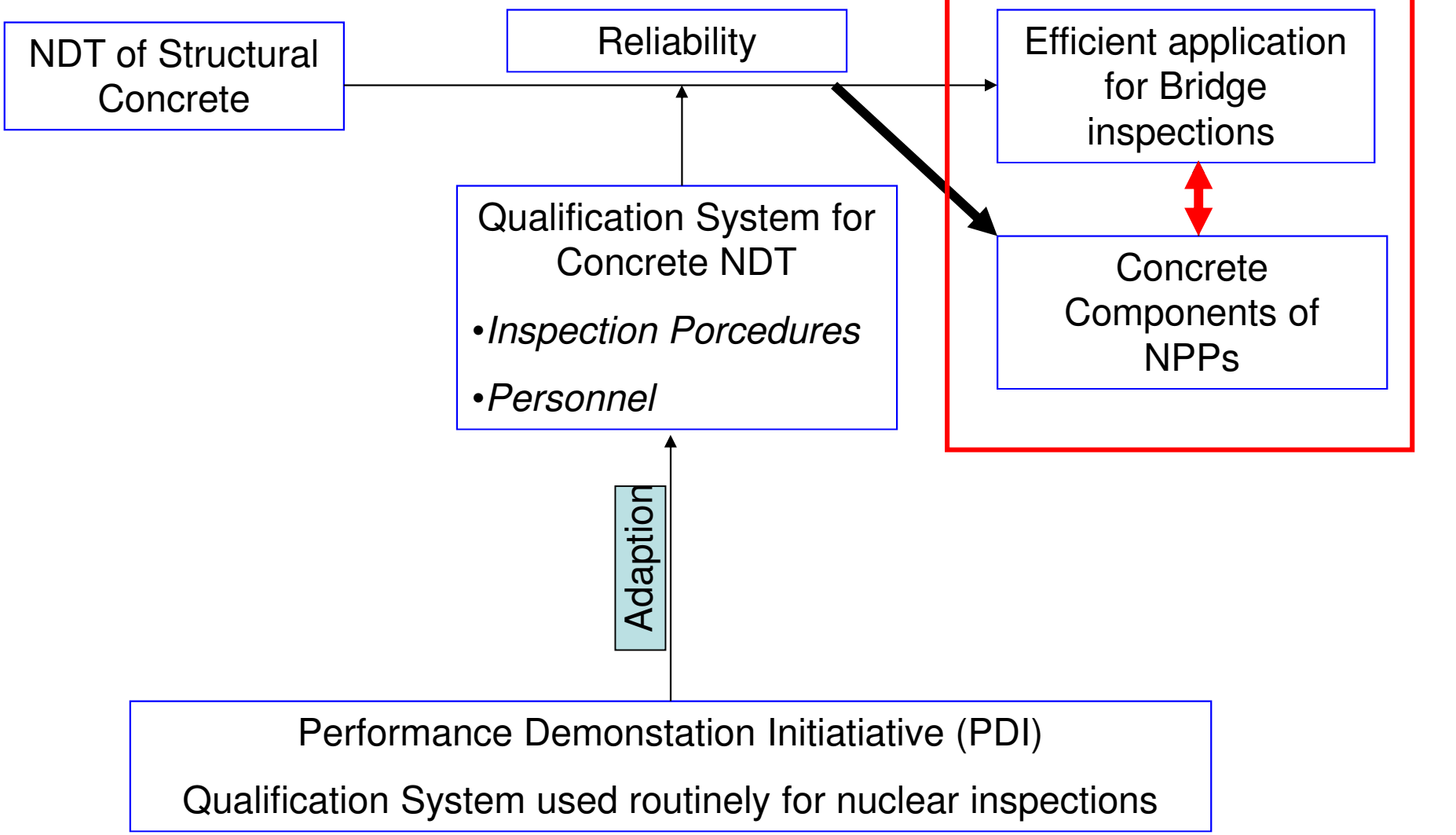
Structural Concrete at Nuclear Power Plants



