

MONTHLY PROGRESS REPORT FOR CONTRACT NO. 500-00-036

PROJECT 2.2 – ENHANCED ENERGY RECOVERY THROUGH OPTIMIZATION OF
ANAEROBIC DIGESTION AND MICROTURBINES PROJECT

REPORT PREPARED BY: COMMONWEALTH ENERGY TEAM

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What we planned to accomplish this period:

It was anticipated that a major focus of activity in May would be preparing for and participating in the Critical Project Review meeting for Project 2.2. This was expected to involve coordinating with members of the Technical Advisory Committee (TAC), Commission staff and representatives of the project hosts (City of Riverside and IEUA). Also in preparation for the meeting, presentation materials were to be prepared and sent to meeting participants. Participation in the meeting was to involve several staff members both in person in Sacramento and several who would participate by phone. Also in May it was anticipated that extensive work would be completed on the design efforts for both the ultrasound and gas cleaning projects. The initial design package for the ultrasound project was to be prepared for internal review anticipating that it would be submitted to the Commission in June. Work on the gas cleaning design effort was also expected to continue with emphasis on coordination with IEUA to ensure that all design activities are conducted in a manner consistent with ongoing operations at the plant. Ultrasound vendor activity was expected to be extensive in May as fabrication of the equipment and detailed planning and coordination activities related to the installation process proceeded. Another important coordination activity was the continuation of the bi-weekly calls involving CE Team staff and the City of Riverside. These call are important in ensuring that information flows smoothly on this project, particularly as the project moves to the field.

What we actually accomplished this period:

Task 2.2.1 Process Selection:

- The CE Team completed its follow up efforts on the *Process Selection Report* submitted previously and prepared summary material of this report for the Critical

Program Review meeting. The primary focus on the report was review and analysis of the technologies considered. The ultrasound vendors provided detailed information about their technologies and continue to be heavily involved in the planning process in order to ensure a smooth process from selection to installation.

Task 2.2.2 Site Selection and Test Plan:

- The CE Team and the technology vendors continued to apply the information developed in the process selection phase and the *Site Selection and Test Plan Report* to the Design activities. Detailed plans regarding the location of the test equipment at each of the locations planned (RP-1) and the City of Riverside Treatment Plant continued to be analyzed and subcontracts were developed that reflected the *Site Selection and Test Plan*, the *MOU*, and the objectives of the PIER Program and Commonwealth Business Plan. This information was used in the design activities under Task 2.2.3.b and in preparing for the Critical Project Review meeting held on May 12.

Task 2.2.3.a. Design Gas Cleaning System:

- Design data and other information on site conditions were collected for the design efforts on the gas cleaning task. Preliminary conceptual drawings showing the layout of the various gas cleaning elements (gas drying, H₂S removal and siloxane removal) and design concepts were reviewed and refined with the host (IEUA) staff so that more detailed information added later in the design would be consistent with IEUA's plans and activities. Preliminary data related to sizing of the piping, electrical, instrumentation/control and other project elements was also developed. This effort is important because the existing gas distribution infrastructure needs to be upgraded to handle the extra gas that will be collected as a result of the task and activities on Project 3.1 related to co-digestion. In addition to the ongoing design efforts, activities on this task included assembling information on the design for the Critical Program Review meeting held on May 12.

Task 2.2.3b Design Ultrasound System:

- Design activities were undertaken in close coordination with the City of Riverside in relation to integrating the two ultrasound test units into the plant's existing facilities. The City of Riverside staff worked closely with CE Team staff to ensure that piping, electrical, instrumentation/control and other design activities were initiated in a coordinated manner so that the ultrasound test units will be properly sized and will function effectively. The preliminary set of 16 drawings, prepared in April was reviewed and refined based upon information discussed in the bi-weekly calls with the City of Riverside. These calls have been very productive in ensuring that the proposed system's design was fully compatible with existing facilities at the City of Riverside. Also during these calls a number of design related issues were discussed. Summaries of the calls are prepared after each call

to document topics covered and to make sure follow up items are clearly defined for all participants. In addition to the ongoing design efforts, activities on this task included assembling information on the design for the Critical Program Review meeting held on May 12.

How we are doing compared to our plan:

As reported previously, the redirection of our approach (two ultrasound technologies, instead of one ultrasound and one thermal hydrolysis technology) will make the project findings more relevant to the State of California, but required additional consultation and planning with the technology vendors. This modified focus delayed completion of the *Site Selection and Test Plan Report*. However, the findings produced will clearly document how the use of ultrasound technology can help increase gas production as well as improve the treatment process.

As part of the ongoing coordination with the technology vendors, the CE Team sought to streamline the site selection and design tasks by involving the vendors in the project planning. This will allow future efforts to focus on project implementation, rather than further evaluations and design activities. However, these additional processes/steps additionally delayed the finalization of the *Site Selection and Test Plan Report*. These challenges have been largely overcome, and it is anticipated that the testing program will be initiated and implemented by the end of 2004. As reported earlier, the *Site Selection and Test Plan* was completed in March, and sent to the Technical Advisory Committee (TAC) for review and comment. Additional information was presented to the TAC at the Critical Project Review meeting on May 12.

Significant problems or changes:

There are no significant fiscal problems to report during this period and work is proceeding within budget. Progress and expenditures will result in project being completed on our revised project schedule and within budget.

