

May 26, 1999

Mr. Ronald D. Hanson
[]
Fluor Daniel Hanford, Inc.
P.O. Box 1000
MS/H5-20
Richland, Washington 83415

EA-1999-04

Subject: Preliminary Notice of Violation and Proposed Imposition of Civil Penalty
\$330,000 and Compliance Order
(NTS-RL-PHMC-KBASINS-1997-0001,-0002,-0004, and -0005),
(NTS-RL-PHMC-KBASINS-1998-0001),
(RL-PHMC-SNF-1997-0001, - 0002, -0011,-0014, and -0021)

Dear Mr. Hanson:

This letter refers to the Department of Energy's (DOE) evaluation of the circumstances surrounding a number of events that involved work process, design, procurement, and quality improvement deficiencies in the Spent Nuclear Fuels Project (SNFP), K-Basins, and other Project Hanford Management Contract (PHMC) facilities. The deficiencies involved repetitive failures to adhere to established operational controls at nuclear facilities under the PHMC. Adherence to these controls ensures that nuclear safety related operations are conducted within appropriate safety margins and in accordance with facility authorization bases. This letter also refers to the findings of a subsequent investigation by DOE into concerns that failed to provide complete and accurate information to DOE regarding a separate regulatory matter at K-Basins.

DOE conducted an onsite evaluation of the quality assurance deficiencies in April 1998. The Investigation Summary Report issued August 20, 1998, describes the results of the investigation. An Enforcement Conference was held with you and members of your staff on October 22, 1998. This conference included a discussion of the circumstances surrounding the potential violations, their safety significance, and the status of corrective actions. During this conference you acknowledged a broad range of deficiencies that directly affected the quality of safety related equipment and services provided by your subcontractors at the K-Basins, the SNFP, and other PHMC facilities. Subsequent to the conference DOE concluded that, in lieu of immediate enforcement action, you should be given an additional 120 days to demonstrate substantial progress in the correction of these long-standing problems across the site.

In April 1999 DOE conducted a supplemental investigation to evaluate your progress in resolving these quality problems as discussed at the Enforcement Conference and in accordance with your Quality Improvement Program. DOE evaluated completed corrective actions and progress that had occurred since the Enforcement Conference. DOE concluded from this review that adequate progress in implementing the commitments made to DOE in correcting the identified quality problems had not been demonstrated. A summary of this supplemental investigation is enclosed.

DOE has concluded that violations of the Design, Procurement, Work Process, and Quality Improvement provisions of 10 CFR 830.120 occurred. The violations described in Section I of the enclosed Preliminary Notice of Violation (PNOV) involve multiple and recurring failures to adequately and fully implement your Quality Assurance Program requirements at the SNFP and K-Basins. The quality deficiencies include (1) failure to adhere to work process procedures and controls; (2) failure to adequately qualify and provide oversight of subcontractors; (3) failure to control design information; and (4) failure to establish an effective quality improvement process to prevent recurrence of these deficiencies.

In one case, FDH allowed a subcontractor, Merrick Engineers and Architects, to continue work for approximately one year after an assessment determined that their quality assurance deficiencies had an adverse effect on the quality of safety related services provided by that subcontractor. Design changes and drawings on safety related equipment, being fabricated by HiLine Engineering and Fabrication, were not controlled or approved. Failure to comply with requirements and controls established by your Safety Analysis Reports, Technical Specifications/Operations Safety Requirements, and operating procedures were identified on numerous occurrences. FDH failed to self-identify these quality problems and failed to implement adequate corrective actions to prevent recurrence.

DOE is concerned with these quality failures because both the SNFP and movement of the fuel stored in the K-Basins to safer storage are of paramount importance to DOE and the local community. It is essential that DOE and the public have confidence in the quality and safety aspects of this project and the nuclear facilities that will process and store the fuel. From a regulatory perspective, DOE is especially concerned that these deficiencies are widespread and recurring. Further, numerous commitments by FDH to resolve the quality problems have not effectively resolved them.

In accordance with the "General Statement of Enforcement Policy" 10 CFR 820, Appendix A, the violations of 10 CFR 830.120 described in Section IA, IB, and IC in the enclosed PNOV have been classified at Severity Level I; the violation described in Section ID has been classified at Severity Level II. In determining the Severity Level of these violations, DOE considered the actual and potential safety significance associated with these occurrences, the programmatic nature of these problems, and other factors discussed below.

