

APAL Final seminar: Advanced deterministic and probabilistic integrity analyses of RPVs subjected to PTS Loading - Lessons learned from APAL



Tuesday, September 17, 2024 - Wednesday, September 18, 2024

IRSN: Institute for Radiation Protection and Nuclear Safety

Scientific Program

DAY 1

State of the art overview

Overview on the state-of-the-art in PTS
Warm pre-stress (WPS) in PTS
Residual stresses relevant to PTS

Advanced thermal-hydraulics analysis procedures

Introduction to Thermo-hydraulics
Uncertainties and BEPU analyses

Advanced deterministic PTS analysis procedures

Structural and fracture mechanics benchmarks
Assessment of LTO improvements & Thermo-hydraulic uncertainties

Advanced probabilistic PTS analysis procedures

Probabilistic fracture mechanics benchmark
Probabilistic fracture mechanics benchmark related to LTO improvements
Probabilistic fracture mechanics benchmark related to TH uncertainties
Probabilistic margin assessment

DAY 2

Best practice for advanced PTS analysis I

Introduction to APAL Best practice guidance
Overview of PTS assessment
Selection of events leading to PTS
Thermo-hydraulic analyses
Temperature and stress field calculations
Deterministic fracture-mechanics assessment for PTS analysis

Best practice for advanced PTS analysis II

Probabilistic PTS analyses and uncertainties I
Probabilistic PTS analyses and uncertainties II