Today’s agenda

• Conversation with Utility Implementers and their customers
  • Advanced Energy
  • Leidos
• Q&A
• 50001 Ready and DOE Updates
  – DOE program transitions
  – Programs utilizing 50001 Ready
  – 50001 Ready progress
DOE 50001 Ready: Applications in the Real World

Wednesday, October 9, 2019
12:00 -1:00 p.m. EDT
DOE 50001 Ready Utility Network Series
Today’s Topics

• Advanced Energy’s (AE) Approach to 50001
  – Our preparation and engagement
  – The cohort method

• 50001 Ready Specifics
  – Benefits, opportunities and challenges

• The Story of One Plant’s Journey
AE’s Approach

• Business Decision
• Multiple ISO 50001 Certifications
• 50001 EnMS Qualified Instructor
• 50001 CP EnMS Scheme Committee Member
• Two full DOE Cohorts
• ISO 50001 Gap Analysis
• 50001 Ready Implementation
• Delivered a variety of trainings
AE’s Approach
The Cohort Method

- Five to seven companies with similar SEM goals and experience levels
- Ideally, non-competing companies
- Willing to openly share info and best practices
- STRONG management commitment is essential
  - Allow time for participation
  - Allow time for homework
  - Provide resources needed to succeed
  - Provide resources for travel to trainings
The Cohort Method: Outcomes

• Gain an understanding of ISO 50001
• Use the 50001 Ready navigator tool
• Increase energy performance improvement!
• Gain recognition for self-attesting to completing the 25 tasks of 50001 Ready
• Improve overall plant operations
50001 Ready Specifics

- Must measure energy performance to receive 50001 Ready recognition
50001 Ready Specifics

- Leverage experience with ISO 9001 and ISO 14001

Task 1: We have defined, documented and approved the Scope and Boundaries of our 50001 Ready energy management system.

Current Status: **Completed**

Your roles for this task: **Contributor**

Detailed Guidance: Scope and Boundaries

- **Getting it Done**
- **Task Overview**
- **Full Description**
- **Notes**
- **Resources**

**Full Description**

- ISO 9001 and/or ISO 14001 transition tips
50001 Ready Specifics

- Use the cross-reference to ISO 50001
50001 Ready Specifics

- Use the task completion guidance

**Detailed Guidance: Energy Policy**

**Task Overview**

The energy policy is top management’s statement of performance. The commitments stated in the policy form the framework for using energy objectives and targets and communicated to personnel across all levels of the organization.

At the completion of this task, you will have...

- Drafted the energy policy
- Approved the energy policy
50001 Ready Specifics

• Use the downloads
50001 Ready Specifics

- Use the EnMS Documentation Guidance Table

<table>
<thead>
<tr>
<th>REFERENCES</th>
<th>DOCUMENTS</th>
<th>RECORDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 50001-2011 Reference</td>
<td>What must be documented?</td>
<td>Notes/Comments</td>
</tr>
<tr>
<td>§ 4.1 b) § 4.2.1 d) § 4.5.4.1 a)</td>
<td>Task 1 Task 19 See also Energy Manual Guidelines</td>
<td>EnMS scope and boundaries</td>
</tr>
</tbody>
</table>
50001 Ready Specifics

• To paraphrase, 50001 Ready puts the Plan, Do, Check, Act process into simple, clear steps:
  – Say what you will do (PLAN)
  – Do what you said (DO)
  – Verify that you did it (CHECK)
  – Review and improve it (ACT)
One Plant’s Story

- Already ISO 9001 and ISO 14001 Certified
- Already LEED Gold Certified
- Desired to achieve ISO 50001 certification

- Started with Gap Analysis
One Plant’s Story: Gap Analysis

• Understand where things are versus where they are required to be
• The difference is the GAP
• The Gap Analysis Process
  – Operations
  – Energy Sources
  – Energy Consumers
  – Documentation
  – Gap Spreadsheet
### Excerpt from the Gap Analysis Spreadsheet

