Deficiency Form

Topical Area: Configuration management		**Date**: 2/25/2002 **ID #**: F-9

Issue: There was an incomplete formal record of the software operational history for the saltwell PIC skid programmable logic controllers.

Requirement:

HNF-PRO-309, *Computer Software Quality Assurance Requirements*, Revision 1, March 23, 2000, Section 2.4, "Software Configuration Management," item 10, stipulates in part that: "A software defect and reporting process shall be implemented..." and that: "Defects shall be documented, evaluated, and resolved."

Reference(s) (specific as to section): As identified herein.

Finding X **Observation**: _____.

Discussion:

The team tried to identify and retrieve a record of software errors and operational problems for Tank Farm programmable logic controller (PLC) applications. This proved difficult because the contractor's capability for searching and retrieving such records was very limited.

The problem evaluation report (PER) process began in the first half of 2001. Prior to the PER process, non-conforming conditions were formally identified using only the nonconformance report (NCR) process, which was still in use at the time of this assessment.

In interviews, the design authority and CHG management said that NCRs had been used to identify observable configuration discrepancies, such as a discrepancy between as-found equipment and a drawing. NCRs were thus identifiable by equipment identification numbers or drawing numbers. They were typically not used for reporting software anomalies. On that basis, the assessment team concluded that the NCR process did not always capture software performance history because it was used primarily for observable hardware configuration discrepancies relative to drawings, or for construction discrepancies. Therefore, prior to the current PER process, no uniform process was used to formally identify, evaluate, trend, and correct software problems.

In assessing the effectiveness of the current PER process, it was difficult for the team to identify and retrieve a reliable sample of PERs involving software conditions. For example, the contractor performed a search of the PER database and retrieved only four PERs involving PLC software. However, a substantial PER (2001-1947) identified by the software custodian (based on his personal knowledge) did not appear in the group retrieved.

This PER identified several PLC configuration discrepancies found during preparation for the U-108 saltwell system operational test prior to startup. It included an error in communication node addressing, and errors in configured setpoint values. These problems were addressed prior to startup, and an extent of condition review was performed via the PER process to assure that these errors would not be duplicated in the S-111 and SX-102 software. However, the contractor's PER database queries did not find this PER.

The assessment team also identified an example of a significant software problem that had not been dispositioned by the PER process. This occurred presumably because the process was still new to the contractor's organization. This example was the June 27, 2001 event involving lockup of a PLC CPU.

This event revealed that the communication configuration would not recognize that the PLC for an interfacing skid had locked up, potentially defeating the pump trip if a leak were detected. The solution to this problem was documented by ECN 669317 and USQ-TF-01-0474. However, the investigation of the locked-up CPU had only been sparsely documented on Routine Work Request WS-01-00411/1. This RWR did not specifically describe the condition, determine the cause, or suggest trending. The work request record was also difficult for the software custodian to identify and retrieve for the team, despite the fact that he was generally familiar with the event.

The team believes that more aggressive use of the current PER process will result in more effective condition identification, condition evaluation (root or apparent cause, extent of condition, condition trending), and appropriate corrective action.

For tracking software development as well as operational performance, the team noted that industry standards such as IEEE Std 1044-1993, *IEEE Standard Classification for Software Anomalies* can provide specific guidelines for recording, classifying, identifying impact, investigating, and dispositioning software anomalies.

Deficiency Form

Topical Area: Configuration management		**Date**: 2/25/2002 **ID #**: F-10

Issue: The "safety significant" classification stipulated in the FSAR for the transfer leak detection system was not reflected in the software configuration management plan for the leak detector stations.

Requirement:

FSAR 4.4.7, "Transfer Leak Detection System" stipulates that the transfer leak detection systems are safety-significant.

Reference(s) (specific as to section): As identified herein.

Finding X **Observation**: _____.

