

Board on Research and Technology Development

Director's Report

**Michael Tinkleman, PhD
Director, Center for Research & Technology
Development (CRTD)
BRTD Meeting – ASME IMECE
November 3, 2008
Boston**

Director's Report

- CRTD Budget Status

/ Key Activities

- **CRTD Met FY'08 Budget Requirements & is on track to meet FY'09 Budget Requirements**
 - Including \$80K more Project “Revenue” Required ie (Subsidy Reduction) – since FY'07
 - Total CRTD Revenue for FY'08 - \$688K
 - **\$246K Net revenue to ASME General Fund**
- **Key FY'08 – FY'09 CRTD Project Activities**
 - ASME Water Management Technology Vision – Roadmap Workshop – “Next Steps”
 - **Executive Summary & Full Report published**
 - **Best Management Practices – Water Management Technologies – Process Industries Workshop**
 - Planning underway – April 2009
 - SPGF Funding

ASME Water Management Technology Vision / Roadmap Workshop

- ASME Water Management Technology Vision – Roadmap Workshop
 - Held 5/9-10/2007 at National Academy of Sciences - 40 participants
 - Goal – “Define ASME Role in Water Management Technology”
 - Vision – “By 2012, ASME will be recognized as a key resource in the development & integration of water management technology solutions that enable the sustainable use & reuse of water”
 - 25% of ASME members are dependent on water availability to process or deliver their primary products and services
 - Focus of today’s Strategic Planning Session

ASME Water Management Vision / Roadmap Meeting



- Trends and Drivers
 - Vision for Water Management
 - Potential Roles
 - Key Challenges
 - Priority Activities
 - Action Plans
- Purpose:
 - Serve as a starting point for dialogue among ASME, industry, government, and academia
 - Define ASME Role in Water Management Technology
 - Guide future ASME efforts to develop value-added products and services in the water management area that benefit both ASME members and the nation at large
 - Washington, D.C.
 - May 9-10, 2007

ASME Water Management Technology Vision / Roadmap Workshop – “Next Steps”

- ASME Water Management Technology Vision / Roadmap Workshop Report
 - Executive Summary & Full Report published
- On-going follow-up with Workshop Participants
- ASME Best Practices Process Industries Workshop – Early 2009 (ASME internal funding - SPGF)
- Seek Funding (external) for Best Practices Workshop – Industrial Non-potable Water Use
- Series of Briefings -- ASME Water Roadmap
 - ASME Management Meeting – 2/08
 - PERSI (Practice, Education & Research for Sustainable Infrastructure – 2/08
 - OSTP/Subcommittee Water Availability & Quality – 3/08
 - PPEC / Water & Steam Research Committees – 4/08
 - Engineers Forum on Sustainability - 9/08

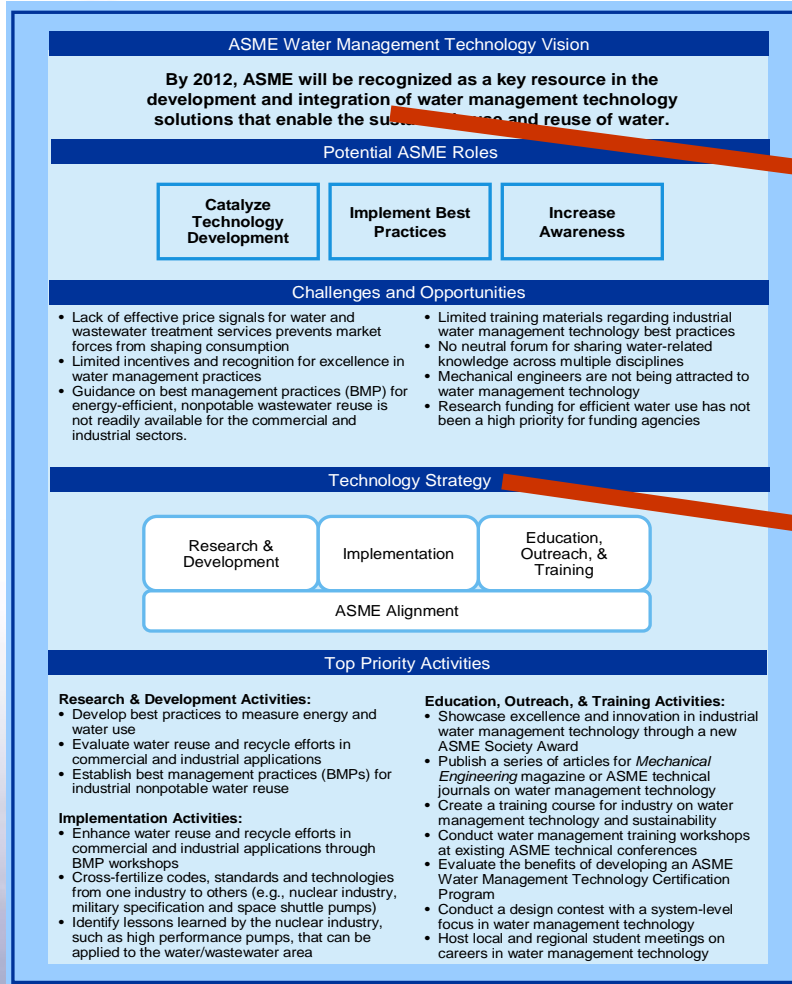
ASME Water Management Vision and Strategies

