CH2M HILL
2485 Natomas Park Drive
Suite 600
Sacramento, CA 95833
Tel 916.286.0224
Fax 916.614.3424

January 3, 2012

Mike Monasmith
Compliance Project Manager
Systems Assessment & Facility Siting Division
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Subject: Air Quality Letters to Docket
Hidden Hills SEGS Project (11-AFC-02)

Dear Mr. Monasmith:

Please find attached the following correspondence re Air Quality that needs to be submitted to Dockets:

- Revised Authority to Construct Forms dated December 19, 2011
- Email correspondence between Nancy L. Matthews of Sierra Research and Jon Becknell of Great Basin Unified Air Pollution Control District regarding Auxiliary Boilers dated December 31, 2011.

Thank you for adding these documents to the record.

Sincerely,
CH2M HILL

John L. Carrier, J.D.
Program Manager

Encl.

Nancy L. Matthews

From: Nancy L. Matthews
Sent: Saturday, December 31, 2011 11:07 AM
To: 'Jon Becknell' (jbecknell@gbuapcd.org)
Cc: Nancy L. Matthews; Gary Rubenstein
Subject: HHSEGS Auxiliary boilers question

Importance: High

Hi, Jon-- Here is an answer to your question below regarding the planned auxiliary boiler operation for Hidden Hills SEGS.

BSE expects to start the auxiliary boilers each summer weekday and shut down each evening (see Section 5.1.4.2, p. 5.1-36), so the boilers won't be on standby overnight. When they start up each morning, the starts will be warm so they will come into compliance (at 25% load) quickly enough that they won't require any separate emissions allowances besides the proposed 3 hour averaging period for normal operations. Cold starts would occur only when the boilers have been shut down for an entire weekend or longer, which is why BSE expects that they will require only about 8 cold startups per year. We request that you do not limit the number of cold startups per boiler per year, however—as long as the boilers comply with their maximum hourly, daily and annual limits, we would ask that the number of annual startups remain unlimited.

Note also that emissions and fuel use are calculated based on equivalent full-load hours—however BSE expects that the boilers may operate more hours at lower loads. For example, each boiler could operate 800 hours per year at 50% load (or, less realistically, 1200 hours at 33% load) while consuming the same quantity of fuel and producing the same total emissions as if it operated 400 hours at 100% load. (800 hours ÷ 7 hrs/day = 114 days, which is approximately equal to the 120-day operating window) (Because the auxiliary boilers are expected to have a turndown ratio of 4:1, they will be able to meet the ppm and lb/MMBtu emission rates in Table 5.1-22 down to about 25% load.)

If you have any other questions about this or any other aspect of the project, please do not hesitate to call.

Happy new year!

Nancy Matthews
Sierra Research
1801 J Street
Sacramento, CA 95811
nmatthews@sierraresearch.com
916-273-5124 (direct)
916-444-6666 (main)
916-444-8373 (fax)

From: Jon Becknell [mailto:jbecknell@gbuapcd.org]
Sent: Tuesday, December 20, 2011 4:44 PM
To: Nancy L. Matthews
Subject: Auxiliary boilers question

Nancy,

I have created a spreadsheet to validate the pollutant emissions and have matched pretty much all of the boiler criteria pollutant rates, based on exhaust flow rates at different operating modes and the corresponding concentrations (taken

presumably from mfg. performance charts or tables). The assumptions for the operation of the auxiliary boilers are eluding me though.

- On page 5.1-37 and in Table 5.1-20, it is stated that the equivalent full-load operation for each auxiliary boiler will be 400 hours per year.
- Based on the daily heat input of 21,000 MMBtu in Table 5.1-20, each auxiliary boiler would be used up to 7 equivalent full-load hours per day.
- This would imply that the boilers are operated 400 ÷ 7 = 57 days (out of the 120-day operating window).
- On page 5.1-41, it states that there will only be 8 cold startups per auxiliary boiler per year.
- This would seem to imply that there would be considerably more hot & warm standby hours (including overnight?).

Straighten me out; I'm confused. How many standby hours are there?

I'm also leaving on vacation until January 3rd, so no hurry on the reply. Merry Christmas & happy New Year!

Jon Becknell
Air Quality Specialist II
Great Basin Unified Air Pollution Control District
157 Short St, Bishop, CA 93514 (760) 872-8211
http://www.gbuapcd.org