<table>
<thead>
<tr>
<th>PDCA</th>
<th>Section</th>
<th>ISO 50001 Section Title</th>
<th>ISO 50001 Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLAN</td>
<td>4.3</td>
<td>Energy policy</td>
<td>The energy policy <strong>shall</strong> state the organization’s commitment to achieving energy performance improvement. Top management <strong>shall</strong> define the energy policy and ensure that it: a) - h)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TM Current Status</th>
<th>GAP</th>
<th>TM Action Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corresponds to Section 4.2 of ISO 14001. Not done.</td>
<td>An energy policy has not been written and communicated.</td>
<td>Update the existing environmental policy in EMS 1 to reflect the requirements for the energy policy in ISO 50001. Publish and communicate the new combined EMS and EnMS policy.</td>
</tr>
</tbody>
</table>
### One Plant’s Story: Planning and Scheduling

- Excerpt from the Schedule

#### TIMELINE

<table>
<thead>
<tr>
<th>PDCA</th>
<th>50001 Step</th>
<th>ISO 50001 Section</th>
<th>Step</th>
<th>ACTION</th>
<th>WORK TASKS from GAP Analysis</th>
<th>Current as of: July 9, 2017</th>
<th>Week ENDING, Sunday:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DO</td>
<td>16,17</td>
<td>4.5.5</td>
<td>D</td>
<td></td>
<td>l. Write section 4.5.5 in the new EnMS to reflect the operational control requirements for the EnMS. Refer to the new FAP for operational controls.</td>
<td>66X 18-Jun 25-Jun 2-Jul 9-Jul 16-Jul 23-Jul 30-Jul 6-Aug 13-Aug</td>
<td>C C C C</td>
</tr>
<tr>
<td>DO</td>
<td></td>
<td></td>
<td>D</td>
<td></td>
<td>m. Create a new <a href="#">FAP</a> document, <a href="#">Operational Controls</a>, similar to FAP75001, but specifically for operational control of energy related items in the EnMS</td>
<td></td>
<td>IP</td>
</tr>
<tr>
<td>DO</td>
<td></td>
<td></td>
<td>A</td>
<td>n.</td>
<td>n. Based on your significant energy uses, select your operations and maintenance activities related to significant energy uses that you will address with operational controls</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>DO</td>
<td></td>
<td></td>
<td>A</td>
<td>o.</td>
<td>o. Implement operational controls for your selected operation and maintenance activities and communicate this to all applicable staff and contractors</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>DO</td>
<td></td>
<td></td>
<td>A</td>
<td>p.</td>
<td>p. Define <strong>significant deviations</strong> from effective energy performance due to the absence of an operational control point of view</td>
<td></td>
<td>S</td>
</tr>
</tbody>
</table>
One Plant’s Story: 50001 Ready

- **50001 Ready** is a recognition program based on the ISO 50001 Standard.
One Plant’s Story: 50001 Ready

- **50001 Ready** is an online, web-based 25 step process for energy management
Summary: 50001 Ready

• Worth the effort
• An alternative
• Help for the weary
• A heavy lift needs leverage
• The right tools
• Task-by-Task
• Dashboard tracking
• Great resources
• Self Attesting
• FREE
Right in the Middle of 50001
Survey Says.....

• 4 out of 5 energy consultants surveyed* recommend

• To prevent this from happening to your Energy Team

*No actual survey was taken. This is just used to make a point.
Questions

Michael Stowe
(919) 857-9043 {desk}
(919) 904-0279 {cell}
mstowe@advancedenergy.org
www.advancedenergy.org

Thank You

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Suite 2100
Raleigh, NC 27606
WISCONSIN IS IN FOR 50001 READY

Presented by: Tim Dantoin and Mark Stover
October 9, 2019
What is FOCUS ON ENERGY®?