The multiple examples of the violations identified in Section I of the PNOV could have been cited and assessed individually for civil penalties. However, DOE elected to collectively aggregate similar violations because of their programmatic nature. In assessing the Severity Level of these violations, DOE considered the repeated poor performance of FDH in correcting these quality problems as evidenced by numerous notifications by DOE of unacceptable quality performance at the SNFP and K-Basins. DOE also considered, in reaching this decision, that some of these violations continued to exist over an extended period of time even though documentary evidence existed that established FDH was aware of the problems and failed to implement timely and adequate corrective actions.

Section II of the PNOV describes a violation of the provisions of 10 CFR 820.11 (Information Requirements) which occurred after the Enforcement Conference of October 22, 1998. The circumstances surrounding this matter are described in detail in the enclosed Investigation Summary Report. This violation directly resulted from the failure of FDH to provide accurate and complete information to DOE, regarding a separate investigation of potential falsification of radiological hold points. This violation is of significant regulatory concern because DOE relies on the accuracy and completeness of information provided by its contractors when making regulatory decisions.

This violation has been classified as a Severity Level II problem because substantial documented information existed within FDH to provide an accurate response to DOE's questions to resolve the issue. However, multiple failures occurred within your corporate organization resulting in a formal response to DOE from the President of FDH as well as subsequent documentation from FDH, which was not accurate and complete in all material respects. Had evidence been developed that the violation was willful, DOE would have considered classifying the violation as a Severity Level I problem.

To emphasize DOE's concern that nuclear activities be performed in accordance with established requirements and to correct quality problems in a timely and effective manner, I am issuing the enclosed Preliminary Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$330,000 (\$220,000 for the violations described in Section I A, IB, and IC of the PNOV, \$55,000 for the violation described in Section I D of the PNOV, and \$55,000 for the violation described in Section II of the PNOV).

DOE has determined that no mitigation is warranted for the violations described in the PNOV. The noncompliances were identified resulting from self-disclosing occurrences or identification of the deficiency by DOE Richland Operations Office (DOE-RL) in most cases. Our assessment could find no evidence of a pro-active self-assessment activity by FDH that resulted in identifying the problems at the SNFP. In addition, the corrective action process has not been timely or adequate in preventing recurrence of these problems at the SNFP.

DOE recognizes that FDH has made some changes to key management positions and has now begun implementing improvements to the corrective action management process that, if completed, should significantly improve the quality of work by PHMC. In addition, FDH has committed to DOE to improve the quality performance of all work performed by Major Subcontractors at PHMC. However, because of the longstanding nature of the problems identified in this action, the Secretary has determined that the enclosed Compliance Order be issued to FDH in order to ensure FDH's full accountability for implementing the actions necessary to resolve these problems.

You are required to respond to this letter and you should follow the instructions specified in the enclosed Preliminary Notice of Violation when preparing your response. Your response should document the specific actions you have taken to date and any additional actions you plan to prevent recurrence, and the scheduled completion of such actions. After reviewing your response to this Notice, including your proposed corrective action plan, DOE will determine whether further actions are necessary to ensure compliance with the applicable nuclear safety requirements. Additionally, you are to follow the response requirements outlined in the Compliance Order.

Sincerely,

David Michaels, PhD, MPH
Assistant Secretary
Environment, Safety and Health

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Enclosures:
Preliminary Notice of Violation
and Proposed Imposition of Civil Penalty
Compliance Order
Supplemental Investigation
Investigation Summary Report

cc: R. Kiy, EH-1
M. Zacchero, EH-1
K. Christopher, EH-10
S. Hurley, EH-10
R. Trevillian, EH-10
G. Podonsky, EH-2
O. Pearson, EH-3
J. Fitzgerald, EH-5
J. Owendoff, EM-1

L. Vaughan, EM-10
K. Klein, DOE-RL
L. Piper, DOE-RL
P. Kruger, DOE-RL
P. Knollmeyer, DOE-RL
R. French, DOE-ORP
J. Augustenborg, DOE-RL
G. Bell, DOE-RL
S. Branch, DOE-RL
S. Veitenheimer, DOE-RL
W. Smoot, DOE-RL
B. Fiscus, DOE-RL
R. Carosino, DOE-RL
A. Wright, DOE-RL
J. Polehn, EH-Resident
D. Lucoff, FDH
J. Lieberman, NRC
R. Azzaro, DNFSB
Docket Clerk, EH-10

PRELIMINARY NOTICE OF VIOLATION AND
PROPOSED IMPOSITION OF CIVIL PENALTY

Fluor Daniel Hanford, Inc.
Project Hanford Management Contract

EA-1999-04

As a result of a Department of Energy (DOE) evaluation of a series of events from late 1996 through 1998 at the K-Basins and the Spent Nuclear Fuels Project (SNFP), violations of DOE nuclear safety requirements were identified. In accordance with the "General Statement of Enforcement Policy," 10 CFR 820, Appendix A (Amended October 8, 1997), DOE proposes to impose civil penalties pursuant to Section 234A of the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2282a, and 10 CFR 820. The particular violations and associated civil penalties are set forth below.

