

## **(2) Southeast Rebuild Collaborative Public Sector Energy Efficiency Project**

The Southeast Rebuild Collaborative (SRC) is a partnership of the state energy offices of Florida, Alabama, Georgia, Mississippi and South Carolina in cooperation with The Cadmus Group created to establish a self sustaining energy efficiency program to ensure that governments, school districts, higher education institutions and the low-cost, multi-family housing sector pursue superior energy management.

To directly *influence* at least 1,300 institutions – encouraging them to promote a culture of energy efficiency and establish best management practices; and to *transform* 10 percent of the organizations influenced – indicated by at least one building upgrade project within the institution under way, demonstrating best energy efficiency design and practices.

Total project cost: \$634,396.00

Funding request: \$498,896.00

Project Lead: Florida Energy Office

Project Participants: The Cadmus Group, Mississippi Development Authority, Alabama Department of Economic and Community Affairs, Jackson Electric Membership Corporation, Southface Institute & Sustainable Atlanta Roundtable, Sarasota County, Georgia Parent Teacher Association – Georgia Green & Healthy Initiative, Florida Solar Energy Center, Institute for Building Technology and Safety, Public Technology Institute, The Sheinkopf Group, Council of Educational Facility Planners International, and Catalyst Financial Group, Inc.

Start Date:

End Date:

### Progress in Past Quarter and Current Status

#### **Southeast Rebuild Collaborative Quarterly Update Summary**

This quarter has been marked by a shift from the development of project infrastructure to the formation of state-specific and regional implementation plans to achieve the SRC goals. Below is a summary of activities undertaken during this period of performance. The progress is broken into regional efforts, which demonstrate that SRC states are effectively working together as a region, and state-specific efforts, which demonstrate what is happening in each state to help the SRC meet state-specific goals.

#### **Quarter 3 Regional SRC Effort Highlights:**

- Held All-hands SRC Executive Committee Meeting Wednesday, August 8 @ 2 p.m. EST, 1 p.m. CT.
- Held Three SRC Orientation Webinar / Training Sessions
- Attended National Association of State Energy Officials (NASEO) Annual Conference in Atlanta, GA from September 9-11, 2007
- Submitted a letter of Support for Southeast Energy Efficiency Alliance (SEEA) Grant Application to EPA and Met with SEEA Director on September 11th in Atlanta, GA
- Met with Southface Energy Institute to Kick-off Their Subcontract Under SRC on September 14th in Atlanta, GA
- Drafted SRC Fall Newsletter to be Distributed October 3, 2007
- Applied as an ENERGY STAR Partner and Energy Efficiency Program Sponsor (EEPS)
- Endorsed American College & University Presidents Climate Commitment (ACUPCC)
- Applied for ENERGY STAR's :30 PSA Co-branding Opportunity

- SRC Represented at National Association of Counties (NACo) Climate Protection Forum September 20 -21,2007
- Planned for Upcoming Round of K-12, Higher Education, and Local Government Sector Webinars
- Sent Materials to CEFPI National Conference in Canada and made Preliminary Plans to Attend for Regional CEFPI Conference in Myrtle Beach, SC
- Expanded and made updates to the SRC Web site ([www.southeastrebuild.org](http://www.southeastrebuild.org))
- Expanded and Maintained Contact Database for SRC Contacts
- Conducted Administrative Activities

### **Quarter 3 State-Specific SRC Effort Highlights:**

#### **Alabama:**

- Attended the Association of County Commissions of Alabama meeting on August 22 in Orange Beach, AL and held two K-12 trainings in Alabama.
- Completed proposal to establish Karen Clifton as Alabama's Executive Committee Member
- Established preliminary plans to engage Alabama in state-wide benchmarking efforts and explore higher education opportunities

#### **Florida:**

- SRC maintains a high level of activity in Florida's public sector
- SRC to present to Florida Higher Education Audience at Florida State University's Getting to Green Conference October 14-16, 2007

#### **Georgia:**

- GEFA requested contact database deliverable- First piece delivered in late August
- Met with GA PTA to discuss their partnership with SRC on September 12, 2007 in Atlanta, GA
- GA PTA article about SRC reached 5,000+ GA PTA Members
- Met with Atlanta Public Schools on September 12th in Atlanta, GA to discuss partnership with SRC
- Conducted research and support for CAL bus tour stop on October 15, 2007 in Atlanta, GA

