UWAG
Utility Water Act Group©

April 16, 2007

FILE NO.: 29142.070318

VIA ELECTRONIC MAIL

Mr. Ronald P. Jordan
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Mail Code 4303T
Washington, DC 20460

Revised Draft Generic Sampling and Analysis Plan for Coal-Fired Steam Electric Power Plants

Dear Ron:

On behalf of the Utility Water Act Group, I am providing the following comments on EPA's Revised Draft Generic Sampling and Analysis Plan for Coal-Fired Steam Electric Power Plants, dated March 31, 2007 (the "Plan"). We appreciate the opportunity to provide input on the Plan, and hope our comments will be useful to you.

Many of the comments reflect our earlier discussions with you. UWAG supports a sampling program that is designed with adequate quality assurance/quality control, applies proper methods, and calls for an appropriate number and type of samples.

We also cannot stress enough that the goal of selecting sampling sites should be to select sites that are representative of the industry as a whole. A decision about whether to promulgate new effluent guidelines should not be based on samples taken from facilities with unusual configurations or treatment systems. We urge EPA to do its best to identify facilities within the mainstream of the industry.

Additionally, UWAG believes it is very important that EPA receive and review data from the first site sampled before it conducts sampling at the subsequent sites, even if the data review were only on preliminary data. UWAG would like to review all data from the first site with EPA as soon as it is available so that any analytical problems or concerns can be dealt with prior to the second sampling event. This process would allow for any needed adjustments to the analytical approach and would improve the reliability of the data collected.

I. Changes Regarding Dissolved Metals and Organics Analysis are Appropriate

UWAG appreciates EPA's inclusion of dissolved metals analysis in the Plan. Whether a metal is in the dissolved phase is important to know for the purposes of examining treatability and identifying possible sources of constituents in a commingled wastestream. UWAG believes data on dissolved metals should be an integral part of EPA's sampling effort.

We also support EPA's decision to refrain from analyzing for organics. Based on routine NPDES permit application sampling, UWAG members report that organics are not typically found in industry wastestreams. For that reason, UWAG agrees with EPA that analyzing for organics is not likely to be productive.

II. EPA Should Conduct Source Water Sampling

UWAG strongly supports EPA's inclusion of source water sampling in the Plan. UWAG believes it is essential that source water data be collected at every facility that does not have long-term or recent source water data for nutrients or metals. Our experience with EPA's loadings analysis based on PCS reports demonstrates that common metals such as iron, copper, and aluminum can be present in intake water in surprisingly high concentrations. The attached tables, excerpted from UWAG's comments on the 2006 Effluent Guidelines Plan, show that intake water pollutants are very prevalent and can account, in some cases, for the majority of loadings supposedly attributable to a facility. For each of the outfalls listed in the tables, the reduction in loading is based on metals present in the intake water. Without sampling source water, EPA will not be able to determine qualitatively what pollutants are added by the facility's operations.

Therefore, intake water samples are important for determining the source waterbody's contribution of metals to the facility. While EPA may argue that, without a comprehensive mass balance analysis, the contribution of metals from the source waterbody is irrelevant, our experience demonstrates otherwise. Treatment systems must be designed in light of the quality of the intake water, and it is a fundamental factor that accounts for certain differences between power plants.

III. One-Day Grab Samples Are Insufficient

As we have stated in several recent meetings, EPA's plan to rely on one-day grab samples to characterize several kinds of influents and effluents will not capture any variability of the various wastestreams to be sampled. In particular, FGD wastewater and ash pond influent can have considerable variability in the level of solids. At a minimum, UWAG

recommends that 24-hour composite samples be used for all samples except those requiring clean methods. For peaking units, it is especially important to use composite samples because the sampling results will vary widely depending on the time within the peaking cycle. Also, composite sampling is routinely used for permit applications and compliance purposes and therefore is appropriate to be used for evaluation of facility performance.

Grab samples (which EPA anticipates will be unpaired influent and effluent samples) also will not provide information on the level of treatment within the FGD or ash pond system. Any conclusions about efficacy of treatment would be based on the erroneous assumption that the influent sample is representative of the influent that would be paired with the effluent sample. Only paired samples of influent and effluent, timed to account for residence time within the treatment system, can provide treatment efficacy information.

Additionally, UWAG strongly recommends that at least two additional samples per sampling point should be collected on separate days. See also EPRI's Sampling and Analytical Plan Guidance for Water Characterization of Coal-Fired Steam Electric Utility Facilities (March 2007) (EPRI Generic Sampling Plan), p. 4-6.