I. VIOLATIONS PERTAINING TO QUALITY ASSURANCE DEFICIENCIES

- A. 10 CFR Part 830.120(c)(2)(iii) "Procurement" requires that "Procured items and services shall meet established requirements and perform as specified. Prospective suppliers shall be evaluated and selected on the basis of specified criteria. Processes to ensure that approved suppliers continue to provide acceptable items and services shall be established and implemented."

Fluor Daniel Hanford, Inc (FDH). procedure, HNF-PRO-268, requires that "Safety Class and Safety Significant procurement contracts, except for Commercial Grade Dedication, shall be awarded to suppliers on the FDH Evaluated Suppliers List (ESL) whose programs and scope meet the procurement requirements." This procedure requires that prior to contract award the supplier shall be evaluated to determine the extent of conformance to the technical and quality requirements. Any unacceptable conditions are required to be resolved.

Contrary to the above, FDH, and its Major Subcontractors (MSC) failed to ensure procured items and services met established requirements in that-

1. Fluor Daniel North West (FDNW) a FDH subcontractor allowed another subcontractor Merrick Engineers and Architects to provide nuclear facility design work affecting nuclear safety on the Cold Vacuum Drying Facility (CVDF) without an approved Quality Assurance (QA) Program. Merrick

- provided these services from November 1996 through August 1997 while they had significant deficiencies known to FDNW in their QA Program.
2. Duke Engineering and Services Hanford (DESH), a MSC to FDH, contracted HiLine Engineering and Fabrication, Inc. in mid 1997 to procure the components and fabricate the Cold Vacuum Drying System, which included safety class components. HiLine was on the FDH ESL, but only for a limited scope which did not include fabrication of safety class systems. An FDH evaluation of HiLine in May 1997 identified that the HiLine QA Program was incomplete. In addition, a December 9, 1997, DESH surveillance report, identified that all QA requirements had not been included in the procurement specification. In February 1998 an FDH-AI (Authorized Inspector i.e., a government inspector independent of the DOE) identified two significant nonconformance reports (NCR) concerning deficiencies in HiLine's QA Program implementation.
- B. 10 CFR Part 830.120(c)(2)(ii) "Design" requires that "Items and processes shall be designed using sound engineering/scientific principles and appropriate standards. Design work, including changes, shall incorporate applicable requirements and design bases. Design interfaces shall be identified and controlled. The adequacy of design products shall be verified or validated by individuals other than those who performed the work. Verification and validation work shall be completed before approval and implementation of the design."

Contrary to the above, FDH, and its MSCs failed to ensure design items and processes met established requirements in that-

1. An October 29, 1997, DESH QA surveillance found "Controls regarding design changes between Chem Nuclear Systems Incorporated (CNSI) and DESH have not been established..." An FDH Project QA review during the week of December 8, 1997, identified that the vendor certification process, requested by DESH and performed by FDH, did not evaluate CNSI's QA program to qualify them to provide design engineering services for nuclear structures, systems, and components projects.
2. Los Alamos Technical Associates, a subcontractor to CNSI, a subcontractor to DESH who is a subcontractor to FDH, submitted a design package on the Integrated Water Treatment System, a subsystem of the SNFP. On August 29, 1997, that package was issued to the DOE Richland Operations Office (DOE-RL) for approval. Upon review DOE-RL identified that the design package had not been verified and validated by an independent review as required by the FDH QA Implementation Plan.

Collectively, these violations constitute a Severity Level I problem.
Civil Penalty - \$110,000.

- C. 10 CFR Part 830.120(c)(1)(iii) "Quality Improvement Processes" 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 the work affected. Correction shall include identifying the causes of problems and working to prevent recurrence. Item characteristics, process implementation, and other quality-related information shall be analyzed to identify items, services, and processes needing improvement."