#### **Mississippi:**

- Reached out to IT contacts to promote PC power management
- Explored the option of promoting ENERGY STAR :30 PSA

#### **South Carolina:**

- SRC worked to finalize the SC State-Wide Implementation Plan involving benchmarking efforts
- SRC plans to build cooperation with SC higher education institutions
- SRC explores opportunities for on-site trainings in SC

### **Quarter 3 Regional SRC Effort Details:**

#### **Southeast Rebuild Collaborative Quarterly Update Details**

*Held All-hands SRC Executive Committee meeting Wednesday, August 8 @ 2 p.m. ET, 1 p.m. CT.*

All SRC member states, cost-share participants, and subcontractors were invited to the August 8 Executive Committee meeting. The group discussed regional and state-specific accomplishments to date and plans for the future. Members from the following organizations were invited to speak at this meeting:

- The Cadmus Group, Inc.
- Mississippi Development Authority (MDA)
- Alabama Department of Economic and Community Affairs (ADECA)
- Florida Department of Environmental Protection (FDEP)
- Georgia Environmental Facilities Authority (GEFA)
- South Carolina Energy Office (SCEO)
- Jackson Electric Membership Corporation (EMC)

- Southface Energy Institute (SEI)
- Sarasota County
- Georgia Parent Teacher Association (GPTA)
- Florida Solar Energy Center (FSEC)
- Public Technology Institute (PTI)
- The Sheinkopf Group (TSG)
- Council of Educational Facility Planners International (CEFPI)
- Larry Schoff
- Catalyst Financial Group, Inc. (CFG)

***Held Three SRC Orientation Webinars / Training Sessions***

During this period of performance, we conducted three training sessions via Webinar. At least 74 participants (unique connections) joined the trainings. The trainings included:

- July 12, 2007 - “Opportunities for Higher Education Institutions.” Presenters included Andrea Putman (Cadmus, APUPCC Implementation Committee) and Dr. Frank Powell (Furman University, SC). Attendees included: Coastal Carolina University, SC, Furman University, SC, Orange County Public Schools, FL, South Carolina Energy Office, SC, and U.S. EPA.
- July 25, 2007 - “Dramatically Reduce Your IT Energy Costs.” Presenters included Mike Walker (Beacon Consultants) and Dave Korn (Cadmus). Attendees included: Palm Beach County School District, FL, Berkeley County School District, SC, and SchoolDude.com.
- August 1, 2007- “Opportunities for Local Governments.” Presenters included Robert Downing: (Calhoun County Commissioner, AL), Ester Matthews (Director of the Austin Climate Protection Plan, TX and Spokesperson for the Plug-in Partners campaign), and Jim Gorby (Fleet Administrator for Fairfax County, VA and Vice Chair of the Public Technology Institute’s (PTI’s) Sustainability Council). Attendees included: Presbyterian College, SC, City of West Palm Beach, FL, and Hillsborough County, FL.

***Attended National Association of State Energy Officials (NASEO) Annual Conference from September 9-11th in Atlanta, Georgia***

During the annual NASEO conference, Cadmus met with state officials from each SRC state to discuss project progress and implementation plans for the future. Cadmus also networked on behalf of SRC and obtained information about other state and regional efforts across the country. State-specific outcomes from the meetings are described below in the each state’s section. Among SRC member state and team staff represented present were:

- Keith Dennis and Julio Rovi (Cadmus)
- David Attaway and Cyrus Bhedwar (GEFA)
- Bill Babington (ADECA)
- Motice Bruce and Floyd Daniels (MDA)
- Alexander Mack (FDEP)
- John Clark (SCEO)
- Denise Grimm and Dennis Creech (Southface)

***Submitted a letter of Support for Southeast Energy Efficiency Alliance (SEEA) Grant Application to EPA and Met with SEEA Director on September 11th in Atlanta, GA***

The SRC Executive Committee approved the drafting and submittal of a letter of support for SEEA’s grant application, due to EPA on August 30, for an EPA grant to promote energy efficiency in the Southeast. SEEA submitted the grant application to secure funding for a regional energy efficiency project. Julio Rovi and Keith Dennis met with Ben Taube, Executive Director of SEEA, on September 11th to discuss opportunities to enhance partnership between SEEA and SRC in the future. Among the topics of discussion were exploring ways to co-sponsor energy efficiency events as well as obtaining funding for SRC as an implementation arm of SEEA.

