



Black Start Exercise: Lessons Learned From the Field



WE ARE THE ARMY'S HOME



29 October 2024

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Agenda

- Authorizations
- Combined Planning Assessment
- Execution Timeline
- Black Start Exercise Phasing
- BSE Best Practices and Lessons Learned
- Garrison POCs



Black Start Exercise Authorizations

- ❑ **DODI 4170.11 Installation Energy Management, Change 2, 31 Aug 2018**
- ❑ ASA(IE&E) MFR Installation Energy Resilience Readiness Exercises, 15 Feb 2019
- ❑ ASA(IE&E) MFR Framework for Planning and Executing Energy Resilience Readiness Exercises, 9 Apr 2020
- ❑ ODASD (E) MFR, A Framework for Planning and Executing Black start Exercises, 6 Aug 2020
- ❑ FY21 National Defense Authorization Act (NDAA)
- ❑ **HQDA EXORD 128-23 Black Start Exercise (BSE) Execution, 21 Feb 2023**
- ❑ 10 USC 2920: Energy resilience and energy security measures on military installations (latest 8 Oct 2024)



Combined Planning Assessment

Fort Moore GC Intent:

- Execute first combined FSE/BSE Event
- Every facility on Fort Moore will lose power; Outage duration will be limited impact to critical/POI facilities and energy capabilities

Exercise Constraints:

- Must test all installation Energy and Water Plan (IEWP) Critical Facilities (USACE PREP)
- HQDA EXORD allows for exemptions of DFMWR, CYS, AAFES, Housing, and DeCA facilities

MCOE CG Guidance:

- EFMP 100% notified
- Limit Impact to Mission, Housing, and Quality of Life

Planning Estimate:

- Identify concept early >1 year
- Planners must **understand power grid** capabilities (Identify all IEWP critical sites and how energy outages impact them)

CG Early Engagement



Full Scale Exercise (FSE)	Black Start Exercise (BSE)
Intended to test and evaluate the operational capability of the emergency management system in an interactive manner.	Intended to test and evaluate an installation's ability to perform critical missions when off post energy feed is interrupted for up to 8 hours (IAW 10 USC 2920).

Background

- HQDA EXORD 128-23:
 - Backup generation must run at full operational load for 8-12 hours.
 - Include the entirety of the installation to maximum extent possible, but at minimum, all facilities that are designated as critical.
 - May exclude **housing areas, commissaries, exchanges and morale, welfare and recreation facilities if backup capabilities are not available** and their exclusion does not preclude the testing of critical facilities on the same electrical feeder.
- BSEs conducted to assess the energy resilience and energy security of installation.
- Externally evaluated by Corps of Engineer.
- 5/7 Dec – Community Information Brief to tenant and non-tenant units.
- 7 Dec – Kelley Hill ERRE
- 9 Jan – ERRE ROC Drill
- 11 Jan – FSE/BSE ROC Drill
- 12 Jan – Main Post ERRE

Department of the Army's First Combined FSE / BSE

BSE Notification Tracker

 <ul style="list-style-type: none"> <input type="checkbox"/> Housing (Email) <input type="checkbox"/> ARTB <input type="checkbox"/> 194 AR BDE <input type="checkbox"/> 197 IN BDE <input type="checkbox"/> 198 IN BDE <input type="checkbox"/> 199 IN BDE <input type="checkbox"/> 316 CAV BDE <input type="checkbox"/> NCOA <input type="checkbox"/> 1SFAB <input type="checkbox"/> Infantry School <input type="checkbox"/> Armor School <input type="checkbox"/> WHINSEC <input type="checkbox"/> MACH (4 hour) <input type="checkbox"/> DENTAC <input type="checkbox"/> AMU <input type="checkbox"/> WTC <input type="checkbox"/> IG <input type="checkbox"/> MARDET <input type="checkbox"/> SLCFT <input type="checkbox"/> ICE <input type="checkbox"/> ARIF <input type="checkbox"/> MCDID <input type="checkbox"/> MICC <input type="checkbox"/> AFSOC GSU <input type="checkbox"/> FMX <input type="checkbox"/> NIM <input type="checkbox"/> MCoE Band <input type="checkbox"/> Military Pay <input type="checkbox"/> Safety <input type="checkbox"/> LRC <input type="checkbox"/> NEC <input type="checkbox"/> CPAC <input type="checkbox"/> DES <input type="checkbox"/> NEC <input type="checkbox"/> DHR 	<ul style="list-style-type: none"> <input type="checkbox"/> EFMP - (Set to be notified 1 Mar) <input type="checkbox"/> Housing - (Set to be notified 1 Mar) <input type="checkbox"/> 75 RR – (Concerned about Real-World Events) <input type="checkbox"/> DODEA (Request power outage at 1300 IOT feed students) <input type="checkbox"/> DFMWR (would like to know power outage flow IOT deplete refrigerators) <input type="checkbox"/> DeCA (No generators – request early phase for re-generator) <input type="checkbox"/> AAFES (Concern about refrigerated goods and vendor notification IOT reset fuel) 	 <ul style="list-style-type: none"> <input type="checkbox"/> None Identified
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Template Email to be sent out to EFMP

