

Appropriate Permit Limits for Proposed Lee County Energy Recovery Facility December 13, 2001

At the request of the FDEP, the Lee County project team has reviewed the current plant operational data as well as test data from other facilities. The purpose of this effort is to determine appropriate permit limits for the proposed new unit for the Lee County Energy Recovery Facility. The starting point for the permit limits begins with the 1995 New Source Performance Standards. USEPA based the performance limits in the NSPS on the most recent available data. This included 12 units with spray dry absorbers, fabric filters and selective non-catalytic reduction systems operating in 1994, as well as earlier data. Overall, EPA used performance test data from over 60 municipal waste combustor plants (60 FR 65391, 19 December 1995 and 60 FR 65396, 19 December 1995). As required by Congress, the NSPS "MACT Floor" is set at the level achieved by the best performing plant. Although EPA did not include European test data, they did indicate that the European data would not have changed the limits (59 FR 48254, 20 September 1994, Section VII - *Comparison of the Proposal and European Emission Limits*).

Due to the United States Supreme Court "Carbone" ruling, decided May 16, 1995, (1994 WL 183594 (U.S.N.Y.)); little development of new MWCs has occurred in the United States. Hence, the conclusion reached by USEPA at that time should still be valid. There has been some additional experience gained in the operation of facilities equipped with modern pollution control trains including spray dry absorbers, fabric filters, selective non-catalytic reduction systems and activated carbon injection systems. Enhanced combustion controls have also improved overall municipal waste combustor performance (good combustion practice). The only potential modifications to these designs for a new facility could be the use of a selective catalytic reduction system for NO_x control. These systems began being applied to municipal waste combustors in Europe and Asia in the early 90's and were reviewed by USEPA in setting the NSPS. They will be reviewed further, based on current costs, in the BACT review for this project.

Therefore, based on the BACT considerations, this facility will be designed and operated in accordance with the NSPS standards. Regardless of the permit limits, there will be no change in the design or operation of the proposed facility. The operation of the combustor, as well as the pollution control train, is continuously monitored and strictly regulated. The steam load is tied to the most recent dioxin stack tests. It cannot exceed more than 110% of the last approved stack test. This effectively limits the load to the combustor. Additionally, the inlet temperature to the bag house is monitored to ensure that condensed metals are collected on the particulate in the bag house. This is also tied to the last approved dioxin stack tests and cannot exceed 25 degrees. In addition, there are inlet/outlet monitors for SO₂, which monitors the performance of the acid gas control equipment. SO₂ is one of the more difficult acid gas species to remove and control of SO₂ to the NSPS limits ensures sufficient control of HF and HCl. The combustion related conditions are monitored continuously through CO and NO_x continuous emission monitors to ensure proper combustion control. There are also opacity and pressure drop monitors that ensure proper performance of the bag house. These continuous air pollution monitors are also supplemented by process monitors used by control room personnel to ensure the proper operation of the facility. There is also a monitoring requirement for the carbon feed rate to ensure adequate control for mercury and other

volatile metals. The pollution monitors are verified by quarterly performance specification tests. Those regulated pollutants not monitored by continuous emission monitors are typically subject to periodic stack tests. The effect of the overall design, control, and monitoring systems ensures that the operation of the plant is subject to continuous agency oversight and hence fully protective of the public. Regardless of the limit set in the permits, there will be no difference in the design or operation of the facility. Overly stringent permit limits merely increase the risk of spurious "exceedences" of an over-restrictive standard.

It should also be noted that the metals emissions are not guaranteed by the vendor and are the responsibility of the County. The County has maintained an aggressive materials separation/recycling program as outlined in the Materials Separation Plan for this project. There is a limited ability to predict what the variability of the waste stream will be over the life of the facility and life of the permit. The permit limits must be set to accommodate the full range of variability that will occur in the waste stream over this time. In order to provide reasonable assurance that a lower limit could be met for the NSPS metals (cadmium, lead, mercury) additional control equipment would be required, likely including a wet ESP. Costs for such additional control would be prohibitive, both on a cost per ton removed and the effect it would have on the tipping fee for the facility.

Due to the limited amount of test data available for the stack test pollutants (21 data points), there is some difficulty in determining what, if any, reductions can be achieved in practice to allow lower permit emission limits than the NSPS. Since the permit limits are deterministic, pass/fail limits that can never be exceeded, it is appropriate that they accommodate the full range of normal operation. Therefore, historical operating data supports the use of the NSPS limits as aggressive, appropriate permit limits.

cc: Joe Treshler
Lindsey Sampson
Samuel Rosania
David Dee
Brian Bahor
Don Elias
W. Corbin
M. Hober
S. Heath
Project File: MPLC