***Met with Southface Energy Institute to Kick-off Their Subcontract Under SRC on September 14th in Atlanta, GA***

Keith Dennis and Julio Rovi of Cadmus met with Denise Grimm, Candice Groves, and Dennis Creech of Southface to kick-off the execution of Southface's subcontract for the SRC. Among the topics of conversation were Southface's role in the project's implementation and contractual reporting requirements. The group discussed the option of having an Atlanta Roundtable event focused on energy efficiency.

***Drafted SRC Fall Newsletter to be Distributed October 3, 2007***

The third SCR newsletter was developed throughout the month of September, with distribution expected on October 3, 2007, National Change a Light Day. This communication piece focused on tools and resources for the higher education sector. Newsletter topics include enhancements to EPA's benchmarking tool, financing tools available to higher education institutions, steps for implementing an ENERGY STAR® dorm room, and spotlights on Furman University and the ENERGY STAR Change a Light, Change the World campaign and national bus tour.

***Applied as an ENERGY STAR Partner and Energy Efficiency Program Sponsor (EEPS)***

During this period of performance, SRC formally applied as an ENERGY STAR partner and Energy Efficiency Program Sponsor (EEPS). This partnership with EPA will open the opportunity for increased resources and support from EPA, such as the potential for free tagging and co-branding of ENERGY STAR's :30 video PSA.

***Endorsed American College & University Presidents Climate Commitment (ACUPCC)***

SRC's Executive Committee approved the endorsement of the ACUPCC, which was formalized on August 8, 2007. Presidents of more than 400 Colleges and Universities across the country have joined the ACUPCC. The commitment calls for colleges and universities to reduce energy use through the promotion of programs such as ENERGY STAR. SRC's partnership with ACUPCC has help SRC to leverage a large, receptive public sector audience to help meet state-specific and regional energy efficiency goals.

***Applied for Co-branding Opportunity of ENERGY STAR :30 Video PSA***

SRC's Executive Committee approved SRC's application to EPA for a co-branding opportunity for the :30 ENERGY STAR video PSA (available for preview at: [www.energystar.gov/psa](http://www.energystar.gov/psa)). If the application is accepted, ENERGY STAR will tag the video PSA with SRC's logo at no-cost. Cadmus has contacted the appropriate media contacts in each SRC state energy office and key partners to brief them on this opportunity and to discuss distribution plans and capabilities. While EPA had originally planned to have the PSA tagged by the end of September, they have now pushed the date back to mid- October.

***SRC Represented at the National Association of Counties (NACo) Climate Protection Forum September 20, 2007***

Keith Dennis of Cadmus attended NACo's first roundtable discussion of climate protection for local governments in Washington, D.C. on September 20, 2007. Approximately 100 representatives of local governments, non-profit organizations, and national energy programs attended this roundtable event. This event represented a low-cost opportunity to promote SRC, to network, and to learn what local governments around the country are doing to promote energy efficiency and what they need to achieve energy efficiency.

Among the attendees from SRC states were:

- Calhoun County, AL
- Santa Rosa County, FL
- St. Petersburg Environmental Research, FL
- Sarasota County, FL (presenters)
- University of Southern Florida, FL
- Leon County, FL

***Planned for Upcoming Round of K-12, Higher Education, and Local Government Sector Webinars***

SRC is planning another round of Webinars to be scheduled in late October / early November.

- The K-12 training will focus on energy efficiency's role in green K-12 buildings, including LEEDTM for Schools. The Webinar will be presented by Rob Van Der Like and a guest speaker and is tentatively scheduled for November 13, 2007.
- The Higher Ed training will focus on energy efficiency's role in campus sustainability programs. Judy Walton from the Association for Advancement of Sustainability in Higher Education (AASHE) has confirmed to present and we are seeking another presenter. The exact date of the training is TBD.
- The Local Government training's topic, date, and speakers TBD. We plan to invite Sarasota County to present.

***Sent Materials to CEFPI National Conference in Canada and Made Preliminary Plans to Attend for Regional CEFPI Conference in Myrtle Beach, SC***

SRC K-12 Material was sent to CEFPI's Annual Conference in Toronto, Canada, to take place on October 6-9, 2007. The material will be made available to school facility planners across the county and will help raise awareness about SRC with our target K-12 audience. SRC is currently planning to submit a presentation topic for CEFPI's regional conference on April 6-9, 2008, in Myrtle Beach, SC.

