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**March 9, 2009**

Solid Waste Section  
Asheville Regional Office

**TO:** Meeting Attendees

**FROM:** S&ME, Inc.

**DATE:** March 06, 2009

**REFERENCE:** **03/04/2009 Meeting Discussion Item Summary**

Morning Session: Duke Energy – Allen Steam Station  
9:15 a.m. – 11:15 a.m.

Afternoon Session: Duke Energy – Marshall Steam Station  
1:45 p.m. – 4:00 p.m.

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**ALLEN STEAM STATION - MEETING ATTENDEES:**

NCDENR: Larry Frost – Division of Waste management (DWM) – Solid Waste Section (SWS) Permitting ; Deb Aja – DWM – SWS Field Operations ; Elizabeth Werner – DWM – SWS Permitting ; Charles Gerstell – DWM – SWS Field Operations.

Duke Energy: Ted Manes ; Ed Sullivan ; Chris Hallman ; Don Scruggs ; Harry Lancaster, III ; Andy Tinsley

S&ME, Inc.: Ken Daly ; Will Harrison ; Bill Miller

The morning session of the meeting was held at Allen Steam Station.

This discussion item summary is intended to provide a general summary of the subject meeting and to document key decisions and action items. This discussion item summary is based on the notes and memory of the authors. This is not intended to be a rigorous and complete record of the meeting.

## ALLEN STEAM STATION – DISCUSSION ITEM SUMMARY:

### 1. Level 1 Safety/ Introduction:

- 1.1 The morning session of the meeting began at approximately 9:15 AM.
- 1.2 Don Scruggs conducted the Level 1 safety assessment.
- 1.3 Ted Manes discussed safety concerns related to the Plant Allen RAB – Ash Landfill site visit to follow the morning session.

### 2. Cell 1 and Cell 2 Schedule Overview:

- 2.1 Ted Manes said that the subgrade grading is almost complete with structural berms being the last remaining items. The following construction activity will be installation of the 18-inch thick” soil liner.
- 2.2 Ted Manes said that further construction activity schedules, such as installation of geosynthetics, will be evaluated along with review of the liquefaction analysis. Ted Manes said that the earliest the geosynthetics installation will begin would be in approximately 3 weeks. Prior to the geosynthetics installation, Ted Manes said that Duke Energy will schedule a pre-installation meeting with NCDENR officials and asked how much notice NCDENR would need to attend this meeting. Larry Frost said that 1-2 days notice would suffice.
- 2.3 Ted Manes asked the CQA documents could submitted in parts to facilitate review and approval. Larry Frost said that this would be acceptable, but requested no more than 2 parts. Ken Daly suggested that S&ME would submit CQA documents for earthworks followed by geosynthetics. Larry Frost said that this staged submittal process should speed up the Permit to Operate (PTO) process.
- 2.4 Ted Manes said that by the middle of May, Allen Steam Station will be generating approximately 30-40 thousand tons of dry ash per month and said that once Cell 1 PTO is granted, Duke would like to move on to Cell 2 construction. Larry Frost asked if Duke intended to submit CQA documents in two parts for Cell 2 also. Ted Manes answered that only one CQA document would be submitted for the Cell 2 PTO.

3. **Cell 3 and 4 .1700 Rules Structural Fill as Landfill Subgrade:** Ted Manes asked if it would be acceptable to place Cells 3 and 4 subgrade fill as ash structural fill. Larry Frost answered that as NCDENR had no issue with Cell 2 subgrade placement, .1700 rules fill for Cells 3 and 4 would be acceptable. Larry Frost continued by saying that Duke would have to submit another structural fill notification letter for cells 3 and 4. Ted Manes asked if this would be a modification or a new notification. Larry Frost answered that it could be a modification to the existing notification package.

