UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

August 5, 2011

Eric Albright
Senior Manager
ENVIRON International Corporation
19020 33rd Ave. W, Suite #310
Lynwood, WA 98036

Subject: Sierra Pacific Industries-Anderson Prevention of Significant Deterioration (PSD) Permit Application

Dear Mr. Albright:

We are writing in response to your PSD permit application for an Environmental Protection Agency PSD Approval to Construct and operate a new cogeneration unit capable of generating approximately 24 megawatts of electricity for the grid through the utilization of biomass fuels at Sierra Pacific Industries- Anderson. The initial application was received on March 29, 2010 and supplements to the application on July 1, 2010 and September 8, 2010. SPI's application was determined to be administratively complete on October 4, 2010. On January 11, 2011, EPA requested additional information from SPI. SPI submitted additional material on June 8, 2011.

SPI's June 8, 2011 response explains SPI's basis for not including other boiler designs for the project, such as bubbling bed and circulating fluidized bed boilers, in the analysis of best available control technology (BACT). We have reviewed SPI's June 8, 2011 submittal and find that it does not adequately evaluate all available technologies. SPI's basis for excluding other boiler designs for the project, on the ground that to do so would be "redefining the source," is inadequate. The enclosure to this letter provides additional comments in response to SPI's BACT analysis. We are requesting that SPI provide further analysis of BACT, including analysis of other boiler designs.

Please submit the requested information regarding alternative boiler technologies within 60 days. We will not be able to process your application until we receive this information. If you have any questions concerning a claim of confidentiality or the review of your application, please contact Omer Shalev at (415) 972-3538 or shalev.omer@epa.gov; or contact me at (415) 972-3974 or rios.gerardo@epa.gov.

Sincerely,

Gerardo C. Rios
Chief, Permits Office
Air Division

cc: Ross Bell, SCAQMD
John Waldrop, SCAQMD
Dave Brown, Sierra Pacific Industries
Michael Tollstrup, California Air Resources Board

Enclosure: Sierra Pacific Industries, Anderson-- Biomass-Fired Cogeneration Project

Best Available Control Technology

40 CFR 52.21(b)(12) reads as follows:

> *Best available control technology* means an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

According to SPI's application, the proposed modification will result in significant increases of oxides of nitrogen (NO_x), carbon monoxide (CO), particulate matter (PM), inhalable coarse particulate (PM_{10}) and fine particulate ($PM_{2.5}$).[1] Therefore, a BACT analysis must be performed for these pollutants. SPI's June 8, 2011 submission provides averaging times and emissions limits that SPI proposes as BACT for the project for these pollutants.

1. Alternative Biomass Boiler Designs

A BACT determination for this project has not been completed. In general, EPA recommends using the top-down process to satisfy the BACT requirement for the appropriate criteria pollutants. This analytical process has the following five steps:

Step 1: Identify all available control technologies.
Step 2: Eliminate technically infeasible options.
Step 3: Rank remaining control technologies.
Step 4: Evaluate most effective controls and document results.
Step 5: Select the BACT.

We do not agree with SPI's position, as stated in its June 8, 2011 submittal, that alternative biomass boiler designs such as bubbling bed and circulating fluidized bed boilers should be excluded in Step 1 of the top-down analysis. SPI's desire to "incorporate a new, reliable boiler with minimal alteration to operations...or changes to the existing facility" does not justify the exclusion of appropriate alternative biomass boiler designs. In particular, EPA believes that alternative boiler designs such as bubbling bed and circulating fluidized bed boilers should be included in the BACT analysis for this project because they represent an "application of production processes or available methods, systems, and techniques, including innovative fuel combustion techniques for the reduction of pollutant emissions," consistent with EPA's BACT definition (see above).

If SPI wishes to eliminate alternative boiler designs as options, SPI could potentially do

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[1] SPI's application also identifies significant increases in Greenhouse Gas (GHG) emissions; however, as the *Deferral for CO2 emissions from Bioenergy and Other Biogenic Sources under the Prevention of Significant Deterioration and Title V Programs* (76 FR 43490 July 20, 2011) will most likely apply to this project, we anticipate that the modification will likely not be subject to BACT requirements for GHGs.

so consistent with criteria such as those described in Steps 2 or 4 of EPA's top-down BACT analysis. EPA notes that a specific case of infeasibility due to the integration of new equipment or combustion processes with existing facility operations should be descriptive and may be made at Step 2 of the analysis. Considerations that take into account energy, environmental, economic impacts, and other costs should be descriptive and made at Step 4 of the analysis. If SPI wishes to exclude alternative boiler designs such as bubbling bed and circulating fluidized bed boilers, SPI should provide detailed explanations to justify its position such as why a fluidized bed boiler would not allow SPI to meet its project needs, or why it is infeasible as mentioned above.

2. BACT Emissions Limitations

Given that a fluidized bed boiler has not been eliminated from consideration for this project, we are providing feedback regarding the emissions limitations you proposed against recent emissions limits for a fluidized bed boiler.

NO_x

SPI proposes a NO_x emission limit of 0.15 lb/MMBtu on a 3-hour averaging period and 0.13 lb/MMBtu on an annual averaging period. Covanta Delano, a fluidized bed biomass boiler in Delano, California, has demonstrated compliance with a 0.10 lb/MMBtu limit for NO_x on a 24-hour rolling average basis.

CO

SPI proposes a CO emission limit of 0.35 lb/MMBtu on a 3-hour averaging period. Covanta Delano has demonstrated compliance with a 0.14 lb/MMBtu limit for CO on a 24-hour rolling average basis.

$PM/PM_{10}/PM_{2.5}$

SPI proposes a $PM/PM_{10}/PM_{2.5}$ emission limit of 0.0011 lb/MMBtu on a 3-hour averaging period. This new limit and averaging time present a significant reduction from what was originally proposed. We are still reviewing this proposed emission limitation, but do not have further comments at this time.

BACT for Startup and Shutdown

SPI's June 8, 2011 submission also outlines the BACT for startup and shutdown periods. We are reviewing the proposed emissions limitations; however, we recognize that these emissions limitations may change in order to reflect other considerations in supplementary material submitted for the BACT analysis.