***Expanded and made updates to the SRC Web site ([www.southeastrebuild.org](http://www.southeastrebuild.org))***

Continued to revise and update the Web site based upon upcoming trainings and events, and posted associated files for members to access. Created the Teacher's page as a clearinghouse for teachers interested in integrating energy efficiency lessons and activities into their curriculum and posted it on July 5, 2007. SRC created a Resources page as a clearinghouse for general energy efficiency materials, Web sites, and organizations with further information for parties interested in energy efficiency. Based upon additional comments and resources submitted by the team, SRC revised and updated the Teacher's and Resources pages in mid-July. SRC added news stories of particular interest to SRC members to the Press Room in mid-July.

***Expanded and Maintained Contact Database for SRC Contacts and maintained Web stats***

Between the time we began tracking Web statistics, April 16, 2007, and September 30, 2007, the SRC Web site had 1,929 Web visits and 6,760 page views. Since the last report, between June 30, 2007 and September 30, 2007, the SRC Web site had 1,094 Web site visits and 3,424 page views. SRC updated the contact database it maintains to include participants of the Webinars, Workshops in AL, and other events, bringing the total number of contacts to 2,755. SRC added the new contacts to the appropriate sector listservs to ensure new contacts receive communication updates from SRC.

***Conducted Administrative Activities***

Administrative tasks conducted during this period of performance included the execution of subcontracts between Cadmus and its subcontractors, development of subcontractor statements of work, invoicing paperwork, etc.

**Quarter 3 State-Specific SRC Effort Details:**

**ALABAMA**

***Attended the Association of County Commissions of Alabama meeting on August 22 in Orange Beach, AL and held two K-12 Trainings in Alabama***

Worked with Clarence Mann and Karen Clifton, Alabama Department of Economic and Community Affairs (ADECA) Energy, Weatherization, and Technology Division, to create an ENERGY STAR focus in the State of Alabama. SRC gave two presentations at the annual convention of the Association of County Commissions of Alabama, held August 21-23 in Orange Beach, AL. SRC also conducted two K-12 workshops in Orange Beach and Montgomery, AL, on

August 23 and 24. Julio Rovi presented ENERGY STAR tools and resources to County Commissioners and staffed a booth with Karen Clifton of Alabama Department of Economic and Community Affairs (ADECA). Robert Downing, Calhoun County, AL, also spoke to the Association about earning the ENERGY STAR label and his county's participation in the ENERGY STAR Challenge.

***Proposal to Establish Karen Clifton as Alabama's Executive Committee Member***

To increase Alabama's participation in cost share, Alabama has proposed to add Karen Clifton as their state's Executive Committee member and to add Larry Knox to the project. Alabama will follow up with this request in writing.

***Established Preliminary Plans to Engage Alabama in State-wide Benchmarking Efforts and Explore Higher Education Opportunities***

Cadmus has been in discussions with Karen Clifton, Bill Babington, and Larry Knox regarding an implementation plan for SRC in Alabama. Currently, SRC is following leads from the onsite meetings in August. In the future, SRC will engage in implementation discussions for a state-wide benchmarking project. Alabama also held an exploratory meeting with Johnny Green, Director of Facilities for Postsecondary, to explore how SRC can help Alabama's higher education sector. SRC is currently brainstorming how to most effectively deliver resources to Alabama in a manner consistent with their state energy efficiency goals.

**FLORIDA**

***SRC Maintains a High Level of Activity in Florida's Public Sector***

SRC has been in personal contact with staff from Volusia County Schools, Seminole County Public Schools, the School Board of Alachua County, Orange County Public Schools, Brevard Public Schools, Pasco County Schools, and many others to promote energy efficiency in Florida schools. Over this period of performance, SRC contacted more than 60 school districts in Florida inviting them to become an ENERGY STAR Partner and provided them with the partnership application letter. SRC has also been active with local governments in Florida and other parties who have expressed interest in energy efficiency and the SRC. SRC also hopes to assist Florida in implementing the recent Executive Orders issued by Governor Crist related to energy efficiency.

