

*The Department of the Air Force is conducting ERREs to determine if installations can meet mission objectives during loss of power and water events.*



An unarmed Minuteman III intercontinental ballistic missile launches during an operational test at Vandenberg Space Force Base, California. Like these tests, ERREs offer an operational test of the energy system to ensure continued support to mission operations.

## Energy Resilience Readiness Exercises

As the Department of the Air Force (DAF) strives for mission assurance through energy assurance, Energy Resilience Readiness Exercises (ERREs), also known as “black start exercises,” are the best tool available to help installations assess mission readiness during a controlled denial of service. An ERRE intentionally shuts down primary power to a base for a minimum of 10 hours, testing onsite backup power systems and identifying infrastructure and mission interdependencies and enabling system capability gaps.

10 U.S. Code § 2920 requires a minimum of five black start exercises per Military Department per year, and the DAF has developed an FY23-28 schedule to meet that battle rhythm. Further, DAF Instruction 90-302 has included ERREs as an authorized assessment while DAF Instruction 90-1701 requires Installation Commanders to conduct ERREs as a part of installation assessments and to incorporate any findings into their Installation Energy Plans (IEPs).

### ERRE Objectives

By using the ERRE approach to assess the current energy resilience posture, the DAF has a means to identify performance gaps in primary and backup energy systems and subsequent mission vulnerabilities. In executing ERREs, the DAF aims to:

- Assess whether an installation can maintain a state of constant mission readiness during adverse conditions.
- Verify backup generation configuration and assess technical performance of energy, water, and communication systems in the event of an outage.
- Identify backup power capability gaps between the installation infrastructure and mission requirements.
- Determine infrastructure improvement opportunities in order to ensure operational mission readiness.

### ERRE Resources

1. The OSD Energy Resilience Readiness Exercise Methodology, “A Framework for Planning and Executing Energy Resilience Readiness Exercises”
2. DAF ERRE Installation Lessons Learned FY20-22
3. ERRE Resource Guide



# How Do ERREs Work?

## COORDINATE

Initiate outreach to key stakeholders and leadership to discuss ERRE CONOPS, concerns, and potential timing.

## DESIGN

Use data calls, informational briefs, and interviews with mission partners to identify mission requirements, capabilities, and assumptions.

## DEVELOP

Through recurring planning meetings and various site visits, develop the exercise scope that will evaluate mission readiness and work to mitigate known issues with preemptive actions and planned responses.

## CONDUCT

Station team members to observe and collect data at points of interest (e.g., critical facilities, leadership hubs, etc.).

## EVALUATE

Produce out-brief and report to detail findings and recommendations from the exercise highlighting stop-gaps, process issues, and technology investments.

## Moving Forward

Building on lessons learned from previously conducted exercises, the DAF has completed sixteen ERREs to date and continues to pursue an ambitious exercise schedule, aiming to meet its requirement of five ERREs per year through FY27 and beyond. In FY24, sustainment of exercise execution will move over to AF/A4CF. HAF will continue to be heavily involved in those exercises that pose unique situations or challenges, such as the first OCONUS exercises, as well as those ERREs that serve as demonstrations for the integration of system modelling alongside the exercise.

## Completed Exercises

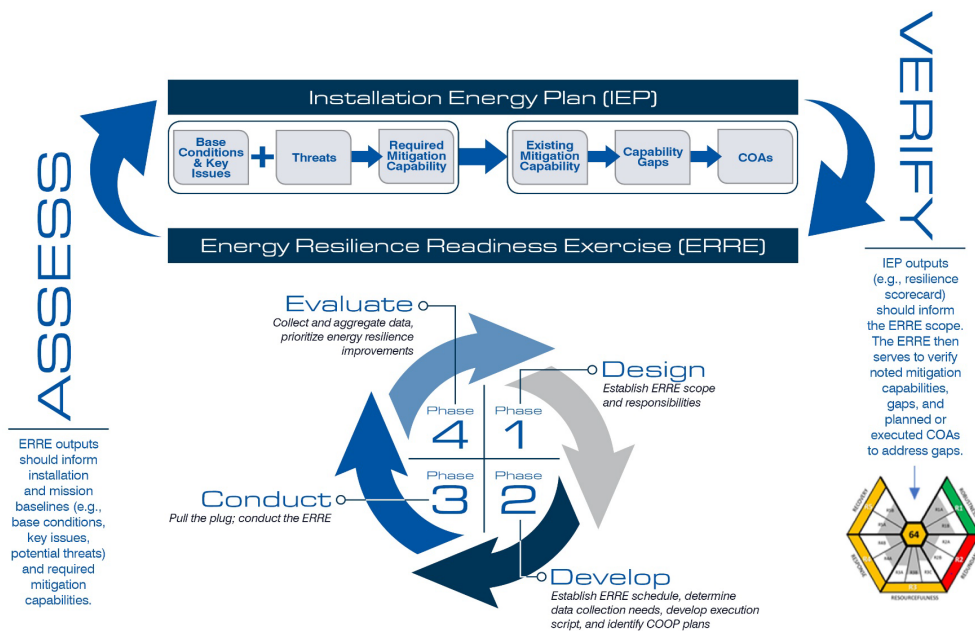
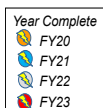


Figure 1: To ensure continued resiliency in the evolving threat environment, mission readiness is assessed and verified in a cyclical process of IEPs and ERREs.

The Department of the Air Force is taking a resilience-focused approach to future energy and water projects concentrated on providing strategic agility for missions and installations.

## For more information:

[safie.hq.af.mil/InstallationEnergy](https://safie.hq.af.mil/InstallationEnergy)

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