Contrary to the above, FDH did not implement a quality process to detect and prevent quality problems. In addition, FDH failed to correct identified problems to prevent recurrence in that-

1. DOE-RL issued a letter dated December 19, 1997, to FDH identifying continuing QA Program deficiencies on the SNFP. In this letter DOE-RL stated that QA deficiencies identified since April 1, 1997, indicate a continuing poor trend in which QA Program requirements are not being properly implemented by line management. QA Programmatic concerns identified in this letter included (1) continuing instances where design work did not comply with QA requirements; (2) continuing instances where work activities did not implement quality requirements, (3) continued failure to ensure Unreviewed Safety Question (USQ) evaluators met training requirements; and (4) lack of an effective event investigation program.
2. DOE-RL conducted a review of the DESH SNFP corrective action management system in December 1997. A letter providing the findings from this review was issued to FDH on December 29, 1997. This review identified the following concerns: (1) corrective actions for significant noncompliances are not being adequately closed by the due dates; (2) corrective actions involving incomplete design reviews were not sufficient to prevent recurrence; (3) PAAA requirements are not identified in subcontracts and vendor procurements; (4) a functioning process to provide trending of minor PAAA noncompliances did not exist; and (5) root cause identification and corrective actions for minor PAAA noncompliances were not always complete and closed on time.
3. DOE-RL issued a letter dated July 13, 1998, to FDH identifying significant quality deficiencies across the PHMC activities. This letter provided examples of sitewide quality deficiencies including (1) ineffective implementation of corrective action management and trend evaluation processes for PHMC; (2) multiple instances in which design work did not comply with QA program requirements; (3) ineffective QA program implementation and corrective action management for the Hanford Site Calibration Laboratory; and (4) ineffective implementation of the Deficiency Tracking System. DOE-RL also stated their concern, in this letter, about FDH's inattention to correcting QA program and

implementation inadequacies has allowed uncorrected known deficiencies to continue.

Collectively, these violations constitute a Severity Level I problem.
Civil Penalty - \$110,000.

- D. 10 CFR Part 830.120(C)(2)(i) "Work Processes" requires that "Work shall be performed to established technical standards and administrative controls using approved instructions, procedures, or other appropriate means..."

Contrary to the above, FDH and their MSCs failed to perform work to established technical standards and administrative controls using approved instructions, procedures, or other appropriate means in that-

1. On March 3, 1997, DESH workers identified several Single Fuel Element Canisters (SFEC) were stored, in the 105 KW Basin West Bay, inconsistent with a facility Technical Safety Requirement (TSR). The TSR allows only capped fuel in Mark I or Mark II canisters to be stored in this area. An Unreviewed Safety Question (USQ) evaluation performed prior to the movement of the SFEC into this area failed to consider the TSR requirement in the evaluation. An investigation by the Plant Review Committee established that an inadequate USQ review had been performed, and that the USQ review did not receive a verification check from any other nuclear safety personnel.
2. On March 21, 1997, DESH identified they had performed load testing of the 105KW Basin monorails using a test load (3000 pounds) that exceeded limits (1700 pounds) established in the K-Basins Safety Analysis Report (SAR). The SAR allowed heavier loads if an analysis was performed on the specific load and its associated test conditions to confirm that the fuel would not risk unacceptable damage. This analysis was not performed prior to conducting the load test with the 3000 pound load which violated the SAR requirement. An analysis was performed subsequent to the first load test, which established that no unacceptable damage would have occurred.
3. DESH identified two occurrences where TSR surveillances were not completed in the required time frames. One such surveillance was for, TSR 4.5.1, per procedure OP-06-004 to inspect railroad switch positions at 105 KE/KW; and the second surveillance was for, TSR 4.2.1.1, per procedure CP-7-3 to inspect K-Basins for loss of water and perform leakage calculations. During the investigation of these surveillance deficiencies, one additional deficiency, occurring January 22, 1997, of the TSR 4.5.1 surveillance requirement was identified. Because of the inadequate surveillance documentation both TSR 4.2.1.1 and TSR 4.5.1 were violated.

4. On June 16, 1997, a 105KE basin spent fuel rack, with thirteen fuel canisters, was discovered mispositioned. The mispositioned fuel rack was an unanalyzed condition (for seismic loads) in the SAR. The mispositioned fuel rack was believed to have been caused by operators who inadvertently hooked the fuel rack with a stiffback hoist and mispositioned it. On July 15, 1997, a second, similar fuel rack out-of-position condition was discovered in 105KE Basin.
5. On September 29, 1997, during a planned movement of fuel, a canister of fuel was dropped in the 105KE Basin. The fuel canister contained 14 fuel pieces. During this fuel movement evolution, a Certified Operator was providing On-the-Job training to an Operator-In-Training and had observed nine successful fuel movements. Prior to movement of the tenth fuel canister, the Certified Operator left the area. The Operator-In-Training continued with the hook up and movement of the fuel canister even though there was no direct supervision by the Certified Operator as required by procedure (OP-07-039E). In addition, Section 4.2.6 of this procedure requires verification of the proper engagement of the lifting hook into the fuel canister trunion by two Certified Operators. In this event no Certified Operators verified the proper engagement of the lifting hook.
6. FDH is responsible for the receipt inspection of all materials used in the SNFP. In October and December 1997, FDH personnel made changes to selected material identification markings when nonconformance with the procurement specifications was identified, and then failed to initiate the required NCRs per Procedure FDH-1610 and HNF-PRO-298 (Rev.0), "Non-Conforming Item Reporting and Control." In October 1997 material, for use in the construction of the SNFP multi-canister over pack (MCO) Baskets, was received by FDH and during receipt inspection was identified to be missing the required material markings. Again, in December 1997, the same supplier sent additional material that did not have the required material markings. In both cases, backup documentation was received from the supplier to support the appropriate material markings and the material was marked by FDH onsite personnel.

