



The Solutions Network

Rochester, New York

## Improving Energy Reliability at Federal Facilities

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### Outline



- Energy Security Requirements for Federal Facilities
- FEMP Efforts to Date
- Next Steps/Discussion

## FEMP Mission



- FEMP works to increase **energy security** and reduce the cost and environmental impact of government by
  - advancing energy efficiency and water conservation,
  - promoting the use of **renewable and distributed energy**, and
  - improving utility management decisions at Federal sites.

## Energy Security Requirements



- **Installations must ensure that energy is available for all critical mission operations**
  - Executive Order 12656: Critical Infrastructure Protection and Emergency Preparedness Responsibilities
  - FEMA Preparedness Circular -- Continuity of Operations
  - GSA guidelines for emergency plans and utility services
  - Homeland Security Presidential Directives (December 2003)



## Homeland Security Presidential Directives #7 & #8

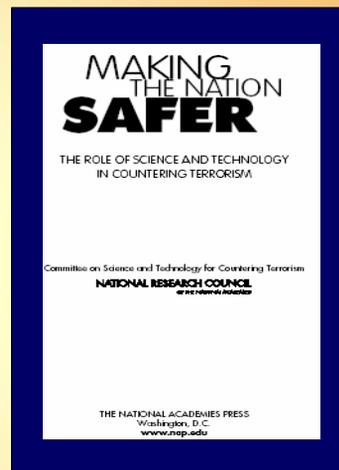


- Agencies must identify, prioritize and protect critical infrastructure from attack or disaster that could “impair Federal abilities to perform essential missions”
- Conduct preparedness exercises to evaluate readiness
- Collaborate with state, local governments and private sector
- DoD: Prepare to provide support to civil authorities during domestic crises
- Conduct vulnerability assessments
- Submit annual reports

## Energy Security/Reliability Solutions Include DG & CHP



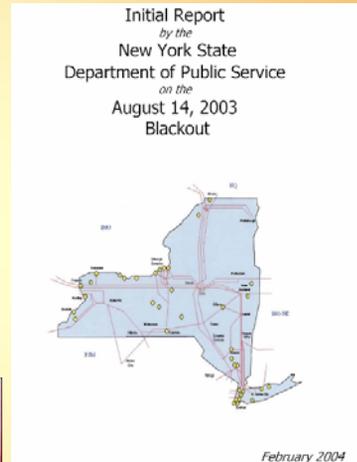
- National Academy of Science (2002): Distribution systems are vulnerable
  - Outages will occur—be prepared
  - Solutions include DG/CHP and “adaptive islanding”
  - New technologies can facilitate islanding and fuel switching “on the fly”



## August 2003 Blackout Highlighted Benefits of CHP



- NYC, NYSERDA and DOE post-blackout reviews:
  - Many emergency backup generators failed (e.g. for hospitals and communications)
  - CHP systems performed as designed



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## Tackling the Challenge



- Ideal approach: Assess all components and their probabilities of failure prior to making new investments
  - Reality: Insufficient time and resources to do this for each site
- More realistic approach: Learn from recent blackouts and experiences at other facilities
  - Apply these lessons and valuable insights to develop and implement solutions at Federal facilities
- **FEMP role: Identify best practices and share lessons learned across agencies**

## FEMP Energy Security: Principal Efforts to Date



- Draft FEMP Energy Reliability Action Plan
- Energy Emergency Planning Checklist
- FY-2004 Pilot Project with Army Southeast

## Draft Action Plan



- Use existing FEMP networks & capabilities
  - Alternative Financing
  - Technical Assistance
  - Outreach
- Collaborate with others
  - Other EERE programs
  - State and local programs addressing DG-CHP and security
- Respond to customer needs

## Draft Action Plan (continued)



- Assist agencies in developing plans to ensure reliable power
- Encourage agencies to use DG/CHP and renewable energy technologies as means to address reliability and other energy concerns
- Conduct outreach and disseminate information on best practices and lessons learned

## Energy Emergency Planning Checklist



- Establish the right team
- Assess needs and vulnerabilities
  - Define and prioritize energy requirements
    - Categorize loads: Essential, critical, non-critical
    - Load profiles (hour, day, week)
    - Available controls and procedures
  - Identify all services supporting energy requirements, normal and emergency
  - Define responsibilities of utilities and vendors

## Checklist (continued)



- Consider credible event scenarios
  - Objective risks (weather, fire, accidents, failures)
  - Subjective risks (terrorist, sabotage, cyber attack) and worst case scenarios
  - Define present capacity to meet critical needs during event (controls, procedures, equipment)
- Identify weaknesses and needed remedial actions
- Implement and test your plan
  - Institute remedial actions; set realistic timeline including resource plans
  - Train staff and coordinate with internal/external partners
  - Institute testing protocols

## FEMP Pilot Project



- FEMP Support to Southeast Regional Office of the Army
  - Energy security plans required for Army bases by September 30, 2004
  - Plans integrate with installation security plans
  - Must be consistent with utility privatization and other DoD policies



## FEMP Pilot Project (continued)



- 16 Army installations involved
- FEMP developing tools tailored to Army needs
  - Energy Security Planning Checklist
  - Plan template
- Technical assistance at installations as requested
- Consultation support throughout process
- Review of draft plans as requested

## Next Steps



- Finalize action plan with stakeholder participation
  - Brownbag lunch following session today
- Activities will depend on available funding and partners



## Stakeholder Input Received to Date – July Meetings



- Unclear who's doing what
  - Services, DHS, FEMA, DOE, GSA
- Need to prioritize facilities to target assistance
- DoD energy security planning: Needs to be coordinated with utility privatization efforts
- Potentially pursue munigrid/microgrid concept
- Add annual energy reporting requirement for security
- Develop and apply tools for security planning
- Set up a clearinghouse of information on best practices, resources/tools available, FAQ's
- Consider a regional pilot focusing on one utility area (e.g., PJM)



## Potential Future FEMP Activities



- Technical Assistance
  - Reliability assessments, screenings
  - DG/CHP and related technologies
- Develop Useful Tools
  - Templates for vulnerability analysis
  - Overview of technology selection tools
  - Energy emergency planning checklist
  - Protocols for testing energy security plans
  - Best practices documents
  - Microgrid information; strategic islanding
- Training/Outreach
- Facilitate collaboration between federal, state and local governments; utilities



## Feedback Welcome!



- Issues of greatest need?
- Types of assistance most valuable?
  - Site specific assistance
  - Information resources
  - Analytic tools
  - Other
- Potential partners/collaborations?
- Other

## Handouts



- FEMP Draft Energy Reliability Action Plan
- FEMP Draft Checklist for Energy Emergency Planning

**Comments and questions  
welcome!**

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