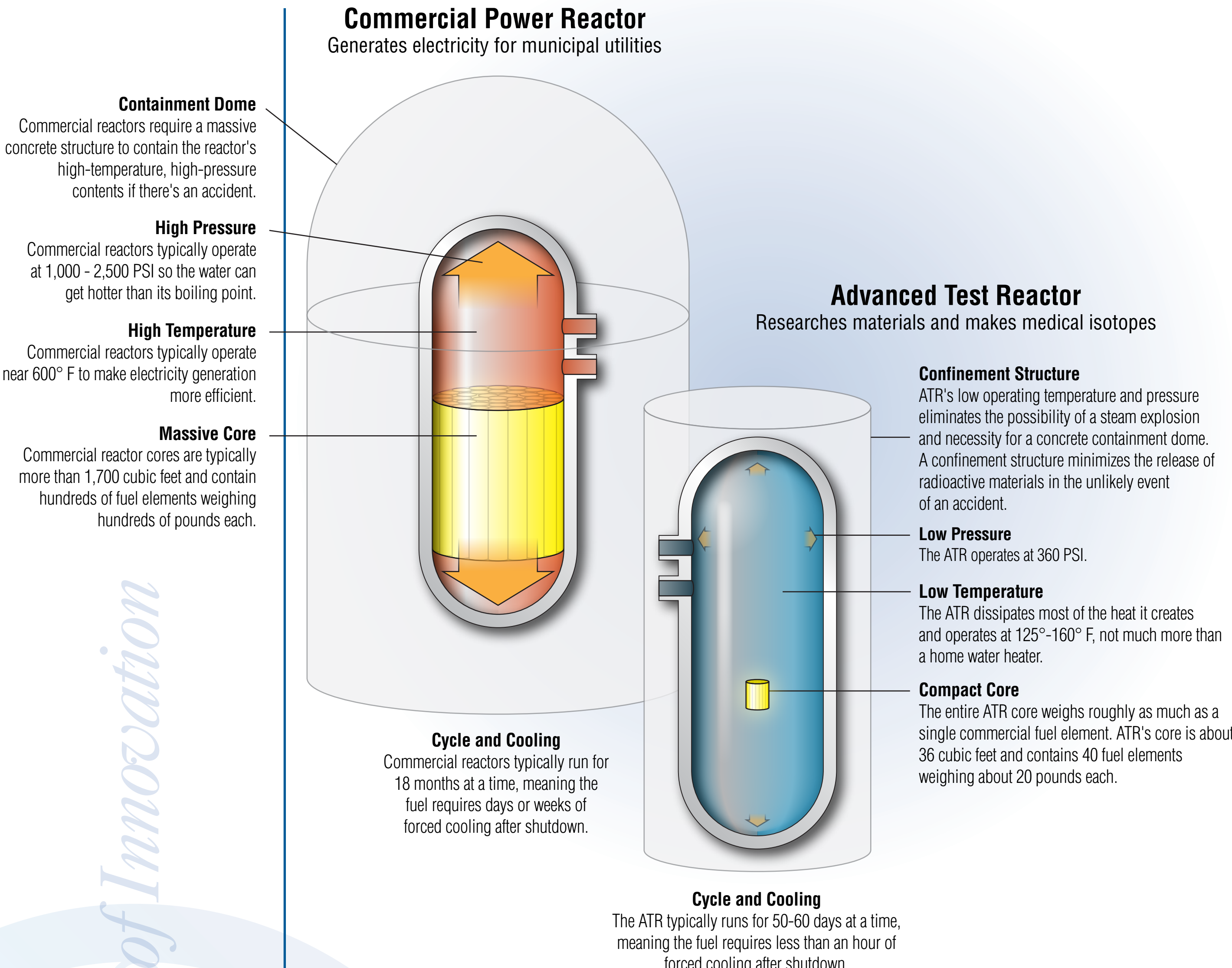


The Energy of Innovation

Idaho National Laboratory

# INL's Advanced Test Reactor

## *A Globally Distinctive Nuclear Science Resource*

The Advanced Test Reactor provides unmatched, national priority nuclear fuel and materials testing capabilities for military, federal, university, and industry partners and customers. Because of its broad importance, the ATR's internal components are routinely upgraded, and its operations are continually assessed against the latest safety and seismic standards.

Based on more than 40 years of operating experience and a well-documented record of continuous safety analyses and upgrades, INL scientists, engineers and safety professionals are confident the Advanced Test Reactor can continue to operate safely and support INL's growing nuclear energy research mission.

### *Comparing Attributes*

As illustrated above, ATR differs significantly from the large reactors used to generate the majority of the nation's emission-free electricity. Because commercial nuclear

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## For more information

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reactors have a distinct purpose, their designs and characteristics are quite different from research reactors such as the ATR.

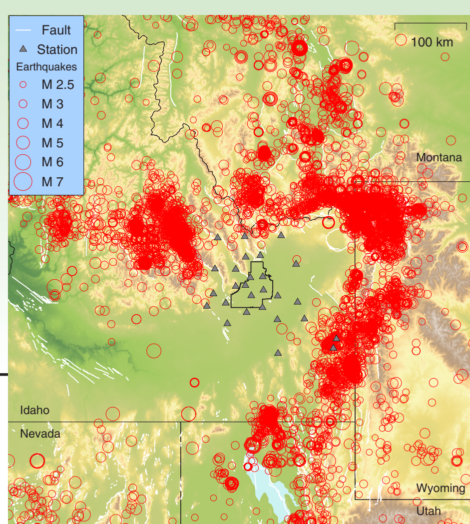
### ATR Safety Systems

ATR emergency systems are qualified to withstand ground accelerations nearly 10 times what the facility felt during the historic 1983 Mount Borah quake. Reserve water (left) and power (center) help ensure ATR is ready to respond to a loss of power or other unplanned event.

The ATR simulator (right) – a replica of the ATR control room – enables ongoing operator training for a wide range of normal, abnormal and emergency situations. Examples of redundant safety systems at ATR include:

- Four diesel generators, including one to provide power for a deep-well pump,
- Diesel fuel to last more than a month,
- Backup batteries that are regularly tested and housed in a seismically strengthened room,
- Reserve cooling water supplies exceeding 10 times the ATR core's volume, including a 1-million gallon tank that has diesel motor driven pumps and can deliver water via gravity pressure if all power is lost,
- Valves on reserve water supplies default to open position if power is lost,
- Ongoing operator training to evaluate response readiness for abnormal and emergency situations, and
- Continual review and analysis of emergency system readiness.

### INL is Located in a Relatively Quiet Seismic Zone




The Department of Energy's Idaho site is located on the Eastern Snake River Plain, which is seismically quiet compared to the surrounding mountains. This map (left) shows seismic events with magnitudes greater than 2.5 between 1850 and 2007. INL seismic monitoring stations have existed throughout the site since 1972 to characterize potential sources of future earthquakes.

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