What we expect to accomplish during the next period:

Activities in June will continue on the design work on the ultrasound and gas cleaning systems. It is anticipated the ultrasound design package will be submitted to the Commission in June and that the bi-weekly calls on that project will continue. It is also anticipated that fabrication of the ultrasound equipment will be completed and that it will be shipped to Riverside. Design activity on the gas cleaning task will also continue including close coordination with the host facility staff at IEUA. The results of the Critical Project Review meeting will become available and implementation of the projects in the field will be initiated. It is also anticipated that any comments received from the Technical Advisory

Committee during the CPR or during the course of the review of any of the deliverables will be incorporated.

Status of Milestones and Deliverables:

Table 1 below summarizes the status of Project 2.2 task deliverables as of the end of the current reporting period.

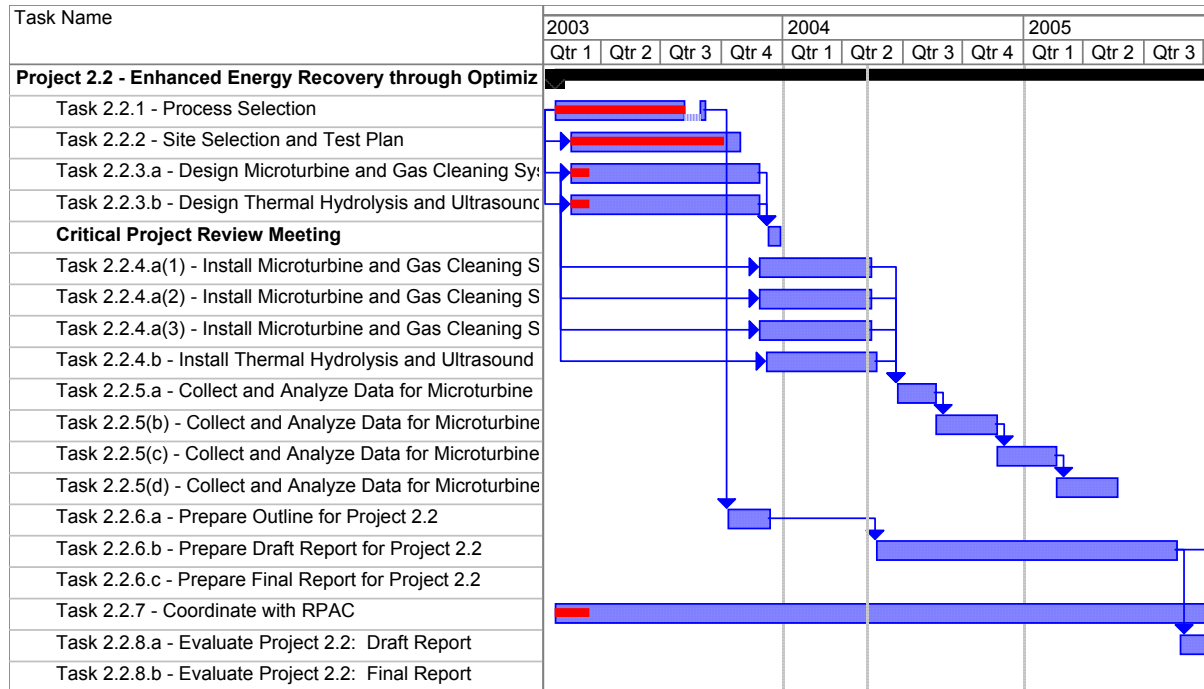
Table 1: Summary of Project Status and Deliverables – Project 2.2

Task No.	Description	Start Date		Due Date		Status (%)
		Planned	Actual	Planned	Actual	
2.2.1	Process Selection	01/24/02	01/24/03	09/04/03	11/10/03	100%
2.2.2	Site Selection and Test Plan	02/15/02	10/15/03	10/26/03	3/31/04	100%
2.2.3.a	Design Gas Cleaning System	02/15/02	11/10/03	11/24/03		30%
2.2.3.b	Design Ultrasound Systems	02/15/02	11/10/03	11/24/03		80%
2.2.7	Coordinate with RPAC	01/24/02		01/16/06		

Explanation of any Difference(s) in Schedule

Task 2.2.2 – Site Selection and Test Plan – The findings of the Process Selection Report identified the technologies that are to be used at both the Riverside plant for enhanced anaerobic digestion and at RP-1 for gas cleaning. As noted previously, additional coordination activities with vendors has been required. Efforts were undertaken to streamline the site selection and test plan and design processes by conducting more detailed coordination with the vendors on their technologies. This approach will shorten the time needed to secure the long lead-time equipment items. It will also improve the likelihood that demonstration pilot programs can be implemented most efficiently, but will delay the completion of the site selection and design tasks.

Overall Schedule for Project 2.2:



Overview of Fiscal Status:

Table 2 below summarizes the fiscal status of Project 2.2 by task as of the end of the current reporting period.

Table 2: Fiscal Status by Task – Project 2.2

Task Number	Budget	Invoiced ¹ To-Date	Fiscal Status *
2.2.1	\$236,563	\$236,563	OT
2.2.2	\$182,543	\$182,543	OT
2.2.3.a	\$242,995	\$0	OT
2.2.3.b	\$215,842	\$0	OT
2.2.7	\$22,557	\$0	OT

*Fiscal Status – Please indicate if you are “On Track” (OT), OverBudget (OB), or UnderBudget (UB)

¹ Invoice to-Date refers to amount invoiced prior to 10% retention withheld.