***SRC to Present to Florida Higher Education Audience at FSU's Getting to Green Conference October 14-16***

Rob Van Der Like of Cadmus will present on behalf of the SRC at Florida State University's "Getting to GREEN," the 2nd Annual Campus & Community Sustainability Conference on October 14-16 in Tallahassee, Florida.

**GEORGIA**

***GEFA Requests Contact Database Deliverable- First Piece Delivered in Late August***

Discussed SRC state-specific goals with GEFA at NASEO's annual conference in Atlanta, Georgia. During the meeting, GEFA requested that SRC develop a database of K-12 Georgia-specific contacts in order to facilitate the process of further energy efficiency in Georgia schools. The SRC will develop and deliver this database by the end of the 2007 calendar year. To date, SRC has located and delivered the contact information for all district superintendents in Georgia (181).

***Met with GA PTA to Discuss their Partnership with SRC on September 12 in Atlanta, GA***

Met with Eve Neumeister and Sheila Cornelius of GA PTA to discuss opportunities to promote energy efficiency through joint efforts of the GA PTA and SRC. We discussed the potential speaking opportunities, information distribution opportunities, and partnership opportunities. We concluded that the partnership agreement between SRC and GA PTA needs to be renewed for 2008. We discussed opportunities to build relationships with the 900 schools with GA PTA units. SRC delivered a blurb about the Atlanta CAL tour stop to PTA and discussed strategy for reaching out to GA schools.

### ***GA PTA Article About SRC Reached 5,000+ GA PTA Members***

GA PTA wrote an article about SRC in their newsletter, The Voice, which has been printed and mailed this month to 5,000+ PTA presidents, secretaries, treasurers, principals and superintendents in schools across the state. Over the period of performance, GA PTA has focused on encouraging schools to sign-up on the SRC website. GA PTA will continue to investigate avenues to get the info out to Georgia school administrative/ teacher groups i.e., GSSA, GSPC, GDOE, GSTA

### ***Met with Atlanta Public Schools on September 11th in Atlanta Georgia to Discuss Partnership with SRC***

Met with Herb Joseph, Director of Administrative Services and former Energy Manager for Atlanta Public Schools (APS) on September 13, 2007. SRC contacted Mr. Joseph in anticipation of the Change-A-Light Bus Tour stop in Atlanta. However, EPA selected another district for the media appearance. In anticipation of the heightened awareness on energy issues in the month of October and the media attention, APS discussed with SRC several actions it may pursue in conjunction with the CAL events. "We believe our data is more robust, and we can benchmark our facilities", remarked Mr. Joseph. The district may also play the ENERGY STAR 30-second PSA on its public access channel and serve as a pledge driver.

### ***Conducted Research and Support for CAL Bus Tour Stop in Atlanta, GA***

Participated in several conversations with officials from the State of Georgia and K-12 stakeholders in preparation for the ENERGY STAR Change a Light, Change the World Bus 12 Tour stop in Atlanta this October. The bus will stop at Durham Middle School in Cobb County, GA, and then travel to a consumer event at a National Football League game later that day. SRC has been involved in discussions with state stakeholders to determine whether the school event can be leveraged to increase the profile of ENERGY STAR in the state's public sector.

## **MISSISSIPPI**

### ***Reached out to IT Contacts to Promote PC Power Management in MS***

Betty Norman, Motice Bruce, Floyd Daniels, and Angelica Rawls have provided SRC with contact information for all MS K-12 IT department heads and superintendents. SRC invited all IT heads to participate in the ENERGY STAR PC Power Management Program.

### ***Mississippi Explores the Option of Promoting ENERGY STAR :30 PSA***

SRC engaged Mississippi in discussions about promotion of the :30 ENERGY STAR video PSA. If the SRC's application for PSA co-branding is accepted, we would like to use the PSA to raise awareness of energy efficiency and to launch an implementation plan in Mississippi.

## **SOUTH CAROLINA**

### ***SRC Works to Finalize SC State-Wide Implementation Plan Involving Benchmarking Efforts Cooperation with Higher Education Institutions***

SRC drafted and presented a state-wide SRC implementation strategy for South Carolina. Camus has been working with SC staff, including Julio Parris, Richard Horton, and Trish Jerman to determine the feasibility of conducting wide-scale benchmarking efforts in SC's K-12 sector. After several discussions, we have begun to brainstorm on whether a project focused on state-owned facilities would be more appropriate, given SC's current investment in existing K-12 energy consumption tracking databases, and initiatives to bring state-owned facilities up to LEEDTM Certification.

