
PLANT LIFE MANAGEMENT OF A LARGE NUCLEAR FLEET

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Plant life management (PLiM) of the 58 EDF nuclear plants is in the core of an energy strategy which integrates durable development, supplying security, safety and competitiveness.

Three main stakes are linked to the EDF fleet PLiM :

- to assure permanently a high level of safety in operation, with a continuous increase of safety level,
- to increase the economic value of such an industrial tool, taking into account the advantage of a standardized fleet, and dealing with the potential vulnerability effect induced ;
- to participate to the industrial solution required to permit a new built smoothing, in comparison with the high initial rythm, of nearly 50 Gwe, during the 80's.

In this paper there are an analysis and descriptions of:

- the industrial stakes associated to lifetime management in particular questions which have to be investigated,
- the meaning, processus and content of the lifetime management approach within EDF:
- 10 years safety reassessment, taking into account, on one hand, safety compliance demonstration and, on the other hand, safety reassessment, the aim of which is to upgrade safety level (seismic analysis, hazards, severe accidents,...). A cost/benefit methodology has been defined to rank the pertinence of plant modifications. The results concerning 3 loops plants thirty years decennial outage program are presented.
- Ageing management principles, based on feed back experience of a large standardized fleet, including a dedicated process for obsolescence problems, and an anticipation approach (examples are given: alloys 600 areas, thermal fatigue, ...)
- Research and development support activities, in relationship with safety criteria, industrial decisions,
- Skills management, internally for the company and those of industrial operators, subcontractors, in the field of design, manufacturing and maintenance :
- Evolution of job needs (engineering and operation),
- Medium and long term vision, in particular for sensible skills,
- Skills transfer because of high rate of retirement.