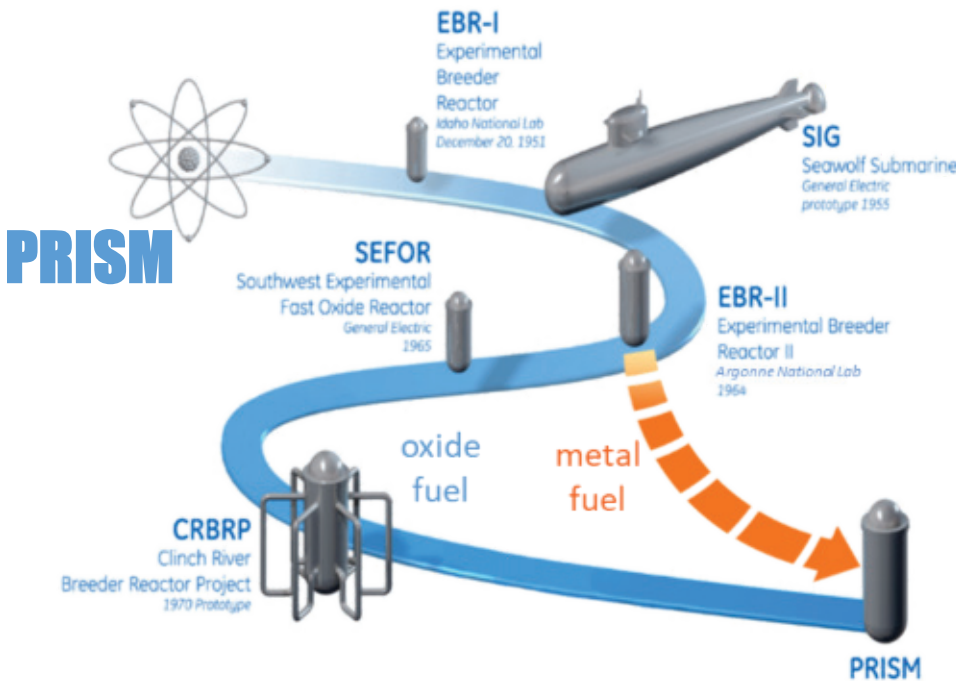


# PRISM

## GEH Sodium Fast Reactor



- Sodium-cooled fast reactor ... Generation IV
- 165 and 311 MWe options ... flexible
- Compact pool-type ... atmospheric, eliminates LOCA
- Passive safety ... air cooling
- Proven metal fuel ... inherently safe
- Superheated steam ... plant efficiency
- Modular design ... quality and efficiency
- High temp ... industrial process heat applications
- Fuel recycling application ... 99% fuel utilization



*PRISM can recycle used nuclear fuel, generating electricity while reducing radiotoxicity from hundreds of thousands of years to hundreds of years, thereby reducing the footprint/cost of the geological repository.*

## PRISM Has Significant Design and Licensing Completed through Various Programs

### Advanced Liquid Metal Reactor (ALMR, 1994-1995)

- PRISM design, initiated in the early 1980s, used as reference for DOE ALMR Program
- Submitted six-volume Preliminary Safety Information Document (PSID)
- NUREG 1368 NCR issued Preapplication Safety Evaluation Report ... **“no obvious impediments to licensing”**

### Global Nuclear Energy Partnership (GNEP, 2007-2009)

- International cooperation program ... closing the fuel cycle

- Submitted PRISM preliminary Design Control Documents (DCD) which NRC docketed for training for advanced reactor licensing ... **“found to be of high technical quality”**

