

MEMORANDUM

TO: EPA-HQ-OAR-2002-0056

FROM: William H. Maxwell, Energy Strategies Group, Office of Air Quality Planning and Standards, EPA (D243-01)

DATE: May 31, 2006

SUBJECT: Analysis of operating oil-fired electric utility steam generating units – revised based on public comments received as a result of the Agency’s reconsideration of the final Section 112(n) Revision Rule

On March 15, 2005, EPA finalized a documentation memo providing its analysis of operating oil-fired electric utility steam generating units (EPA-HQ-OAR-2002-0056-6178). That memo contained Table 3, “Summary of information for 11 oil-fired plants listed in previous table.” As a result of information obtained through the public comment period (EPA-HQ-OAR-2002-0056-6481.1) for the Agency’s reconsideration of the “Revision of December 2000 Regulatory Finding on the Emissions of Hazardous Air Pollutants From Electric Utility Steam Generating Units and the Removal of Coal- and Oil-Fired Electric Utility Steam Generating Units from the Section 112(c) List” (Section 112(n) Revision Rule; 70 FR 62200; October 28, 2005) and from the latest U.S. Department of Energy, Energy Information Administration (DOE/EIA) data on existing generating units for 2004 (EPA-HQ-OAR-2002-0056-6694), EPA is providing a revised Table 3.

Since issuance of the February 1998 Report to Congress, we have learned that a number of the 11 plants have reduced or eliminated their Ni emissions through unit closures or fuel switching (OAR-2002-0056-2046; OAR-2002-0056-5998, EPA-HQ-OAR-2002-0056-6481). This memo presents a reassessment of the data provided in the March 15, 2005, memo. Of the 42 units that made up the 11 plants, 13 units have permanently ceased operation or are out of service (OAR-2002-0056-2046; OAR-2002-0056-5998, EPA-HQ-OAR-2002-0056-6481) and an additional 2 units will cease operation within 3 years (EPA-HQ-OAR-2002-0056-6481.1). Five units have reported to the DOE/EIA that their fuel mix now includes natural gas, which was not reported in the earlier data (OAR-2002-0056-5998, EPA-HQ-OAR-2002-0056-6481). An additional three units report using either natural gas or distillate oil (rather than residual oil) in 2003 or 2004 (OAR-2002-0056-5998, EPA-HQ-OAR-2002-0056-6481). Six units have changed their fuel to natural gas exclusively since the data for the February 1998 report were obtained

(OAR-2002-0056-2046; OAR-2002-0056-5998, EPA-HQ-OAR-2002-0056-6481). One unit is now reported to be a combustion turbine rather than a steam boiler (EPA-HQ-OAR-2002-0056-6694). Finally, 2 units fire a residual oil/natural gas mixture and have limited their residual oil use through permit restrictions to no greater than 10 percent of the fuel consumption between April 1 and November 15, with natural gas being used for at least 90 percent of total fuel consumption (OAR-2002-0056-2046 at p. 13). These changes mean that 31 of the original 42 units have taken, or will within 3 years take, steps to reduce or eliminate their Ni emissions; only 3 of the original 11 plants, 2 in Hawaii and 1 in Florida, have units that appear not to have taken any actions that would result in reduced Ni emissions. Of the 11 units that appear to not have taken steps to reduce or eliminate their Ni emissions, only the 8 units at the 2 Hawaiian plants report using only oil. The remaining three units report firing both oil and natural gas (as was also reported in the RtC). The 11 plants, along with their fuel mix and operational status in 1994, 2003, and 2004 and a note as to whether the units have taken any action that would result in reduced Ni emissions are provided in Table 3 (revised).

Table 3 (revised). Summary of information for 11 oil-fired plants listed in previous table.