PLEASE READ MESSAGE BELOW FOR THOSE EFMP FAMILY MEMBERS THAT RESIDE ON FT. MOORE

This is more detailed information pertaining to the previous email sent discussing the Energy Resilience Readiness Exercise (ERRE) on January 12, 2024, and the Black Start Exercise (BSE) during March 2024.

Dear Valued Fort Moore Resident,

On behalf of the Garrison Commander, I'm writing to inform you of two upcoming Readiness Exercises which will impact housing and residents of housing with short term loss of power to housing.

Fort Moore is conducting a Black Start Exercise (BSE) during March 2024, and a preparatory Energy Resilience Readiness Exercise (ERRE) on 12 January 2024.

- The Garrison is charged with conducting these exercises in order to prepare for the possibility of unexpected disruptions to its utilities. It will demonstrate Energy Resilience by exercising its back up power systems, and will otherwise exercise its emergency contingency plans.

Each of these Exercises will impose a loss of power to the installation - or a portion of the installation (including Housing) - for a short term period.

- During 12 January's ERRE, the power outage is scheduled for the afternoon, and is scheduled for a period of 2 to 4 hours.
- Housing affected includes only the Main Post Custodian Area. This includes all East Main Post and Inlandhead Neighborhoods/Villages.
- DFMWR will work to minimize disruptions to Housing, Child Development Centers, and AAFES facilities during this time; however all of these "populations or audiences" can expect to experience short and intermittent power disruptions normally of a 20-30 minute duration, but with the possibility they could last up to an hour.

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* 1489 EFMP members registered to Fort Moore



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Combined Planning Assessment

CONCEPT OF OPERATION MANEUVER CHALLENGE

Planning Estimate (cont.):

- ❑ Engage **Senior Leaders early** (get buy-in)
- ❑ Engage units early (**why it is important to them**)
- ❑ Identify competing requirements
- ❑ Set conditions with PAO – community education and outreach (Mayor meetings)
- ❑ EFMP understanding (Medical requirements) overcommunicate often and directly
- ❑ **Confirm training objectives**
- ❑ **Clearly identify Trusted Agents** – Sign Non-Disclosure Agreement (NDA)
- ❑ Plan **Functional Exercises**
 - ❑ **Best Practice: Executed 2 small-scale ERREs in advance of BSE**
- ❑ Identify IMCOM's roles – What will they do for you?
- ❑ **Key Organization Contingency Plans**
 - ❑ Hospital/Clinics (Storage, Services)
 - ❑ LRC (Food services, Fuel – AAFES*)
 - ❑ MWR (Childcare and community events)
- ❑ ROC Drill with Senior Command

Mission: Fort Moore, and MCOE conduct integrated protection Full Scale and Black Start Exercises (FSE/BSE) MAR 24. IOT validate our Prevent, Protect, Mitigate, Respond and Recover (P2MR2) capabilities, validate plans, and demonstrate our ability to protect the Fort Moore community.

Purpose: To achieve program success, one hundred percent commitment and support is required from all personnel/unfilities involved in designing, planning, and delivering an externally evaluated FSE/BSE. Close coordination and command support of this program enables maximum use of Garrison assets and resources to manage and execute this program efficiently and effectively. Accordingly, external evaluation of FSE/BSE require Garrison and Senior Commander oversight of respective individual and collective training plans involving train ups ensuring the FSE/BSE is a culmination of training and preparation to best validate capabilities.

Focus Areas:

- Fatality Management
- Emergency Response
- Recovery Operations
- Community Support

End State: Validate responders energy resiliency, Crisis Action Team (CAT)'s, and recovery operations ability to contain, shorten, and recover from all-hazards event.