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

II. VIOLATION PERTAINING TO INFORMATION REQUIREMENTS

- E. 10 CFR 820.11(a) requires that any information pertaining to a nuclear activity provided to DOE by any person shall be complete and accurate in all material respects.

Contrary to the above, in November 1998 FDH provided information to DOE that was not complete and accurate in all material respects. The information provided by FDH was material because it was used by the Department in evaluating the safety significance of an event. The event involved the backdating of radiological

hold points for June 25, 26, and 30, 1997, at the K-Basins facility associated with Work Package 1K-97-0005/K. Specifically, in that-

1. On or about November 18, 1998, FDH submitted a document to DOE in which FDH represented that the addition of signatures and dates on the hold points for June 25, 26, and 30, 1997, was not considered back-dating; rather it reflected the practice of real-time recording. In its investigation, DOE established that the hold points for June 25, 26, and 30, 1997, were improperly documented, contrary to the representations made by FDH.
2. On or about November 18, 1998, FDH provided copies of three Radiological Survey Reports to DOE, i.e., report numbers 229730, 229789, and 229738. FDH represented that the Radiological Survey Reports formed the basis for the Health Physics Technicians' decision to document the hold points on June 25, 26, and 30, 1997. In its investigation, DOE established that FDH failed to include Radiological Survey Report Number 229725, which would have supported a check for baseline contamination levels for activities conducted on June 25, 1997.
3. On or about November 18, 1998, FDH provided a copy of Radiological Survey Report Number 229738 for June 30, 1997. FDH represented that this document, and two other surveys, formed the basis for the Health Physics Technician's decision to document the hold point on June 30, 1997. DOE's investigation established that this survey was not performed to satisfy the requirements of the hold point.
4. After reviewing the three Radiological Survey Reports provided to DOE on or about November 18, 1998, DOE questioned the sequence and the late completion of Radiological Survey Report Number 229789. This survey was purportedly performed on June 26, 1997, but was not documented until July 21, 1997. FDH represented to DOE that due to time and attendance factors, the Health Physics Technician did not have the opportunity to document the survey until July 21, 1997. However, DOE's investigation established that the survey was not documented late because of time and attendance factors. Rather, the Health Physics Technician documented the survey on July 21, 1997, because he was told by a supervisor to create the document.

Collectively, these violations constitute a Severity Level II problem.

Civil Penalty -\$55,000

Pursuant to 10 CFR 820.24, Fluor Daniel Hanford, Inc. is hereby required within 30 days of the date of this Notice and Proposed Imposition of Civil Penalty, to submit a written statement or explanation to the Director, Office of Enforcement and Investigation, Attention: Office of the Docketing Clerk, EH-10, P.O. Box 2225 Germantown, MD 20875-2225, with copies to the Manager, DOE Richland Operations Office, and to the Cognizant DOE Secretarial Office for the facilities that are the subject 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) the facts admitted, and if denied, the reasons they are not correct. Successful implementation of the requirements set forth in the enclosed Compliance Order will satisfy the need for submittal of a corrective action plan to resolve these violations.

Any request for remission or mitigation of the civil penalty must be accompanied by a substantive justification demonstrating extenuating circumstances or other reasons why the assessed penalty should not be imposed in full. Unless the violations are denied, or remission or mitigation is requested within the 30 days after the issuance of the Preliminary Notice of Violation and Proposed Imposition of Civil Penalty, Fluor Daniel Hanford, Inc. shall pay the civil penalty of \$330,000 (imposed under Section 234a of the Act) by check, draft, or money order payable to the Treasurer of the United States (Account Number 891099) mailed to the Director, Office of Enforcement and Investigation, at the above address. Should the contractor fail to answer within the time specified, an order imposing the civil penalty will be issued.

