

(7) Western U. S. Food Processing Efficiency Initiative

This two-year effort will develop a body of knowledge about the food processing industry's energy and water efficiency opportunities. At least six demonstration projects will be completed and an analysis and best practices portfolio will be assembled. Results will be disseminated via training and workshops.

Total project cost: \$1,627,777

Funding request: \$730,652

Project Lead: Oregon Department of Energy

Project Participants: Washington State University Energy Program; California Energy Commission; Idaho Department of Water Resources Energy Division; Northwest Food Processors Association; California League of Food Processors; Northwest Energy Efficiency Alliance; Lawrence Berkeley National Laboratory; Del Monte Foods

Publications/Presentations:

Case studies were written and printed for use and distribution by the FIRE team. A "save the date" flyer was distributed at the NWFPA conference for the upcoming satellite teleconference at the Northwest Industrial Conference. NWFPA staff gave a presentation on the STAC work to the Northwest Energy Efficiency Alliance Industrial Efficiency Alliance "All Hands Meeting" on June 23, 2005.

Patents: None:

Progress in Past Quarter and Current Status:

The task descriptions are included below followed by descriptions of specific progress. Appendices supplement the progress descriptions.

Task 1: Form Network/Planning

Develop a collaborative network of stakeholders, including industry associations, universities, industry leaders, state and regional agencies, energy-efficiency organizations, and national laboratories through the following activities: (1) All 3 participants will identify key food processing companies in the western states region, beyond the participants described in this proposal, and invite them to participate in ongoing planning and implementation. (2) Industry associations will facilitate industry participation in the project. (3) NWFPA and CLFP will use their energy task forces of company executives to identify effective strategies to reach decision makers in industry for transfer of best practices and emerging technologies. (4) WSU Energy Program will schedule two face-to-face participant meetings at annual conventions and/or video conferencing broadcasts to provide opportunities for industry and partner participation. (5) The NWFPA and CLFP will convene member advisory groups to provide input on best practices, technology experiences, and needs. (6) WSU Energy Program will lead development of the strategic plan for the participants and facilitate the project Industry Advisory Group. (7) WSU Energy Program will lead recruitment of regional and national industry executives for policy development and long-range strategic planning. This will include site visits to seven key regional corporate offices or plants to identify and document priority needs, standards of practice, and new or emerging technologies in use. (8) LBNL will lead evaluation of the California Food Processing Road map for applicability to the western states research agenda and needs identified through association data gathering. All participants will detail outcomes of the projects to include energy savings, emissions reductions, products produced and value added for the industry.

Three conference call meetings were held this quarter. Summaries of the conference call meetings are attached. Several other conference calls and subsequent follow-up calls took place between FIRE team members to discuss future planning and follow-up activities for the group.

Task 2: Best Practices Portfolio

All participants will assemble an initial portfolio of best practices already known to the organizations and share the information throughout the region. All participants will develop relationships with industry contacts, EERE, state energy offices, national laboratories, associations, suppliers, Industrial Assessment Centers, and universities to gather information, identify promotion leveraging opportunities, and collaborate on demonstrations or case studies. All participants will provide content input and Web links to the NWFPA's newly developing Web portal with the Best Practices Programs available to food processors. This is being planned under recent DOE funding. WSU Energy Program will coordinate this material. Resources will include solutions to key issues such as: applicable technologies, best practices, productivity, financial incentive programs, and homeland security supply chain/regulatory issues. NWFPA and the CLFP will identify members with active best practice capability or programs and identify which have published findings or data to share.

Initial preparation and organization of the Energy Portal took place throughout the quarter. Research and document gathering took a high priority. All relevant documents, articles, and news items that could be obtained through the Oregon State Library and the Oregon State University system were collected and organized for posting on the Energy Portal. Content for the web site was drafted and posted into the web sites as applicable. Oregon and NWFPA staff coordinated in order to ensure the orderly transition of the Energy Portal from its "test" site to live status on the NWFPA web site.

The Energy Portal went live on July 5, 2005. Virtually all sections of the Energy Portal now have content and are available to industry and the general public through the NWFPA web site. A direct link to the Energy Portal is available from the NWFPA home page, as well as from the energy subsection of the NWFPA web site.

Task 3: Emerging Technologies

A portfolio of emerging technologies that show promise for efficiency, productivity, or emissions improvement for the food processing industry will be created. WSU Energy Program will compile data and case studies on emerging technologies being applied in the food processing industry for productivity improvement, energy efficiency, quality enhancement, or waste minimization. CEC will develop six case studies of their Public Interest Energy Research (PIER) projects that demonstrate commercial application of emerging technologies that may benefit food processors. WSU Energy Program will identify specific services of WSU's Food Science Department and the Impacts Center with ties to the Manufacturing Extension Network for developing marketing or delivery strategies for emerging technologies. CEC will inventory emerging technology demonstration sites and identify which incorporate widespread best practices to identify case examples for write up. Idaho will lead development of best practice guidelines for specifying and protecting programmable logic controllers resistant to interruption from voltage drop. WSU and Oregon will research combined heat and power applications in food processing and identify barriers and opportunities. LBNL will compile an inventory for food processing of the best available commercial and emerging technologies and sort by end use (hot water, steam, motors), process (washing, cutting, freezing, refrigeration, canning, conveying...) or system type (boilers, chillers, refrigeration compressors...).

