Owens, Mike

From: Owens, Mike
Sent: Wednesday, October 14, 2015 4:07 PM
To: 'David Beatty'
Cc: 'Harold Burge'
Subject: RE: Hunter minimization plan

Dave and Harold,

There appears to be nearly a third of a page missing from the Hunter minimization plan. At the bottom of page 2, there is the beginning of a list of items to be recorded for each boiler startup event. Item "a" is listed at the bottom of the page. I would expect the list to continue at the top of page 3, to include the same types of items as listed on page 3 for shutdown events. But it does not. Since the footer for page 3 appears about two-thirds of the way down the page, not at the bottom of the page, I suspect the top third of page 3 is missing. Can you contact Pacificorp and see if they made an error in what they sent you? Thanks!

Mike Owens
Environmental Engineer
Air Program
EPA Region 8
303-312-6440

From: David Beatty [mailto:dbeatty@utah.gov]
Sent: Monday, October 05, 2015 4:05 PM
To: Owens, Mike
Subject: Hunter minimization plan

Pacificorp just sent this to me, they tell me this is the latest one.

PACIFICORP ENERGY
A PACIFICORP COMPANY

HUNTER PLANT
2 Miles South on Utah Highway 10 of Castle Dale, UT -- P.O. Box 569 -- Castle Dale, UT 84513

June 16, 2011

Mr. Bryce Bird
Utah Department of Environmental Quality
Division of Air Quality
195 North 1950 WestP.O. Box 144820
Salt Lake City, UT 84114-4820

Hunter Plant Startup and Shutdown Minimization Plan

Dear Mr. Bryce Bird:

PacifiCorp, Hunter Plant was issued Title V Operating Permit: 1500101001 January 7, 1998, and last revised May 16, 2008. Condition II.B.1.h(g) states "The permittee shall periodically revise the Hunter Plan for the affected source as necessary to satisfy the requirements of this Condition or to reflect changes in equipment or procedures at the affected source. Each such revision must be submitted to the Executive Secretary. [Authority granted under R307-401-8(1)(a)[BACT]; condition originated in AO DAQE-AN0102370012-08]" Attached is a revision of the Hunter Plant Startup and Shutdown Minimization Plan. This revision is due to equipment changes, specifically the replacement of Unit 2's precipitator with a baghouse and installation of low NO_x burners with secondary over fire air and forced oxidation on the SO_2 Scrubbers.

Should you have any questions regarding this revised Startup and Shutdown Minimization Plan, please contact Kevin Kitchen, PacifiCorp, Environmental Analyst (435-748-6280).

Sincerely,

Laren Huntsman,
Plant Manager – Managing Director Hunter Power Plant
Responsible Official

LKH:klk

cc: Dana Ralston -320 NTO
William K. Lawson, Director – Engrg/Env
Travis Larsen - Hunter Power Plant
File

PACIFICORP ENERGY

Hunter Plant Startup and Shutdown Minimization Plan

1. General Emissions Description

The intent of this Hunter Plant Startup and Shutdown Minimization Plan ("Minimization Plan") is to minimize the duration and extent of emissions during periods of startup and shutdown.

2. Startup General Description

Fuel oil is the initial heat input source used during boiler unit startup, and the unit startup begins when fuel oil is introduced into the boiler. As the boiler, turbine equipment and steam temperatures rise to design values, coal feeders are gradually placed into service concurrently with fuel oil firing. (Generally, two feeders are operational during the end phase of the boiler startup process.) As steam and equipment temperatures continue to rise while co-firing on fuel oil and coal, the boiler combustion process stabilizes adequately such that fuel oil firing can cease.

Startup ends no later than the point in time when flue gas temperatures at each outlet duct of the electrostatic precipitator (ESP) (Unit 1) or baghouse (Unit 2 and 3) reach a temperature of 220°F and two coal feeders have been placed into service, or 20 hour duration (300 hours per year per boiler and 750 hours per year combined for all 3 boilers).

