



United States Department of the Interior

BUREAU OF MINES
WM DOCKET CONTROL
CENTERSBURGH RESEARCH CENTER
COCHRANS MILL ROAD
POST OFFICE BOX 18070
PITTSBURGH, PENNSYLVANIA 15236

'86 SEP -5 P3:19

September 2, 1986

Dear Banad:

As we discussed during our telephone conversation, I have reviewed the draft final report for the contract "Grouting Efficiency in Vertical Shafts." In my opinion the contractor, Engineers International has fulfilled the requirements of the contract. Primarily I am concerned whether the report provides the information needed by NRC, and if any opinions of the authors are contradictory to current NRC policy.

The three areas to be addressed by the contractor were:

- Case studies of vertical shafts where grouting was used.
- Methods of detecting voids in grout.
- The best case grouting situation where voids would be minimized.

Based on these three areas, I would appreciate comments from NRC concerning the following:

1. Do the range of shaft sinking practices described encompass the types of practices that would be appropriate for sinking the exploratory shaft (ES). While realizing that requirements for the ES will be more stringent than for any existing shaft, is sufficient information supplied to extrapolate from current practice to required procedures. Specifically, can leakage, which cannot be prevented by current practices used in the case studies, be controlled for ES if more stringent standards are applied? Does this report complement the Gonano ["Evaluation of Alternative Shaft Sinking Techniques for High-Level Nuclear Waste (HLW) Deep Geologic Repositories"] report?
2. Are monitoring techniques described adequate for identifying the size of voids expected during grouting of the ES? Is monitoring required during ES construction, or could "improved" grouting techniques be substituted for current monitoring techniques.
3. Does water leakage during the pre-closure period preclude successful isolation during the post-closure period? The contractor seems to raise this issue on page 200. Is it relevant to question whether grouting practices, which may allow leakage into the open shaft, are adequate to prevent communication of aquifers during the post-closure period?

Please let me have any NRC comments by September 16, 1986. Call me if you have any questions.

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WM Record File
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WM Project 10, 11, 16
Docket No. _____
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Sincerely,
Chuck Taylor
Charles D. Taylor

Distribution:
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