If requesting mitigation of the proposed civil penalty, Fluor Daniel Hanford, Inc., should address the adjustment factors described in Section VIII of 10 CFR 820, Appendix A.

David Michaels, PhD, MPH
Assistant Secretary
Environment, Safety and Health

Dated at Washington D.C.
this day of 1999

UNITED STATES
DEPARTMENT OF ENERGY

In The Matter Of) EA-1999-04
Fluor Daniel Hanford, Inc.)
Hanford)
Richland, Washington)

COMPLIANCE ORDER
REQUIRING QUALITY ASSURANCE CORRECTIVE MEASURES
(EFFECTIVE IMMEDIATELY)

I

Fluor Daniel Hanford, Inc. ("FDH" or "contractor") is the managing and integrating contractor for portions of the Hanford Reservation, in the State of Washington. Since October 1996, FDH has been the managing and integrating contractor responsible for ensuring the operation of several facilities at Hanford, including the K-Basins and Spent Nuclear Fuel Project, under the Project Hanford Management Contract (PHMC). FDH manages these facilities on behalf of the Department of Energy (DOE), and DOE requires that FDH be in compliance with various nuclear safety requirements embodied in DOE regulations, as well as various contractual requirements. This Order focuses on several areas in which FDH has not maintained its compliance with certain of these DOE regulatory requirements.

II

Since April 1997 FDH has failed to ensure compliance with quality assurance regulatory requirements concerning the safe management and operation of K-Basins and Spent Nuclear Fuel Project (SNFP) activities. This Order addresses past failures in management processes related to selection; qualification and oversight of subcontractors; compliance with work process controls and approved procedures; and the quality improvement process to correct identified problems. DOE is concerned about the continued failure to correct problems in these areas, despite multiple prior notifications of such problems by both DOE and the contractor's own self-assessment process. DOE expects that its contractors will operate DOE's nuclear and high hazard facilities in full compliance with all regulatory and contractual requirements, and that identified problems will receive vigorous management attention to rectify the problems.

Since April 1997 numerous DOE and contractor assessments have identified problems related to the quality assurance of key components or activities related to the Spent Nuclear Fuel Project, K-Basins, and other PHMC facilities under FDH responsibility. These problems have pertained to compliance with DOE's quality assurance regulation, namely 10 CFR Part 830.120, Quality Assurance Requirements. That Rule requires DOE indemnified contractors, among other things, to evaluate and select suppliers based upon contractor specified criteria, and to implement a process to ensure contracted suppliers continue to provide acceptable items and services. Additionally, that Rule requires such contractors to perform work using approved work controls and procedures, and to implement a quality improvement process to correct identified problems. These controls, along with other nuclear safety regulatory requirements, ensure that nuclear safety operations are conducted safely with appropriate safety margins. Conducting operations safely and ensuring the quality and reliability of safety features at these nuclear facilities ensures the safety of DOE's workers as well of the public from any potential radiological harm.

In October 1997 DOE's Richland Operations Office (DOE-RL) notified FDH of deficiencies in safety-related subcontractor supplied subsystems for the SNFP. Also, FDH and its subcontractors found problems in the design and procurement controls being applied to SNFP items in various reviews and assessments in February, June, August, October, and December 1997. However, these findings did not result in aggressive steps by FDH to correct the controls being applied to subcontractors and suppliers to FDH under the PHMC contract. In December 1997 DOE-RL issued a letter to FDH identifying continuing quality assurance deficiencies on the SNFP. That letter indicated that deficiencies occurring since April 1997 indicated a poor trend in which quality assurance requirements were not being implemented by FDH, including failure to comply with work control procedures and design deficiencies. Additionally, a separate review by DOE-RL in December 1997 found major deficiencies in the FDH quality improvement process to correct problems, including corrective actions for noncompliances not being closed by due dates, failure to trend nuclear safety requirement noncompliances, and failure to identify and complete corrective actions for non-reportable nuclear safety noncompliances.

On July 13, 1998, DOE-RL again notified FDH by letter of a continuing quality problem across PHMC projects, including the SNFP. The letter underscored DOE's concern with FDH's inattention to (1) correcting quality assurance program and implementation inadequacies and (2) having allowed known deficiencies to continue uncorrected.

