
Point Sources Work Group – August 16 & 17, 2018

In Attendance one or both days:

Primary Members

Ross Adkins
Eric Dick
David Fish
Frances Isgrigg
Naomi Morton Knight
Clark Milne
Dr. William Simpson
Kathy Stringham

Proxy Members

Robert Brown
Lee Hazen
Karl Hough
John Kelly
Kristina Smith
Buki Wright

Facilitation Team

Brian Rogers

Non-Voting Members

Nick Czarnecki
Cindy Heil

Work Group Discussion

All point sources

- BACT was triggered by the Serious Non-Attainment Area designation. MSM is more than likely.
- There is a timing conflict between what we can do and what we need to do
- Controls mandated by BACT or MSM don't solve the air quality problem; point sources should fund solutions that do so. Funding WSCOP and Weatherization directly impact PM_{2.5}
- Would a Compliance Order By Consent (COBC) allow for mitigation of SO₂ and PM_{2.5} from other sources to gain time for new plants (GVEA, Fort Wainwright/Doyon Utilities, Aurora)
- Conversion from #2 to #1 fuel oil for home heating and GVEA addresses the sulfur issue
- If ULSD brings SO₂ levels below limits, could point sources avoid BACT?
- Additional cost of ULSD is highly variable, could range from 3 cents to a dollar more; highly volatile based on market conditions. Average of 30-40 cents may not be meaningful as market conditions would change if ULSD is required. 2021 requirement of ULSD for marine uses may increase demand
- Would there be an opportunity for a precursor demonstration for SO₂ later (e.g. post-ULSD)?
- EPA does not consider stack height as taking emissions out of the mix – still counted in the airshed

GVEA issues

- Electric rate reduction for NOASH during exceedances – violates principle of cost causer/cost payer, but would cost on the order of \$100k / year
- Challenge may be to change thinking from economic dispatch to environmental dispatch – what would cause the least emissions
- Challenge of encouraging electric use by NOASH households – safety if using portable heaters
- Healy 1 will shut down in 2024 unless the consent decree is renegotiated or there is an extension. Additional issues there include PSD (prevention of serious deterioration) and regional haze
- GVEA was burning HAGO prior to 2014; it has ~8000 ppm sulfur compared to current use of #2 with ~2600 ppm sulfur. Burning #1 with ~900 ppm sulfur would cut SO₂ from GVEA by 2/3.

- BACT or MSM would require use of ULSD at 15 ppm
- Healy 2 startup will displace some of the Zehnder and North Pole SO₂ emissions; this displacement should be counted as part of the solution
- GVEA could accept a permit limit/reduction on the Zehnder and North Pole units as part of the plan, perhaps under 70 tons/year with provision to exceed in emergency situation
- #1 and ULSD burn cleaner, which is better on parts, but worse on efficiency
- GVEA would not upgrade or replace Zehnder and North Pole units under a COBC that provided additional time for new units

UAF issues

- UAF will see a reduction in SO₂ when the new boiler comes on line.
- UAF will schedule a tour for the Work Group
- UAF could provide some electricity to GVEA in the winter

Fort Wainwright / Doyon Utilities issues

- Options study underway; may buy electricity from GVEA and add distributed heating plants
- Plant will need replacement within 10 years; Fort Wainwright will need backup heat and electricity
- Question: how many tons per year of SO₂ are being produced? Is there an option to pay offsets to buy time for replacement of the plant?

Aurora plant issues

- Less than 15-year useful life with existing boilers without major modifications
- There is no formal replacement plan, but oldest boilers will need to be replaced within 15 years and be new technology, will need spray dry absorbers
- Company has an economic struggle for sufficient revenues from 243 customers to operate, maintain and upgrade facilities
- Cost of BACT estimated by State DEC at \$12 million, but Aurora thinks \$20-30 million
- Cost of MSM estimated by State DEC at \$60-65 million
- Likely impact of BACT or MSM is closure of plant, which would mean up to 240 new oil or natural gas boilers in the downtown core
- Aurora would consider offset mitigation by building wood kiln but would need to identify capital and operating dollars. A kiln combined with dry wood sales requirement and opportunity to swap wet for dry wood would affect wood stove emissions
- District heat expansion is possible, but would need to about double the penetration to serve the whole downtown
- There is 1/3 more capacity for district heat without expansion of the plant if electric is kept static

General

- Would like to see modeling of incremental impact of proposals
- Need to add monitors to provide better data for decision-making: are the Fairbanks hot spots real over a 24-hour period, and are they wood smoke dominated?

- Monitoring should focus on North Pole airshed; we should add sulfur monitoring in North pole
- We need economic analyses of the choices for heat and electricity, and among choices for control measures
- If 20 percent of $PM_{2.5}$ is SO_2 originated, how much of this is household? One way to test would be an experimental project to require #1 Fuel Oil for all residential use for a year and monitoring the change in SO_2 . Based on the difference in sulfur content between #1 and #2, we could calculate the proportion of SO_2 coming from households.