FINAL Exercise APPROVAL AUTHORITY: Senior Commander

Training Objectives

Contain the Incident and Establish Site Control:

- Evaluate the capability to activate and stress Mission Command nodes.
- Test our incident management capabilities and the ability to manage large scale incidents

Shorten the Duration of the Incident:

- Examine and test installation's ability to provide life-sustaining, human services, and restorations operations to the affected population, to include local evacuation & reentry, emergency family assistance, and community lifeline / critical infrastructure functions restoration.
- Incident response will demonstrate damage and infrastructure assessment and resource protection methods, along with casualty collection (Triage, Treatment).
- Identify gaps in Mission Command, training, support systems and deployment nodes during a power outage.
- Identify resource requirements to sustain Mission Essential Functions (MEF) during a power outage.

Speed Recovery:

- Demonstrate the ability to assemble the installation Recovery Working Group and plan, coordinate and support recovery and community resiliency operations.
- Assess the impact and importance of energy capabilities gaps and determine priorities.

Damage Assessment Key

- RED: Destroyed Damage
- ORANGE: Major Damage
- YELLOW: Minor Damage

Black Start Exercise Concept and Phased Restoration Summary

U.S. ARMY

BSE

Black Start Exercise Phases:

- Phase 1: E-1 Hour (Black)
- Phase 2: E-1 Hour (Green)
- Phase 3: E-2 Hours (Green)
- Phase 4: E-2 Hours (Green)
- Phase 5: E-2 Hours (Green)
- Phase 6: E-2 Hours (Green)

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- Phase 6: E-2 Hours (Green)

GC Decision Points

GC Decision	Purpose	Proposed Date
Publish OPORD	Engage all Installation members – Installation Exercise Brief (exercise date will be withheld)	20-Oct-23
Energy Exemption Guidance	Establish expectations on what will be exempted	20-Oct-23
Command Emphasis	CG provides guidance to force	30-Oct-23
Determine Date of Execution & Enclosure-1	Initiate movement for Corps of Engineers and other evaluators (LTC Wallace MACH request date due to medical scheduling)	21 Nov 23
PAO Messaging	Engage community and EFMP	19 Dec 23
Exercise Information Brief	Validate slides prior to Exercise Information Brief	19 Dec 23
Energy Exemption List Approval	Allows Flint Energy time to assess final list for feasibility and management of power outage	12-Jan-24-19 Dec 23
Back brief ID-T	As stated in IMCOM Order (45 days prior)	1 Feb 24
SC out brief	Validate SC attendance at FSE/BSE out brief	15 Mar 24





