

KH/ABSTRACT

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FEB 05 1991

Mr. Dale Hedges, Conference Co-Chairman  
 ASQC Second International Waste  
 Management Conference  
 709 Rivenbark Court  
 Las Vegas, NV 89128

Dear Mr. Hedges:

Enclosed please find an abstract of the talk I propose giving at the American Society for Quality Control (ASQC) Energy Division Second International Waste Management conference, on March 18, 1991. The talk is titled "QA Learning Curve from the NRC's Perspective."

If you have any questions or require additional information, please contact me at (301) 492-0447.

Sincerely,

**ORIGINAL SIGNED BY**

Kenneth R. Hooks, Section Leader  
 Quality Assurance Section  
 Repository Licensing and Quality  
 Assurance Project Directorate  
 Division of High-Level Waste Management  
 Office of Nuclear Material Safety  
 and Safeguards

Enclosure: As stated

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ABSTRACT  
for  
ASQC Energy Division Second International Waste Management Conference  
March 17-20, 1991

QA Learning Curve from the NRC's Perspective  
by  
Ken Hooks, QA Section Leader

The U.S. Nuclear Regulatory Commission (NRC) is responsible under the Nuclear Waste Policy Act of 1982, as amended, to review and evaluate the U.S. Department of Energy (DOE) application for a license to build a High-Level Waste (HLW) geologic repository when and if such an application is submitted. In the pre-application (site suitability) phase, the NRC reviews DOE's activities and advises DOE of deficiencies identified through this review (i.e., prelicensing consultation). One of the areas in which this preapplication review has been focused is Quality Assurance (QA).

The DOE is required by Code of Federal Regulations (CFR), Title 10, Part 60, Subpart G, to implement a 10 CFR 50 Appendix B - type QA program, as applicable, for all systems, structures, and components important to safety and barriers important to waste isolation. The requirements of Appendix B were written and have been implemented on numerous commercial nuclear power plants, including site selection and evaluation activities; however, they have not previously been imposed upon a process essentially restricted to earth science activities.

Although the NRC staff believes that the requirements of Appendix B are sufficiently broad and flexible to be applicable to earth science activities, it is obvious at this time that interpretation and implementation of these requirements has often been frustrating to participants in DOE's HLW repository program. The NRC has attempted to provide guidance concerning Appendix B requirements in the form of NUREGs and discussions with DOE and participants, and through encouraging and participating in DOE QA workshops to identify and resolve problems in QA program implementation. To date, these QA workshops have not identified any problems with Appendix B requirements, but rather problems in interpretation and implementation by DOE and the participants.

In retrospect, it appears clear that much more effort should have been placed on familiarization, indoctrination and training in both the reasons for QA and QA concepts and techniques, and on involvement of scientific and technical personnel. People with a background in the commercial nuclear power plant business grew with QA; in general, people in the HLW repository program were unfamiliar with formal QA programs, and failed to understand either the need for an Appendix B-type program or how to implement it.

The NRC, the DOE, and the HLW repository program participants are all still climbing the QA learning curve. Although it is not possible to return to the beginning and establish a different, perhaps better, curve, the following concepts can still be used to improve the rate at which we climb the curve.

- Explain QA as a tool to improve the work process. Concentrate on explaining how QA can help, not hinder, scientific work, and assiduously avoid adversarial situations.
- Explain the reasons behind QA requirements until they are understood; do not impose the requirements from above.
- Try to speak about QA in language which can be understood by earth scientists; many QA problems appear to be rooted in semantics.
- Develop work procedures around existing work practices, with the involvement of the responsible workers. Add QA requirements only as necessary.
- Insist on the line organization taking responsibility for doing and documenting work in accordance with their procedures. Work with the line organization to make the procedures reasonable.
- Start audits and surveillances early, and use them as learning experiences. Emphasize the necessity for effective corrective actions.
- Be open to feedback from the earth scientists, but insist that their complaints be specific and contain suggestions for improvement.
- Do not allow QA to become a management tool to impose non-QA requirements on line organization. Separate QA and administrative controls.
- Always remember that QA is the tail, not the dog (although a tail may be required to win the prize).

I believe that a QA program which considers these, or similar concepts, will result in a QA learning curve which is easier for everyone associated with the HLW repository program to climb.