

INTEROFFICE MEMORANDUM

Date: 17-Feb-1999 02:54pm
From: Tom Davis
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Dept:
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To: Theresa Heron (HERON_T@A1@DER)
CC: Ms. Yolanta E. Jonynas (jonynasye@gru.com@PMDf@EPIC66)

Subject: GRU - Deerhaven Generating Station Flyash Silo

Theresa,

Yolanta has requested that I respond to your question regarding the potential (uncontrolled) PM emission rate for the Deerhaven Generating Station flyash silo.

The following analysis is based on an AP-42 emission factor for concrete batch plants. The factor represents uncontrolled PM emissions due to the pneumatic transfer of cement to a storage silo. This situation is analogous to the Deerhaven situation except that flyash is being transferred instead of cement. Because both materials are composed of small size particles, PM emissions would be expected to be comparable.

From AP-42, Table 11.12-2, Concrete Batching:

Cement Pneumatic Unloading to Elevated Storage Silo = 0.27 lb PM/ton material mixed
(uncontrolled emission rate - measured before fabric filter)

Per AP-42, material mixed consists of:

Cement	=	500 lb
Sand	=	1,240 lb
Aggregate	=	1,900 lb
Water	=	360 lb
Total	=	4,000 lb

Cement therefore comprises $(500/4,000 \times 100)$ or 12.5 % of material mixed by weight.

PM factor on a ton of cement basis = $0.27 / .125 = 2.16$ lb PM /ton cement
Assume factor for flyash transfer is same as cement; 2.16 lb PM/ton flyash
Maximum annual flyash transferred to silo = 87,500 tons
Potential annual uncontrolled PM = $(2.16 \text{ lb/ton}) \times 87,500 \text{ ton} \times (1 \text{ ton}/2,000 \text{ lb}) = 94.5$ tpy

Note that the annual flyash transfer rate of 87,500 tons represents the maximum, potential rate. Actual flyash transfer rates are significantly lower. Based on a 17 year record provided by GRU (1982 - 1998), the maximum annual transfer rate was 59,494.54 tpy or approximately 70% of the potential rate. Minimum and average annual flyash transfer rates for the 17 year period were 33,513.23 and 43,655.11 tons, respectively. Maximum, minimum, and average uncontrolled PM emission rates for the 17 year period are 64.3, 36.2, and 47.1 tpy, respectively.

Please contact me if you have any questions.

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