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Greenhouse Gas Limits on New Electric Generating Facilities: First Strike

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Power Plant Greenhouse Gas Timeline

- **Feb 27, 2006:** 40 CFR 60, Subparts Da, Db, & Dc Amended
 - *“EPA has concluded that it does not presently have the authority to set NSPS to regulate CO₂”*
 - 11 states, 2 cities, and 3 environmental groups sued
- **Apr 2, 2007:** *Massachusetts v. EPA:* EPA must determine whether greenhouse gases (GHGs) are an air pollutant
- **Dec 7, 2009:** Endangerment Finding establish GHGs as air pollutants
- **Dec 30, 2010:** EPA settles lawsuit by agreeing to issue a proposed GHG electric generating unit (EGU) rule by Jul 26, 2011 and a final rule by May 26, 2012
- **Apr 13, 2012:** EPA proposes a new source performance standard (NSPS) for GHGs from new fossil fuel-fired EGU



Proposed EGU GHG Regulation

- Applies to fossil fuel-fired EGUs >25 megawatt electric (MWe)
- Emissions limit of 1,000 pounds of CO₂ per megawatt-hour (lb CO₂/MWh), as a 12-operating month annual average
- Emissions limit based on emissions analysis of natural gas combined-cycle (NGCC) plants
- For all other fossil fuels, proposal would require carbon capture and storage (CCS) technology
 - There are no currently operating commercial grade CCS operations on any U.S. Power Plants
- 30-year averaging option for coal and petcoke CCS units
 - 1,800 lbs. CO₂/MWh for the first 10 years
 - 600 lbs. CO₂/MWh for the remaining 20 years
 - Longest compliance demonstration period ever for EPA



Proposed EGU GHG Regulation Follow-up

- Proposed rule had 2,682,625 comments
“Most Comments for an EPA Proposed Rule”
- Final rule was expected on Apr 13, 2013
- EPA received three notices of intent to sue for failing to issue a final rule from 3 environmental groups, 10 states, 2 cities, and the Conservation Law Foundation
 - 21 other states attorneys general asked EPA not to settle
 - All three groups delayed filing a lawsuit, due to upcoming Administration announcement on climate change
- President Obama detailed his Climate Action Plan during a speech on Jun 25, 2013



The President's Climate Action Plan



I. Cutting Carbon Pollution

- Deploying Clean Energy
 - **Cutting Carbon Pollution from Power Plants**
 - Promoting Renewable Energy
 - Clean Energy Innovation
- 21st Century Transportation
- Cutting Waste Energy
- Reducing Other GHG Emissions
- Federal Initiatives (E.O. 13514)

“I’m directing the Environmental Protection Agency to put an end to the limitless dumping of carbon pollution from our power plants and complete new pollution standards for both new and existing power plants.” - President Obama, 6/25/2013

EPA Response

- EPA has submitted a new draft of the proposed EGU GHG rule to the Office of Management and Budget (OMB)[†]
 - Proposed rule is being reviewed by Federal agencies for comment before being issued
- What is in the proposed rule? Only EPA knows.



Best guesses:

- If continuing with one limit for all fuels, a new proposed rule would not be necessary
- NGCC remains the lowest GHG emitter
- CCS remains the only likely option for fossil-fuel fired EGUs
- A new proposed rule could set a new applicability date (e.g. June 12, 2006 expansion of the RICE NESHAP)

[†][“EPA sends climate rule to White House.”](#) *Politico*. 1 July 2013.

The President's Memorandum to EPA

On Jun 25, 2013 President Obama wrote a memorandum to EPA directing them to implement his Climate Action Plan with the following directions:

- Sep 20, 2013: Issue another proposed rule for GHGs from new EGUs (and issue final rule in a “timely fashion”)
- Jun 1, 2014: Issue proposed rule for GHGs from existing, modified, and reconstructed EGUs
- Jun 1, 2015: Issue final rule for existing, modified, and reconstructed EGUs
- Jun 30, 2016: States must submit state implementation plan (SIP) for existing, modified, and reconstructed EGUs



