

Shaping tomorrow's **energy**
together for a **cleaner,**
better **future**

New Nuclear Energy in Sweden – Repeating the success story from the seventies

September 18, 2024

Kim Dahlbacka

Regional Account Director for Eastern and Northern Europe
Westinghouse





Westinghouse Sweden History & Today

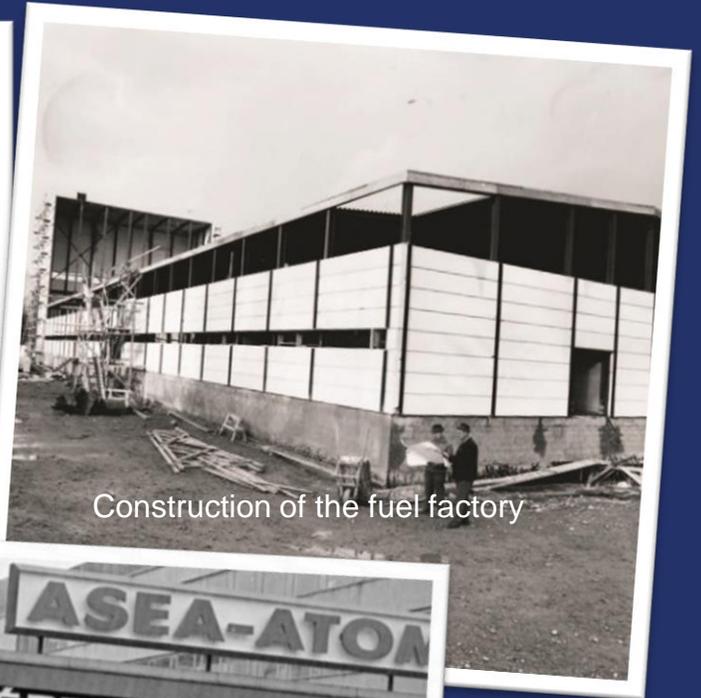
ASEA / ASEA Atom – The 60's



Oskarshamn 1 quote in 1963 - outside the Tegnér office



Inauguration of the fuel factory 1966 - Marcus Wallenberg



Construction of the fuel factory



Development of BWR fuel



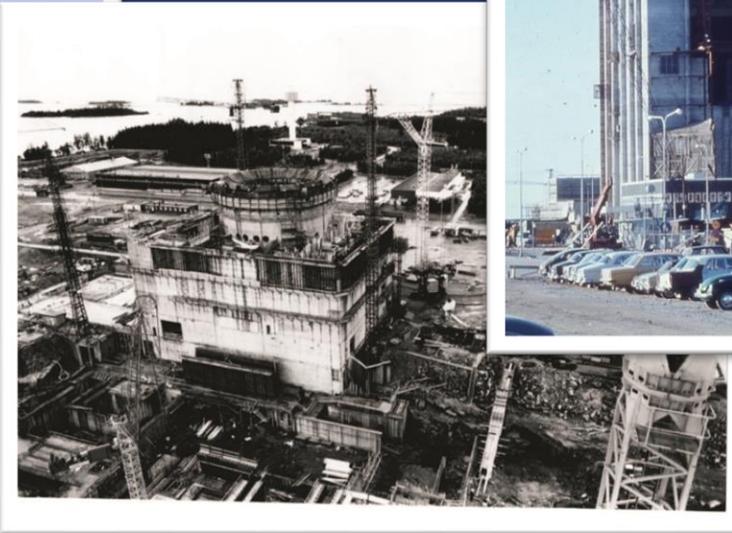
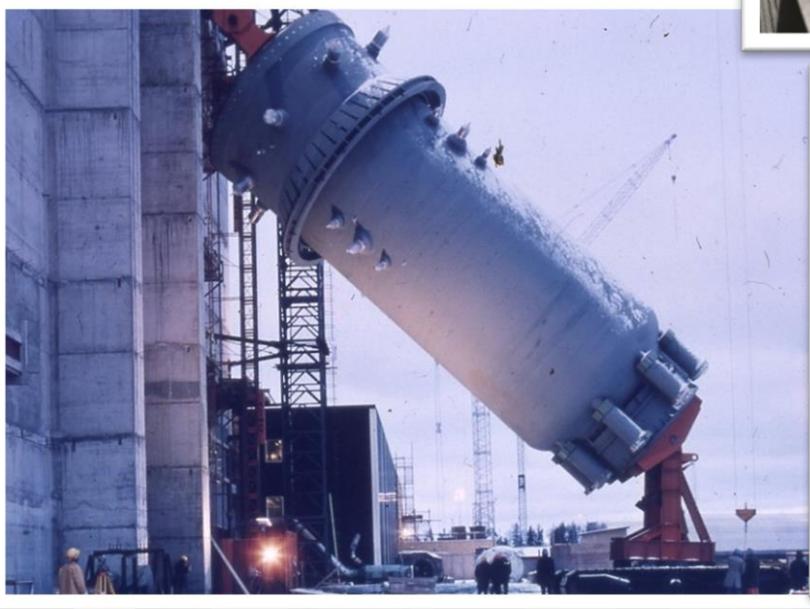
Construction site visit



