



Memorandum

December 16, 2011

To: General Assembly, City and Borough of Sitka
Via: Jim Dinley, Municipal Administrator
From: Christopher Brewton, Utility Director *COB*
Subject: EPA NESHAP RICE

In June 2004, the U.S. Environmental Protection Agency (EPA) promulgated 40 CFR 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE). The purpose of Subpart ZZZZ was to regulate emissions of hazardous air pollutants (HAP) from stationary spark ignited engines (gasoline, natural gas, propane). On March 3, 2010, EPA revised 40 CFR 63 Subpart ZZZZ to include stationary compression ignited engines (diesels).¹ For the moment, this is a bad news – good news story. First the bad news.

These new regulations are applicable to all of our Jarvis Diesel Plant engines and must be in compliance no later than May 13, 2013. What are these requirements? There are specific testing, treatment, and monitoring requirements. Each engine must be independently tested to measure existing engine CO emissions.² Based on this initial evaluation, an emission control technology must be selected to provide a 70% reduction in measured CO. There are several technologies available, but the most common is active oxidation catalyst. This is similar to the catalytic convertor on automobiles but on a significantly larger scale. Finally, a continuous parameter monitoring system (CPMS) must be installed on each engine to constantly monitor the engine and catalyst to ensure emission reductions are met.

There will be significant costs for engine testing and installation of catalyst and monitoring equipment and there will be increases in future operational costs as well. Although emissions testing have not been conducted for our specific engines, we have a good idea of estimated costs based on an evaluation completed for the Ketchikan Public Utilities (KPU) diesel plant. KPU has a Fairbanks Morse diesel that is similar in size and age to our three (3) Fairbanks Morse diesels. The estimated cost of an oxidation catalyst for the KPU engine is \$191,000, including CPMS. I expect a similar cost for our Caterpillar (D4) diesel, resulting in potential costs of \$764,000 for the Jarvis Diesel Plant, not including engineering design and installation costs.

Besides the initial capital costs, the regulations require further emission testing of the engines every 8,760 hours or 3 years. The active catalyst will also require replacement every 10,000 hours. In addition to the substantial reporting activities currently required for our diesel operations, semiannual compliance reports must be submitted as well. All told, this is a new **\$1,000,000** regulation we must comply with.

¹ Federal Register/ Vol. 75, No. 41/Wednesday, March, 2011/Rules and Regulations

² EPA has identified 30 pollutants under HAP. However for the purposes of this regulation, EPA has selected formaldehyde (CH₂O) as a surrogate for HAP emissions, and further selected carbon monoxide (CO) as a surrogate for CH₂O, therefore, the emission standards are written in terms of CO reduction.

These regulations seem a bit of overkill. In fact, they are. In the notice, the EPA recognized that engines located in remote areas of Alaska have special challenges that should be taken into consideration.³ The EPA defined the distinction between rural and urban areas with the provision that areas not accessible by the Federal Aid Highway System (FAHS) are deemed rural.

Now for the good news. The EPA recognized remote Alaska is different, and although not technically exempt from these regulations, they established a less rigorous emissions treatment standard for these rural engines. It is known as Generally Available Control Technologies (GACT). Whereas, the above mentioned oxidation catalyst treatment standard is Maximum Achievable Control Technology (MACT). GACT is described as methods, practices, and techniques which are commercially available and appropriate for application considering economic impacts and technical abilities of the sources.⁴

In terms of this regulation, GACT is essentially good maintenance practices; change oil and filters every 500 hours or annually, inspect air filters every 1,000 hours, and inspect hoses and belts every 500 hours. We can happily live with that. Although the oil change interval is greater than manufacturers recommended levels (1,000 hrs), and an oil change for D4 alone costs \$10,000. Unfortunately, due to a quirk in the regulations we are required to utilize MACT as Sitka is classified as an urban area. Why is this? As it turns out, the definition of rural in NESHAP was derived in part from a 1995 decision regarding diesel fuel.

In 1995, the Alaska Department of Environmental Conservation (ADEC) was required by EPA to develop a transition plan to ultra low sulfur diesel fuel (USLD).⁵ In the development of this plan, it was clarified how marine highway communities were to be classified regarding rural/urban status. Basically, the communities that did not have regular year-round ferry service were considered remote/rural. Therefore, communities served by regular year-round ferry service, by definition, are urban. In addition to Sitka, this urban classification includes other major metropolitan areas such as; Angoon, Tenakee, Kake, Hoonah, and Hollis.

Fortunately, our Alaskan delegation is aware of this onerous regulation and recently sent a letter to EPA Administrator Lisa Jackson seeking relief.⁶ Their request is to limit the application of NESHAP RICE to only communities served by the Alaska Railbelt electric grid. Should this effort fail, this expense is something Sitka can ill afford and we would have to scramble to ensure compliance. It is important to recognize this is a calculated risk we are taking by not taking immediate action to meet compliance. We could be subject to fines and prosecution if regulations stand and we cannot get the MACT installed before May 13, 2013.

We must complete several critical and expensive utility projects to ensure we can continue to provide reliable and reasonable cost energy to our customers. I cannot, in good conscience, recommend we waste our ratepayer's money to comply with a rule that is clearly inappropriate and does nothing to address our utility's urgent needs. This issue will be revisited after we have exhausted all avenues of relief from this regulation.