Plant	Unit	City	State	Fuel mix/operational status ^a			Actions taken to reduce Ni emissions
				1994 ^b	2003 ^c	2004 ^d	
Waiau	Waiau 3	Pearl City	HI	Oil	RFO	RFO	No
Waiau	Waiau 4	Pearl City	HI	Oil	RFO	RFO	No
Waiau	Waiau 5	Pearl City	HI	Oil	RFO	RFO	No
Waiau	Waiau 6	Pearl City	HI	Oil	RFO	RFO	No
Waiau	Waiau 7	Pearl City	HI	Oil	RFO	RFO	No
Waiau	Waiau 8	Pearl City	HI	Oil	RFO	RFO	No
Honolulu	Honolulu 8	Honolulu	HI	Oil	RFO	RFO	No
Honolulu	Honolulu 9	Honolulu	HI	Oil	RFO	RFO	No
New Boston	New Boston 1	South Boston	MA	NG/Oil	NG	NG	Yes ^e
New Boston	New Boston 2	South Boston	MA	Oil	Not operating	Not operating	Yes
Astoria	Astoria 1	Astoria	NY	NG/Oil	Not operating	Not operating	Yes
Astoria	Astoria 2	Astoria	NY	NG/Oil	NG	NG	Yes
Astoria	Astoria 3	Astoria	NY	Oil	RFO/NG	RFO/NG	Yes
Astoria	Astoria 4	Astoria	NY	NG/Oil	RFO/NG	RFO/NG	No
Astoria	Astoria 5	Astoria	NY	Oil	RFO/NG	RFO/NG	Yes
Mystic	Mystic 4	Everett	MA	Oil	Not operating	Not operating	Yes
Mystic	Mystic 5	Everett	MA	Oil	Not operating	Not operating	Yes
Mystic	Mystic 6	Everett	MA	Oil	Not operating	Not operating	Yes
Mystic	Mystic 7	Everett	MA	NG/Oil	RFO/NG	NG/RFO	Yes ^f
T.G. Smith	T.G. Smith S1	Lake Worth	FL	Oil	NG/RFO	Out of service	Yes
T.G. Smith	T.G. Smith S2	Lake Worth	FL	Oil	Out of service	Out of service	Yes
T.G. Smith	T.G. Smith S3	Lake Worth	FL	Oil	NG/RFO	NG/RFO ^g	Yes
T.G. Smith	T.G. Smith S4	Lake Worth	FL	Oil	Out of service	Out of service	Yes
Bryan	Bryan 3	Bryan	TX	Oil	NG/DFO	NG	Yes
Bryan	Bryan 4	Bryan	TX	Oil	NG/DFO	NG/DFO	Yes
Bryan	Bryan 5	Bryan	TX	Oil	NG/DFO	NG/DFO	Yes
Bryan	Bryan 6	Bryan	TX	NG/Oil	NG/DFO	NG/DFO	Yes
Bryan	Bryan 7	Bryan	TX	Oil	NG/DFO	NG/DFO ^h	Yes
Riviera	Riviera 3	Riviera Beach	FL	NG/Oil	RFO/NG	RFO/NG	No
Riviera	Riviera 4	Riviera Beach	FL	NG/Oil	RFO/NG	RFO/NG	No
Devon	Devon 3	Millford	CT	Oil	Not operating	Not operating	Yes
Devon	Devon 4	Millford	CT	Oil	Not operating	Not operating	Yes
Devon	Devon 5	Millford	CT	Oil	Not operating	Not operating	Yes
Devon	Devon 6	Millford	CT	Oil	Not operating	Not operating	Yes
Devon	Devon 7	Millford	CT	Oil	RFO/NG	RFO/NG	Yes
Devon	Devon 8	Millford	CT	Oil	RFO/NG	RFO/NG	Yes
Alamitos	Alamitos 2	Long Beach	CA	NG/Oil	NG	NG	Yes
Alamitos	Alamitos 4	Long Beach	CA	NG/Oil	NG	NG	Yes
Alamitos	Alamitos 5	Long Beach	CA	NG/Oil	NG	NG	Yes
East River	East River 5	New York	NY	Oil	Not operating	Not operating	Yes
East River	East River 6 ⁱ	New York	NY	Oil	RFO/NG	RFO/NG	Yes
East River	East River 7 ⁱ	New York	NY	Oil	RFO/NG	RFO/NG	Yes

^a RFO - Residual fuel oil

DFO - Distillate fuel oil

NG - Natural gas

b RtC; EPA-HQ-OAR-2002-0056-0173

c Existing Generating Units in the United States by State, Company and Plant, 2003;
existing generating units as of January 1, 2004 (EPA-HQ-OAR-2002-0056-5998)

d Existing Generating Units in the United States by State, Company and Plant, 2004;
existing generating units as of January 1, 2005 (EPA-HQ-OAR-2002-0056-6694).

e New Boston 1 will operate for only 3 more years (EPA-HQ-OAR-2002-0056-6481.1)

f Mystic 7 will be shut down at the earliest possible time (EPA-HQ-OAR-2002-0056-
6481.1)

g T.G. Smith Unit 3 burns No. 5 fuel oil for compliance with the SO₂ requirements and
only operates approximately 200 to 300 h/yr (EPA-HQ-OAR-2002-0056-6481.1)

h Bryan 7 is listed in the 2004 DOE/EIA summary as being a combustion turbine, rather
than as a steam boiler (EPA-HQ-OAR-2002-0056-6694).

i Agreement limits fuel oil use to less than 10 percent of fuel consumption between April 1
and November 15. Natural gas used for at least 90 percent of fuel consumption (EPA-
HQ-OAR-2002-0056-2046)