Construction of Containment Wall

Plant Life Extension (PLEX) makes assessment of concrete components essential

Quantification of Reliability
Bridge testing goes nuclear… and vice versa



Needs for Application of Concrete Related NDE in the Nuclear Field

OECD Nuclear Energy Agency, "Development priorities for Non-Dest
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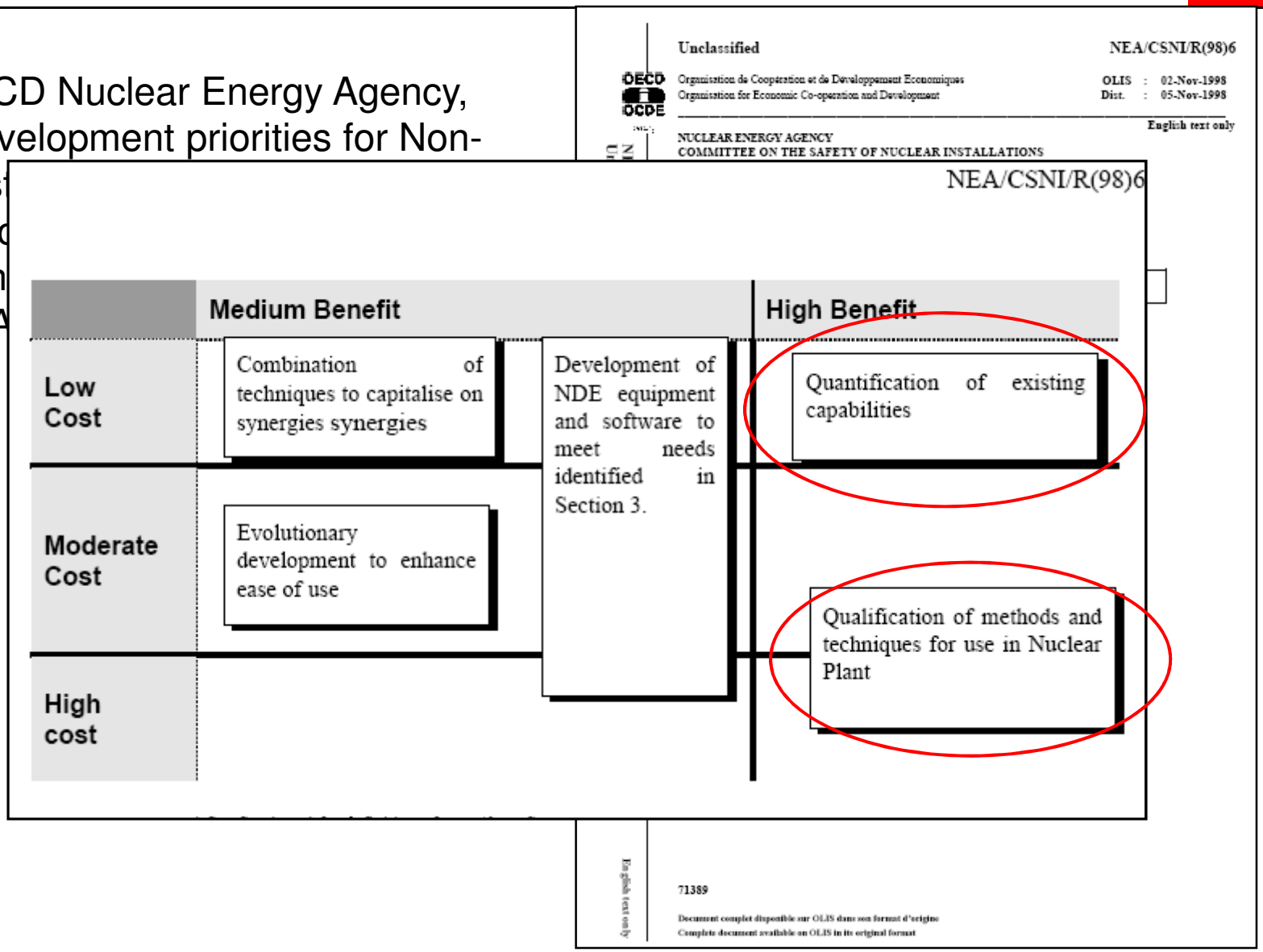
NEA



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COMMITTEE ON THE SAFETY OF NUCLEAR INSTALLATIONS

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	Medium Benefit		High Benefit
Low Cost	Combination of techniques to capitalise on synergies synergies	Development of NDE equipment and software to meet needs identified in Section 3.	Quantification of existing capabilities
Moderate Cost	Evolutionary development to enhance ease of use		Qualification of methods and techniques for use in Nuclear Plant
High cost			

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Regular "Nuclear" Qualification Procedures for NDT inspection of mechanical components

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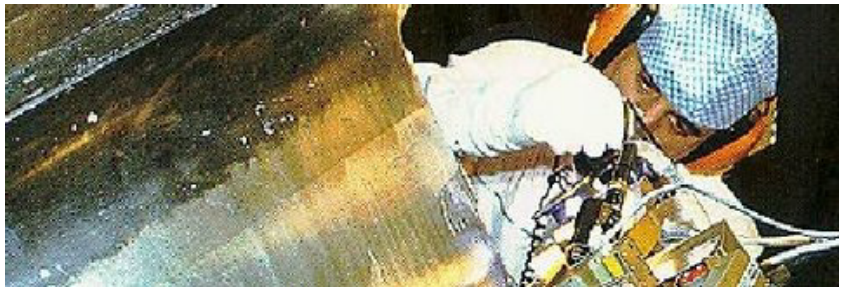
- **Qualification of the Inspection Procedure**
  - *Technical Justification*
  - *Open test pieces*
    - Geometry, Surface Condition, accessibility
    - All relevant flaws have to detected (and sized if applicable)



- **Approval to the Inspection Procedure by Qualification Body**
- **Qualification of Inspection Personnel**
  - *Mandatory: Passed General Training, hold valid certificate*
  - *Blind Test, must find at least 80% of the flaws*

⇨ **Reliability** ⟶ **Adaption to Concrete Applications, Simplification**

Conclusion

- Qualification = Reliability
- Lower risk for client, inspections become more attractive
- Successful application will improve acceptance of NDT even more
- Concrete inspections at NPP need input from bridge testing experts
- For inspections of NPPs reliability is essential
- Benefit for bridge testing community
- Next Step: Pilot Project

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