In early 1998 DOE-RL requested the Office of Enforcement and Investigation to evaluate the regulatory significance of the continuing failure to correct the identified quality problems. An onsite investigation was conducted in April 1998. As described in the Investigation Summary Report of August 20, 1998, the Office of Enforcement and Investigation concluded that numerous quality assurance deficiencies, contrary to 10 CFR 830.120 were continuing to occur. Specifically, several subcontractors to FDH had performed design and fabrication of safety related nuclear components but did not have an approved Quality Assurance Program and were not approved suppliers per the

FDH Evaluated Supplier List, as required by FDH procedures. In one case FDH allowed a subcontractor to continue work for approximately one year after an FDH assessment had determined that the subcontractor's quality assurance deficiencies had an adverse affect on the safety related services provided by that subcontractor. Design changes and drawings on safety related equipment being fabricated by another subcontractor were not controlled or approved in accordance with procedures. Numerous occurrences between October 1996 and February 1997 were identified and evaluated by the Office of Enforcement and Investigation where FDH and its subcontractors had failed to comply with safety requirements and controls in their approved Safety Analysis Reports, Technical Specifications, Operational Safety Requirements, and various operating procedures. No comprehensive actions had been undertaken by FDH to prevent these programmatic problems of work control and procedure violations. Additionally, the review by the Office of Enforcement and Investigation evaluated several instances of quality improvement deficiencies, many representing cases of inadequate corrective actions to preclude recurrence of the same or similar problems.

These deficiencies and events were the subject of an Enforcement Conference on October 22, 1998. At that Conference, FDH acknowledged the problems identified by DOE in its Investigation Summary and also indicated their conclusion that the problems were widespread at the site beyond K-Basins and the SNFP. At the Conference FDH presented a planned Quality Improvement Program (QIP), which was focused on identifying quality assurance problems and causes across all of the FDH-managed Hanford projects. In addition to changes in key management positions, FDH committed to DOE that a broad set of corrective actions, as part of the QIP, would be implemented across all of the FDH projects to fully correct the identified quality assurance problems. FDH also promised compensatory interim actions to prevent quality problems from occurring in the interim until all longer-term corrective actions of the QIP were completed. Following the Enforcement Conference and extensive deliberations within the Department, DOE elected to exercise its discretion and defer enforcement action for the identified quality assurance violations until it could evaluate the effectiveness of the planned improvements under the QIP. In an Enforcement Letter of November 16, 1998, DOE notified FDH of that decision, but indicated DOE would wait 120 days for progress to be made and then perform an on-site evaluation of progress and results. In that letter, DOE gave FDH an opportunity to show substantive progress in improving the quality of its operations.

On March 10, 1999, DOE notified FDH of its intention to perform an onsite review, between March 29 - April 1, 1999, of FDH progress in completing corrective actions. That onsite review found that FDH was not progressing as committed or as was reasonably expected in correcting these quality problems that follow:

1. No commitments were included in the QIP for the completion of corrective actions by major subcontractors to FDH

2. The scheduled completion dates committed to during the Enforcement Conference for several key actions had not been met
3. Several corrective actions had not been completed although commitment dates for their completion had substantially passed
4. FDH had not required, until March 3, 1999, their major subcontractors to evaluate the extent of the DOE identified quality assurance deficiencies at the facilities they were managing, even though these problems had been identified in the DOE Investigation Summary of August 20, 1998, and were part of the subject of the Enforcement Conference of October 22, 1998.
5. DOE's onsite review evaluated two different problem areas to validate FDH alleged improvements in the quality improvement process to correct deficiencies. In one area related to correcting configuration management problems, the review found that certain corrective actions committed to DOE had not been completed as committed. In both this area and the other area, which related to failure to perform [nuclear] safety inspections, the review found that the root cause analysis was inadequate and, consequently, the corrective actions taken were deficient. DOE found that quality deficiencies were continuing to occur.

Furthermore, DOE has concluded that despite commitments to correct these quality problems, in addition to the programmatic deficiencies in implementing corrective actions, events are continuing to occur in the following areas: items and services procured from subcontractors and suppliers, compliance with work controls and procedures, and correction of newly identified problems. Examples of these continuing problems are enumerated in the Preliminary Notice of Violation in this Enforcement Action EA-1999-04.

As a result of the continuing and repetitive nature of these problems, and the failure to meet commitments to resolve the identified deficiencies, DOE has issued a Preliminary Notice of Violation and proposed civil penalty for these violations, as part of this Enforcement Action EA-1999-04. Additionally, after considering the lack of progress to resolve these known problems since 1997, despite many opportunities to do so, I am issuing this Order, effective immediately, directing FDH to correct the identified problems and bring operations into compliance with Part 830.120.

III

In light of the foregoing, I have concluded that FDH must take action to correct and improve the quality of its operations, particularly with respect to the problem areas of qualification and oversight of subcontractors, compliance with work controls and procedures, and the process to detect and prevent recurring quality problems. These steps are necessary so that DOE has confidence in the safety of operations managed by FDH, as well as the quality of safety features intended to protect workers and the public from radiological harm.