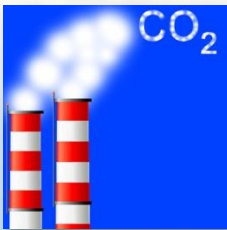
Next Steps

- EPA will issue proposed rule limiting GHGs from new EGUs
- EPA will issue final rule
 - Lawsuits will be filed by environmental groups, industry, and states
- EPA will issue proposed rule limiting GHGs from existing, modified, and reconstructed EGUs
- EPA will issue final rule
 - More lawsuits will be filed
- EPA will use lessons learned from implementing mercury standards and its 14-year new source review investigation into coal-fired power plants to implement an EGU GHG NSPS.
“The coal-fired power plant industry is an EPA national enforcement priority.” EPA Enforcement Website



Unintended Consequences

- The EGU NSPS will be the first federal air regulation providing an emissions limit and/or control requirement for GHGs
- This will have a profound affect on the Title V permit program
 - The GHG Tailoring Rule only established a separate Title V major source applicability threshold for GHGs
(Required to calculate facility-wide GHG potential-to-emit)
 - The EGU NSPS would automatically reclassify GHGs as a “regulated air pollutant,” used to define emissions units
(Required to calculate GHG for each emissions unit)
- From 40 CFR 70.2 – Regulated Air Pollutant:



(3) Any pollutant that is subject to any standard promulgated under section 111 of the Act ...
(enabling legislation for NSPS)

GHGs as Regulated Air Pollutants

A Title V permit application must contain:

- All emissions of regulated air pollutants
- Details on each emissions unit (equipment that emits regulated air pollutants), such as:
 1. All emissions of a regulated air pollutant;
 2. All emissions egress points (e.g. stacks);
 3. Emissions rates;
 4. Process rates, operating schedules, flow rates; and
 5. Control equipment.
- Listing of insignificant emissions units



Title V Permit for GHG Emissions Unit

Since there are no GHG limits or control requirements for anything other than EGUs, there would be no restrictions in the Title V permit. A blank page would be issued for an emissions unit that only emitted GHGs and is not regulated by the EGU NSPS.

Facility Name: **Boysen Power Company**
Facility ID: **134728738**
Emissions Unit: **Boysen Unit # 1 400-01**

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
none	none	none

2. Additional Terms and Conditions
None

II. Operational Restrictions
None

III. Monitoring and/or Recordkeeping
None

IV. Reporting Requirements
None

V. Testing Requirements
None

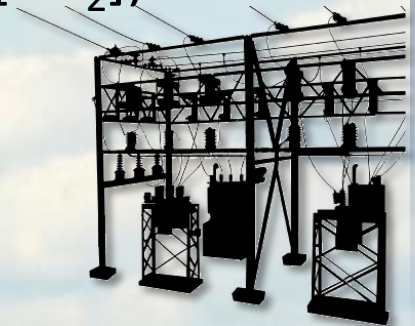
VI. Miscellaneous Requirements
None

Final Title V Permit - General Terms and Conditions

Potential GHG Emissions Units

Many sources of GHG emissions are not in a Title V permit, as GHGs are not considered a regulated air pollutant. After the EGU NSPS is issued, some of the following sources of GHGs would be considered emissions units:

- Transformers (Sulfur Hexafluoride [SF_6])
- Electrical Equipment (Perfluorocarbons [PFC] or SF_6)
- Refrigeration Equipment (Hydrofluorocarbons [HFC])
- Air Conditioning Equipment (HFC)
- Fire Suppression Systems (HFC or PFC)
- Industrial Wastewater Treatment (Methane [CH_4])
- Liquified Industrial Chemicals (Carbon Dioxide [CO_2])
- Geologic Sequestration of CO_2 from CCS (CO_2)
- Industrial Waste Landfills (CH_4)



Some Questions to Ponder

- When is an updated permit application required?
(Effective date of the EGU NSPS or permit renewal date)
- How should GHG emissions be calculated?
(GHG leaks from air conditioning equipment)
- How should GHG emissions be reported?
(By individual GHG or in carbon dioxide equivalents [CO₂e])
- Should insignificant emissions units that emit a significant amount of GHG be reclassified as significant emissions units?
- Does the state Title V application computer program allow for GHG emissions to be included for emissions units?
- Would EPA amend the Title V regulations so that insignificant includes GHG emissions units not otherwise regulated?
(Reducing paperwork for the Title V permit “blank page”)

Any Questions?

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