Although the equipment is not fully effective until proper temperatures and stable conditions are reached, startup emissions are minimized by placing flue gas desulfurization (FGD) scrubber in service prior to the introduction of fuel to the boiler, and through the placement of the electrostatic precipitator (Unit 1) and baghouse (Unit 2 and 3) into service prior to coal being introduced into the boiler.

Placing the scrubber in service prior to firing fuel has the advantage of reducing sulfur dioxide emissions as well as aiding the removal of particulate matter emissions and reducing visual opacity. The disadvantage of this practice is that additional moisture is introduced into the flue gas stream and with the low stack temperatures encountered early during the startup period, there is a potential that moisture will interfere with the opacity monitor reading on Unit 1.

Exercising caution to ensure that the electrostatic precipitator collection plates and wires are not fouled with fuel oil, or the baghouse bags blinded with oil, which would have a long-term detrimental affect on performance. The ESP or baghouse will be placed into

service prior to the introduction of coal into the boiler, which provides for a reduction in particulate matter emissions and opacity.

3. Startup Definition – Units 1 through 3

For Hunter Units 1 through 3, startup begins with the introduction of fuel to the boiler.

Startup ends no later than the point in time when two coal feeders have been placed in service and the flue gas temperature at each of the outlet ducts of the electrostatic precipitator (Unit 1 and 2) or baghouse (Unit 3) reach a temperature of 220°F, or 20 hour duration (300 hours per year per boiler and 750 hours per year combined for all 3 boilers).

4. Shutdown General Description

Unit shutdown begins when the unit load or output is reduced with the intent of removing the unit from service. Shutdown ends at the point when fuel input to the boiler ceases.

Shutdown events will generally be of short duration. During planned unit shutdown events, generator electrical power output will be gradually reduced as steam generation and thermal input to the boiler, via coal combustion, are reduced. Eventually the generator will be disconnected from the electrical power grid and fuel input to the boiler will cease. The FGD scrubbers and ESP or baghouse will remain in service until the all fuel sources are removed from the boiler.

5. Shutdown Definition – Units 1 through 3

Shutdown is defined as the period beginning when the unit load is reduced with the intent of removing the unit from service, or when the unit trips as the result of a sudden and unforeseen failure or malfunction and ending when fuel flow to the boiler ceases.

6. Startup Emission Minimization

The Hunter Plant utilizes work practices to minimize emissions during startup events. These work practices include ensuring that appropriate pollution control equipment (FGD scrubbers and ESP or baghouse) are operational prior to the introduction of fuel oil or coal to the boiler during a startup event.

7. Reporting and Recordkeeping

Startup and shutdown emissions will be controlled by minimizing the frequency and duration of plant startup and shutdown events. Records will be maintained that document the number and duration of individual startup and shutdown events.

Hunter plant environmental personnel will record each boiler unit startup event and log the following information:

a. The boiler unit undergoing startup

and 3. Record startup and shutdown CO emissions on Unit 3 and on Units 1 and 2 when installation of low NOx burners with secondary over fire air have been completed.

Hunter plant environmental personnel will record each boiler unit shutdown event and log the following information:

a. The boiler unit undergoing shutdown
b. The date, time and duration of each shutdown episode including:
c. The start time of the shutdown event
d. The end time of the shutdown event.
e. Record startup and shutdown NO_x, SO_2 and CO_2 emissions, Units 1, 2 and 3. Record startup and shutdown CO emissions on Unit 3 and on Units 1 and 2 when installation of low NOx burners with secondary over fire air have been completed.

8. Summary

In Section 1 - 5, PacifiCorp has defined boiler startup and shutdown at the Hunter Plant. PacifiCorp has also identified work practices (Work Practice Plan S-1906) that Hunter Plant personnel utilize to minimize emissions during boiler startup and shutdown events. These work practices include ensuring that appropriate pollution control equipment (FGD scrubbers and ESP or baghouse) are operational prior to the introduction of fuel oil or coal to the boiler during a startup event.

Records will be maintained as indicated in Section 5 to document the date, time and duration of each boiler startup and shutdown event, emissions during startup and shutdown, as well as the total annual duration of boiler startup events, on a unit-specific basis.