Vision

By 2012, ASME will be recognized as a key resource in the development and integration of water management solutions that enable sustainable use and re-use of water.

Technology Strategy

- Research & Development
- Implementation
- Education, Outreach & Training
- ASME Alignment



Director's Report - CRTD Key Activities

- **DOE / NETL Peer Reviews**

- Three Peer Reviews Conducted in FY'08

- Advanced Power Systems – 7/2007

- Carbon Sequestration – 9/2007

- **6th Year for CO2 Sequestration Review**

- Fuel Cells – 4/2008

- All 3 Peer Reviews “Meeting Summary & Recommendations” Volumes on NETL web site
<http://www.netl.doe.gov/technologies/coalpower/peer-review/index.html>

- Two Peer Reviews being planned for FY'09

- Hydrogen & Syngas

- Existing Plants, Emissions & Capture



the **ENERGY** lab
Where energy challenges converge and energy solutions emerge

Site Map GO>

ABOUT NETL

KEY ISSUES & MANDATES

RESEARCH

TECHNOLOGIES

- Oil & Natural Gas Supply
- Coal & Power Systems
 - Clean Coal Demonstrations
 - Innovations for Existing Plants
 - Gasification
 - Turbines
 - Fuel Cells
 - FutureGen
 - Advanced Research
 - Contacts
- Carbon Sequestration
- Hydrogen & Clean Fuels
- Technology Transfer

ENERGY ANALYSES

SOLICITATIONS & BUSINESS

EDUCATION

Coal and Power Systems

Independent Peer Reviews of NETL Technology Programs

NETL is conducting a series of independent Peer Reviews of its Strategic Center for Coal Technology Programs in accordance with Departmental guidelines. Using a standard set of selection criteria, each technology program selects between 15 and 20 projects to be peer reviewed that represent the program's project portfolio and a significant portion of their fiscal year budget. Selected projects undergo a rigorous review during which the Principal Investigators summarize the status of their research, accomplishments, and future planned activities to an independent panel of experts. Projects are evaluated using a standard set of metrics to assess the progress of the Project Team towards achieving the Statements of Project Objectives as well as specific project milestones of the research. Following the Peer Review, NETL uses the results to guide and redirect the projects, as appropriate, underscoring NETL's commitment to funding and managing a portfolio of high-quality research.

For information regarding the Peer Review conducted, click on the links below.

FY 2007 Peer Reviews:

- [Advanced Power Systems Peer Review](#) (July 16–19, 2007)
- [Carbon Sequestration Peer Review](#) (September 17-20, 2007)

FY 2008 Peer Reviews:

- [Fuel Cells Peer Review](#) (April 21-25, 2008)

 Internet



CRTD-87

Final Report
2007 Strategic Center for Coal
Advanced Power Systems
Peer Review Meeting



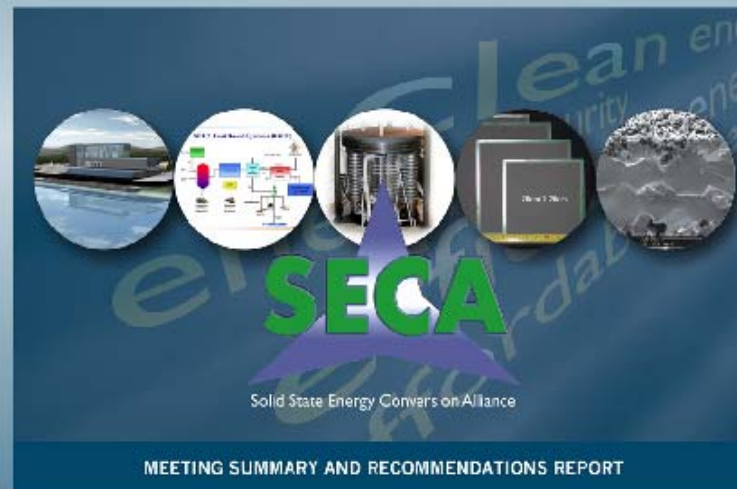
VOLUME I: MEETING SUMMARY AND RECOMMENDATIONS

