

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:**

Activity was to continue to focus on integrating two ultrasound systems into the Riverside Plant and integrating gas drying, H<sub>2</sub>S and siloxane removal systems into the IEUA RP-1 site. Additionally, ongoing coordination activity was to continue with the project hosts at IEUA and Riverside County. The results of these efforts were to be presented in the *Site Selection and Test Plan* report that the CE team anticipated submitting to the Commission in late March. Activities related to finalizing the *Site Selection and Test Plan* were expected to require ongoing coordination with the technology vendors to ensure that the intended six-month testing period could begin in a timely manner later this year. The detailed planning for the fabrication of the planned test equipment was also to continue, with the CE Team and vendors working closely on this effort.

Further refinement was expected on the *Memorandum of Understanding (MOU)* between the City of Riverside and the CE Team as it related to the proposed ultrasound-testing program at the City of Riverside Treatment Plant. It was anticipated that this document would be finalized by the end of March.

**What we actually accomplished this period:**

Task 2.2.1 Process Selection:

- The CE Team continued its follow up on the *Process Selection Report* submitted previously. Primary efforts continued to focus on the review and analysis of the technologies presented. Contact and coordination with the technology vendors continued in order to fabricate and provide the latest ultrasound technologies to the projects planned at Riverside County. 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:

- Discussions continued with the City of Riverside regarding the proposed *Memorandum of Understanding (MOU)*. The result of these discussions is the definition of the roles and responsibilities of each party, as well as the program layout to be undertaken at the Riverside plant. As anticipated, the *MOU* was completed and executed in late March.
- The CE Team and the technology vendors continued to apply the information developed in the process selection phase, to the *Site Selection and Test Plan* development 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.
- The *Site Selection and Test Plan Report*, along with the process and instrumentation diagrams and other elements of the site selection report, was prepared. A draft of this report was completed and submitted to the Commission and the Project 2.2 Technical Advisory Committee (TAC) for review. Detailed planning continued with the vendors and a schedule developed providing them with a workable plan to complete the development of the test units in the timeframe required. Related to this effort, planning was initiated on the critical project review meeting. Information is being included in the *Site Selection and Test Plan* in order to ensure that the proposed project can clearly present a detailed six-month testing plan that will foster gas production and improved operations at the host site.
- A site visit was conducted of the ultrasound project at the City of Riverside's treatment plant and the gas-cleaning project at the IEUA Regional Plant 1 (RP-1). This visit was attended by Commission, Commonwealth Energy staff, and representatives of the CE Team and host facilities. During this site visit participants were able to tour the facility and the location that is planned for the demonstration projects.

Task 2.2.3.a. Design Gas Cleaning System:

Design data and other information on site conditions were collected for the initiation of the design efforts on the gas cleaning task. Preliminary drawings were prepared showing the layout of the various gas cleaning elements (gas drying, H<sub>2</sub>S removal and siloxane removal) and design concepts were reviewed with the host (IEUA) staff. Preliminary data related to sizing of the piping, electrical, instrumentation/control and other project elements was developed.

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.

**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 CE Team believes that upon completion, 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 can be initiated and implemented by the end of 2004. As reported earlier in this report, the *Site Selection and Test Plan* was completed in March, and sent to the Technical Advisory Committee (TAC) for review and comment. Additional information will be presented to the TAC at the Critical Project Review meeting, anticipated to be held in early May.

**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:**

Activity related to enhanced energy production, gas cleaning and advanced energy recovery will continue, along with additional coordination activity with the project hosts at IEUA and Riverside County. Efforts on this project will focus on integrating two ultrasound systems into the Riverside Plant and integrating gas drying, H<sub>2</sub>S and siloxane removal systems into the RP-1 site. It is anticipated that comments on the *Site Selection and Test Plan* will have

been received from the Commission and TAC members. The CE team will integrate comments and/or changes and the *Site Selection and Test Plan* will be finalized. Design efforts will continue on integrating the ultrasound and gas cleaning systems into the City of Riverside and IEUA’s RP-1 plants respectively, with ongoing coordination with the technology vendors to continue to ensure that the intended six-month testing period will begin in a timely manner later this year. Additionally, the detailed planning for the fabrication of the planned test equipment will continue in April so that the Vendors efforts can begin in May thereby ensuring that the overall testing program will be achieved in contract timelines.

**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.

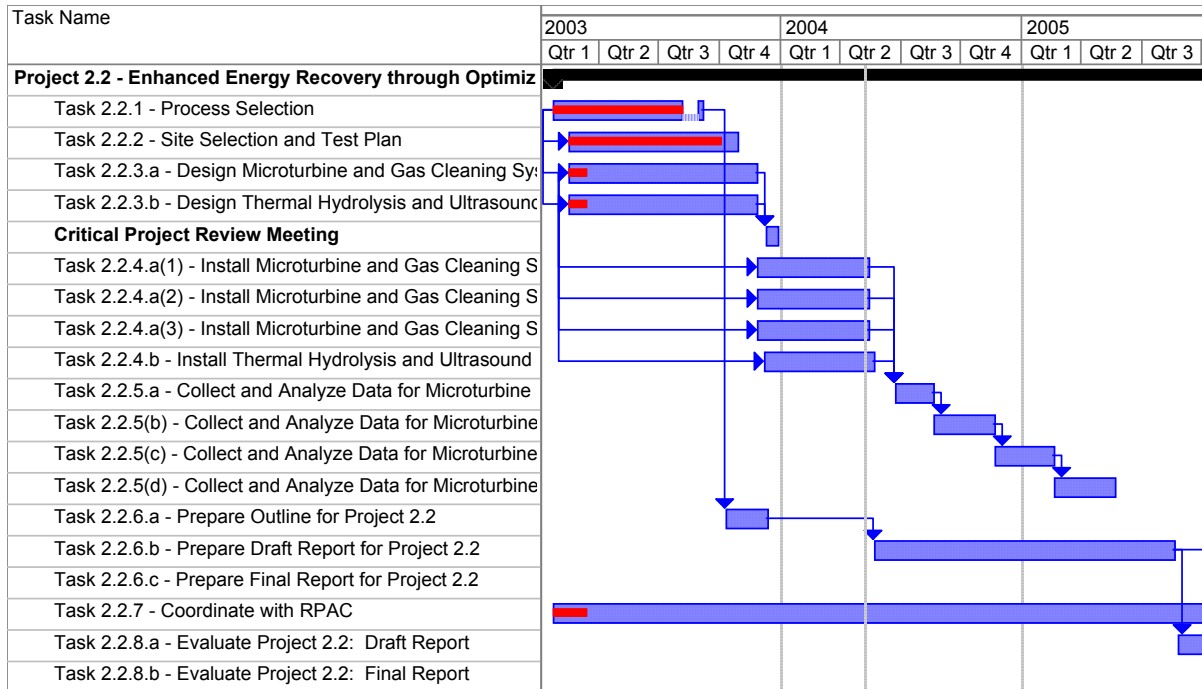
**Table 1: Summary of Project Status and Deliverables – Project 2.2**

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		95%
2.2.2	Site Selection and Test Plan	02/15/02	10/15/03	10/26/03		90%
2.2.3.a	Design Gas Cleaning System	02/15/02		11/24/03		10%
2.2.3.b	Design Ultrasound Systems	02/15/02		11/24/03		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**

Task Number	Budget	Invoiced <sup>1</sup> To-Date	Fiscal Status *
2.2.1	\$236,563	\$236,563	OT
2.2.2	\$182,543	\$0	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)

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