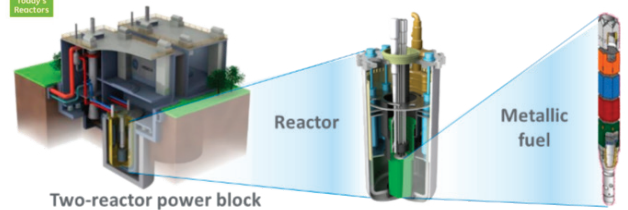
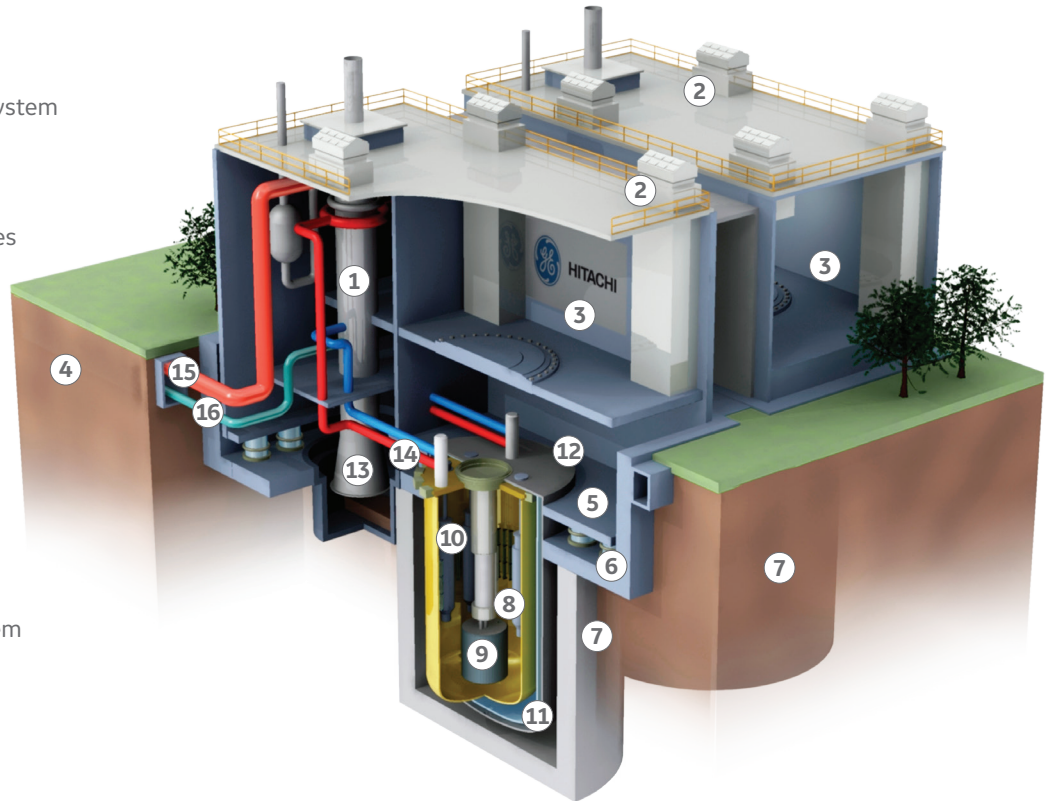
### Probabilistic Risk Assessment (PRA, 2016)/Licensing Modernization Program (LMP, 2018)

- GEH developed PRISM PRA with Argonne National Laboratory (ANL)
- PRISM PRA used for table-top demonstration of Southern-led, DOE-supported, risk-informed licensing approach for Gen IV reactors

# The PRISM Reactor Can Produce up to **100x More Power** per Unit of Fuel, Compared to Conventional Reactors

## PRISM Power Block

1. Steam Generator
2. Reactor Vessel Auxiliary Cooling System
3. Refueling Enclosure Building
4. Steam Tunnel to Turbine
5. Reactor Protection System Modules
6. Seismic Isolation Bearing
7. Reactor Module
8. Primary Electromagnetic Pump
9. Reactor Core
10. Intermediate Heat Exchangers
11. Lower Containment Vessel
12. Upper Containment Building
13. Sodium Dump Tank
14. Intermediate Heat Transfer System
15. Steam Outlet Piping
16. Feedwater Return Piping



**HITACHI**

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