### ***SRC Plans to Build Cooperation with SC Higher Education Institutions***

SRC plans to maintain good relations with Furman University and to build relationships with University of South Carolina (USC) and Clemson University in order to promote energy efficiency in SC. These relationships will help provide opportunities for on-site visits to the state.

### ***SRC Explores Opportunities for On-site Trainings in SC***

SRC is exploring the possibility of a site visit to the Columbia, SC area to link K-12, state, and higher education opportunities to create a concentrated series of trainings in South Carolina to increase the visibility of SRC and energy efficiency in the state. Potential visits may include: a

visit to the Greenville area to build upon relationship with Furman University, to create a SRC event surrounding a Southern Living Home's "off the grid house" that will be on display at Furman next spring, to create inroads with Clemson University, and to build a relationship with Greenville local governments; a visit to the Columbia area to coordinate a co-sponsored event in the Columbia area to attract participants and sponsors and to educate attendees and tour USC's new biomass plant; or a state stakeholder conference(s) to explore opportunities to hold trainings or participate in speaking events at state-sponsored conferences, such as the USCEM annual meeting on November 6th or the meeting next spring.

Plans for the Next Quarter:

***Next Steps for the 4th Quarter:***

The SRC project is ready to move forward with the state-specific activities discussed above. In addition, SRC plans to roll out additional regional campaigns, such as EPA's Change a Light, Change the World and Challenge for Local Governments to coincide with the availability of Federal resources. SRC will continue to produce outreach materials including sector specific fact sheets, Webinars, and newsletters. Other planned activities include:

- Hold additional EC meetings according to the EC meeting schedule.
- Focus on more formal forms of feedback and enhanced dialogue between all SRC stakeholders.
- Customize and distribute materials, including SRC fact sheets, ENERGY STAR fact sheets, and newsletters to new recruits and SRC partners.
- Continue training programs and conduct following in the K-12, Local Government, and Higher Education Sectors.
- Expand infrastructure and enhance program offerings.
- Develop plans for on-site visits to states as appropriate.
- Create successes in each state to serve as case study for other states.

### **Buildings Technologies Category**

#### **(3) Residential Heat Pump and Air Conditioner Research, Demonstration and Deployment; Improving Pacific Northwest Utility and State HVAC Programs.**

The project is focused on discovering the simplest means to diagnose and optimize the new generation of high performance heat pumps and air conditioners and to integrate these diagnostic and optimization tools into the energy efficiency programs operated by the SEOs and utilities of the Pacific Northwest.

Total project cost: \$1,420,000

Funding request: \$630,000

Project Lead: Idaho Department of Water Resources, Energy Division

Project Participants: Northwest Power and Conservation Council, Bonneville Power Administration, Energy Trust of Oregon, Oregon Department of Energy, Washington State University Extension Service, Ecotope Inc., Stellar Processes, NEEA, NW Power and Conservation Council, Plus representative utilities

Start Date: March 23, 2006

End Date: March 23, 2008

Patents: At this point, patent applications are not planned for any of the work being developed in the project..

Publications/Presentations: During the quarter:

- 1) Larry Palmiter, Ecotope, presented heat pump analysis using the version of SEEM developed by the project at the 11<sup>th</sup> Annual Westford Building Science Symposium.
- 2) The Project Manager and members of the Technical Team met with the Northwest Energy Efficiency Alliance, and Bonneville Power Administration to discuss heat pump training with regional leaders. The project training initiative was presented.
- 3) Presented project status information to Northwest Energy Efficiency Alliance residential technical advisory committee to help them identify opportunities and areas of need for future funding and program efforts in aimed at improving the efficiency of heat pump and air conditioning systems in the residential sector.

Progress in Past Quarter and Current Status:

During the time period beginning July 1, 2007 and ending September 30,2007 the Energy Division accomplished the following:

Task 1. Develop and Implement Technical Advisory Group

- 1) The Technical Advisory Group members attending the Regional Technical Meeting on July 17, 2007.
- 2) Preparation for ASHRAE Winter Meeting - Planning and coordination STAC activities with ASHRAE TC 6.3 & development of SPC 193P MOT.
- 3) RESNET – Conference call meeting of task group of technical committee to investigate de-rating of heat pumps unless commissioned 8/15/07 (see attached minutes).

