

Category of Award Nomination: Waste/Pollution Prevention

Title of Nomination: Nitrogen Oxides Reduction, VA San Diego Healthcare System

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Summary:

The VA San Diego Healthcare System operated a cogeneration system consisting of Solar Saturn Turbine with a waste heat recovery boiler driving an 800 KW generator. This cogeneration unit produced an average NO_x concentration of 341.5 PPM. This cogeneration system was retired and replaced with a new Solar Mercury Turbine, 4,600 KW with an ultra lean premix burner system and heat recovery steam generator which was permitted with the local Air Pollution Control District to operate at 7 PPM.

As a result of this system upgrade a reduction of 41.9 tons of NO_x was achieved and a certificate of ownership of Class A Air Pollutant Emission Reduction Credits was issued by the Air Pollution Control District, County of San Diego on June 22, 2005.

In turn, 40 tons of Emission Reduction Credits was sold to a third party to generate \$4.2 Million Dollars which was used to buy down the capital investment of the new cogeneration system.

Evaluation Criteria

- (1) Does the project involve the use of innovative approaches, techniques, and technologies? That is, does the project represent something that is not well demonstrated or proven for the category under which you are submitting your nomination? Please describe.*

This project was innovative in that a new state of the art ultra clean Solar Mercury Turbine was installed as a beta test unit at the VA San Diego Healthcare system as the first commercial installation. A permit to construct was issued by the San Diego Air Pollution Control District with permit levels of 7 PPM NO_x with no additional required pollution control devices. The unit was source tested and passed at 4 PPM.

- (2) Is the project cost effective when considering life cycle costs? Describe actual cost savings, revenue generated, and costs avoided, including the means by which forgoing was determined. Also, describe any other tangible benefits, such as improved health and safety or reduced waste.*

The combined heat and power plant was installed as a replacement of a small outdated cogeneration unit at the VA San Diego Healthcare System under a Department of Energy ESPC (Energy Savings Performance Contract) with Sempra Energy Services. The contract included provisions for the transfer of 40 tons of NO_x Emissions Reduction Credits at a price of \$105,000 per ton for a total value of \$4,200,000. This value was used to buy down the capital investment.

- (3) Does the project have an internal education or outreach designed to promote the goals of your project at the facility or within VA or promote partnerships with the local community, another Government agency, a non-Governmental agency, private industry, or other entity outside your facility? Please describe.*

This project promotes partnership with both the local community and the private sector. Sempra Energy is an energy service provider in San Diego County. The direct partnership involved the ESPC contract with Sempra Energy to install a new combined heat and power plant at the VA San Diego Healthcare System. The other part of the partnership was that Sempra needed to purchase 40 tons of NO_x Emissions Reductions Credits to construct a new power plant that would provide electricity to the local community. This project, through the transfer of the credits, allowed the new power plant to be constructed and permitted which provided a direct benefit to the community by providing increased local electrical supply.

- (4) Were performance measures or goals identified to determine the success of the project? If so, describe them and indicate if they were met or exceeded.*

The initial application for banking the Emission Reduction Credits for the project had a projection of 43.6 Tons/Year of NO_x reduction. The final validated quantity after construction was completed was 41.9 Tons/Year.

Attachments

The attachments provided include the Certificate of Ownership of 41.9 Tons/Year of NO_x Emission Reduction Credits issued by the local Air Pollution Control District on June 22, 2005; The initial compliance source test showing the new turbine operating at 4 PPM NO_x; and a letter submitted to the Air Pollution Control District prior to permitting projecting a reduction of 47 Tons/ Year less the emissions from the replacement cogeneration system which brought the projection to 43.6 Tons/Year.