Discussion:

Contrary to the FSAR, the software configuration management plan (SCMP) for the leak detector stations (RPP-7142 Revision 0, 11/20/2000) stated "The leak detector station PLC system and software used for the Hanford saltwell interim stabilization are general service, defense-in-depth."

In an interview, the design authority stated that the "general service, defense in depth" classification stipulated in the SCMP of record was believed correct when the SCMP was issued November 28, 2000, but that the current FSAR requires a "safety significant" classification.

During the assessment, the team was unable to identify any "problem evaluation requests" or pending "engineering change notices" that would change the safety/quality classification of the software or programmable logic controller (PLC) to reflect the higher classification stipulated in the FSAR.

The design authority said that the leak detection station PLC and software will be reclassified as safety-significant when the safety equipment list is updated (due February 28, 2002), following which the design authority would prepare an implementation plan to reconcile gaps in qualification to the higher classification. This included gaps such as those in documentation of requirements analysis, verification, and validation.

Deficiency Form

Topical Area: Configuration management		**Date**: 2/25/2002 **ID #**: F-11

Issue: Vendor, procurement, verification, and validation documentation for the safety significant software supporting the saltwell pumping instrumentation and control skid programmable logic controllers was not retrievable.

Requirement:

a. HNF-PRO-309, *Computer Software QA Requirements*, Section 2.1, Software Life Cycles, Baselines, and Controls, requires in part that: "Software previously developed and not in accordance with this procedure...shall conform to the following:

   Perform, document, and provide for an independent review and evaluation:
   - Its adequacy to support software operation and maintenance
   - Test plans and tests cases required to validate the software for acceptability..."

b. Section 2.3, "Documentation," requires in part that "Review of software baselines shall be performed and documented at each of the software life cycle control points."

Reference(s) (specific as to section): As identified herein.

Finding X **Observation**: _____.

Discussion:

Contrary to the requirements of HNF-PRO-309, documentation of most of the PLC software life cycle was generally not retrievable despite past attempts by the design authority to find it. This included requirements analysis, design, code construction/acquisition, integration and system factory testing, installation and acceptance stages as defined in HNF-PRO-2778. The PLC procurement was done in 1994. The design authority stated that they had been unsuccessful in finding this documentation or verifying that it existed. They had searched DOE procurement files and vendor files, and were only able to recover fragmented documentation.

The assessment team concluded that CHG lacked the documentation to demonstrate complete conformance to HNF-PRO-309, and HNF-PRO-2778 for the major portions of the software life cycle. It is also inconsistent with ASME NQA-1, "QA Requirements for Nuclear Facility Applications," Subpart 2.7.

For control of software changes (software configuration management), the design authority had baselined the PLC software configuration "as-found" in 1999. The baseline configuration was captured in considerable detail in a baseline software release document "PLC/DTAM Software Programs for Pumping Instrumentation and Control (PIC) Skid 'D'." The design authority had "reverse-engineered" and documented software requirements from the as-found configuration.

Software release documentation for other PIC skid PLCs consisted of separately issued documents similar to the skid D baseline document. However, the as-found configurations were not subjected to a critical review.

The team noted that, notwithstanding the contractor's software configuration management program, this absence of life cycle documentation would be inadequate as-is for software classified as safety significant.

Deficiency Form

Topical Area: Configuration management		**Date**: 2/25/2002 **ID #**: F-12

Issue: The design description document for safety class leak detection circuits and initial software release packages for safety significant saltwell PIC skid programmable logic controllers had not been subject to design verification.

Requirement:

1. 10 CFR 830.120(c)(2)(ii), *Design*, required in part that "The adequacy of design products shall be verified or validated by individuals or groups other than those who performed the work. Verification and validation work shall be completed before approval and implementation of the design."

2. HNF-IP-0842, Vol. IV, "Engineering," Section 4.24, *Design Verification*, Revision 2, requires in part that "The design verification is completed before relying on the structure, system, or component, or computer program to perform its function."

Reference(s) (specific as to section): As identified herein.

Finding X **Observation**: _____.