### 4. Landfill Operations

- 4.1 **Landfill Owner/Operator Notification:** Ted Manes said that while Duke Energy would be the landfill owner, Southeast Fly Ash (SEFA) would probably operate the landfill. Larry Frost said that NCDENR will need the owner and operator information for the PTO. Ted Manes and Chris Hallman said that this is the case at Belews Creek also. Larry Frost replied that the Belews Creek PTO would have to be amended and that Duke Energy should provide this information wherever else Duke Energy would contract landfill operations.
- 4.2 **Operator Certification/Training:** Ted Manes asked if the operators would need certifications. Deb Aja said that a 1.5 day training session must be attended by operators and that this training is offered by NC-SWANA. Ted Manes asked if Don Scruggs, the landfill equipment manager, should also complete this training. Larry Frost said that it would probably be beneficial for him to complete. Chris Hallman asked if the training must be through SWANA or if Duke Energy could set up its own training program. Chris Hallman added that Duke – Midwest already has operations training for Coal Combustion Products (CCP) personnel. Larry Frost and Deb Aja answered that Duke Energy should ask SWANA directly and that SWANA may farm this training out to Duke if the content of the course is sufficient. Ken Daly asked Larry Frost if Duke could develop its own internal program. Deb Aja and Larry Frost said that it makes sense to try and do this but that Duke would have to work out the details.
- 4.3 **Alternative Weekly Covers:** Ted Manes said that Duke would like to use alternative covers to preserve landfill capacity and that Duke would like to complete an alternative cover demonstration. Deb Aja said that when Duke is ready, NCDENR can authorize alternative cover demonstrations. Accepted alternatives would be documented by Larry Frost in a permit modification. Bill Miller said that he heard of a landfill which used ash as an alternative cover. Deb Aja said that she was not aware of this. Larry Frost said that if this is the case, NCDENR would review and evaluate applicability to the RAB – Ash Landfill at Allen. Ted Manes mentioned that dust is a big concern with using just ash as a cover. Deb Aja asked if ash could be mixed with anything. Ted Manes said that Duke Energy is evaluating using a certain category of ash as a binding posi-shell-type material. Chris Hallman said that Duke Energy is currently working on this cover issue with Jason Watkins (NCDENR) at Belews Creek. Deb Aja noted that alternative covers are evaluated for site specific conditions. Ken Daly asked Deb Aja to summarize alternative cover requirements. Deb Aja answered that the alternatives must be effective against fire, vectors, dust, odor and infiltration. Charles Gerstell added that the alternative must be as effective as the base option. Ted Manes asked that Bill Miller send a link to the article which discussed using ash as an alternative cover.

## 5. Liquefaction Potential Evaluation

- 5.1 **Landfill Stability Review:** Ken Daly summarized that in response to NCDENR-DWM's request, S&ME prepared a summary of stability analysis for the Plant Allen RAB – Ash Landfill dated February 18, 2009. This letter summarized slope stability, settlement, and liquefaction potential analyses conducted for the Permit to Construct (PTC) application.
  - 5.2 S&ME evaluated the final landfill configuration in the liquefaction potential analyses and that S&ME was currently reviewing interim landfill configurations (representing active landfill operations).
  - 5.3 Ken Daly explained that liquefaction potential analyses take into account the overburden imposed by the landfill and were based on an average landfill height. He explained that there are locations along the landfill perimeter, where the actual height is less than the average assumed in the analyses and that liquefaction potential is a concern in these locations. S&ME is currently reviewing liquefaction potential for these conditions.
  - 5.4 Ken Daly explained that S&ME is conducting more sophisticated liquefaction potential analysis based on a site-specific seismic response analyses. S&ME is also evaluating post-liquefaction slope stability and potential mitigation measures. Results of additional analyses will be provided to NCDENR.
  - 5.5 Larry Frost said that Chris Hallman notified him of the supplemental stability review and that NCDENR is mainly concerned with the stability of the landfill along the East Dike which abuts the Catawba River. Larry Frost noted that NCDENR is reviewing these analyses because of interest raised from the recent TVA event.
  - 5.6 Ken Daly emphasized that stability analyses results indicate that proposed landfill configurations along the East Dike are stable. The areas of concern and current evaluation are north-south trending within the landfill footprint and inside the limits of the retired ash basin.
  - 5.7 Larry Frost added that he provided the stability summary letter to Dam Safety personnel as well as Ming Chao (of the solid waste section), who will be preparing a list of questions for S&ME and Duke Energy. Ted Manes suggested that Duke Energy and S&ME personnel meet with NCDENR personnel to review existing analyses and discuss questions NCDENR may have. Larry Frost indicated NCDENR would be open to this, after their review and questions are prepared.
- 6. Site Visit**
- 6.1 Ted Manes explained the general site layout referencing an aerial photo.
  - 6.2 The group then toured the site to observe the retired ash basin and landfill construction progress.

BREAK FOR LUNCH AND TRIP TO MARSHALL STEAM STATION:  
11:15 AM – 1:30 PM

## MARSHALL STEAM STATION - MEETING ATTENDEES:

NCDENR: Larry Frost – Division of Waste management (DWM) – Solid Waste Section (SWS) Permitting ; Deb Aja – DWM – SWS Field Operations ; Elizabeth Werner – DWM – SWS Permitting ; Charles Gerstell – DWM – SWS Field Operations.

Duke Energy: Dean Snyder ; Ed Sullivan ; Donna Burrell ; Andy Tinsley

S&ME, Inc.: Ken Daly ; Will Harrison ; Bill Miller

The afternoon session of the meeting was held at Marshall Steam Station.