IV. The Number of QA/QC Samples Should be Increased

As EPRI indicated in its April 16, 2007 memo to EPA regarding matrix interferences, EPA's plan to perform quality assurance/quality control ("QA/QC") on 10 percent of the samples from a given matrix (Plan, Section 2.9) is inadequate. The complex matrices that EPA will be dealing with merit a higher level of QA/QC examination. UWAG urges EPA to adopt EPRI's recommendations for field blanks, method blanks, matrix spike/matrix spike-duplicates, quality control samples, and "blind" reference samples. Please see EPRI's Generic Sampling Plan for additional details on appropriate QA/QC.

Also, UWAG notes that EPA has not yet released its Quality Assurance Plan for review. The QAP is an essential part of the sampling program, and the industry should be given an opportunity to review and comment on the QAP before sampling begins.

V. Metals Speciation is Necessary for Selenium and Arsenic

For purposes of treatability analysis, UWAG recommends that EPA perform metals speciation for selenium and arsenic. EPRI has already discussed the emerging science of selenium speciation in our meetings. Particularly for selenium but also for arsenic, speciation is challenging in the laboratory, but necessary to determine the form of the metal present. Only

with this information is it possible to understand why a constituent is removed or not removed by a specific treatment system.

VI. Matrix Spikes and Matrix Spike Duplicates are Necessary

As described in the EPRI Generic Sampling Plan and in EPRI's supplemental memo on matrix interferences, it is essential that one matrix spike/matrix spike duplicates (MS/MSDs) be conducted for each potential matrix (*e.g.*, at a minimum ash pond effluent or final discharge and the FGD wastewater treatment effluent, but preferably these wastestreams as well as ash pond and FGD influents). This is the only way of identifying interferences that will prevent proper analysis of the samples for low-level metals. (See related comment below about laboratory experience levels.) If MS/MSDs are not performed for each matrix, then the accuracy and precision of the analytical results will be in doubt. UWAG strongly recommends that EPA require its laboratory to perform MS/MSDs and supply Level IV reports or the equivalent, so that EPA will receive the raw data and be able to evaluate it if necessary.

VII. Laboratory Should Have Expertise and Experience in Handling Similar Samples

UWAG recommends that all low-level metals analysis be done by the same laboratory, and that the laboratory have experience in analyzing samples from coal-fired power plants. As we have explained, the analysis of matrix interferences for all types of FGD samples and ash pond samples is a critical step. Unless the laboratory has experience in handling such matrices, it will have difficulty dealing with the samples in an appropriate way.

VIII. Collection of Ash Pond Influent

EPA proposes to sample ash sluice water within the receiving ash pond, at a point just beyond the ash delta. In this manner, EPA hopes to allow for initial settling to occur prior to sampling. Collecting a representative sample at the edge of the ash delta is going to be difficult, for a number of reasons. First, ash ponds often have more than one pipe feeding wastewater into the pond. Some ash ponds have ash sluice water from different units entering the pond through different pipes; other ponds have other types of wastewater coming into the ponds (*e.g.*, sump discharges, raw water treatment wastes, etc.). Even if the pipes enter the pond near the same location, it will be difficult to determine whether complete mixing has occurred by the time the water reaches the edge of the ash delta, and operational conditions (*e.g.*, which unit is operating, and at what capacity level) will greatly influence the constituents of the sample. Further, in many ponds the pipes enter the pond at different locations, and complete mixing does not occur until some undetermined point in the pond that may be quite distant from the ash delta.

There is no easy solution to these potential sampling complexities. UWAG urges EPA to examine these issues individually for every facility that is to be sampled.

IX. Engineering Data Collection

UWAG supports the collection of basic engineering data during sampling, such as that specified in the Plan on Figure 2-3, the Engineering Data Collection Sheet. However, UWAG is concerned that EPA will face serious time constraints if it intends to spend only one day at the facility. First, EPA and its contractors will need to watch required safety videos and presentations before any work can begin. The safety presentations may require anywhere from 1-3 hours, depending on the types of activities EPA will be performing and the sections of the facility being visited. Second, the clean sampling techniques required for low-level metals analysis will use a significant portion of the day. UWAG urges EPA to ensure that it collects the engineering data despite these unavoidable time constraints.

