framatome

Plant Phase-Out Optimization

Solution leader covering various elements of phase-out, from optimized cycle for fuel utilization, optimal operation, to spent fuel management in spent fuel pools and in interim- and/or dry-storage

Framatome has the competencies, resources, and experience to optimize the Fuel cycle economy at plant End Of Life.

Challenge

At End Of Life (EOL), an Nuclear Power Plant (NPP) is simultaneously facing challenges such as i) operation of the last cycles and optimization of the Fuel, ii) management and removal of irradiated fuel from the spent fuel pools, iii) preparation of spent fuel for interim and/or final storage (wet or dry concept). Additionally, phase-out is often associated for many utilities to staffing challenges, including loss of knowledge and experience.

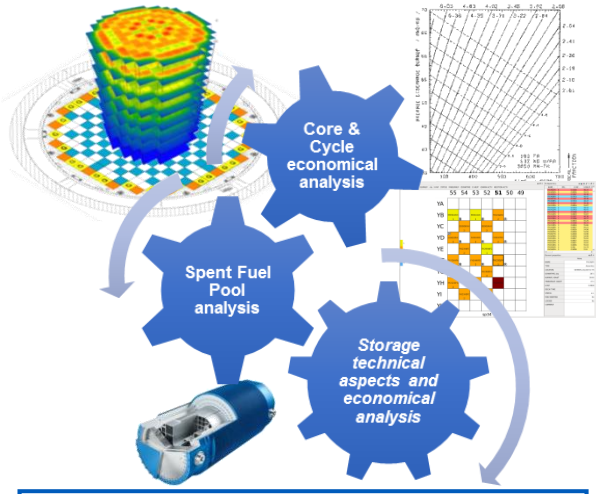
Solution

Framatome has vast experience in EOL phase-out, developed through the German phase-out & some of the European phase-outs, as well as our experience as a Fuel and Core designer for PWR and BWR fleets. We are able to conduct in-depth analyses on the last operational cycles leading to greater EOL economics and cost savings. This includes not only the cost reductions on the fuel procurement and utilization, the cost of outages, the management of the spent fuel pool to optimize the storage time and space of the spent Fuel Assemblies, the different costs related to the transport and storage in casks for interim and/or final storage in wet or dry conditions, but also the risk anticipation based on lessons learned.
In collaboration with utilities, taking into account their constraints, Framatome develops and optimizes potential scenarios for the last cycle operations, and for the disposal of spent fuel.
Framatome brings dedicated and tailored support to customers by performing engineering analyses, and/or offering consultancy activities through experienced personnel or trainings.

Customer benefits

Demonstrated most economical EOL scenarios optimizing:
- fuel utilization & cycle operation,
- outage time & effort,
- significant economical parameters for the post-operational phase, including spent fuel pool management, transport and storage significant parameters.

Your performance
is **our** everyday **commitment**



Technical information

Framatome performs multi-discipline & multi-cycle studies to reduce the total costs linked to the last cycles and the Back-End scenario by varying different parameters, such as:
- Cycle and outage lengths and frequencies, Fuel Assembly (FA) batch volume, FA enrichment, EOL Burn-Up
- Spent fuel pool constraints such as management of decay heat and radiation sources, criticality, space, handling
- Number of available transport and storage casks, safety constraints on spent fuel storage justification, field service activities to be planned not only for handling, repairing sound, but also detecting and encapsulating defective FA

Key figures

> 200 optimizations performed for EOL analyses.

Up to 10% saved on operational and Back-End costs thanks to plant phase-out optimization.

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