

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 during June design work would continue on the ultrasound and gas cleaning systems. It was also anticipated the ultrasound design package would be submitted to the Commission in June and that the bi-weekly calls on that project would continue. Fabrication of the ultrasound equipment would be completed and would be shipped to Riverside. Design activity on the gas cleaning task would also continue including close coordination with the host facility staff at IEUA. The results of the Critical Project Review (CPR) meeting would become available and that implementation of the projects in the field would be initiated. Comments received from the Technical Advisory Committee (TAC) during the CPR or during the course of the review of any of the deliverables would be incorporated.

**What we actually accomplished this period:**

Task 2.2.1 Process Selection:

- Work on this task is complete. The results have been have been incorporated into the design process and are being implemented into the project in the field.

Task 2.2.2 Site Selection and Test Plan:

- Work on this task is complete. The results have been have been incorporated into the design process and are being implemented into the project in the field.

Task 2.2.3.a. Design Gas Cleaning System:

- Efforts on this task continued in June. Design data and other information on site conditions were collected for the design efforts on the gas cleaning task. Preliminary conceptual drawings outlining the layout of the various gas cleaning elements (gas drying, H<sub>2</sub>S 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 developed. This effort is important, as the existing gas distribution infrastructure needs to be upgraded to handle the extra gas that will be collected as a result of the task.

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 the CE Team staff to ensure that piping, electrical, instrumentation/control and other design activities were initiated in a coordinated manner that the ultrasound test units will be properly sized and will function effectively. The design documents for this project were submitted to the in June. Design information was reviewed and updated in the field on an ongoing basis as needed. This has been accomplished through frequent communications with the City of Riverside staff including weekly calls where project activities are discussed. In the previous months these calls were held on a bi-weekly basis, but it is anticipated that they will be held weekly during the critical installation and startup period. 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.

Task 2.2.4b Install Ultrasound System:

- With approval from the Commission to proceed with Project 2.2 received on May 25<sup>th</sup> (in follow up to the CPR held on May 12<sup>th</sup>), work on this task can begin. Coordination with the City of Riverside related to installation activities continued as a natural outgrowth of the coordination on the design tasks. Ultrasound equipment to be installed at the City of Riverside Plant was received and installation plans finalized. Issues related to the control system arose and steps were taken to update the installation process so that ultrasound systems would be fully compatible with the existing facilities.

**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 TAC for review and comment. Additional information was presented to the TAC at the Critical Project Review meeting held on May 22<sup>nd</sup> and installation and start up will continue to proceed through August time-frame.

**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:**

Installation of the ultrasound systems at Riverside will continue in July. Equipment received in June will be installed and start up activities planned. In addition, control system modifications being planned will be developed in detail so the control system upgrades can be implemented during the installation process. On the gas cleaning project, design efforts will continue, with the focus being on the efforts needed to make sure that the connections to the existing gas distribution system are adequate. In addition, equipment layouts and the associated mechanical, civil and electrical/instrumentation and control engineering activity will continue. The weekly coordination calls with the City of Riverside will continue and it is expected that a coordination meeting will be held at the IEUA facility in late June to review the design approach for the moisture removal, siloxane removal and H<sub>2</sub>S removal systems. It is also anticipated that the gas sampling plan will be reviewed.

**Status of Milestones and Deliverables:**

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

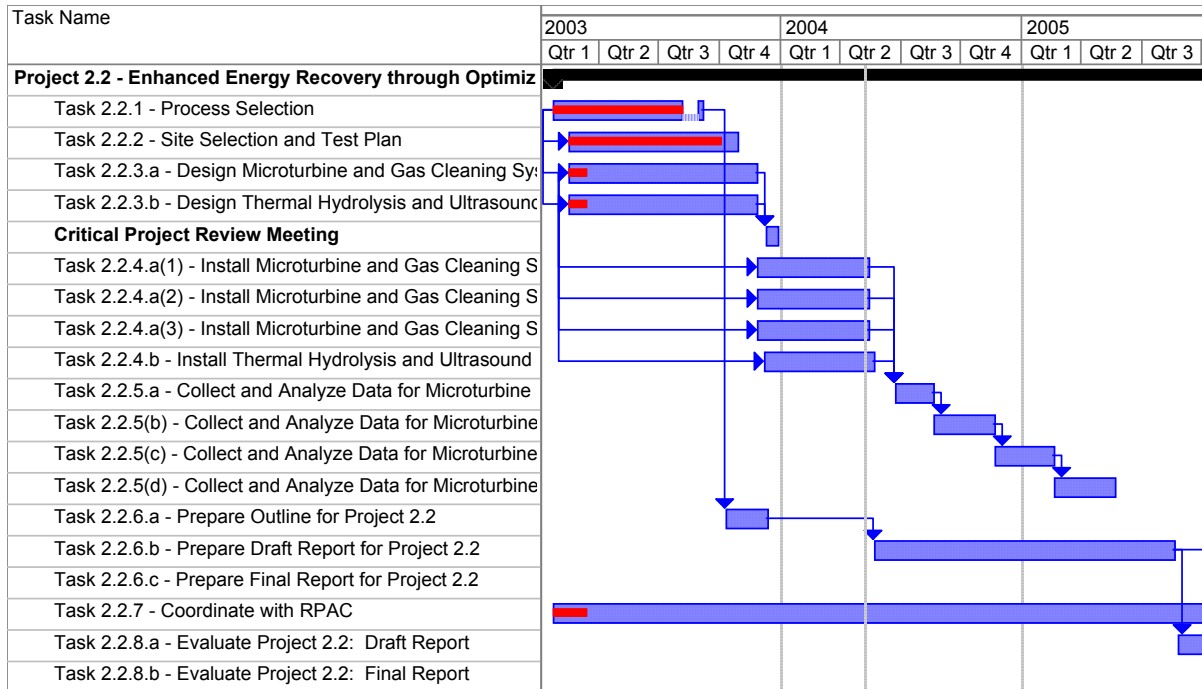
**Table 1: Summary of Project Status and Deliverables – Project 2.2**

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		95%
2.2.4.b	Install Ultrasound System	12/5/03	6/1/04	5/21/04		10%
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**

<b>Task Number</b>	<b>Budget</b>	<b>Invoiced<sup>1</sup> To-Date</b>	<b>Fiscal Status *</b>
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
2.2.4.b	\$229,585	\$0	OT
2.2.7	\$22,557	\$0	OT

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

<sup>1</sup> Invoice to-Date refers to amount invoiced prior to 10% retention withheld.