Department of Energy
Washington, DC 20585

July 8, 2005

Mr. Edward Aromi
President and General Manager
CH2M Hill Hanford Group, Inc.
P.O. Box 1500
Richland, WA 99352

Subject: Enforcement Letter – Improper Controls Associated with Use of Neutron Test Source

Dear Mr. Aromi:

My office has completed an evaluation of the facts and circumstances relating to a CH2M Hill Hanford Group (CHG) employee receiving higher than expected cumulative neutron dose (274 mrem) in 2004. Your investigation into the source of this exposure revealed that the neutron dose occurred during the troubleshooting and repair of failed neutron probes, which involved the use of a neutron source. Further, your investigation into the cause of the exposure revealed significant breakdowns in both work planning for the job evolution and in control of the neutron source.

The troubleshooting and repair of the failed neutron probes was primarily controlled using a verbal work authorization and a General Radiological Work Package (RWP). Verbal instructions, being appropriate only for the lowest category of low risk work, resulted in the CHG Radiation Control organization not being involved in the review of the work scope or the development of a job specific RWP. Based on past and current applications of a General RWP in performing annual and quarterly preventive maintenance of neutron probes, CHG decided that the use of a General RWP was acceptable for the troubleshooting and repair of the neutron probes. However, the General RWP did not address neutron radiation and, as such, was not an appropriate administrative control to protect personnel working with neutron sources. The job evolution did include requirements for the posting and removal of radiation areas. However, due to the fact that the CHG Radiation Control organization was not involved in the review of the work scope and a General RWP was used in lieu of a Job Specific RWP, no radiation surveys were required or conducted.

In your root cause analysis associated with the worker neutron exposure you state that the CHG "source control program is a barrier to ensure that sources are identified, accounted for and under positive control. Control of a source is relinquished by the Source Custodian under the following conditions:

- The source user demonstrates a need to use the source,
- Appropriate training is verified,

- Authorization by RWP, procedure, or Health Physics Technician coverage is established, and
- Documentation of source issuance is completed.

Following completion of the above, the source is issued, used, and returned." These above mention barriers were entirely defeated because the worker had access to the neutron source independent of the Source Custodian.

With respect to the above noted deficiencies, violations of 10 CFR 830, *Nuclear Safety Management*, and 10 CFR 835, *Occupational Radiation Protection* have apparently occurred. The extensive and fundamental failures in work control and source control, as exhibited during troubleshooting and repair of the neutron probes, are extremely troubling. Multiple administrative barriers established by CHG to protect its workers were overcome and were undetected by CHG for a considerable period of time. Typically, I would consider pursing enforcement action for events involving such extensive and fundamental breakdowns. However, I recognize the limited scope of the job evolution in which the breakdowns occurred. In addition, upon identification of the neutron exposure, CHG conducted a prompt and thorough investigation to include your extent-of-condition review and a scheduled mid-point and end-point assessment of corrective actions taken. Further, corrective actions have been identified to address the specific issues associated with use of neutron sources and additional corrective actions have been identified to address those broader site-wide weaknesses identified as a result of the extent-of-condition review.

I have chosen to exercise enforcement discretion on these matters consistent with the DOE Enforcement Policy, and to forgo formal enforcement action at this time. However, it should be understood that my office will continue to monitor CHG nuclear safety performance, including any reexamination of the causative factors, 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 Richard Day at (301) 903-8371, should you have any questions.

Sincerely,

Stephen M. Sohinki
Director
Office of Price-Anderson Enforcement

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