Pittsburgh, Pennsylvania
July 16 – 19, 2007

**U.S. DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY**



Final Report Strategic Center for Coal Fuel Cell Program 2008 Peer Review Meeting



Pittsburgh, Pennsylvania
April 21 – April 25, 2008

Director's Report

- CRTD Key Activities

- **Power Plant & Environmental Chemistry (PPEC)**
 - Two 2 1/2 Day Workshops
 - Over 80 attendees at each
- **Yield Strength Handbook**
- **Amine Project**
- **Sustainability**
 - CRTD Sustainable Products & Processes Research Committee
 - Sustainability Working Group

Director's Report

- CRTD Key Activities

- **Sustainability**
 - **Sustainability Working Group**
 - **CRTD Sustainable Products & Processes Research Committee**
 - **Sustainable Products & Processes Vision Roadmap Workshop Planning Meeting held 10/16/2008 with Facilitator.**
 - **SPGF Funded**
 - **Focused initially on Sustainable Manufacturing**
 - **Preparing for a broader 1 ½ day Workshop in early 2009**
 - **ASME Marketing & Sales – Portfolio Management actively involved**

CRTD RESEARCH PROJECT TEMPLATE		
Committee:		
Project Idea:		
Goal:		
Background:		
Key Challenges: •	Benefits: •	
Tasks: •		
Potential Partnerships / Funding Sources: •	Expected Accomplishments: •	Immediate Next Steps: •

CRTD RESEARCH PROJECT TEMPLATE – Water Example

Committee: Research Committee on Water Management Technology

Project Idea: Evaluate water reuse and recycle efforts in commercial and industrial applications.

Goal

Derive a better understanding of the current commercial and industrial reuse and recycle landscape, collaborate with those already engaged, and provide mechanisms to facilitate progress in these efforts.

Background

In commercial and industrial applications, water is primarily used for cooling, heating, processing, and stack gas-scrubbing purposes. To achieve economic and environmental goals, industry seeks to conserve, reuse, or recycle water discharged from these applications. The degree to which water is reused or recycled greatly depends on the product/process quality requirements, effluent treatability, reuse/recycle infrastructure, discharge restrictions, and cost. These factors will differ significantly from process to process and from industry to industry. Striking a balance of all of these elements for effective reuse and recycle of water can be a challenging task. ASME recognizes that many efforts are under way to help industry increase the reuse and recycle of water.

Key Challenges

- Water quality use requirements compete with recycled water availability and treatability
- Current thinking about infrastructure is not very flexible, which limits reuse/recycle effort.
- There is limited understanding of the reuse and recycle landscape

Benefits

- Increased awareness of current reuse and recycle initiatives
- Improved understanding of the challenges faced by commercial and industrial organizations when implementing water reuse and recycle activities
- Define role for ASME to contribute and facilitate progress

Tasks

1. Gather information on current efforts.
2. Identify key players.
3. Establish baseline of water reuse and recycle initiatives.
4. Determine potential activities for ASME.
5. Identify potential collaborators for knowledge and cofunding support.
6. Evaluate results and prepare final report.

Potential Partnerships / Funding Sources

- Industrial organizations
- Commercial entities
- Water-related research associations

Expected Accomplishments

- Baseline of water reuse and recycle efforts established
- Final report completed

Immediate Next Steps

- Identify project lead
- Define project scope

Director's Report

- CRTD Key Activities

- **Update CRTD Research Opportunity Planning Matrix**
- **Utilize new CRTD Research Project Template**
- **Energy Environment & Waste**
 - **Ongoing Strategic Planning Activities**
 - **Engage SWP, EED**
- **Risk Technology**
 - **New Chair / Potential SERAD collaboration**
- **Plant Engineering & Maintenance – Follow-up on initial dialogue**
- **ASME Innovation Portal**