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June 14, 1993

Sam Nalluswami, Project Manager
US Nuclear Regulatory Commission - NMSS
11555 Rockville Pike
Rockville, MD 20852

Subject: Northeast Ohio Regional Sewer District Responses to NRC Comments on the Safety Analysis Report, Northeast Ohio Regional Sewer District, Cuyahoga Heights, Ohio, April 30, 1993

Dear Mr. Nalluswami:

On behalf of the Northeast Ohio Regional Sewer District, enclosed are the responses to NRC comments (letter J. Austin to E. Odeal dated May 24, 1993) on the subject Safety Analysis Report. Three copies of the revised report are also enclosed. Revisions to the report are delineated by a line in the right hand margin.

A copy of the comments and the revised Safety Analysis Report is being sent to Mr. Don Sreniawski, NRC Region III.

If you have any comments regarding the Safety Analysis Report, please don't hesitate to call me on (716) 592-3431.

Very Truly Yours,

Theodore G. Adams

Theodore G. Adams
Project Radiation Safety Officer

Enclosure

cc: E. Odeal
T. Lenhart
D. Sreniawski
R. Connelly
B. Koh

DA:93:022

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NEORSD RESPONSE TO NRC COMMENTS
on SAFETY ANALYSIS REPORT

Comment:

Page 1-1, Section 1.0 Introduction, Paragraph 1

Please explain the meaning of ...(EGG - Energy Measurements, April, 1992). If this is a reference, please include in Section 7.0 REFERENCES. In general, the references are not completely identified.

Response:

EGG - Measurement, April 1992, refers to the report (EGG-10617-1164, April, 1992) prepared by EGG. This report documents the results of an aerial flyover of the NEORSD Southerly Plant performed by EGG in April, 1991. This is a specific reference. References are now completely identified in the text and included in Section 7.0.

Comment:

Page 1-1, Section 1.0 Introduction, Last Paragraph

Page 1-1, last sentence, and page 1-2, first sentence, discuss sediment and water samples from the North and South Fill Areas taken by the Oak Ridge Institute for Science and Education (ORISE). The only sediment and water samples listed in that report were from the Cuyahoga River, the canal to the river, the sanitary ponds, and the swamp north of the North Fill Area. There were none from the fill areas.

Response:

This section/paragraphs have been revised to clarify where sediment and water samples were taken in the North and South Fill Areas and what concentrations of Cobalt 60 were found in these samples.

Comment:

Page 1-2. Section 1.0 Introduction, Paragraph 2

The first sentence states that the Nuclear Regulatory Commission based its conclusion, on when the contaminant reached the plant, on ORISE results. The NRC also considered reviews of sewer district records and interviews of employees.

Response:

This sentence has been revised to include consideration of "reviews of sewer district records and interviews of NEORSD employees".

Comment:

Page 1-2. Section 1.0 Introduction, Paragraph 3

The last sentence states that the SAR projects potential exposure for normal and abnormal conditions. We feel the SAR does not address the scenario of a find of a pocket of a very high concentration of cobalt-60 significantly in excess of the levels discussed in the SAR. The document should provide the direct radiation level and cobalt-60 concentration in ash at which work would be stopped, and the risk to the public and workers should be re-evaluated.

Response:

The Radiological Control Plan has been revised (see Section 9.0 Paragraph 9.1 Introduction, Revision 1) to include a special action level to ensure excavation workers exposures will be limited to ALARA. Basically, Paragraph 9.1 states: " if at anytime during the excavation of the ash from the lagoons, the radiation level exceeds 1mR/hr, the excavation and related work will be immediately stopped. An evaluation of the risks to the public and workers due to the abnormal radiation level will be performed and documented. Further ash lagoon remediation activities may proceed with the approval of the Project Radiation Safety Officer after the evaluation is completed....".

This action level and related wording is incorporated in Section 4.2.2 of the Safety Analysis (SAR). Other "action levels" are identified in the Radiological Control Plan

(see Table 10-1) and have been included in the SAR by reference.

Due to the fact that radiological analysis of most samples takes at least several days to perform, this time lag does not provide a timely basis on which to establish an action limit based on cobalt-60 concentration and therefore is not practical.

Comment:

Page 2-1, Section 2.1, Paragraph 3

Figure number should be 2 instead of 3. This appears to be a typographical error. Please provide information pertaining to flood-elevation, frequency, flood plain delineation, and related data for the site.

Response:

The subject Figure number should be 1. This was a typographical error. A new Figure 3 has been added which shows the topography of the South Fill Area and related Ash Lagoons. Figure 4 shows the Wind Rose. Figure 5 depicts the Old River Bed Channel location. Information pertaining to flood-elevation, frequency flood plain delineation and related data for the site has been incorporated into Section 2.1, 3rd paragraph and Section 3.2

Comment:

Page 2-3, Section 2.3, Paragraph 1

The description of perched water layer is not clear. What is the name of the report which contains the data for the borings performed in 1973? Please include in the reference.

Response:

A description based on best available information of the perched water layer has been incorporated into Section 2.3, 3rd Paragraph. The name of the report which contains the data for the borings performed in 1973 is Subsurface Investigation Report, Cleveland Regional Sewer District, Southerly Plant Extension, Malcolm Pirnie, Inc. 1974. This report is included in Section 7.0, References.

Comment:

Page 3-3. Section 3.2 Unusual Occurence Response

Flooding may be an unusual occurrence. What are the proposed precautions to prevent breached berms, flooded lagoons, and downstream transport of radionuclides by blood waters?

Response:

Since the ash lagoons and South Fill area are located within a earthen berm constructed above the 100 year flood elevation, there is little potential for radionuclides to be transported downstream of the Southerly Wastewater Treatment Plant by flood waters. Periodic inspections and maintenance of the earthen berms will minimize potential for lagoon and berm failure. In addition, the final design of the area containing the contaminated ash includes a cap or cover to preclude movement of ash.

Comment:

Page 4-1. Section 4.2 Potential Exposures to Workers On-site

The phrase in the last line, ...inhalation of direct ...", appears to be "...inhalation and direct..."

Response:

The subject phrase should be "inhalation and direct". This has been corrected.

Comment:

Page 4-2. Section 4.2.1 Inhalation Doses. Equation (4-1)

The value of DF (Dose Factor) for inhalation in the Equation (4-1) should be 219 mrem/μCi, instead of 190 mrem/μCi (See Federal Guidance Report No. 11, Table 2-1).

Response:

The value of DF (Dose Factor) for inhalation in Equation 4-1 has been changed to 219 mrem/μCi. The related calculation has been revised accordingly.

Comment:

Page 4-4. Section 4.3 Potential Inhalation Exposures to the General Public. Paragraph 3

Assuming 98 percent of the material remains suspended at the site boundary, the inhalation dose at the site boundary is projected as 73.5 (0.98x75) mrem (not 1.5 mrem), plus essentially zero dose from direct radiation exposure. Wind rose data may not be conservative for the months of excavation, since 10.1 percent is yearly average.

Paragraph 4, last sentence states that the maximum exposures will be less (0.04 mrem). Please show the calculations.

Response:

The inhalation dose at the site boundary has been recalculated. The calculation is shown. A conservative value of 28.3% has been selected to include all potential wind directions that may carry air borne contamination to the nearest receptor located north east of site. The maximum exposure calculation based upon percent wind direction is presented.