Task 2. Conduct Lab Testing of HP Systems

The lab testing on the cooling cycle for the second system was completed during the quarter, and testing on the heating cycle was begun. Larry Palmiter continues to conduct data analysis as a quality assurance measure.

**NOTE: We are applying for a short time extension to the end of June, 2008 in order to allow Purdue University to complete testing and allow time for data analysis and incorporation into the SEEM model.**

Task 3. Develop and utilize enhanced modeling tools

- 1) Integration of the latent heat model was completed and a ground contact model was added to SEEM during the quarter.
- 2) A user interface for SEEM was commissioned by the Northwest Power and Conservation Council. The NPCC is paying Ecotope for this programming as part of their match contribution. These funds will be reported on completion of the project.

Task 4. Develop and Test Field Commissioning Protocol Tool

- 1) The Short Term monitoring rig continues to perform well in the field test at three long-term test locations.
- 2) Oregon Department of Energy explored an opportunity to employ the tool to monitor ductless mini-split heat pump systems as part of regional study of the equipment.
- 3) Training for instruction on short term monitoring equipment installation was scheduled for October 10<sup>th</sup>.

Task 5. Perform Long Term Monitoring and use it to Verify/Beta Test Short Term Monitoring (STM)

- 1) Six monitoring sites were up and running during the quarter.

- 2) Monitoring results are posted at: <http://www.ezsim.com/STAC/>
- 3) Field test equipment was removed from the Kennedy home in Boise and from several other sites throughout the region. Short-term test equipment was left in place.
- 4) The Oregon Department of Energy project staff spoke with monitoring contractor on several occasions to check in and get updates on system performance at the Oregon sites. All appeared to be running without problems in the monitoring systems.

Status of Field Research to Date:

- Four of the seven sites had installation or commissioning errors that significantly decremented performance. This is consistent with the previous study done in Oregon and Washington on complicated heat pump systems. In other words, over half of systems have installation or commissioning errors that reduce performance 50 to 80%.
- Thermal expansion valve problems in the systems were undetected by the technicians, although they had a significant performance impact. We are considering adding temperature split measurement to the commissioning process in order to diagnose this problem.
- The amount of strip heat tied to defrost was found to substantially impact heating performance. We are considering adding a specification that defrost kw be limited to 10 kw.

Task 6. Develop HVAC Technician Training, Recruit Contractors, Train and Provide Technical Assistance, and Monitor Results

- 1) A regional meeting on heat pump and duct efficiency training strategy was scheduled held on July 10<sup>th</sup> in Goldendale, Washington to discuss duct design and sealing and heat pump commissioning training with regional leaders representing all state energy offices, the Northwest Energy Efficiency Alliance, Bonneville Power Administration and key utilities. Five STAC project team members attended including the Project Manager, and the session was facilitated by the project lead for Oregon Department of Energy. The STAC Technical Team presented the project training phase and the impact the project was having on commissioning knowledge.
- 2) The training development task was discussed in a conference call on September 18, 2007.
- 3) Short term monitoring training was discussed during the conference call and scheduled for October 10<sup>th</sup> in conjunction with the Regional Technical Forum meeting on October 9<sup>th</sup>.

Task 7. Conduct Data on Cost of HVAC equipment and commissioning

- i. Washington State University Energy Program completed data collection (see attached).
- ii. Oregon Department of Energy used the data reported in previous quarter and system pricing information from WSU HVAC contractor survey to document incremental costs associated with heat pump efficiency requirements in residential energy code proposal currently being considered in Oregon. Having this research data on hand offered very timely support to ODOE's code change effort.

Task 8. Develop Final Report

The final report was discussed, and the minimum time needed to analyze and report on the lab data as part of that report was estimated.

Task 9. Manage Project

The project continued to move along on all tasks. The most time slippage was in the testing at Purdue University, and the training development phase is delayed about two months due to the need for collection of cooling data prior to pulling the long term testing.

Plans for Next Quarter: Identify activities to be performed during the next quarter.

- 1) Each state team will select at least one site for monitoring system deployment and get equipment setup, data analyzed. Schedule at least one contractor training with improved commissioning procedure.
- 2) Complete the training curriculum and commissioning booklet.
- 3) Continue system testing at Purdue University.
- 4) Complete first prototype of SEEM modeling interface.
- 5) Meet concerning assignments at timeline for the final report.