

Department of Energy Washington, DC 20585

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Follow up request from the U.S. Geologic Survey (USGS) Quality Assurance Audit, May 20-24, 1991.

Your letter dated June 24, 1991, addressed the "root cause" analysis pertaining to the plug that did not get knocked off the end of the packer for well H3.

Installation of packers in well H3 was completed by an Nevada Test Site (NTS) contractor on May 30, 1984 as documented in DOE/NV/10322-18, NNWSI Hole Histories, dated June, 1987. It should be noted this history does not address removal of packer plugs at the time of installation in well H3. Conversely, histories of other wells contain specific entries documenting removal of packer plugs. Considering that this error in installation took place approximately seven years ago, no formal "root cause" analysis was attempted. However, from a review of available documentation and interviews with personnel of involved organizations, it appears that this was an isolated error that occurred during one of many packer installations. It is important to note that in 1984 USGS did not have an approved Quality Assurance program nor procedures to control Yucca Mountain Project quality affecting activities requiring NTS contractor support. Since August, 1985 USGS has controlled these quality affecting activities by implementation of Quality Management Procedure YMP-USGS-QMP-3.05, Work Request For NTS Contractor Services (Criteria Letter). As of August, 1989, the USGS Quality Assurance program, including YMP-USGS-QMP-4.05, was approved as having adequate controls to permit initiation of quality related work on the project.

From this information, it is evident that formal programmatic controls for work performed by NTS contractors were not imposed at the time of packer installation in well H3. However, through implementation of an approved Quality Assurance program and procedures, the probability of recurrence of errors in installation of equipment has been minimized.

If you have additional questions regarding this matter, please do not hesitate to contact me.

> Donald G. Horton, Director Office of Quality Assurance

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