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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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September 12, 2001

Mr. Andrew T. Silfer
Corporate Environmental Programs
General Electric Corporation
100 Woodlawn Avenue
Pittsfield, MA 01201

Via Electronic and U.S. Mail

Re: Comments on General Electric Company's 10 August 2001 letter titled *On-Plant Consolidation Areas Geotechnical Testing of In-Place Materials*, Pittsfield, Massachusetts.

Dear Mr. Silfer:

This letter contains the Environmental Protection Agency's (EPA) review comments concerning the 10 August 2001 submittal by General Electric Company (GE) titled *On-Plant Consolidation Areas (OPCA) Geotechnical Testing of In-Place Materials*.

The review was focused on GE's ability to demonstrate that the OPCA placement methods and procedures are adequate and appropriate and that the in-place material should remain stable based on GE's analyses.

Comments:

1. Based on the results of the in-situ moisture-density test summarized in the report (Table 2), the placement methods utilized appear to have been adequate to achieve a dense in-place condition.
2. The in-situ moisture-density test results summarized in Table 2 suggest that excessive moisture content negatively impacts the degree of compaction. In general, fill material should be placed within about 3% wet or dry of the material's optimum moisture content (o.m.c.). However, it appears that the OPCA material can be successfully placed at a moisture content of at least 4% wet of its o.m.c. and still achieve an acceptable degree of compaction. A high in-place moisture content will not allow for adequate compaction as evidenced by the low degree of compaction reported for sample S-1 which has a reported in-place moisture content of 20.1% (sand cone moisture content), 9.1% above the samples o.m.c.
3. The results of the direct shear testing seem reasonable for materials which are classified as silty sand and silty sand with gravel. The conclusions drawn in regard to slope stability based on the shear strength test results are reasonable. The actual slope stability analysis was not reviewed. It should be noted that the results of direct shear testing may be slightly higher than the results of triaxial shear strength testing, however, even reducing the internal friction angle determined from the direct shear test by a few degrees still yields results higher than the assumed internal friction angle incorporated in the stability analysis.
4. The placement methods described in the report are appropriate but must be implemented. In particular, lift thickness, number of equipment passes and moisture content must be controlled in order to achieve a stable condition. If drying the material during placement becomes necessary, productivity may be impacted.
5. Based on the correlation between the d_{15} particle size, which ranges between about 0.16 and 0.0073mm and permeability, the permeability of the material is estimated to be between about 1×10^{-4} cm/sec and 1×10^{-5} cm/sec. It should be noted that based on the Unified Soil Classification System, the material may contain up to 12% clay

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as indicated on Table 3. This high percentage of clay would also tend to suggest a range of permeability indicated above. Given the relatively large percent of fines (34 to 40%), the material may be moisture sensitive and drying any wet material to a workable water content may involve significant effort.

6. The report does not address the depth at which the material samples were collected. It is assumed that the three samples were collected from the OPCA surface. It is worth noting that samples recovered at lower elevations may exhibit different strength parameters depending on the material's moisture content and density condition. In order to ensure similar in-place density conditions, the methods used to place the materials sampled should be implemented if those methods differed from the general placement and compaction procedures described in the report.

In summary, the results of the laboratory testing performed by GE on samples of in -place material selected by GE generally demonstrate that the placement methods and procedures are adequate and appropriate and that the in-place material should remain stable based on GE's analyses. This statement is valid assuming the material samples collected and tested are representative of the composition and condition of the material within the OPCA. In order to ensure that similar conditions as those described in the report are achieved, the placement procedures described by GE must be implemented.

Should you have any questions regarding this information, please do not hesitate to contact me at (617) 918-1268.

Sincerely,



Michael Nalipinski
GE Facility Project Manager

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