FY2021 OVERVIEW
Office of Asset Management

CAS/CAIS Annual Meeting
October 19-20, 2021

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DISCUSSION POINTS

• DOE FY2021 Climate Adaptation & Resilience Plan
• DOE Order 437.1: Bridge and Tunnel Management
• Functionality Assessment
• CAIS Estimating Module
• Mobile IU Role Out
• Condition Assessments and COVID-19
• CAS/CAIS Meeting Highlights
Climate Adaptation & Resilience Plan

• Required by E.O. 14008, Section 211, directing agencies to develop Climate Action Plan and Policy Statement.

• Development guided by the DOE Sustainability Steering Committee. Drafted by a team with broad representation from programs, laboratories, and key staff offices.

• Signed by Secretary Granholm on August 25, 2021.

• Primary focus is climate adaptation and resilience, which includes mitigation actions with adaptation co-benefits.
Climate Adaptation & Resilience Plan

**Priority Actions:**
1. Assess Vulnerabilities and Implement Resilience Solutions at DOE Sites
2. Enhance Climate Adaptation and Mitigation Co-benefits at DOE Sites
3. Institutionalize Climate Adaptation and Resilience Across DOE Policies, Directives, and Processes
4. Provide Climate Adaptation Tools, Technical Support, and Climate Science Information
5. Advance Deployment of Emerging Climate Resilient Technologies

**Specific Topics:**
1. Update Climate Vulnerability Assessments
2. Describe Agency Efforts to Enhance Climate Literacy in its Management Workforce
3. Describe Agency Actions to Enhance Climate Resilience
   a. Describe Agency Actions for Climate-Ready Sites and Facilities
   b. Describe Agency Actions to Ensure a Climate-Ready Supply of Products and Services
New DOE Bridge and Tunnel Order

DOE Order 437.1: Bridge and Tunnel Management
New DOE Bridge and Tunnel Order

• Highlights:
  • Describing key DOE components for managing bridges, tunnels, and culverts;
  • Listing the types of bridge inspections and providing a description of each including purpose, frequency, documentation, and reporting; and
  • Listing the recordkeeping and reporting requirements for DOE’s bridges, tunnels, and culverts.
New DOE Bridge and Tunnel Order

- FIMS Usage Codes addressed in Order:
  - Previously Required:
    - 1168 PUBLIC ACCESS BRIDGE (PEDESTRAIN)
    - 1169 CONTROLLED ACCESS BRIDGE (PEDESTRAIN)
    - 1768 PUBLIC ACCESS BRIDGE (VEHICULAR)
  - Newly Required (previously optional):
    - 1468 PUBLIC ACCESS BRIDGE (RAILROAD)
    - 1469 CONTROLLED ACCESS BRIDGE (RAILROAD)
    - 1769 CONTROLLED ACCESS BRIDGE (VEHICULAR)
    - 1771 TUNNEL (CONTROLLED ACCESS VEHICULAR)
    - 1772 TUNNEL (PUBLIC ACCESS VEHICULAR)
    - 2629 CULVERT
CAIS Estimating Module

• In FY 2021, expanded use of module from:
  • Project Estimating Groups
  • Maintenance Estimating Groups
  • RPV Estimating Groups

• Hosted multiple training sessions for these new groups.

• Implemented recommendations from these groups on how to improve the capabilities of this module.
  • New Report
  • Added Capabilities
Mobile Inspection Unit (IU) Role Out

• Deployed December 2020
• Simplified interface for adding new Inspection Unit (IU) records from smartphones and tablets.
  • Capture and upload images
  • Ability to capture field notes
  • Reaffirm or amend existing IU from previous inspections
Functionality Assessment

- Complete a functional assessment (AKA: Modernization Assessment) of each operating real property asset at least once during any 5-year period to determine if the asset is missing a capability needed for its mission. Modernization costs are the estimated costs associated with these findings.

Deadline
August 19, 2021
Condition Assessments & COVID-19

How should a site manage the DOE Order 430.1C five-year condition assessment requirements when it does not have physical access to conduct the inspection?
• For FY 2021, sites were not penalized for out-of-date inspections.

• Sites should develop a mitigation strategy for conducting physical inspections for assets with out-of-date inspections due to COVID-19 interruptions.
CAS/CAIS Meeting Highlights

- INL Pavement Inspections
- Life Cycle Cost Estimating
- SRS Dams and Railroads Condition Assessments
- Graded Approach for Short Span Bridges and Culverts
QUESTIONS

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Priority Action 1. Assess Vulnerabilities & Implement Resilience Solutions at DOE Sites

- Conduct/update climate vulnerability assessments and develop resilience plans at each site within one year.

- Implement resilience plans with solutions prioritized based on vulnerabilities, mission impact, and life-cycle costs or savings.
  - Site and Grid hardening (e.g., pole upgrades, undergrounding, heat tolerant transformers, elevating/protecting flood-prone assets)
  - Expand distributed energy resources/storage/microgrids (employ “island capability” during power outages)
  - Reduce energy demand through energy efficiency (e.g., HVAC upgrades)
Priority Action 2. Enhance Climate Adaptation and Mitigation Co-benefits at DOE Sites

• Reduce energy use in facilities
  • Energy efficiency focusing on grid-interactive and net-zero ready buildings
  • Pursue efficiency & electrification as dual pillars of a decarbonization strategy

• Deploy clean energy sources and modernized infrastructure
  • Utility Partnerships, Grid Modernization Initiative, Smart Labs Accelerator

• Improve ecological and land site management
  • Preserve and restore forest cover, native grasses, and other indigenous plants
  • Encourage longer-term storage of carbon and reduce wildfire potential
Priority Action 3. Institutionalize Climate Adaptation & Resilience Across DOE Policies, Directives & Processes

• Update M&O contractor requirements to include addressing climate adaptation and resilience

• Update climate action requirements for established DOE management systems (e.g., ISO 50001 Energy Management System, ISO 14001 Environment Management System)

• Update relevant DOE directives and technical standards to address climate considerations (e.g., DOE order 413.3B, Program and Project Management for the Acquisition of Capital Assets); 430.1C (Real Property Asset Management), and 436.1 (Departmental Sustainability)
BACK UP Climate Adaptation & Resilience Plan

Priority Action 4. Climate Adaptation Tools, Technical Support, & Climate Science Information

- Update building codes for resilience
  - Implement White House initiative for establishing and adopting performance standards, and latest building codes.

- Enhance access to climate projections for resilience planning
  - Provide user friendly web-based access to downscaled climate information

- Provide vulnerability assessment tools and resources
  - FEMP Technical Resilience Navigator

- Provide support for energy justice communities
  - Evaluate the extent to which DOE sites can benefit neighboring communities through climate change adaptation and other strategies
Priority Action 5. Deployment of Emerging Climate Resilient Technologies

- Use DOE sites as testbeds
  - Electric vehicles: (e.g., NREL electrifying 100 percent of fleet within two years)
  - Net-Zero: (e.g., National lab pilots demonstrating carbon-neutral solutions at varying scales and operating conditions)
  - Microgrids, power delivery systems, storage, microreactors, water reuse systems, gray water systems for landscaping, etc.

- Increase deployment opportunities in energy justice communities
  - Regional innovation hubs: (e.g., LANL and DOE science and energy programs creating economic opportunities for surrounding communities).
  - Entrepreneurial pipelines: (e.g., ED identifying opportunities for internships for neighboring energy justice communities)