Operations and Maintenance (O&M) Program

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Federal Energy Management Program (FEMP)

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Meeting Overview

• Familiarize meeting members with FEMP’s O&M Program

• Address Deferred Maintenance problem
  – Form a Problem Solving Team (PST)
  – Seeking agency participants

• Announce Re-tuning Challenge opportunity to jump start your savings this year
  – Nominate your sites
Administration’s Priorities and O&M

- Resilience
- Security
- Readiness
- Infrastructure
- Jobs
- O&M
FY16, federal agencies reported $165.3 billion of deferred maintenance for general properties, plants, and equipment ...

Why?

Two studies were accomplished to analyze BMAR:

- 1998, National Research Council on Stewardship of Federal Facilities
- 2014, GAO study titled “Improved Transparency Could Help Efforts to Manage Agencies' Maintenance and Repair Backlogs”

Both studies found similar conclusions:

- **Focus on initial costs as opposed to life-cycle costs**
  - Installing lesser quality systems with lower initial cost
  - Higher O&M requirements; more maintenance frequencies, more spare parts needed, shorter life
    - More of a problem with Design/Build verses Design-Bid-Build
Deferring Maintenance and Repair (cont.)

- **Inadequate funding** for maintenance and repairs
  - O&M funding should be 2 – 4% of the replacement value of facilities portfolio. Federal Agencies historic funding is much less

- **Aging facilities** that require increased levels of maintenance and repairs to keep them operating effectively

- **Lack of information** (Metrics) that would assist facility program managers in making compelling arguments for maintenance and repair budgets to decision makers

- **Lack of accountability** for stewardship
O&M Overall Strategic Goals and Statute

• Statutory Requirement
  • No direct statute found

• O&M Program Strategic Goals:
  • Enhance O&M delivery
    • Improves energy & water savings, reliability, and operational efficiency
  • Enhance resiliency through improved O&M (increased reliability of systems)
  • Increase Outreach to include “One-Stop-Shop” Website for all tools, training, resources, and best practices

• Announcing FEMP’s Re-tuning Challenge
Problem 1: O&M is not viewed as an urgent requirement

- Federal deferred maintenance of $165.3 billion
  - Form a Problem Solving Team (PST)
    - Identify potential solutions
    - How to implement such solutions
    - Enlist agencies in solution process
- Develop operational efficiency metrics
- Coordinate with Performance Contracting on areas of O&M and retuning opportunities
  - Most, if not all, ESPC/UESC projects should include O&M
  - Work with agencies to address planning for post-construction O&M costs
    - Include O&M in Planning and Programming (P&P) packages as a part of project’s costs for new construction and major renovations
    - Include O&M costs as part of all efficiency and resilience systems’ retrofits, renovations, and new construction
O&M Delivery – Problems and Solutions (cont.)

• Problem 2: O&M programs lack needed resources
  – Develop technically focused resources on best practices for resourcing O&M
  – Develop template for compelling reasons for PMs to justify O&M funding
  – Look for solutions and alternatives to optimize O&M resources (staffing, prioritization of work, funding, zones verses work category, etc.)

• Problem 3: New technologies being deployed require new skills to operate and maintain
  – Develop technical resources for new technologies used in buildings and resilience

• Problem 4: Performance specifications and agency O&M manuals are often based on outdated practices
  – Develop lessons learned and tools on new specifications and cutting edge approaches
O&M for Resilience – Problems and Solutions

• **Problem 1:** Evolving mission requirements (energy and water resilience) will further strain overall resources of O&M programs
  – Develop metrics for O&M prioritization of energy and water resilience/security technologies
  – Enhance/develop guidance for effective O&M plan for resilience technologies (e.g. standby generators)

• **Problem 2:** New energy resiliency technologies being deployed require new skills to operate and maintain
  – Develop Best Practices guidelines for resiliency technologies that are being increasingly deployed
O&M Outreach – Problems and Solutions

• **Problem 1: No comprehensive O&M website exists**
  – Develop “One-Stop-Shop” O&M Website for all tools, training, resources, best practices, and case studies
  – Post all O&M program developed materials – technology checklists and issues papers/guidance on the website
  – Locate and vet available materials, tools, training, and resources across federal and non-profit sectors

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FEMP O&M Best Practices Website Organization

- **O&M Policies Statutes**
- **New O&M Technology Checklists**
- **O&M Issues Papers**
- **O&M Resource Library**
Re-tuning

What is Re-tuning:

- Re-tuning is a process of improving control of a building energy systems utilizing Building Automation System (BAS) of centrally controlled buildings through:
  - The application of simple and common sense principles
  - Identification and correction of faulty control infrastructure
  - Instilling strategies for better monitoring and control into the culture and mindset of the building operators

Benefits of Re-tuning:

- Quick energy savings
- Cost savings and cost effectiveness
- Occupant’s comfort
## Re-tuning Success Stories

<table>
<thead>
<tr>
<th>Agency</th>
<th>GSA</th>
<th>Army</th>
<th>Navy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>Carter-Keep Courthouse, San Diego, CA</td>
<td>AMC Headquarters, Redstone Arsenal, AL</td>
<td>Central Plant, Honolulu, HI</td>
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<tr>
<td><strong>Size (SF)</strong></td>
<td>480,000</td>
<td>435,000</td>
<td>1.2 million</td>
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<td><strong>Investment</strong></td>
<td>$50,000</td>
<td>$250,000 (included other buildings)</td>
<td>$150,000</td>
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<tr>
<td><strong>Energy savings</strong></td>
<td>29%</td>
<td>18%</td>
<td>16%</td>
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<td><strong>Costs savings</strong></td>
<td>$252,397</td>
<td>$201,500</td>
<td>$150,000</td>
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<tr>
<td><strong>EUI * (before/after)</strong></td>
<td>51.1 → 36.6</td>
<td>122.0 → 99.7</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Measures</strong></td>
<td>11</td>
<td>6</td>
<td>4</td>
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*EUI – Energy Use Intensity in kBtu/ft²
FEMP Re-tuning Challenge – Outline

Retuning steps:
1. Onsite classroom training includes on-the-job training (OJT)
2. Re-tuning Team retunes; Onsite Staff observes
3. Onsite Staff retunes, Re-tuning Team oversees
4. Onsite Staff retunes by themselves, Re-tuning Team spot checks
5. Re-tuning Team is available for reach back support

Targeted outcome:
- Train the trainer
- Utilize lessons learned and templates

Next Steps:
- Agencies share Re-tuning Challenge information with their sites
- Interested agencies should contact FEMP – Nael Nmair for follow-up
- More details will be offered at a webinar on Jan 10, 2019
Re-tuning Challenge – Webinar Information

FEMP Re-tuning Challenge Webinar

• Thursday, Jan 10, 2019
  2:00 PM – 3:00 PM EST

• Link: Join meeting from your computer, tablet or smartphone.
  https://global.gotomeeting.com/join/166369605

• Audio: You will receive the option to join via computer or dial in using your phone.
  United States: +1 (786) 535-3211
  Access Code: 166-369-605

• First GoToMeeting? Let's do a quick system check:
  https://link.gotomeeting.com/system-check
Next Steps for Agencies (Action Required)

- Participate in the deferred maintenance Problem Solving Team (PST)
- Recruit respective sites for the Re-tuning Challenge
- Share your ideas for FEMP O&M
- Contact Information:
  Nael Nmair, FEMP O&M Program Manager
  Nael.Nmair@ee.doe.gov
QUESTIONS/DISCUSSION?