ASEA-ATOM

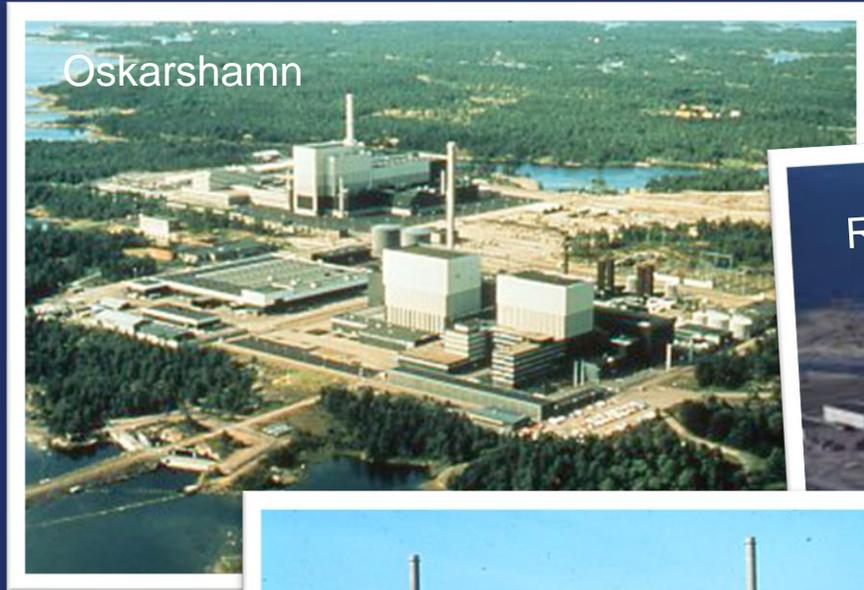
CEO Lars Halle at Tegnér

ASEA Atom – The 1970's



ASEA Atom – The 1970's and 1980's

Eleven reactors in Sweden and Finland





We built **14 reactors** in
Sweden & Finland in **19 years**

Innovative Solutions Portfolio



AP1000® PWR
~1200 MWe



AP300™ SMR
330 MWe



eVinci™ Microreactor
5 MWe



Long Duration Energy Storage
Unlimed MWe for ~ 10 hours

Our reactors can also deliver beyond electricity benefits

Hydrogen Generation and Process Heat

Radioisotope Production

Complementary clean energy products to serve the needs of diverse global consumers

