PUBLIC ABSTRACT

Applicant (primary) name: NeuCo, Inc.

Applicant's address: 200 Clarendon Street
Hancock Tower, T-31
Boston, MA 02116

Team Members (if any):
(listing represents only participants at time of application, not necessarily final team membership)

Name	City	State	Zipcode
Name	City	State	Zipcode
Name	City	State	Zipcode

(Use continuation sheet if needed.)

Proposal Title: Development and Demonstration of Integrated Optimization Software at the Baldwin Energy Complex

Commercial Application: X New Facilities Existing Facilities X

9 Other, Specify:

Technology Type: Advanced Optimization Software

Estimated total cost of project:
(May not represent final negotiated costs.)

Total Estimated Cost: $ 18,640,231

Estimated DOE Share: $ 8,388,104

Estimated Private Share: $ 10,252,127

PUBLIC ABSTRACT (contd.)

Anticipated Project Site(s): Baldwin Energy Complex, Baldwin, IL 62217
Location (city, county, etc.) State Zipcode

Location (city, county, etc.) State Zipcode

Location (city, county, etc.) State Zipcode

Type of coal to be used: Powder River Basin _____
Primary Alternate (if any)

Size or scale of project: 6000/tpd
Tons of coal/day input

And/or

1,768 MWe Megawatts, Barrels per day, etc.
Other (if necessary)

Duration of proposed project:
(From date of award) (Months) 48

PRIMARY CONTACT:
For additional information,
interested parties should contact:

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Name

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Position

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PUBLIC ABSTRACT (continued)

Brief description of project:

NeuCo proposes to design, develop, and demonstrate integrated on-line optimization systems at Dynegy Midwest Generation's Baldwin Energy Complex, which has agreed to serve as the host site for the project. The modules to be developed as part of this project will address sootblowing, SCR operations, overall unit thermal performance, and plant-wide profit optimization. The benefits will take the form of reduced NOx, increased fuel efficiency, and reliability. The increases in fuel efficiency (heat rate reduction) will also provide commensurate reductions in greenhouse gases, mercury, and particulates.

These solutions will build on NeuCo's ProcessLink™ technology platform. This technology was first applied for combustion optimization at wall-, roof- and tangentially-fired boilers; this application over the last four years has been successfully commercialized and is now providing substantial NOx reduction and fuel efficiency benefits to owners and operators of pulverized coal units located throughout the United States. The proposed work will build on this success by 1) demonstrating closed-loop combustion optimization for cyclone boilers; and 2) integrating the above-described newly developed solutions with combustion optimization, at all three of the plant's 600 MW coal-fired units.

The ProcessLink technology platform includes neural networks, genetic algorithms and fuzzy logic techniques from which to comprehensively apply optimization techniques to a variety of systems within coal power plants through existing control technologies and then link these systems to each other. It also supports the development of integrative optimization solutions, which use system-specific optimization applications as data sources and actuators. The overall architecture of this platform is designed to permit flexible deployment strategies; rather than requiring that all data and logic be resident on a single computer, the service model allows applications to leverage networked computational resources. Thus core to the design principles employed here is an application architecture built around interoperable services for the provision of high-value process management and business logic.

The proposed project will take place over a four year period from Calendar Year 2003 - 2006. A primary objective will be to develop the technology so as to maximize the overall benefits for the coal-fired power generation industry in the United States.