



### ■ ATMEA1 Main Features

Item	Specifications
Thermal output	3150 MWth
Electrical output	1100 – 1150 MWe (Net)
Operation cycle length	12 to 24 months
MOX loading	Available for 0 – 100% MOX loading
Load follow operation	100% – 25% (1% - 3%/min), including automatic frequency control, instantaneous return to full power capability, and effluent reduction by variable temperature control
Outage duration	Less than 16 days for normal refueling outage
Design plant life	60 years
Primary system	3 – loop configuration
Safety system	3 – train, reliable active system with advanced accumulators
Severe accident mitigation	Core catcher and hydrogen recombiners keep long-term integrity of containment
Provisions for airplane crash	Safety related buildings protected against commercial airplane crash through reinforcement and physical separation
Seismic condition	Available for high seismic area
Public concerns	No emergency planning (evacuation) required
Regulation compliance	Compatible worldwide including US, Europe, Japan

AREVA and Mitsubishi together stand for:

More than 120 construction experiences of commercial nuclear power plants

Nuclear factories worldwide avoiding manufacturing bottlenecks

4 nuclear power plants under construction throughout the world

while licensing and precicensing process are underway in the US, UK, and Japan.



Tour AREVA - 92084  
 Paris La Défense Cedex 9 - France  
 Phone: +33 (0)1 34 96 83 45  
 E-mail: yasuhiko.okabe@atmea-sas.com  
 www.atmea-sas.com