Discussion:

The design description for the intrinsically safe leak detector circuit (HNF-SD-ER-736 Revision 0, May 8, 1998) had not been subject to design verification. In addition, initial software release packages such as RPP-5775, "PLC/DTAM Software Programs for Pumping Instrumentation and Control Skid 'P'," Revision 0, May 8, 2000 had not been subject to design verification.

Engineering change notices (ECNs) issued against these documents had been subject to an "informal review." However, documentation of the scope and disposition for these informal reviews was not retrievable. "Informal reviews" were described in a CHG procedure that was cancelled after the leak detector design description was issued. In interviews, the design authority and CHG management said that the scope of informal reviews typically was at the discretion of the document author, and there was apparently no requirement to document an informal review and retain records of the comments and their resolution. HNF-IP-0842, Vol. IV, "Engineering," Section 4.24, *Design Verification* prescribes specific requirements for design verification and its documentation.

Deficiency Form

Topical Area: Configuration management		**Date**: 2/25/2002 **ID #**: F-13

Issue: The design description and commercial grade item (CGI) dedication for leak detection relay circuits did not identify or address all critical characteristics.

Requirement:

1. HNF-SD-WM-ER-736 Rev. 0, 5/8/98, "Intrinsically Safe Leak Detector Circuit Design Description," states in the introduction that: "This report delineates requirements and demonstrates compliance for the intrinsically safe leak detector circuit design." Therefore, the assessment team expected that the document was required to present or reference all of the critical functional and performance requirements and design inputs for the system or design being described.

2. HNF-IP-0842, Volume 4, Section 3.11, *Commercial Grade Item Upgrade Dedication* requires in part that specifications for safety class or safety significant structures, systems, and components (SSCs) must identify all critical characteristics necessary for acceptable performance of the SSC.

   Specifically, Subsection 3.5, *Determine Operating Environment and Natural Phenomena Hazard Design Requirements*, requires in part that: "The Design Authority determines and/or approves all operating environments, for both normal operation and accident conditions, under which the commercial grade item must function."

   In addition, Section 4.0, *Definitions*, defines critical characteristics as:

   "Identifiable and measurable attributes/variables of an item that are critical to the item's safety function or can be used to provide assurance that the item received is the item specified.

   Critical characteristics include those properties or attributes that define an item's form, fit, and function essential to performing its safety function(s)."

Reference(s) (specific as to section): As identified herein.

Finding X **Observation**: _____.

Discussion:

Design description document

The design description for the intrinsically safe leak detector circuit (HNF-SD-ER-736 Revision 0, May 8, 1998 identified the circuit as "safety class." However, the design description did not

include critical electrical design inputs and characteristics such as tolerances for supply voltage, frequency, and harmonic content as well as device ratings such as surge withstand capability, contact ratings, and diode ratings.

The design description purported to delineate the requirements for the leak detector circuit and demonstrate compliance to the requirements presented. It was generally comprehensive and traceable to design inputs that appeared valid at the time the document was written. However, some authorization basis references were obsolete as was the "safety class" classification. For example, reference to HNF-SD-WM-BIO-001 for the safety basis was no longer valid. The current FSAR stipulates "safety significant," not "safety class" for this equipment.

In interviews with the cognizant engineer for the document and the design authority for the system, they said that the anticipated system design description program was expected to revisit these types of requirements. They expected the system design description program to provide a more complete identification of the design basis and design inputs/requirements that might have been missing in earlier design documents.

CGI dedication

The CGI dedication for leak detection relays (HNF-4275, Revision 8, September 25, 2001) also did not include critical electrical design inputs and characteristics. These included characteristics such as tolerances for supply voltage, frequency, and harmonic content as well as device ratings such as surge withstand capability, contact ratings, and diode ratings. The document was limited to a functional test of the leak detection relay circuits as a "black box." In an interview, the design authority said he believed this approach was typical of CGI dedications. The team concluded that functional tests are necessary but not always sufficient to identify and demonstrate conformance to all critical characteristics of an SSC.