- Wisconsin’s statewide energy efficiency and renewable energy program
- Partnership with five IOUs and over 100 municipal and co-op utilities across the state
- Working with eligible residents and businesses since 2001
- Provides financial, technical, educational and other resources to encourage energy savings and reduced utility bills
Support for Business Customers

• Technical and project support from Energy Advisors (EA) from Focus on Energy

• EAs coordinate with customers, utility account reps and Trade Allies

• Technical support includes:
  • Identifying opportunities
  • Quantifying opportunities
  • Incentive applications
  • Improving energy management
Wisconsin’s SEM Initiative

• Inspired by conversation with an active Focus customer
• Great support from the Focus on Energy Program Administrator
• Launched in 2015 with 30 participants
• Concluded in 2018 with 27 reaching their self-imposed SEM “finish line”
• 5 participants achieved ISO 50001 Certification
• 8 participants achieved or pursuing 50001 Ready recognition from US DOE
• Led to ongoing SEM offering to next round of customers
## Our SEM Implementation Process

<table>
<thead>
<tr>
<th>Period</th>
<th>SEM Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Zero to 12 Months</strong></td>
<td>• Develop a regression model of energy use in baseline period</td>
</tr>
<tr>
<td></td>
<td>• Establish process for routine data gathering and performance tracking</td>
</tr>
<tr>
<td></td>
<td>• Complete initial energy review to understand significant energy uses</td>
</tr>
<tr>
<td></td>
<td>• Identify and implement opportunities for improving energy performance</td>
</tr>
<tr>
<td></td>
<td>• Review existing Energy IT capabilities &amp; opportunities for improvement</td>
</tr>
<tr>
<td></td>
<td>• Evaluate energy savings during performance period</td>
</tr>
<tr>
<td></td>
<td>• Hold management review to assess progress and determine path forward</td>
</tr>
<tr>
<td><strong>Beyond 12 Months</strong></td>
<td>• Discontinue SEM</td>
</tr>
<tr>
<td></td>
<td>• Remain SEM Partner</td>
</tr>
<tr>
<td></td>
<td>• Become SEM Leader</td>
</tr>
<tr>
<td></td>
<td>• Stay engaged with Focus on Energy EA to pursue opportunities on a case-by-case basis</td>
</tr>
<tr>
<td></td>
<td>• Continue pursuing opportunities, tracking performance, assess Energy IT capabilities</td>
</tr>
<tr>
<td></td>
<td>• Pursue ISO 50001 certification, 50001 Ready status or 3rd Party Certification of SEM efforts</td>
</tr>
</tbody>
</table>
Utilizing 50001 Ready

- Gauge customer understanding of and readiness for SEM / ISO
- Endpoint goal for customers willing / ready for ISO
- Resource guide for SEM / ISO implementation
- Earn customer recognition of achievements (internally and externally)
- Jumping off point for pursuing ISO certification
Utilizing 50001 Ready

Benefits
• Clearly defined structure for SEM efforts
• Specific endpoint for SEM efforts

Challenges
• Integrating with existing continuous improvement systems (e.g. quality & environment)

Going Forward
• Use 50001 Ready as an internal audit tool
• Pursue an enterprise approach across multiple facilities
• Consider supply chain implementation
Customer Experience
Neenah Inc.
50001 Ready

Jon Waterman, Operations Engineer
Neenah, Inc. – Whiting Paper Mill
Neenah Inc. Today

- Leading manufacturer of specialty materials for niche markets
- Total Employees: > 2,500
- Global Sales of ~$1 Billion in 80+ countries
- Headquartered in Alpharetta, GA

Whiting Paper Mill
- 245 employees, 24/7 operation
- 4 paper machines, 345 tons/day
- 2 natural gas boilers generate steam
- Converting department on-site
Product Portfolio

- Box Wrap & Set-Up Boxes
- Label
- Folding Carton
- Wide Format
- Paper Card & Carrier
- Commercial Print & Identity
- Filtration
- Backings
- Specialties
### Commitments & Benefits

