

IRSN VIEWS ON CONCRETE HARVESTING

OECD/NEA WORKSHOP ON INTERNATIONAL CONCRETE HARVESTING
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Context

- French operator (EDF) is willing to extend the operation of its NPP beyond 60 years
- Concrete structures are non-replaceable components
- IRSN, as a TSO, needs to assess the aging issue toward the safety requirements of concrete structures (tightness and structural strength) under normal and accidental conditions
- IRSN has identified two priority subjects :
 - Mechanical stability of the RPV support structures : effect of irradiation on concrete
 - Behavior of containment building : creeping/shrinkage (effect on prestress) and Internal Swelling Reactions (ISR)
- IRSN is leading an international project on ISR (ODOBA Project with US-NRC, CNSC, VTT and Bel-V) and participating to the European ACES Project (comprehensive project on concrete aging)

IRSN Views on Concrete Harvesting activities - ISR

- IRSN has a strong interest in Harvesting activities in order to have access to real material aged in real conditions in order to confront the data obtained with experimental works :
 - effect of accelerated aging protocols
 - Scale effect from laboratory tests to real structures (partially addressed in ODOBA project)
- IRSN is in relation with EDF on the possibilities of harvesting from Fessenheim facility but also is willing to have international collaboration
- IRSN had supported the Canadian initiative of the OECD/NEA HARVEST Project that unfortunately was not launched.
- IRSN can propose in conjunction with harvesting initiative to build ODOBA-like experimentation on “twin structures” : large metric structure submitted to accelerated aging (with also some lab cylinders) : feasibility to be assessed (availability of concrete pouring data, aggregates, cements...)



Credits: Benoît Durville - IRSN

