

Flexible Operation of Nuclear Power Plants

Adapt electricity production to an intermittent market demand



Flexible power plant operation solutions enable nuclear power plants (NPPs) to adapt electricity production to an intermittent market demand.

The growth of intermittent renewable energy generation and the effects of renewable energy standards and policies are having a significant impact on the merit curve for energy generation on major grids worldwide. NPPs connected to such grids – and which are remaining in base load mode – are experiencing a high number of hours with negative electricity prices.

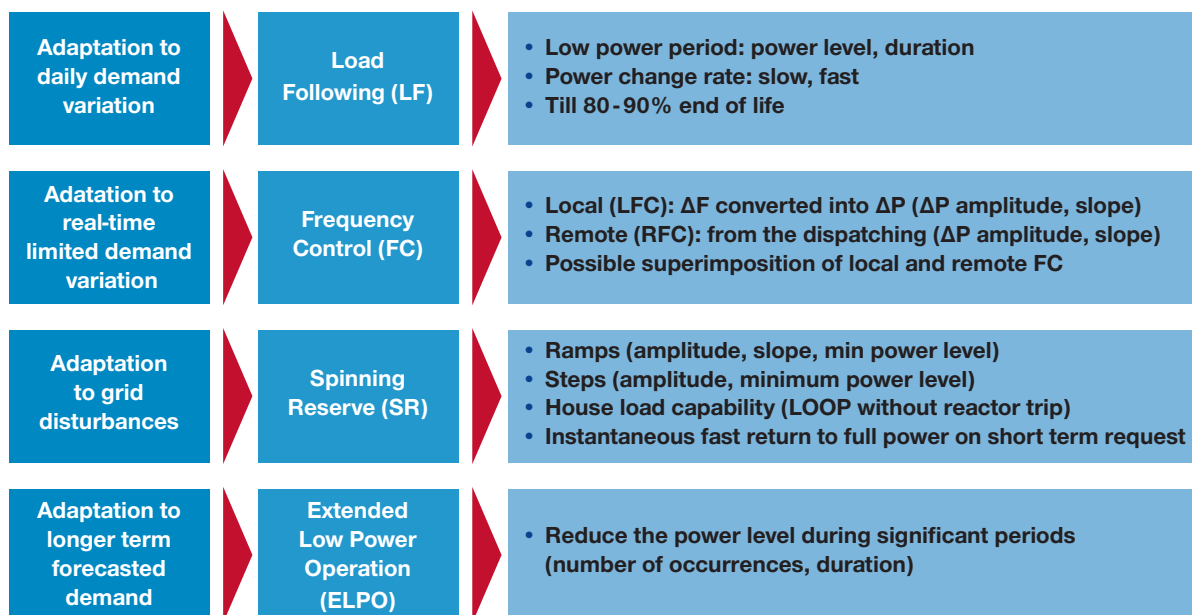
Enabling NPPs to become flexible and adapt to new grid demand

AREVA has the widest experience in NPP flexible operation solutions. Feasibility studies and related plant upgrades can be implemented to evaluate and enable any NPP (pressurized water reactor or boiling water reactor) to become more flexible.

AREVA's solution is based upon a process which covers

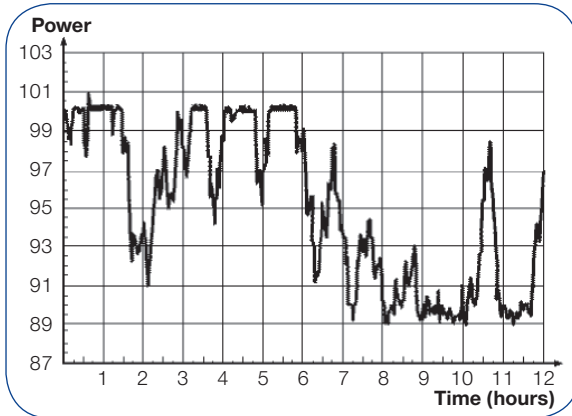
- the precise definition of grid demand
- the unit's flexible operation capabilities
- the alignment of requirements and capabilities
- recommended plant upgrades
- the implementation of such upgrades.

Four main types of flexible operation solutions can be implemented, singly or in combination. Each solution answers a specific grid demand and all are subject to the respective country's regulations.



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AREVA's flexible load following solutions can help your NPP to become more flexible and remain competitive, while avoiding negative electricity prices.



Flexible power plant operation

References

Since 1970, AREVA-designed plants have operated in various flexible operation modes (original plant design included flexible operation capability or plants have been modified/optimized for flexible operation):

- 58 AREVA-designed EDF NPPs in France have been operating safely and reliably for hundreds of reactor years
- Six AREVA NPPs in China, two units in South Africa, and two units in Korea: all designed for flexible operation
- AREVA-built NPPs in Germany (BWRs and PWRs) have been designed for flexible operation and are operating safely and reliably since the early 1970's.

+ Your advantages at a glance

- A smooth and reliable way to become flexible
- Support from the most experienced provider of flexible operation solutions for your feasibility study
- Unique fuel performance experience
- Feasibility of fully automated load ramps
- Dedicated and focused recommendations for plant upgrades
- Support for the Licensing Process
- Direct economic benefits of energy generation with flexible operation

Are you interested in AREVA's flexible power plant operation solutions?

AREVA GmbH

Contact us for more information:

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