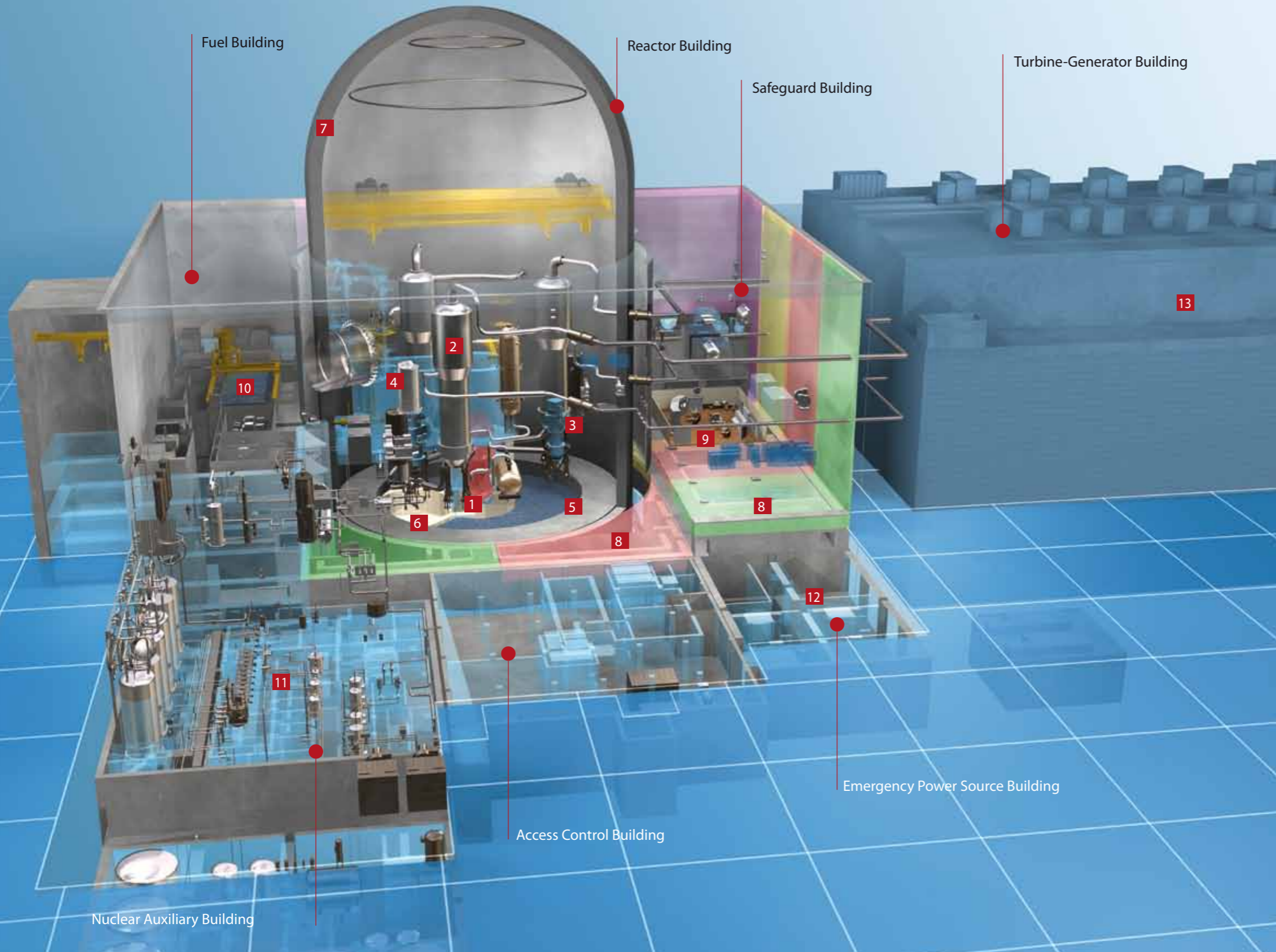
# ATMEA1

The mid-sized Generation III<sup>+</sup> PWR you can rely on

ATMEA supplies the most advanced 1100 MWe PWR plant with the combination of the unique set of competence and experience of its parent companies, AREVA NP and Mitsubishi Heavy Industries



The mid-sized Generation III+ PWR you can rely on



### Top-level safety as a Generation III+ plant

- Regulatory compliance: compatible worldwide including US, Europe, Japan
- Probabilities of core damage and of large radiological release a factor of 10 lower than conventional PWRs
- Clear separation between safety and operational systems
- 3 Emergency Power Supply Systems + 1 back up train + Diversified additional Alternative AC Power system (AAC)
- External hazards: protected against large commercial airplane crash, earthquake, flooding
- Long-term containment integrity against severe accidents kept by core catcher, passive hydrogen control capability

### Relief of people around site area

- No emergency planning (evacuation, etc.) required
- Protection against severe accidents and air plane crash
- Less waste, less impact for environment

### High operation performances by reliable and proven technologies

#### High thermal efficiency

- 10% of generation cost and fuel consumption savings compared to Generation-II PWRs
- Realized by efficient steam generator design with economizer, state-of-the-art turbine technologies, etc.

#### High plant availability

- Less than 16 days for normal refueling outage
- On-line maintenance capability
- Accessible reactor building design during operation
- Reliable and proven technologies integrating AREVA and Mitsubishi experiences

#### Operation flexibility

- Flexible 12 to 24-month operation cycle length keeping an economical fuel consumption
- Extended load-follow and frequency control capabilities
- MOX loading capability up to 100%

#### Flexibility for site and grid conditions

- 1100 – 1150 MW (net) compatible with almost every grid
- Design available for high seismic area
- Design available for 50/60Hz and various heat sink conditions

Reactor Building		
1	Reactor	Low power density core, available for 24-month operation cycle keeping an economical fuel consumption
2	Steam Generators	High steam pressure with axial economizer
3	Reactor Coolant Pumps	Proven high efficiency pumps
4	Advanced Accumulators	Passive and efficient injection against loss of coolant accident
5	In-containment Water Storage	Eliminates switch-over operation for loss of coolant accident
6	Core Catcher	Keeps and cools molten core in the long term
7	Containment	Pre-stressed concrete containment vessel with steel liner ensuring the protection against large commercial airplane crash

Safeguard Building		
8	Safeguard systems	Well proven active systems - 100% x 3-train configuration - 1 additional 100% safety train (Div X) for support systems with additional diversified heat sink - Structural protection against airplane crash - Division separation - Provisions for effective on-line maintenance
9	Main Control Room	Full digital I&C system and advanced human-machine interface Protected against airplane crash

Fuel Handling Building		
10		Protected against airplane crash
Nuclear Auxiliary Building		
11	Reactor auxiliary and waste disposal systems	Proven operational systems

Emergency Power Building		
12	Emergency Generators	Redundant trains enabling on-line maintenance Segregation against airplane crash
Turbine-Generator Building		
13	Turbine-Generator	Latest design with highest efficiency