



**Department of Energy**  
Washington, DC 20585

March 31, 2006

Mr. Frank Russo  
President and General Manager  
Bechtel BWXT Idaho, LLC  
Advanced Mixed Waste Treatment Project Office  
765 Lindsay Boulevard  
Idaho Falls, ID 83402

Subject: Enforcement Letter – Quality Assurance Deficiency Related to External  
Dosimetry Accreditation

Dear Mr. Russo,

This letter is to inform you of the Department of Energy's (DOE) concern regarding a quality assurance-related deficiency stemming from the recent external radiation dosimetry performance testing by the DOE Laboratory Accreditation Program (DOELAP) of dosimeters utilized at Idaho National Laboratory (INL). This deficiency was identified through the quality assurance testing of external dosimeters by CH2M-WG Idaho (CWI) staff.

During its employment as the management and operating (M&O) contractor of what is now INL, Bechtel BWXT Idaho (BBWI) was responsible for the site's external dosimetry program. During that period, BBWI dosimetry staff utilized a representative external dosimeter for DOELAP accreditation purposes, and this particular dosimeter incorporated a mock personnel identification card similar to those used with the routine external dosimeters in use at that time. This identification card consisted primarily of a blank piece of laminated photographic paper stock. Beginning in 2000, the laminated paper identification card was gradually replaced with a plastic version, and this replacement was completed in early 2003. However, BBWI dosimetry staff did not install a new personnel identification card in the representative external dosimeter used for DOELAP accreditation.

In 2004 and 2005, the representative external dosimeter was submitted to DOELAP for renewal of INL's external dosimetry program accreditation. What was not recognized was that this dosimeter still contained the outdated personnel identification card. When new dosimeter components were installed in a similar, general-use external dosimeter, that dosimeter then underwent routine quality assurance testing by CWI staff. The response of the dosimeter with the plastic identification card to low energy radiation was found to be significantly less than that of the representative external dosimeter used for DOELAP accreditation. CWI staff notified the DOELAP testing laboratory of this discrepancy and asked that DOELAP check its low energy radiation response testing process. DOELAP personnel performed this task and reported no errors. CWI's

dosimetry staff investigated this issue further and discovered that an outdated personnel identification card had been retained within the representative dosimeter. The plastic used in the current personnel identification card apparently attenuates, to some degree, low energy radiation. As a result of the discovery, CWI reviewed all radiation exposure records that could have been affected by this heretofore unrecognized attenuation characteristic and, fortunately, found only two dose records that needed minor corrections.

DOE's quality assurance requirements allow contractors to meet certain performance standards using representative items for efficiency and cost-effectiveness as long as doing so conforms to statistical norms. However, this event identified a complacency and inattention to detail on the part of BBWI that could have resulted in the need to correct a significant number of personnel radiation exposure records. When it was the M&O contractor, BBWI was responsible for the failure to update the mock identification card used in the representative external dosimeter and, thus, did not exercise appropriate diligence in its maintenance and use of this particular dosimeter.

As a result of this, an apparent violation of 10 CFR Part 830, "Nuclear Safety Management," occurred. The intent of this enforcement letter, therefore, is to serve as a reminder that quality assurance extends to all aspects of DOE nuclear activities. It should be understood that my office will continue to monitor BBWI's nuclear safety performance and will take enforcement action if warranted.

No response to this letter is required. Please contact me at (301) 903-0100, or have your staff contact Steven Zobel at (301) 903-2615, should you have any questions.

Sincerely,



Stephen M. Sohinki

Director

Office of Price-Anderson Enforcement

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