³ Federal Register/ Vol. 75, No. 41/Wednesday, March, 2011/Rules and Regulations, page 9658

⁴ Senate Report No. 101-228, December 20, 1989

⁵ ADEC communication, June 25, 2010

⁶ Ltr to EPA dtd December 14, 2011, from Sen. Murkowski, Sen. Begich, Congressman Young

Congress of the United States
Washington, DC 20510

December 14, 2011

The Honorable Lisa Jackson, Administrator
U.S. Environmental Protection Agency
Ariel Rios Federal Building
1200 Pennsylvania Ave., NW, Room 3000
Washington, DC 20460

Re: 40 CFR 63 Subpart ZZZZ Rules on air quality under NESHAP RICE

Dear Administrator Jackson:

As members of the Alaska Congressional Delegation, we ask you to re-examine and modify the definition governing which rural Alaska communities must meet a higher and more expensive standard under the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (NESHAP RICE). It is our understanding that EPA is considering changes to the NESHAP RICE regulations in order to address a petition on stationary diesel generation used for emergency backup. We ask you to also consider changes to the rule for rural Alaska utilities during this process.

The NESHAP RICE regulation as finalized in August 2010, under 40 CFR 63, Subpart ZZZZ, generously excludes “areas of Alaska not accessible by the Federal Aid Highway System (FAHS).” However, a number of Alaska communities on the Alaska road system or served only by the Alaska Marine Highway System share the same characteristics as those excluded from the rule. We suggest a more equitable and cost-effective rule would amend this definition to exempt all non-Railbelt power grid communities in Alaska from the new NESHAP RICE regulation.

Utilities throughout most of rural Alaska share a reliance on stationary diesel generation for base-load or backup generation. In addition, those utilities are confronted by great distances and high transportation costs for diesel fuel, goods and services; long, cold winters with low levels of light; extremely low customer density and a small number of ratepayers who can share additional costs; and a lack of connection to a major electric grid. Connection to the “Federal Aid Highway System” does not prove the absence of these conditions.

Additionally, rural generation seldom constitutes a significant source of hazardous air pollutants given the small populations served by widely geographically dispersed utility generation facilities. Therefore, these high costs provide little public benefit.

The failure of the current regulation’s exemption is clearly seen in small Southeast Alaska communities “accessible” by one scheduled visit per month in the winter by an Alaska Marine Highway vessel, a component of the Federal Aid Highway System. That ferry stop in no way lowers cost-of-service or provides a larger customer base. Similarly, small,

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isolated communities on the Alaska and Richardson Highways not connected to the Railbelt grid face the same fundamental challenges.

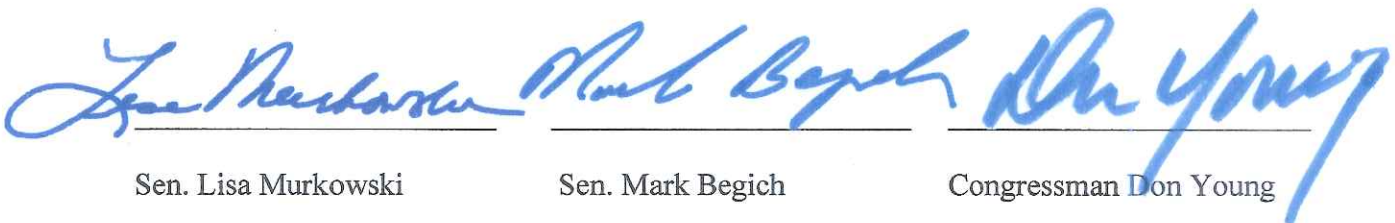
The three largest communities in Southeast Alaska face a similar issue. While Juneau, Ketchikan and Sitka predominately rely on hydropower, they maintain diesel generation for emergencies, exceptional peak demand and times of low water. The utilities serving these communities may have a few more customers to share the costs but only use diesel generation for short periods of time. Relative to towns in Lower 48 served by the national grid, the costs to comply are extremely high, and all of the issues of distance, cost and extreme climate apply to these communities as well.

A couple of examples illustrate these dramatic costs. The City of Ketchikan, served by the Alaska Marine Highway System, predominately uses hydroelectric power but employs backup diesel generation. It would need to spend an estimated \$1.5 million initially and a few hundred thousand dollars per year to comply with the new standards. This is roughly the equivalent of 25 cents per kilowatt hour, even though its backup generation on average is utilized only 1.18 percent of the year. Both Alaska Power and Telephone Company and Copper Valley Electric Association, which serve small, isolated towns along the Alaska and Richardson Highways, will have to spend hundreds of thousands of dollars each year, raising already high retail rates by at least 6 cents per kilowatt hour, for negligible reductions in pollutant levels.

As a Delegation, we ask EPA to limit the application of the NESHAP RICE regulation to only communities served by the Alaska Railbelt electrical grid. Such a definition will still require communities in the urbanized Alaska Railbelt to comply with the air emission reduction regulations, protecting human health, while avoiding the high costs of compliance with the rules by utilities serving smaller, rural towns statewide. This is a particularly important issue for rural Alaskans given their exceptionally high costs of energy. We sincerely hope the agency will re-examine this issue and accept this more equitable and cost effective application of the rule.

Thank you for considering this request.

Sincerely,



Sen. Lisa Murkowski

Sen. Mark Begich

Congressman Don Young

cc: Dennis McLarren, Regional Administrator, EPA Region 10