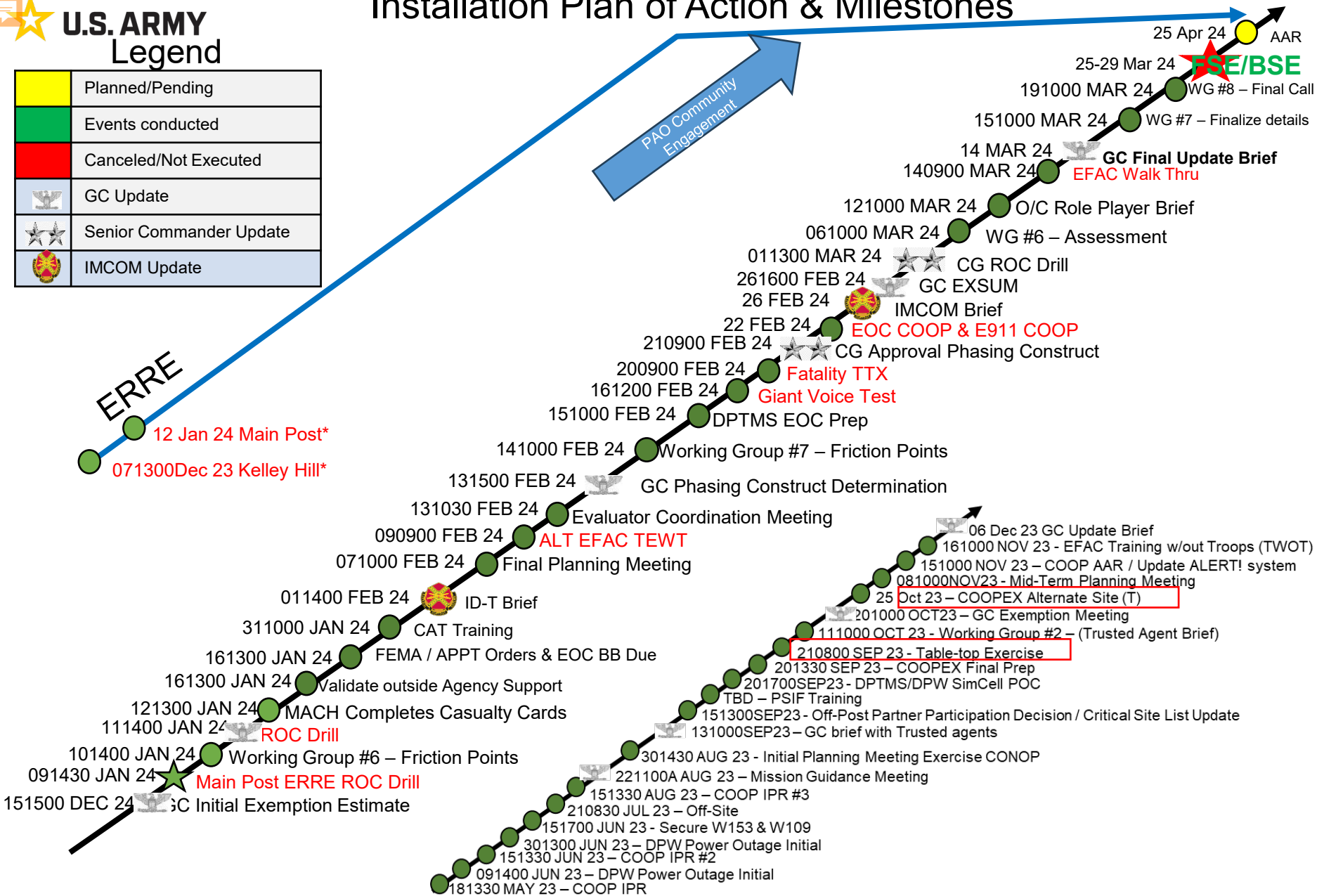
U.S. ARMY Legend

	Planned/Pending
	Events conducted
	Canceled/Not Executed
	GC Update
	Senior Commander Update
	IMCOM Update

Installation Plan of Action & Milestones



ERRE



FSE-BSE Go / No-Go Criteria

Go Criteria

- Media Campaign is complete
- Verify ability to restore power immediately / cancel event if needed
- All Exceptional Family Members living in on-post housing have been identified, and risk has been mitigated

No-Go Criteria

- Unforeseen real-world large-scale Emergency
- Severe weather impacting the installation on day of exercise
- Unexpected power outage
- OPDG (24 Feb – 29 March 24; starts within the window)**



Black Start Concept and Phased Restoration Plan (Fort Moore)



All Power on Fort Moore De-Energized

Microgrid Energized

- MCoE HQ
- WHINSEC
- AMU
- MP Station/911
- Puckett Parkway Shopette
- Mini-Mall Shopette
- East Main Post
- Perkins
- Faith Middle
- Dexter Elementary

Housing Area Power Restored -199th (-)

- Uchee Creek Campground
- ABN Shopette
- Harmony Church Shopette
- Indian Head CDC
- 1st Division CDC
- McGraw CDC
- Davis Hill, Bouton Heights, Indian Head, Patton, Upatoi, McGraw, and Custer
- Stowers Elementary
- EA White Elementary
- McBride Elementary

POI, Range, and Exempt Facility Power Restored

- 75th Ranger Compound
- AAFES Main PX
- Commissary
- Custer Express
- Marne Road Express
- Soldier For Life Center
- Santa Fe CDC
- Northwest Range Complex
- Northeast Range Complex

