

(3) procedurally establish a Measurement Control Program, and (4) evaluate the appropriateness of portable NDA equipment.

Additional violations were also identified related to Quality Improvement provisions of 10 CFR 830.120. DOE investigation determined that multiple opportunities existed for identification of the NDA problems prior to the hiring of Canberra as an NDA subcontractor in February 2001. Specifically, a DOE assessment performed in August 1999 identified problems with software quality assurance closely related to those underlying the NDA data quality problem. Timely and effective corrective actions to the DOE assessment may well have corrected the subject deficiencies. Additionally, no assessments of the portable NDA process were performed by FHI. Finally, routine quality control of the portable NDA data was not performed, and, consequently, failed to identify the NDA data quality problems.

In accordance with the General Statement of Enforcement Policy, 10 CFR 820, Appendix A, the violations described in the enclosed PNOV have been classified as three Severity Level II violations. In determining the Severity Level of these violations, DOE considered the actual and potential safety significance associated with the event under consideration, the programmatic and recurring nature of the problems, and other factors.

To emphasize the importance of maintaining a comprehensive quality program for DOE nuclear activities, I am issuing the enclosed PNOV and Proposed Civil Penalty in the amount of \$137,500. DOE has determined that no mitigation is warranted for timely self-identification and reporting given that the NDA data quality problem existed for two years prior to detection and had a subcontractor not been hired by FHI to work off the NDA backlog at Building [], the problem may not have been detected for some additional indeterminate period of time. Delays were also noted in the reporting of discovered NDA data quality problems to senior FHI management by FHI Analytical Laboratory personnel. DOE does acknowledge, however, that upon recognition of the problem by FHI senior management, timely reporting actions were taken. DOE also evaluated the adequacy of corrective actions identified and implemented by your organization. Our evaluation concluded that your investigation of the NDA data quality problem was comprehensive in scope and corrective actions appear sufficiently broad to address the issues. Consequently, 25% mitigation of the maximum Severity Level II civil penalty for work process related violations of 10 CFR 830.120 (c)(2)(i) is appropriate.

You are required to respond to this letter and follow the instructions specified in the enclosed PNOV when preparing your response. Your response should document any additional specific actions taken to date. Corrective actions will be tracked in the Noncompliance Tracking System (NTS). You should enter in the NTS (1) any actions that have been or will be taken to prevent recurrence and (2) the target and completion dates of such actions. After reviewing your response to the PNOV, including your proposed corrective actions entered into the NTS in addition to the results of future

assessments or inspections, DOE will determine whether further enforcement action is necessary to ensure compliance with DOE nuclear safety requirements.

Sincerely,



Stephen M. Sohinki
Director
Office of Price-Anderson Enforcement

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Enclosures:
Preliminary Notice of Violation
Enforcement Conference Summary
List of Attendees

cc: K. Klein, DOE-RL
G. Sanders, DOE-RL
S. Seth, DOE-RL
S. Olinger, DOE-RL
L. Piper, DOE-RL
R. Carosino, DOE-RL
M. Schlender, DOE-RL
C. Gibbs, DOE-RL
B. Hollowell, DOE-RL
B. Fiscus, DOE-RL PAAA Coordinator
S. Turner, FHI PAAA Coordinator
R. Azzaro, DNFSB
B. Cook, EH-1
M. Zacchero, EH-1
J. Roberson, EM-1
S. Johnson, EM-5
H. Himpler, EM-5, DOE PAAA Coordinator
R. Day, OE
P. Rodrik, OE
S. Hurley, OE
Docket Clerk, OE

**PRELIMINARY NOTICE OF VIOLATION
AND
PROPOSED IMPOSITION OF CIVIL PENALTY**

Fluor Hanford, Inc.
Hanford Site

EA-2002-03

During a Department of Energy (DOE) investigation conducted on February 12-14, 2002, violations of DOE nuclear safety requirements were identified. In accordance with the "General Statement of Enforcement Policy," 10 CFR 820, Appendix A, DOE proposes to impose civil penalties pursuant to section 234A of the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2282.a, and 10 CFR 820. The particular violations and associated civil penalties are set forth below:

I. Work Processes

10 CFR 830.120 (c)(2)(i) Work Processes requires that equipment used for process monitoring or data collection be calibrated and maintained. Specifically, "Project Hanford Quality Assurance Program Description," Revision 3, section 5(3.5), dated 3/3/99, states that "Portable and installed instruments used for process monitoring or data collection shall be controlled, calibrated, and maintained."

Contrary to the above, between September 1998 and May 2001, during which time Fluor Hanford, Inc. (FHI), provided nondestructive assay (NDA) services at Building [], the portable NDA equipment used to generate data for radioactive waste characterization purposes was not adequately controlled or calibrated.

This violation constitutes a Severity Level II problem.

Civil Penalty - \$41,250

II. Work Processes

10 CFR 830.120 (c)(2)(i) Work Processes requires that work be performed to established technical standards and administrative controls using approved instructions, procedures, or other appropriate means.

