

# Critical Infrastructure Test Range Complex (CITRC)

*Electric Grid Security & Testing Capabilities*

The Idaho National Laboratory (INL) operates one of the most advanced utility-scale electric grid test beds in the U.S., supporting government, industry, and academic research. CITRC enables testing, validation, and development of next-generation grid technologies in a realistic environment.

## Why CITRC?

### Utility-Scale Test Bed

890-square-mile desert site, utility-fed, fully reconfigurable.

### Realistic Conditions

Year-round weather extremes, live electrical work and fault initiation.

### Cybersecurity Leadership

Over 100,000 sq. ft. of lab space for industrial control systems and OT cybersecurity.

## Expert Support

- Power systems engineers, cyber analysts, and risk experts
- Experienced line crews for rapid system reconfiguration
- Industry partnerships and utility connections

*INL grid analysts working at the Critical Infrastructure Test Range Complex.*



## Testing Capabilities

### Transmission

- 69kV to 345kV operation
- 16 miles of dedicated test transmission line
- Advanced conductors, sensors, and tower enhancements

### Distribution

- 15kV to 35kV operation
- 5 miles of dedicated test distribution lines
- Smart substation controllers, cybersecurity, and failure state analysis

### Dedicated Facilities

- Flexible at-scale equipment: transformers, cables, poles
- Integration of distributed generation and loads
- Grid-connected fault testing and microgrid operation

## Learn More

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See the facility

U.S. DEPARTMENT  
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Idaho National Laboratory

*Battelle Energy Alliance manages INL for the U.S. Department of Energy's Office of Nuclear Energy*