The Alliance will target the fruit and vegetable (NAICS 3114) and dairy products (NAICS 3115) sub-segments with a combination of technology and business-related solutions. Lawrence Berkeley National Laboratory is continuing work on the emerging technologies section. Initial integration of that work into the Energy Portal is expected to occur this quarter.

The Report on the Programmable Logic Controls Workshop held January 18, 2005 and the Guidelines were presented to the NWFPA Board of Directors on April 28, 2005. While the Board recognized the great value these Guidelines have to the food processing industry, they declined to approve them based on concerns for potential liability. Ken Ecklund, Idaho Department of Water Resources, is looking into the liability issue and options for NWFPA "approval." NWFPA wants to be able to distribute the Guidelines for use in the food processing industry.

Task 4: Prepare and Deliver Content for use through the associations' web sites, e-newsletters, workshops, video-streaming, and other conferences and promotions.

NWFPA will facilitate a teleconference workshop for food processing maintenance personnel in energy efficiency training with assistance from all partners. The workshop will be available to interested parties in up to 15 other Western states. CEC will research their experience with video streaming and educate the partners on how to prepare materials for use in that context for satellite conferences, Web, or e-mail delivery. CEC, Oregon and WSU Energy Program will develop a format for compiling, crediting, publishing and delivering reports useful to the industry. NWFPA and CLFP will identify graphic content needs for presentations, case studies, and Web sites and will manage partners contribution to meet those needs.

A case study format was agreed upon and the Motor Challenge two page, four-sided format was selected. A format guide and questionnaire was developed to assure that there is continuity of content in each of the sections of the case studies. Elements of the case study (tables, graphs, photos, headers) are included in the format guide. CEC will develop and distribute streaming video training or promotion clips regarding thermal systems. CEC will provide training or guide other partners to develop similar capabilities. Planning for the Satellite Teleconference continued throughout the quarter. Because of conflicts, the date of the Satellite Teleconference has been changed from November 3, 2005 to November 10, 2005. A detailed project plan was developed for the teleconference.

The NWFPA staff teleconference team held weekly planning and status meetings. FIRE Team members made potential speaker contacts and 90 percent of the speakers for the event have been confirmed.

Several potential teleconference producers were interviewed and their proposals for the event were reviewed. Oregon State University was selected as the producer and uplink site for the event. NWFPA staff had an extensive conference call with Chris Cockrill and Julia Oliver (who managed two satellite teleconferences for (USDOE) to obtain information and insights on conducting a teleconference. Ms. Oliver provided NWFPA her Final Report for use in planning the teleconference. The agenda has been developed as well as a draft Host Site Invitation (to become a downlink site); proposed logo options were developed as well as letterhead; a database of potential host sites and attendees is being developed.

Task 5: Utility/Management Demonstration

Del Monte will demonstrate the best available technology and applications of Utility Management Systems (UMS) integrated with Enterprise Asset Management (EAM) technologies. Del Monte and LBNL will conduct research, literature search and technology overview of the

state-of-the-art of utility management and enterprise asset management tools. The multiple product features, integration capabilities, systems requirements and other characteristics of those tools will be identified so industry can readily conduct comparative analysis. LBNL will outline the scope necessary to study in detail the standards of production, water and energy efficiency practice for one of the largest food processing sectors. Del Monte is finalizing tariff mapping for real time energy expenditure tracking of electricity and gas. Work continues on the open house event in November. The Del Monte EEM/EAM system went operational this quarter and is undergoing system evaluation and testing. Some screen shots from the EEA/EAM system in use by Del Monte are included as an attachment.

Plans for Next Quarter:

- Oregon, NWFPA, and other FIRE team members will continue to edit existing content and post new content to the Energy Portal. Oregon and NWFPA will continue to solicit feedback from the FIRE advisory committee and general users and incorporate that feedback into the content, structure, and functionality of the Energy Portal. NWFPA staff will work with Avecetra and the Northwest Energy Efficiency Alliance to develop the regional calendar from its current static incarnation into a more interactive tool. NWFPA staff will also work with Avecetra and California League of Food Processors on a direct button from CLFP's web site to the Energy Portal.
- FIRE team members will continue to work on the Satellite Teleconference. FIRE team members will finalize the agenda and speakers and make all arrangements for the Satellite Teleconference. NWFPA staff and FIRE team members will develop the program and script. Team members will also obtain downlink sites and develop a Host Site Kit, Marketing Materials, and Conference Materials. A marketing plan will be devised and implemented. FIRE team members will work to obtain sponsors. NWFPA staff will work with Oregon State University on production and execution of the event. Registration for the event will also take place this quarter.
- California will continue to work on PIER case studies and additional content for the Energy Portal and for the FIRE project in general.
- Del Monte will continue to work on the EEM/EAM project and the open house event.
- The NWFPA will work with Ken Ecklund on NWFPA "approval" of the PLC Guidelines and the two demonstration projects of PLC protection using the Guidelines.