



State of Ohio Environmental Protection Agency

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George V. Voinovich
Governor

December 20, 1999

Mr. Johnny Reising
U.S. Department of Energy, Fernald Area Office
P.O. Box 538705
Cincinnati, OH 45253-8705

Re: GATOR CALIBRATION REPORT COMMENTS

Dear Mr. Reising:

This letter provides as an attachment Ohio Environmental Protection Agency and Ohio Department of Health comments on the Calibration Report for the Mobile Sodium Iodide System Known as the Gator.

If you have any questions, please contact Tom Ontko or me.

Sincerely,

for Thomas A. Schneider
Fernald Project Manager
Office of Federal Facilities Oversight

cc: Jim Saric, U.S. EPA
Terry Hagen, FDF
Mark Shupe, HSI GeoTrans
Francie Hodge, Tetra Tech EM Inc.
Ruth Vandergrift, ODH

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Ohio Environmental Protection Agency Comments
on the Calibration Report for the
Mobile Sodium Iodide System Known as the Gator

General Comments

1) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Pg #: Line #: Code: c
Comment: It is the position of the Ohio Environmental Protection Agency and the Ohio Department of Health that a "calibration pad" be constructed for daily use for all the *in situ* gamma instruments. This is especially important now that several of the areas that were used for quick daily instrument performance checks have been remediated. Such a pad would be especially important to resolve outstanding orientation differences in the Gator. It could also be used for daily source checks for all of the *in situ* instruments.

2) Commenting Organization: Ohio EPA Commentor: ODH
Section #: Pg #: Line #: Code:
Comment: In light of the success with which the identically equipped RTRAK and RSS have been deployed in precertification activities at the site, it is appropriate to consider future use of the Gator for screening applications despite its acknowledged limitations

The potential to miss AWAC areas is a serious flaw. The development of trigger levels and operator software "flags" to minimize the potential for missing AWAC areas in those locales where Radium and Thorium are near background should be a priority.

3) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Comment Pg #: Line #: Code: C
Comment: Has an effort been made to orient the crystal the same as the R-RTRAK to eliminate some of the geometrical differences between the device.

4) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Calibration Process Pg #: 2 Line #: 22-29 Code: C
Comment: The inhomogeneity issue with concentrations near the upper range of interest can be resolved through the use of the planned calibration pad. The development of a calibration pad for the real-time instruments needs to be a priority for this program. Provide information on the status of the calibration pad and time table for its implementation.

5) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Calibration Results Pg #: 4 Line #: 7-11 Code: C
Comment: The calibration process for this instrument spanned a time greater than 70

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days. This appears to be a rather long time to perform a calibration. With calibration time frames this long unidentified interferences can enter the process which can influence the calibration. Recommend that a set time period for the calibration of instruments be specified.

- 6) Commenting Organization: Ohio EPA Commentor: ODH
Section #: Calibration results Pg #: 7 Line #: Code: c
Comment: It appears the large relative percent deviation of Gator measurements vs. HPGe for Ra-226 would necessitate a lot of extra time and effort confirming an increase in hotspots during precertification.

- 7) Commenting Organization: Ohio EPA Commentor: ODH
Section #: Calibration results Pg #: 10 Line #: Code: c
Comment: The data comparisons for Th-232 and K-40 are encouraging. This demonstrates that good precertification data can be obtained when the contaminant is homogeneously distributed and spectral interferences are minimal. The assumption of uniform contamination at depth, typical geometries, and spectra impacted by waste inventories in the production area will significantly compromise data quality unless compensated for.

- 8) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Calibration Verification Pg #: 13 Line #: 1-4 Code: C
Comment: By restricting the comparisons the verification process is defeated. The calibration and verification process should be documented in a procedure and followed. Deviations to the procedure and the resulting changes in results should be clearly documented. Restricting comparisons for the sake of getting "better" calibration curves is unacceptable.

- 9) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Summary and Conclusions Pg #: 16 Line #: 28-29 Code: C
Comment: Agree that the Gator may be used only at ASL A. Additional work still needs to be performed to resolve the discrepancies noted in this report.

- 10) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table 8 Pg #: na Line #: na Code: C
Comment: The averaging of two counts and change in geometry is inappropriate during the calibration procedure, especially since the geometry may be a major cause for the discrepancies in the calibration.

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- 11) Commenting Organization: Ohio EPA Commentor: ODH
Section #: Tables 1 through 3 Pg #: Line #: Code: c
Comment: The calibration measurements summarized in Tables 1 - 3 include %
dead time. For clarity, it would be prudent to include a footnote stating the data is
corrected for such.