Contrary to the above, between September 1998 and May 2001, work was not performed to established standards and controls using approved procedures.

Examples include the following:

- A. In May 1999, a FHI NDA Scientist modified the spreadsheet used in the [] NDA process. FHI procedure HNF-PRO-309, "Computer Software Quality Assurance Requirements," section 2.6(3)(b), Revision 0, dated September 3, 1998, states "Software verifications shall be performed as necessary to ensure that changes are appropriately reflected in software documentation." However, the intended modification to the spreadsheet was not adequately reflected in the applicable spreadsheet documentation and no verifications were performed. In addition, this section of the procedure states "Software validation shall be performed as necessary for the change." However, the modification to the spreadsheet was not subjected to validation.
- B. HNF-PRO-309, section 2.6(2) states "Configuration identification shall include: Unique identification of the software element to be placed under software configuration management. Each version or revision of a software element shall be uniquely identified and labeled." However, the revisions to the spreadsheet used in the [] NDA process were not uniquely identified and labeled.
- C. HNF-SD-2900-QAPP-001, "[] Facility Nondestructive Analysis: Quality Assurance Program Plan," Revision 0, section 2.2, dated June 25, 1998, states "BWHC will perform NDA to meet the requirements of ANSI N15.36-1994 for Nondestructive Assay Measurement Control and Assurance." Further, "Letter of Instruction for Nondestructive Analysis at []," section 5.5(e), dated June 8, 1998, required that FHI prepare and submit to Bechtel Hanford Incorporated written procedures for "Analysis and reporting of measurement control data." However, FHI (1) failed to establish a measurement control program for portable NDA operations, (2) did not have formal procedures for the implementation of a NDA Measurement Control Program, and (3) did not evaluate the appropriateness of the portable NDA instrumentation.

Collectively these violations constitute a Severity Level II problem.
Civil Penalty - \$41,250

III. Quality Improvement

10 CFR 830.120 (c)(1)(iii) Quality Improvement requires that processes to detect and prevent quality problems shall be established and implemented. Items, services, and processes that do not meet established requirements shall be identified, controlled, and corrected according to the importance of the problem and work affected.

Contrary to the above, between May 1999 and May 2001, processes to detect and prevent quality problems were inadequate. Examples include the following:

- A. HNF-MP-599, "Quality Assurance Program Description," Revision 4, Part 2, section 3 (4.1), dated January 3, 2000, states "Managers at all levels are responsible for correcting identified deficiencies in a timely manner." In August 1999, DOE Richland conducted an audit of FHI computer software quality assurance and

identified several deficiencies related to the use of NDA applicable spreadsheets. As a result of this audit, FHI developed a correction action plan to remedy the problems noted in the audit report. However, FHI management did not assure that these corrective actions were addressed in a timely manner. Specifically, most of the corrective actions that would have affected NDA activities at [] were not completed until 20 months after initial identification.

- B. HNF-MP-599, "Quality Assurance Program Description," Revision 3, Part 2, section 10 (3.1), dated March 10, 1999, states "Independent assessments shall be planned and conducted to measure the adequacy of work performed in complying with applicable requirements." and to "evaluate the quality of PHMC item and service quality and promote improvement in PHMC processes and activities." However, over the period 1999 to May 2001, FHI performed no software quality assurance independent assessments of the NDA activities that would have impacted the NDA work being performed at Building [].
- C. HNF-MP-599, "Quality Assurance Program Description," Revision 3, Part 2, section 9 (3.1), dated March 10, 1999, states "Managers at every level shall plan, schedule, and conduct assessments of their management systems and processes." However, some FHI management with direct responsibility for work being performed at Building [] were not aware of this work activity until May 2001, when they were notified of the NDA data quality issues.
- D. HNF-SD-2900-QAPP-001, "[] Facility Nondestructive Analysis: Quality Assurance Program Plan," Revision 0, section 2.2, dated June 25, 1998, states "BWHC will perform NDA to meet the requirements of ANSI N15.36-1994 for Nondestructive Assay Measurement Control and Assurance." This ANSI Standard provides detail on how to establish a Measurement Control Program to assure the stability of the NDA measurement processes and to provide confidence in the quality of the NDA data over time. However, FHI failed to implement a Measurement Control Program for its NDA activity at [] and as such degraded their ability to detect and prevent NDA data quality problems.
- E. HNF-MP-599, "Quality Assurance Program Description," Revision 5, section 3 (3.1), dated August 31, 2000, states "Processes for identifying and reporting deficiencies in a timely manner and to the appropriate level of management shall be developed and implemented." Section 3 (4.3) states "Analytical is responsible for analyzing samples and notifying customer when results are out of specification." However, FHI NDA personnel failed to report and disposition the NDA data discrepancies in a timely manner. Specifically, FHI management, DOE Richland, and the customer of the NDA data were not notified until three months after quality concerns with NDA data were initially recognized.