The design authority stated that the anticipated system design descriptions are expected to be the formal documentation of all critical characteristics for the system of interest and its equipment.

Appendix E

Observations

Deficiency Form

Topical Area: System Maintenance		**Date**: 2/19/02 **ID #**: O-1

Issue: TSR surveillance work packages include corrective maintenance that could obscure the maintenance and surveillance history of equipment.

Requirement: None

Reference(s):

Manual HNF-IP-0842, Section 7.1, "Tank Farm Contractor Work Control."

Manual HNF-IP-0842, Section 7.3, "Preventative Maintenance."

Finding _____ **Observation**: _____X_____.

Discussion: Without an independent maintenance work package to address a failed surveillance the opportunity to identify component reliability is hindered. Manual HNF-IP-0842, sections 7.1 and 7.3, allowed the incorporation of corrective maintenance activities into TSR surveillance work packages. However, by segregating maintenance from surveillances activities, the accurate realization of component reliability and timely resolution of component problems would be enhanced as follows:

- The temptation to "pre-condition" equipment prior to testing would be reduced. This would occur because the demarcation between testing and repair would be much clearer. ("Pre-conditioning" refers to exercising equipment to improve the probability the test will pass. This does not duplicate actual field conditions, and so does not accurately verify operability.)

- System and maintenance engineers would be afforded the opportunity to view as-found conditions after a failed surveillance. Specifically, engineers could learn of component conditions first hand, rather than through craft documentation of conditions.

- Presently, all surveillance test or maintenance activities performed for the transfer leak detection system have not been captured as items in the database of J-5 reports. Each surveillance test and all maintenance activities performed on a system or component need to be entered into the J-5 database as an independent line item. Then when J-5 queries were generated the number of failed surveillance would become readily apparent. This would occur because there would be specific work packages for the original failed surveillance, the corrective maintenance to fix the failed surveillance, and the re-surveillance to verify the maintenance fix the problem.

- Engineers would be required to determine the appropriate maintenance required to fix the failed surveillance rather than the craft. With first hand knowledge of the failed system, engineering can effectively view the issue from a generic Tank Farm prospective and take the appropriate action to address similar issues.

Deficiency Form

Topical Area: System Maintenance		**Date**: 2/19/02 **ID #**: O-2

Issue: Lack of a safety classification for the impressed-current cathodic protection system has the potential to accelerate deterioration of protected piping.

Requirement: None

Reference(s):

HNF-SD-WN-SAR-067, Tank Farm FSAR, Chapter 2, REV 3, "Facility Description," described, in part, the tank farm operation and Chapter 3 REV 3, "Hazard and Accident Analysis, described, in part, the facility hazard classification for components and systems.

Finding _____ **Observation**: _____X_____.

Discussion: FSAR section 2.4.14 stated that to minimize and control corrosion, most encasement piping associated with the DST in 200E was protected by an impressed-current cathodic protection system. Additionally, section 3.3.2.4.7, Waste Transfer Leaks, stated that corrosion was a major contributor to leaks in the transfer lines. The transfer system is classified safety significant but the cathodic protection system has not been classified as safety class, safety significant, or defense in depth. The assessors noted that reverse landing of the positive and negative leads on the impressed-current cathodic protection system would accelerate rather than suppress the piping corrosion rate.

Additionally, the system engineers told the assessment team that an independent verification performed by the QA department might be warranted for lifted DC wiring during maintenance on the impressed-current cathodic protection system. Inspection requirements are often dictated by the classification of the equipment.

Deficiency Form

Topical Area: Configuration management		**Date**: 2/25/2002 **ID #**: O-3

Issue: A specific and uniform format and content should be established for software configuration management plans governed by HNF-PRO-309.

Requirement:

Reference(s) (specific as to section): As identified herein.

HNF-PRO-309, *Computer Software Quality Assurance Requirements*, