

### Nuclear Energy Overview

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mn.gov/commerce

# Nuclear Energy Generation in Minnesota



#### Electricity Generation in Minnesota 2023

- Prairie Island Nuclear Plant
  - Began operation in 1973, license expires in early 2030's
  - Capacity of ~1000 MW (2 units)
- Monticello
  - Began operation in 1971, applied to extent operation to 2040
  - Capacity of 670 MW (1 unit)

ource: Energy Information Administration mn.gov/commerce

# Developments in Nuclear Energy Technology

#### **Advances in Design**

• Small Modular Reactors "SMR" (300 MW or less)

#### Advances in coolant technology

- Alternatives to water-reach higher temperatures and improve efficiency and safety
- Molten salts, metals, and helium are all being explored

### **Advances in fuel technology**

 Uranium enclosed in ceramic and carbon-based layers to reduce corrosion and melting which Improves safety

## Advanced Reactor Development Timeline



Advanced Reactor Deployment Timelines | NIA (nuclearinnovationalliance.org)

## **Developments in Nuclear Energy Policy**



Final Report V1 - Implications of Inflation Reduction Act Tax Credits - December 2023.pdf (nuclearinnovationalliance.org)

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