## MARSHALL STEAM STATION – DISCUSSION ITEM SUMMARY:

### **7. Level 1 Safety/ Introduction:**

- 7.1 The afternoon session of the meeting began at approximately 1:45 PM.
- 7.2 Donna Burrell conducted the Level 1 safety assessment and discussed current site conditions in preparation for the site visit.

### **8. Project Overview**

- 8.1 Dean Snyder explained that Duke Energy proposes to construct an Industrial Landfill for fly ash on-site. Dean Snyder said that through evaluation, the site was finally selected and will be constructed over the inactive ash basin south of Island Point Road. Dean Snyder explained how Duke Energy proposes to build the landfill in 2-3 year increments and to construct subsequent stages ahead of filling activities. Dean Snyder explained that to prepare Cell 1 and 2 areas for .1700 rules structural fill placement, existing terrain would be modified to accept said fill in a subgrade preparation project that is currently being bid.
- 8.2 Ken Daly discussed the proposed landfill development sequence and said that Phase 1 will consist of four cells, and that the first two cells will be constructed at one time, followed by the next two cells.
- 8.3 Waste Types: Donna Burrell said that the asbestos and C&D landfills have been closed. Dean Snyder said that Duke would like to place C&D and asbestos waste into the proposed landfill. Larry Frost said that this is acceptable, but to include all the probable wastes into the original permit to construct (PTC) application.
- 8.4 Ken Daly, Bill Miller and Donna Burrell discussed the distinction between active and inactive ash basin areas. The group discussed and concluded that the inactive ash basin is the basin upstream of the 820 Dike while the active basin is downstream of the same dike.

## **9. Landfill Subgrade Structural Fill and Schedule**

- 9.1 Ken Daly said that the landfill subgrade for Cells 1 and 2 will first be constructed with .1700 rules structural fill.
- 9.2 Larry Frost asked when the notification for the landfill subgrade structural fill could be expected. Ken Daly said it would be in two to three weeks followed by the landfill Permit to Construct (PTC) in May to June. Ken Daly said the Hydro/Site Study will be submitted by next week as well.
- 9.3 Ken Daly said that the subgrade preparation work is expected to be complete by June of 2009. Dean Snyder said that following this, the .1700 rules fill will be placed while Cells 1 and 2 are being bid and that Duke Energy expects to begin Cell 1 and 2 construction by April of 2010.
- 9.4 Larry Frost said that the structural fill notification could be issued for the entire Phase I instead of two separate notifications for Cells 1-2 and Cells 3-4. Elizabeth Werner said that NCDENR would need to know volumes and time periods in the structural fill notification. The group discussed logistics of related erosion and sediment control permitting.
- 9.5 Ken Daly summarized that construction is anticipated to be completed in October 2010 with the CQA report submitted to NCDENR in December 2010. Larry Frost indicated that the Permit to Operate can ordinarily be issued 90 days after the CQA report is submitted.
- 9.6 Dean Snyder asked if there would be any issues if the landfill is not completed in the timeframe discussed today. Larry Frost answered that the PTC is valid for 5 years (from the date issued) and the PTO is valid for 5 years before renewal. He explained that one PTO comes with the PTC permit fee. The PTO for cells 3 and 4 would require a permit modification. Larry Frost said that NCDENR would like the Phase II PTO to be issued by the time Phase I PTO is expired.

## **10. Other Permitting Activity**

- 10.1 Larry Frost asked what plans Duke has for landfills at other sites, as additional landfill permitting activity may increase turn-around time for permits. Ed Sullivan said there is consideration for a landfill at Buck Steam Station but that Duke Energy is currently evaluating the need.
- 10.2 Dean Snyder said that ash from Riverbend may be proposed for disposal at Marshall. Permitting off-site/out-of-county waste and local government approvals were discussed. It was concluded that County approval for off-site/out-of county waste is required. Larry Frost asked that Duke Energy include ash from other plants as well as other waste materials in the original permit, instead of modifying the permit in the future.
- 10.3 Dean Snyder asked if there would be issues with excavating ash from Riverbend and transporting to Marshall. Ed Sullivan said that the wet ash is under DWQ. Larry Frost said that this would only have an effect on permitting schedules if a modification was required.

10.4 Dean Snyder said that following Marshall, Duke Energy may only be expanding landfills and not building new ones. Larry Frost said that the permitting officials can handle the proposed timeline, but that additional landfills would have an effect on schedules.

10.5 Ken Daly asked how long the PTC review would take. Larry Frost answered that 60 to 90 days for initial review and comment followed by another 60 to 90 days to review response to comments.

**11. Site Visit:** The group visited the proposed landfill site.