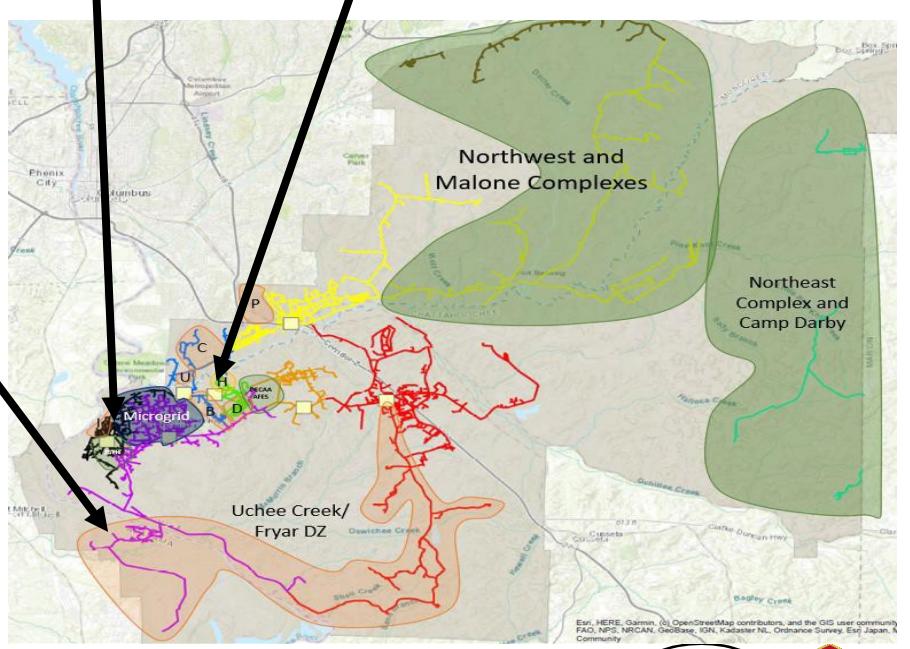
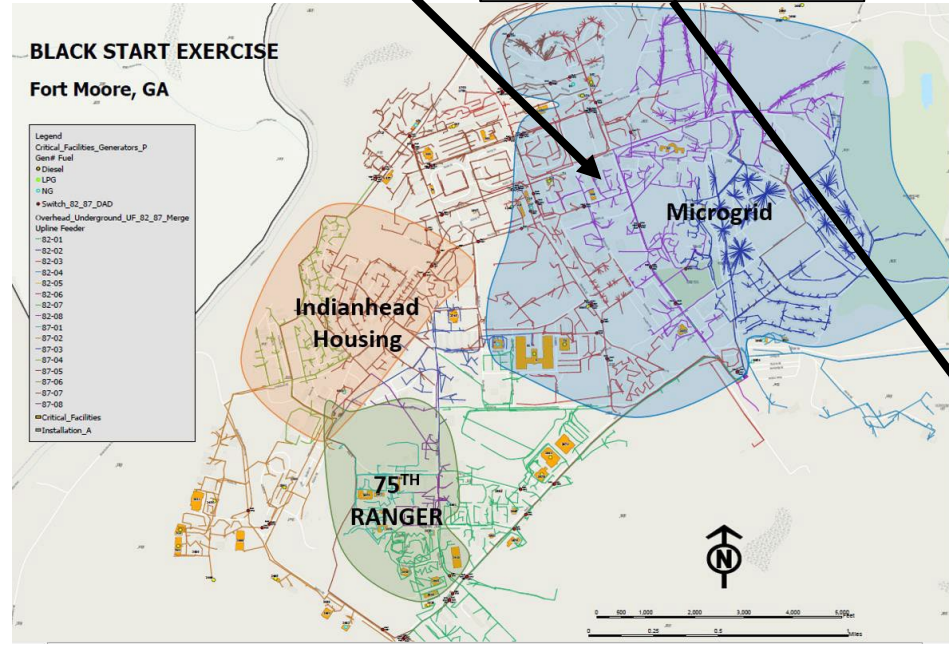
Hospital Power Restored, Begin Refueling Operations

- MACH Complex

All Power Restored

- 194th BDE
- 197th BDE
- 198th BDE
- 316th BDE
- NCOA
- SFAB
- MATA
- WTB
- Lawson AAF
- Patton Shopette
- Sandhill and Chaffee Troop Store

