



# IDEA2022

## Building Connections

June 6-9 | Sheraton Centre Toronto Hotel | Toronto, ON



INTERNATIONAL  
DISTRICT ENERGY  
ASSOCIATION

# From GHG Emitting to Directly Green with Nuclear

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# District Energy Systems currently produce GHG Emissions ...

## DE Current Benefits

- A variety of fuel variations
- Economy of scale reduces emissions from distributed consumption
- Reliability of Systems



...but they still produce GHG's; District Energy Systems are looking to nuclear to go green....

# Recent advances in Nuclear have made Small Modular Reactors a valid consideration ....

- Three Tiers of sizes
  - Micro 5-10MWe, 15-30MWth
  - Mid Size 75-100MWe
  - Grid Size 100-350MW
- Safe, driven by Fuel Design advancement.
- Lock in fuel price certainty for 18-20 years.
- Reduced construction and licensing timelines
- Can produce electricity, hot water/steam or hydrogen.
- No Design Basis accidents that result in fuel melting.
- Exclusion zone is at the plant boundary.
- Standardized design and can be installed in incremental units.



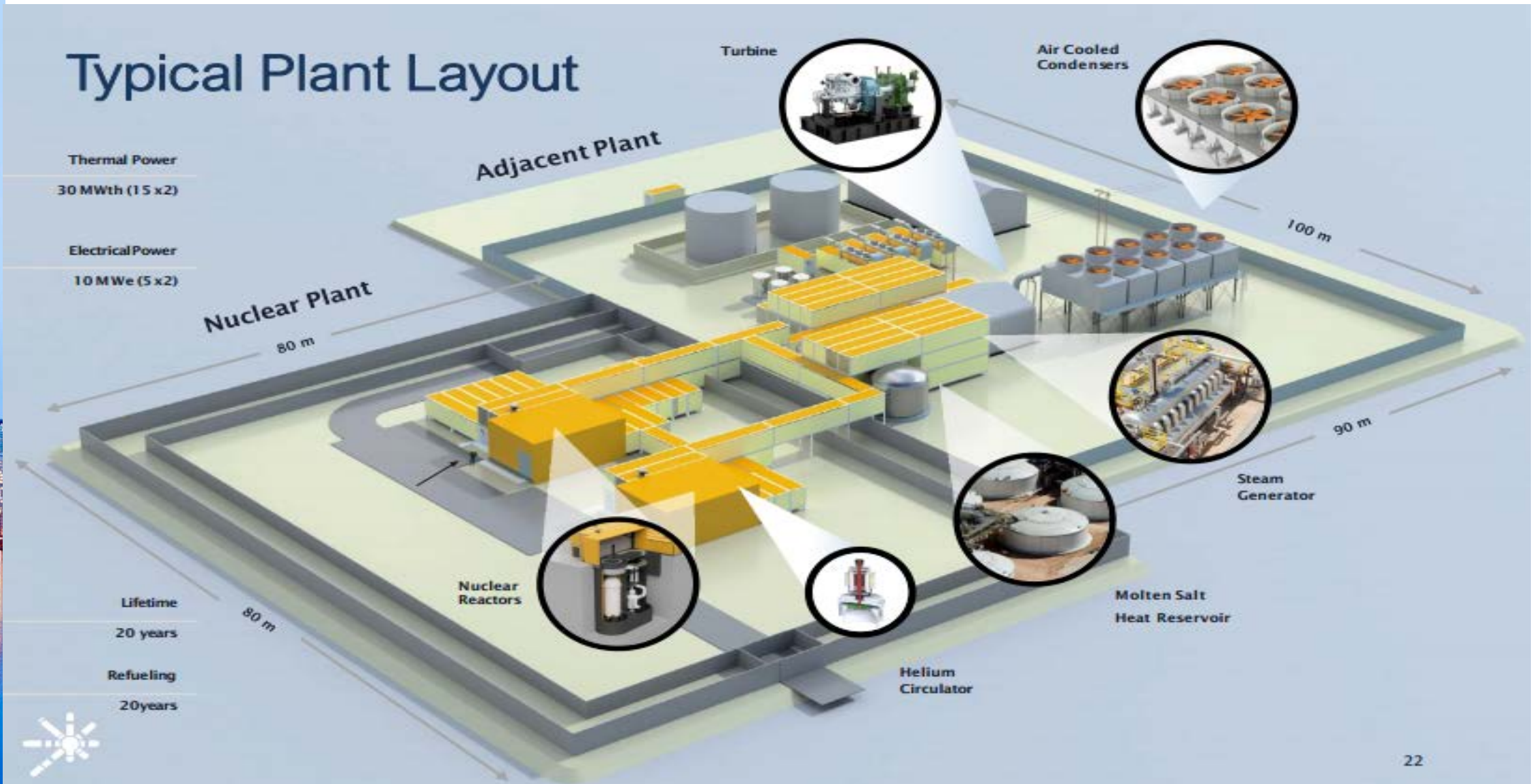


# University of Illinois using USNC design .....

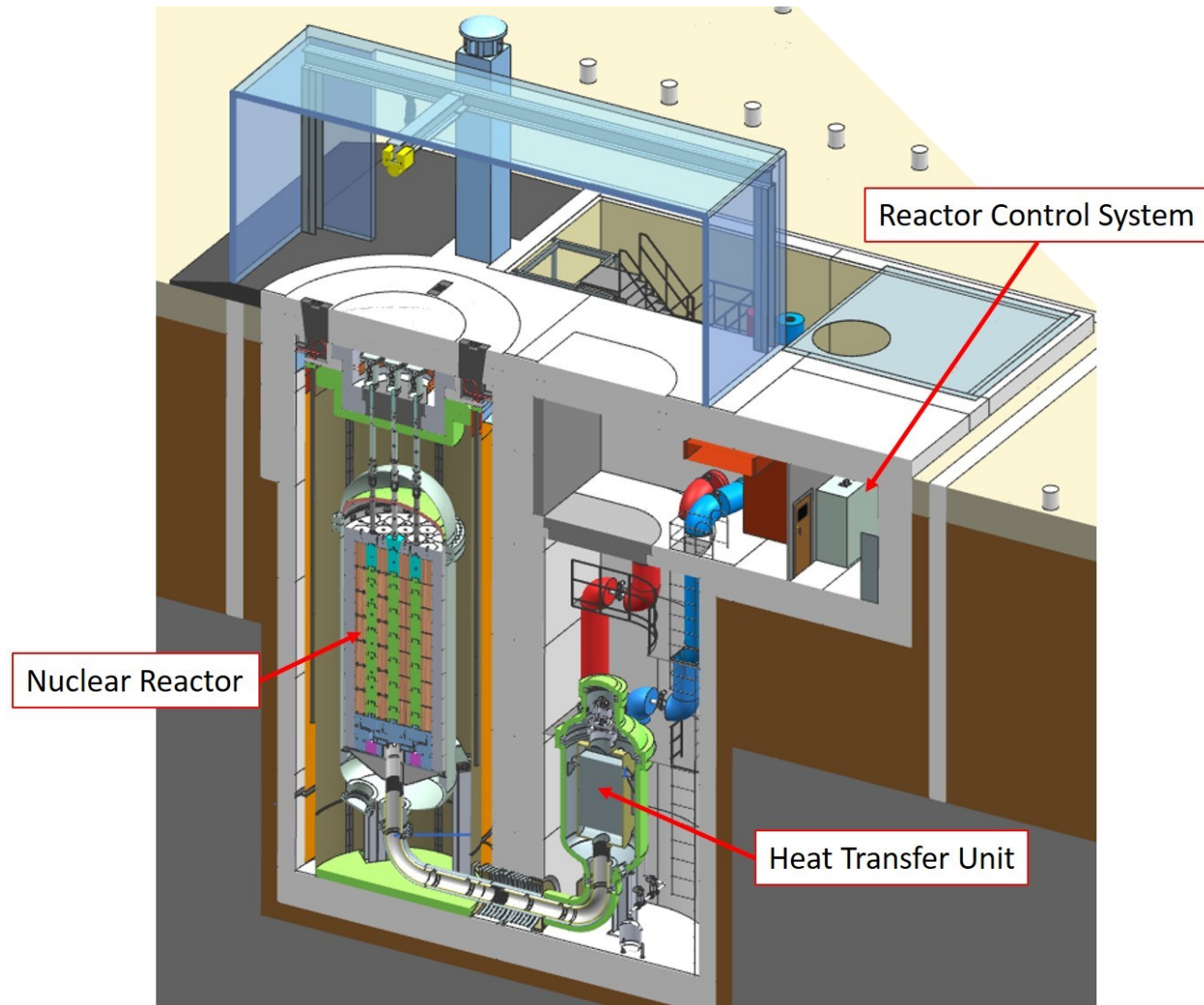




# Chalk River Laboratories using USNC design .....



# USNC reactor design .....





# Lessons Learned

- VTT Study with NuScale Reactor in Finland DE System
- Cost competitive
- Safe with growing public acceptance.
- Canada and US are Tier 1 nuclear countries with capable supply chains
- Reduces fuel uncertainty and pricing risk.
- Can load follow and store heat for peak loading
- Can be configured for electrical, thermal, Hydrogen or combination of these.
- Used Fuel Storage plans in place.



# Q&A



# Thank You!



**Louie Shoukas**





# Advanced Triso Fuel .....