- Facilitate energy-related projects
- Energy Team Meetings – Multi-functional

<table>
<thead>
<tr>
<th>Year</th>
<th>Project Title</th>
<th>Project Cost</th>
<th>Annual Savings</th>
<th>Annual Energy Saved Therms</th>
<th>kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Boiler Blowdown Upgrade</td>
<td>$290,000</td>
<td>$94,000</td>
<td>192,300</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refiner Upgrade</td>
<td>$362,000</td>
<td>$124,000</td>
<td>2,319,146</td>
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<tr>
<td></td>
<td>Freshwater Reduction</td>
<td>$110,000</td>
<td>$47,000</td>
<td>49,637</td>
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</tr>
<tr>
<td></td>
<td>Annual Totals</td>
<td>$872,000</td>
<td>$312,000</td>
<td>291,574</td>
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<tr>
<td>2016</td>
<td>Condensate Heat Recovery</td>
<td>$90,000</td>
<td>$22,122</td>
<td>44,243</td>
<td></td>
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<tr>
<td></td>
<td>Lighting Efficiency</td>
<td>$92,000</td>
<td>$29,000</td>
<td>502,290</td>
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<tr>
<td></td>
<td>Annual Totals</td>
<td>$862,000</td>
<td>$387,126</td>
<td>409,909</td>
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<tr>
<td>2017</td>
<td>Mill Insulation</td>
<td>$85,000</td>
<td>$27,000</td>
<td>81,169</td>
<td></td>
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<tr>
<td></td>
<td>Process Water Heat Recovery</td>
<td>$254,000</td>
<td>$169,000</td>
<td>211,348</td>
<td></td>
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<tr>
<td></td>
<td>Annual Totals</td>
<td>$519,000</td>
<td>$292,580</td>
<td>381,649</td>
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<tr>
<td>2018</td>
<td>Steam Trap Survey</td>
<td>$12,000</td>
<td>$25,000</td>
<td>40,708</td>
<td></td>
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<tr>
<td></td>
<td>VFD for Process Pumps</td>
<td>$151,702</td>
<td>$42,700</td>
<td>281,448</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual Totals</td>
<td>$195,702</td>
<td>$183,975</td>
<td>167,376</td>
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<tr>
<td>2019</td>
<td>Dryer Hood Heat Recovery</td>
<td>$26,000</td>
<td>$18,000</td>
<td>281,448</td>
<td></td>
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<tr>
<td></td>
<td>Agitator Upgrades</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Closed-Loop Sealing Systems</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

- SEM Leaders Initiative – $113,771 granted in 2018
50001 Ready Status

- **June 8th, 2018** – Neenah Inc. Whiting Mill recognized for “instituting global best practices in continuous energy improvement.”
  - 1st paper mill in Wisconsin to achieve 50001 Ready Status
- Maintain program infrastructure
  - US DOE 50001 Ready Navigator Tool
- **Commitment to Sustainability**
50001 Ready and DOE Updates

• Program participation

• Program offerings
  – Resource review
  – Navigator 3.0 transition
  – 50001 Ready recognition and promotion
  – Utilities and partners engaged with 50001 Ready

• US TAG to TC30142

• 50001 Ready news and updates
50001 Ready Navigator Participation

Growth by Industry Sector

✓ 52 Recognized facilities
✓ Exponential growth observed since 2018 due in part to:
  ✓ Expansion of 50001 Ready program offerings and
  ✓ Partnerships with Utilities and Implementers

✓ 50% Industrial
✓ 20%, commercial
✓ 15% institutional
✓ 15% other

Approved Recognitions
Resource Review: Navigator Multisite

✓ Reduce time & cost of implementing 50001 Ready across multiple facilities
✓ Enter and manage multiple sites in one portal
✓ Allows for ‘central office’ review, communications or completion of tasks
✓ Usable by agencies, sites, utilities, ESCOs etc.
Resource Review: Navigator Partner Platform

- Support, observe, and report on multiple projects
- No direct controls over projects
- Legal use of DOE 50001 Ready logos and Co-branded Navigator & recognition
- Usable by agencies, sites, utilities, ESCOs etc.