Units
Quality of Life Facilities
Housing Area
Schools



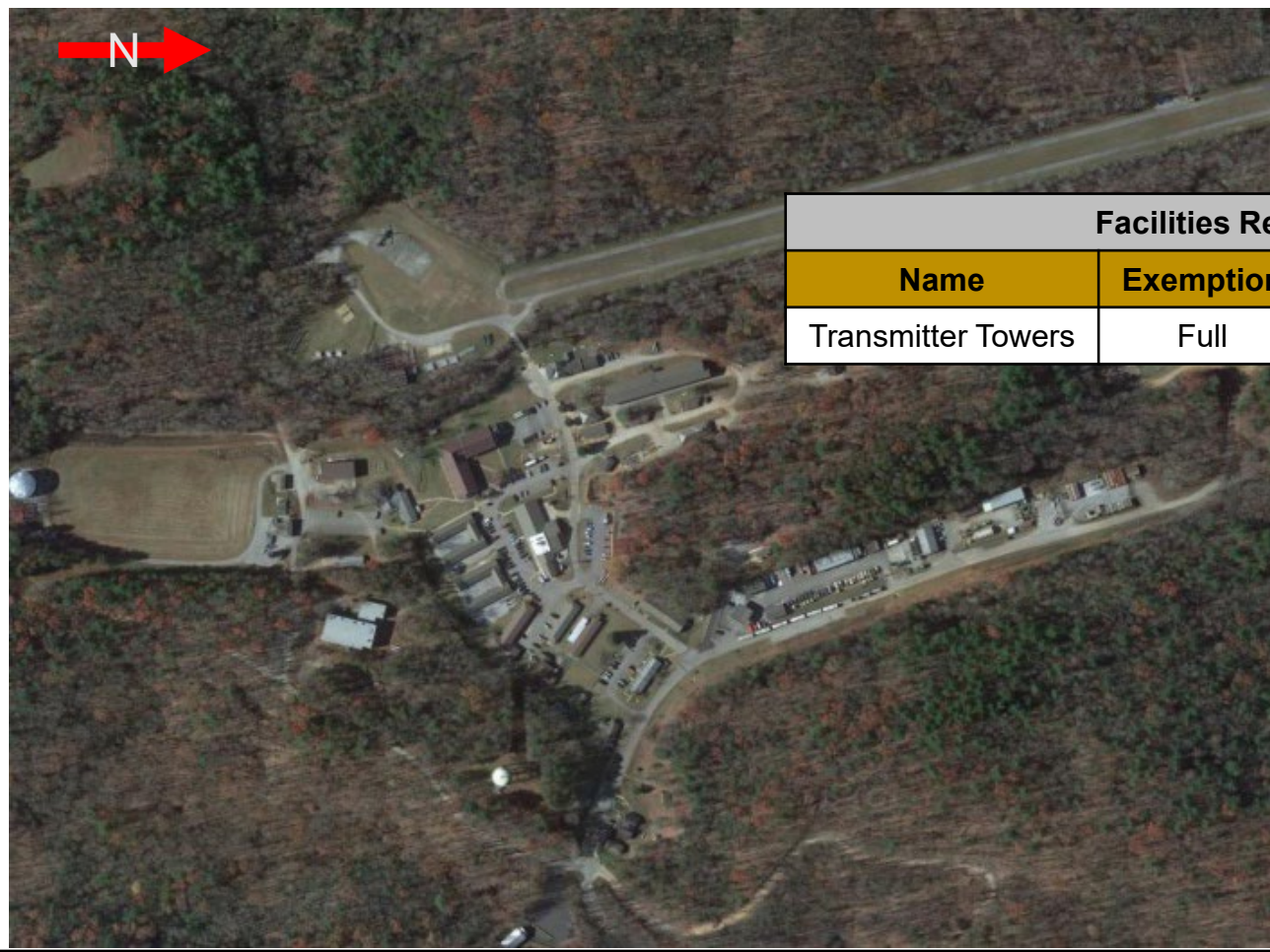
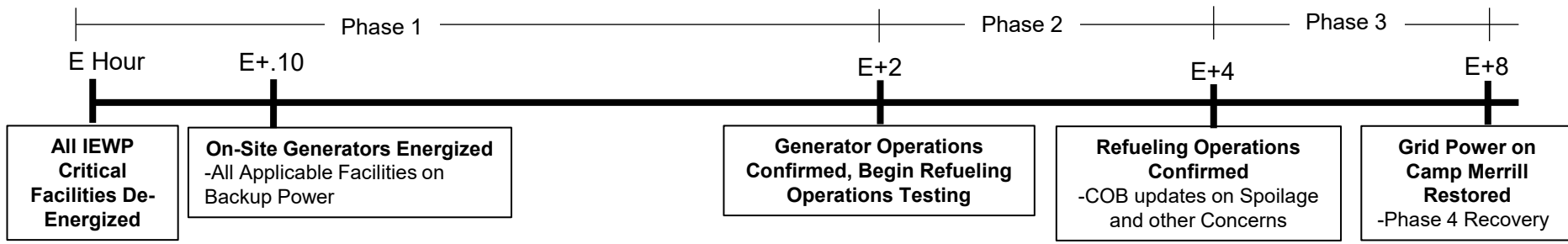
Fort Moore Black Start Exercise Phasing Construct Example