Collectively, these violations constitute a Severity Level II problem.
Civil Penalty - \$55,000

Pursuant to the provisions of 10 CFR 820.24, FHI is hereby required within 30 days of the date of the Preliminary Notice of Violation and Proposed Imposition of Civil Penalty, to submit a written statement or explanation to the Director, Office of Price-Anderson Enforcement, Attention: Office of the Docketing Clerk, EH-10, 270 Corporate Square Building, U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585-0270 if sent by the U.S. Postal Service. If sent by overnight carrier, the response should be addressed to Director, Office of Price-Anderson Enforcement, Attention: Office of the Docketing Clerk, EH-10, 270 Corporate Square Building, U.S. Department of Energy, 19901 Germantown Road, Germantown, MD 20874-1290. Copies should also be sent to the Manager, DOE Richland Operations Office, and to the Cognizant Secretarial Offices at Headquarters for the facilities that are subjects of this notice. This reply should be clearly marked as a "Reply to a Preliminary Notice of Violation" and should include the following for each violation: (1) admission or denial of the alleged violations; (2) any facts set forth which are not correct, and (3) the reasons for the violations if admitted, or if denied, the basis for denial. Corrective actions that have been or will be taken to avoid violations will be delineated with target and completion dates in DOE's Noncompliance Tracking System. In the event the violations set forth in the Preliminary Notice of Violation are admitted, this Notice will constitute a Final Notice of Violation in compliance with the requirements of 10 CFR 820.25.

Any request for remission or further mitigation of civil penalty must be accompanied by a substantive justification demonstrating extenuating circumstances or other reasons why the assessed penalty should not be paid in full. Within the 30 days after the issuance of the Notice and Civil Penalty, unless the violations are denied, or remission or mitigation is requested, FHI shall pay the civil penalty of \$137,500 imposed under section 234a of the Act by check, draft, or money order payable to the Treasurer of the United States (Account 891099) mailed to the Director, Office of Price-Anderson Enforcement, Attention: Office of the Docketing Clerk in accord with the instructions set forth above. Should FHI fail to answer within the time specified, the contractor will be issued an order imposing the civil penalty. In requesting further mitigation of the proposed civil penalty, FHI should address the adjustment factors described in section IX of 10 CFR 820, Appendix A.



Stephen M. Sohinki
Director
Office of Price-Anderson Enforcement

Dated at Germantown, MD
this 12th day of August 2002

Enforcement Conference Summary (NTS-RL- -PHMC-PFP-2001-0004)

The Department of Energy's (DOE) Office of Price-Anderson Enforcement (OE) held an Enforcement Conference with FHI personnel on June 25, 2002, in Richland, Washington. The OE called the meeting to discuss the facts, circumstances, and corrective actions pertaining to Nondestructive Assay (NDA) data quality issues over the time period June 1998 to May 2001 while performing NDA in support of the Building [] decontamination and dismantlement effort. Mr. Anthony Weadock, acting on behalf of the Director of the Office of Price-Anderson Enforcement, called the conference to order. A list of attendees is attached. Information and key areas discussed at the conference are summarized below, and material provided by FHI during the conference was incorporated into the docket file.

Mr. David B. Van Leuven, Executive Vice President and Chief Operating Officer for FHI, began the presentation with an introduction of FHI personnel and indicated his agreement with the findings presented in the OE Investigation Summary Report with one exception (post conference discussion revealed this one exception being related to the personnel training deficiencies noted in the Investigation Summary Report). Mr. Scott Sax, FHI PFP Director, provided an overview of the potential violation and discussed the related causal analysis. In addition, Mr. Sax discussed the Nuclear Material Stabilization (NMS) related corrective actions and concluded by stating that all NMS corrective actions have been completed. Mr. Shelby Turner, FHI QA Director, discussed the broader FHI corrective actions completed or scheduled to be completed. Mr. Van Leuven then discussed the safety significance of the NDA event and stated that there were no actual nuclear safety or worker safety consequences as a result of the NDA data quality issues, but the potential for significant consequences existed for portable NDA activities. Mr. Van Leuven then concluded by discussing several areas of potential mitigation for OE consideration.

Mr. Weadock indicated that DOE would consider the information presented by FHI together with the entire record, when DOE undertakes its enforcement deliberations. Mr. Weadock then adjourned the conference.

June 25, 2002

**Fluor Hanford Incorporated NDA Data Quality Issues
Enforcement Conference List of Attendees**

Office of Price-Anderson Enforcement

Anthony Weadock
Richard Day
Sharon Hurley
Peter Rodrik

DOE Richland

Lloyd Piper
Brian Fiscus
Shirley Olinger
Harry Bell
Larry Romine
Jim Todd
Shiv Seth

Office of Environmental Management

Sandy Johnson

FHI

David B. Van Leuven
Anthony Buhl
George Jackson
Elizabeth Curfman
Scott Sax
Shelby Turner
Jennifer Curtis