What can you do with the partner platform?

1. Organize multiple facilities into cohorts.
2. Use 50001 Ready logo on your website and materials
3. Your logo on Navigator and recognition certificate
4. Add custom guidance for each task
DOE is restructuring the Navigator to better align with the changes issued in the **ISO 50001:2018 standard**

- Anticipate full transition by Jan 2020

If you are ready to get READY now, there is no need to wait! --- DOE is working hard to ensure a seamless transition for anyone in progress.

- Additional resources:
  - [ISO 50001:2011 to 2018 Transition Guide](#) Created by the DOE, LBNL, and the US TAG to navigate this revision including:
    - Section by section comparison of changes
    - Addition of High Level Structure (HLS) as found in other popular ISO standards (14001 / 90001)
  - ISO 50001:2018 standard is available through the [Georgia Institute of Technology](#)

Learn more at: [energy.gov/50001ready](#)
DOE will help you promote your 50001 Ready success!

50001 Ready Partners and Facilities receive:

- DOE facility certificates of recognition
- Project showcase to highlight your achievements
- Promotional package tailored to your needs:
  - Your company logo featured on DOE 50001 Ready sites
  - Project showcase to highlight your achievements
  - Access to customizable press material and resources
Utilities and Implementers: Increase SEM Program Participation

• Through 50001 Recognition, increase attention, reach, and recognition for participating utilities and implementer programs

• When facilities self attest to the completion of 50001 Ready, DOE helps to promote the success of the facility, implementer, and utility through project showcases and implementer case studies.

Links to latest Project Showcases and Case Studies

go.lbl.gov/50001Ready/SEG

go.lbl.gov/50001Ready/Tronox

go.lbl.gov/50001Ready/ArcelorMittal
If you use of ISO 50001, then you should drive its future!

Interested in making global impact to the further advancement of energy management?

The US Technical Advisory Group (TAG) to ISO Technical Committee (TC) 301 is the official ANSI TAG responsible for representing US positions on energy management, efficiency, and savings standards being developed internationally.

**Why Join the US TAG to ISO TC 301?**

Gain a better understanding of, and influence over, new and upcoming energy-related standards:

- **Technical Influence** - Represent the US position in working groups developing ISO standards in TC 301
- **Early Access** – Provide input to evolving standards
- **Professional Development** - Interact and learn from other technical experts, create a personal network, and hear global perspectives on important issues.
- **Leadership** - Develop experience in teamwork and in the art of consensus building.

To learn more contact Deann Desai, TAG Administrator, at deann.desai@innovate.gatech.edu

*US TAG to ISO TC 301 is not a DOE program, but a professional membership offered on a fee-based structure with multiple levels of entry options available.*
How do energy efficiency program administrators use 50001 Ready?

✓ Private and public organizations are incorporating the continual improvement practices from the 50001 Ready Navigator into their business-to-business and utility program offerings.

✓ DOE is seeking to partner with U.S.-based organizations to expand the use and increase end-user benefits of 50001 Ready assets.

Utilities and Partners already engaged with 50001 Ready:
Other 50001 Ready updates

• Playbook 2.0 – feedback wanted!

• See you in Minneapolis, MN! We are excited to meet you at: 22019 ACEEE Energy Efficiency as a Resource Conference.

• Manufacturing Energy Assessment Software For Utility Reduction (MEASUR)
  – Integrated software suite to aid manufacturers as they improve the efficiency of energy systems and equipment within a plant
Questions + what’s coming up

Visit the 50001 Ready website at energy.gov/50001Ready

- Download sample utility partner profiles and program implementation guides
- Find links to the Navigator and EnPI Lite

Stay informed

- NEW CONTACT ethan.rogers @ee.doe.gov to add others to this utility network distribution list

As we wish Sandy Glatt a fond farewell, the 50001 Ready program warmly welcomes Ethan Rogers to the 50001 Ready team!

- Sign up at energy.gov/50001Ready for email updates about ISO 50001 and related DOE programs