Fuel Cycle Closure and Waste Recycle/Reduction

Customer Selection of Westinghouse New Plant Technology

CUSTOMER CHALLENGES



Emission-free
Energy



Energy
Security



Energy Price
Stability



Grid
Stability

CUSTOMERS CONTINUE TO SELECT WESTINGHOUSE

AP1000 PWR



China has **4 AP1000** reactors
in operation & **12 units** under
construction



Poland contracts for
3 AP1000 reactors



Bulgaria selects
2 AP1000 reactors



2 operating AP1000s,
1st new in USA in 30 yrs



Ukraine contracts for
9 AP1000 reactors



India selects
6 AP1000 reactors

AP300 SMR



UK selects **4 AP300 SMRs**
Community Nuclear Power

Pumped Thermal Energy Storage

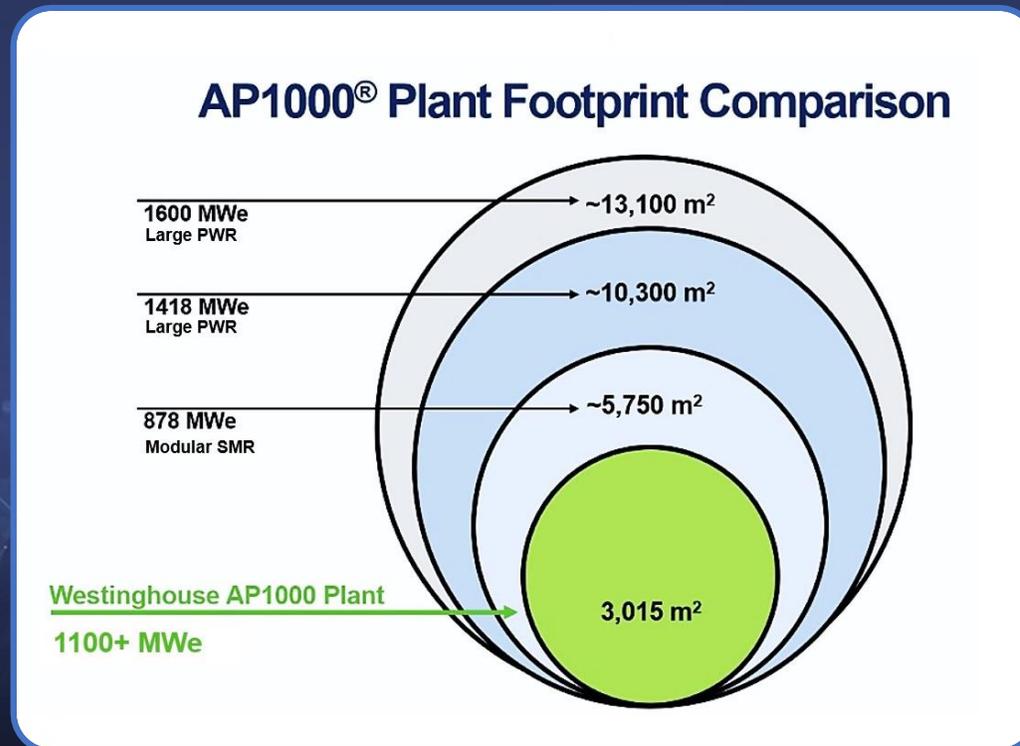


US DOE selection – Alaska grid-scale
LDES project at **50 MW & 1.2 GWh**

AP1000 Technology

Safe, Simple, Proven

- Generation III+ plant; most advanced in operation today
- Fully passive safety systems and 72+ hour coping after station blackout
- Standardized, optimized design utilizing advanced modular construction
- Licensed by nuclear regulators in Europe, USA, and China
- Record-setting operational performance
- Advanced, load-following capabilities
- Safe, clean, reliable energy



- ✓ Land utilization
- ✓ Infrastructure costs
- ✓ Environmental impact
- ✓ Safety and security
- ✓ Increased efficiency
- ✓ Easier public acceptance
- ✓ Cost-effective decommissioning
- ✓ Potential for modular design
- ✓ Operational efficiency
- ✓ Reduced cooling needs
- ✓ Flexibility in expansion

Modular Construction Approach

Shorter construction schedule – Improved quality – Reduced field work

Factory production of modules



On-site module assembly



Transport Modules



Plant Operation



Site Survey and Preparation



Site Construction



Construction and module assembly



Requires pre-engineering and early procurement – More work done in parallel

AP1000 Technology

Record Setting Operations



- Superior operating performance – availability and capacity factors >92%
- Dramatically reduced start-up test programs from 10 months to 5 months or less
- Industry performance records set for first cycle refueling outages (28 days) second cycle (19 days)
- Plants used for both baseload and load-follow modes with ramp rates of 1 MW/second
- Sanmen units received a perfect score by the World Association of Nuclear Operators (WANO)

Westinghouse & Hyundai Team for AP1000

Opportunities in Sweden and Finland

- Westinghouse & Hyundai Team announcement follows the Swedish governments presentation in November 2023 of a roadmap for new nuclear, announcing its plans to construct two large-scale reactors by 2035 and the equivalent of 10 new reactors, including SMRs, by 2045
- Westinghouse will provide the design and development of its industry-leading, globally deployed AP1000 technology
- Hyundai Engineering & Construction will provide its globally recognized industrial engineering and construction services for the project



We Can Do It!



**We built 14 reactors in
Sweden & Finland in 19 years**



We can do it – Again!

Any questions?



Westinghouse
Electric Company



@WECNuclear



Westinghouse
Electric Company



wecchinanuclear

westinghousenuclear.com



Westinghouse