EPA should be aware, however, that some of the data required on the Engineering Data Collection Sheet may not be available, or will have to be estimated. For example, the tons per hour of fly ash and bottom ash generated will have to be estimated from the daily coal burn (in tons), the estimated percent of ash in the coal, and an estimate of the percentage split between fly ash and bottom ash likely to be generated. Also, many plants do not estimate fly ash and bottom ash sluice water flow rates.

X. Analytical Methods for Chlorine and pH Measurements

The Plan is unclear about field procedures and testing methods for chlorine and pH. For both free and total chlorine, Table 2-4 says that colorimetric kits will be used for field measurements. UWAG recommends that EPA specify amperometric titration as the method for free and total chlorine, since this is the compliance standard method. Additionally, the Plan should specify that, where necessary, the sampling team should use amperometric titration to test for total residual oxidants (needed for stations using a bromine-based biocide). If EPA plans to test for TRC/TRO in FGD and ash pond wastewaters, then it is important that a method be used which accounts for potential manganese interference. Some facilities have documented false positives for TRC/TRO while using a field method that did not account for manganese interference.

For pH, Table 2-4 says that color indicator strips and pH meters will be used. The Plan should specify that the color strips will only be used to check preservation levels of samples and that pH strips would not be dipped into the sample container. Actual pH measurements should be done using a standardized, calibrated pH meter only.

XI. Use of EPA Method 1669 Should Include Masks

EPA plans to use its clean method protocol, Method 1669, for collection of low-level metal sample fractions. Plan, Section 2.4. Under this method, the use of masks is optional. However, UWAG recommends the use of masks during all tasks to be completed using Method 1669 due to potential differences among sampling staff (such as presence or absence of metal teeth fillings).

XII. Split Sampling

UWAG appreciates that the Plan acknowledges the right of the individual facility to collect split samples at each sampling point. Plan, Section 2.10. UWAG hopes to coordinate the split sampling effort and looks forward to working with EPA on this objective. UWAG plans to select a laboratory to receive the split samples and will provide the necessary personnel and supplies to obtain the splits and ship them to the laboratory for analyses.

Again, we are extremely grateful for the opportunity to comment on the Plan and to participate in this process.

Very truly yours,

Donna B. Hill/eea

Donna B. Hill
Chair, Effluent Guidelines Committee

Attachment

ATTACHMENT

ALUMINUM

	Facility Name	Permit ID No.	Outfall	EPA's Estimated Loading (lb/yr)	Facility's Estimated Loading (lb/yr)	Reduction in Loadings	EPA's Estimated TWPE	Facility's Estimated TWPE	Reduction in TWPE	Percentage Reduction
1	WEST TEXAS UTILITIES COMPANY	TX0002666	001	1,226,638	0	1,226,638	79,353	0	79,353	- 100%
2	AEP TEXAS NORTH COMPANY	TX0001422	001	273,132	0	273,132	17,669	0	17,669	- 100%
3	WI ELECTRIC POWER CO PT BEACH	WI0000957	001	184,388	71,009	113,379	11,928	4,594	7,334	- 61%
			002	117,147	15,721	101,426	7,578	1,017	6,561	- 87%
4	WI ELECTRIC POWER CO OAK CREEK	WI0000914	003	120,474	2,234	118,240	7,794	145	7,649	- 98%
			004	167,070	29,117	137,953	10,808	1,884	8,924	- 83%
			005	124,506	20,709	103,797	8,054	1,340	6,714	- 83%
			006	89,175	2,808	86,367	5,769	182	5,587	- 97%
5	INDIANA-KENTUCKY ELECTRIC CORP	IN0001759	006	145,016	17,379	127,637	9,381	1,124	8,257	- 88%

IRON

	Facility Name	Permit ID No.	Outfall	EPA's Estimated Loading (lb/yr)	Facility's Estimated Loading (lb/yr)	Reduction in Loadings	EPA's Estimated TWPE	Facility's Estimated TWPE	Reduction in TWPE	Percentage Reduction
1	CONECTIV DELMARVA GENERATION	DE0000558	001	3,547,719	481,920	3,065,799	19,867	2,699	17,168	- 86%
2	GULF POWER CO-CRIST STEAM	FL0002275	010	1,010,409	17,186	993,223	5,658	96	5,562	- 98%
3	FL PWR CORP-SUWANNEE RIV STEAM	FL0000183	001	110,095	3,558	106,537	617	20	597	- 97%