In this Order, I direct FDH to implement procedural controls that they have committed to develop, but have not fully implemented. FDH is required to complete an extent of condition review of facilities under the management responsibility of FDH, including those operated by subcontractors, to identify the degree to which the violations identified in the DOE Investigation Summary exist. FDH is required to submit (1) the results of this review and (2) an action plan for any identified deficiencies to DOE-RL. The report of this independent assessment is to be provided to DOE-RL, with an action plan on the steps FDH will take to correct any deficiencies from the assessment.

Additionally, FDH is required to implement processes to meet commitments they have made related to regulatory requirements in the areas of control of subcontractors, compliance with work control procedures, and correction of identified problems. These processes are the fundamental problems that are the subject of DOE's Enforcement Action EA-1999-04, and they have not been fully corrected. Procedures to implement these processes are to be approved by DOE-RL prior to use. Finally, the Order directs FDH to conduct an independent assessment to confirm that these actions have been completed as required by the Order, and that the completed actions are effective in resolving the FDH-wide quality assurance problems that are the subject of this enforcement action and Order.

IV

Accordingly, pursuant to Section 161 of the Atomic Energy Act of 1954, as amended, and DOE's regulation 10 CFR 820 Subpart C, IT IS HEREBY ORDERED THAT

1. FDH complete an extent of condition review for these issues at all PHMC nuclear facilities by August 15, 1999. This review shall (1) validate proper implementation of DOE nuclear safety requirements and will (2) include an action plan to correct identified deficiencies. Any identified deficiencies will be documented in appropriate tracking and corrective action processes, and reported into the Noncompliance Tracking System (NTS) and/or Occurrence Reporting System (ORPS) in accordance with DOE's reporting criteria. The results of the review and the action plan will be submitted to DOE-RL for approval
2. Within 45 days FDH shall implement improved subcontractor and configuration control processes such that all suppliers of nuclear items and services are properly evaluated and placed on the approved suppliers list prior to performing contracted work; source and receipt inspection is performed so that quality affecting work that does not meet procurement requirements is identified, documented and corrected; and facilities and items are verified to meet design specifications and design changes are evaluated and approved prior to fabrication. Procedures for such processes shall be approved by DOE-RL.
3. Within 45 days FDH shall implement work control processes such that all nuclear facility and support system work activities are properly supervised by designated and trained work control personnel; work is performed in accordance with

established project requirements and approved work procedures; and an approved critique process ensures that deficient work processes are evaluated in a timely manner and that appropriate immediate and longer term corrective actions are taken. Procedures for such processes shall be approved by DOE-RL.

4. Within 45 days FDH shall implement a deficiency tracking system such that deficiencies are tracked to closure and evaluated for quality improvement opportunities. Within 75 days FDH shall implement a single FDH sitewide corrective action management process. Within 45 days FDH shall implement a process that ensures the effectiveness of corrective actions to prevent recurrence, and that performance indicators of deficiency tracking, trending and closure are available for management review. Procedures for such processes shall be approved by DOE-RL.
5. Within 60 days of completion of the above actions, FDH shall conduct an independent assessment under the direction of the FDH Facilities Evaluation Board, confirming the completion of the above actions and the effectiveness of these actions in correcting the problems that are the subject of this Enforcement Action EA-1999-04. The report of this independent assessment will be provided directly to DOE-RL, including an action plan by FDH of the steps to be taken to address any findings and observations of this independent assessment.

V

This Order constitutes a Final Order of the Department of Energy and is effective immediately. The contractor may, within 15 days of the issuance of this Order, request the Secretary to rescind or modify the Order in accordance with 10 CFR 820.43. The request may identify any proposed changes to specific actions to resolve issues of appropriateness or reasonableness. Any such request to modify or rescind should be directed to the Secretary of Energy, U.S. Department of Energy, 1000 Independence Avenue SW, Washington, D.C. 20585, and should include good cause for the request. Any request to modify or rescind does not stay the effectiveness of the Order unless the Secretary issues an order to that effect.

As set forth in Subpart C of 10 CFR 820, each failure on the part of the contractor to successfully complete any of the above ordered actions shall constitute a separate nuclear safety violation and could be subject to civil monetary penalties in accordance with Section 234 of the Atomic Energy Act of 1954, as amended, and 10 CFR Part 820, at up to \$110,000 per day for each such infraction. Additionally, DOE would consider all other remedies available, including contractual.

Bill Richardson
Secretary of Energy

Dated at Washington, D.C.
This day of 1999