Facilities Restored <8 hrs:

Name	Exemption	Reason
Simulation Center	Partial – 1 Hr	Restored with Housing Phase
Communication Hut	Partial – 1 Hr	Restored with Housing Phase
Access Control Point	Partial – 1 Hr	Restored with Housing Phase
Water Support Building	Partial – 1 Hr	Restored with Housing Phase
Communication Hut	Partial – 2 Hr	Restored with POI/QOL Phase
Community Center	Partial – 2 Hr	DECA/ AAFES Impact – POI/QOL Retore
Child Development Center	Partial – 2 Hr	DECA/ AAFES Impact – POI/QOL Retore
Admin General Purpose	Partial – 2 Hr	OP-ALERT Impact, Restored with POI/QOL Phase
Battalion HQ	Partial – 2 Hr	OP-ALERT Impact, Restored with POI/QOL Phase
Hospital	Partial – 4 Hr	Community Impact - Restored with POI/QOL Phase
Hospital Utilities	Partial – 4 Hr	Community Impact - Restored with POI/QOL Phase



Black Start Exercise Concept and Phased Restoration (Camp Merrill)



Facilities Restored <8 hrs:		
Name	Exemption	Reason
Transmitter Towers	Full	LHS/ Community PD/FD Impact

Black Start Exercise

Best Practices/ Lessons Learned

SUSTAINS

- Forward coordination with utilities to schedule shutdowns
 - Planned outage maps of exercise
- Close hold trusted agents were only group with working knowledge
 - Hard to control closer to event
 - Town Halls** with residents with window of execution, not specific date/time
- Worked with **USACE PREP and other installations** for their lessons learned
- Do not offer exemptions to anyone initially to set expectations
 - Rent temporary generators for areas exempt from test

IMPROVES

- Perform several Energy Readiness and Resiliency Exercises (ERREs) before BSE to identify vulnerabilities
 - Identified refueling plan gaps (trucks and scheduling)
 - Network switch battery replacements**
 - Traffic light Uninterruptable Power Supply (UPS) deficiencies
 - Network Tower disruptions (loss of cell phones, radio backups)
 - Identified gaps in critical facility lists and generation
- Confirm IEWP Critical Facilities list at least 1 year prior to exercise



Black Start Exercise Points of Contact

- ❑ Geoffrey Ray, Energy & Utilities Branch Chief, DPW Fort Moore
Cell: (757) 784-6170 or geoffrey.d.ray.civ@army.mil
- ❑ Damian Haye, Energy Manager, DPW Fort Moore
Cell: (706) 505-4360 or damian.e.haye.civ@army.mil
- ❑ Lindsey Warner, Utility Specialist, DPW Fort Moore,
Cell: (706) 358-2084 or lindsey.m.warner.civ@army.mil

Full Scale Exercise Points of Contact

- ❑ John Nolt, Chief, Plans and Operations, DPTMS Fort Moore,
Cell: (706) 570-5596, office (706) 545-2146 or john.m.nolt.civ@army.mil
- ❑ Brandon Landis, Supervisor, Plans and Operations, DPTMS Fort Moore
Cell: (706) 575-8589, office (706) 545-8352 or
Christopher.b.landis4.civ@army.mil



Questions



Backup



Camp Merrill

Exemption Justification

Scheduled Preventative Maintenance

- Transmitter/ Repeater Towers at Camp Merrill all have local generator backups
- T1: 15KW Kohler Generator
- T2: 25KW Cummins Generator
- T3: 25KW Cummins Generator
- All generators are tested monthly. Inspection records from the last 90 days have not indicated any equipment failures or deficiencies.

Unscheduled Outages

- Camp Merrill experiences on average X outages per month due to weather and above ground transmission line damage
- These outages exercise equipment readiness similarly to a Black Start Exercise.
- Testing these facilities will not produce any results that we are not already aware of, and due to the presence of Community PD/FD communication equipment, this introduces unnecessary risk to this exercise.

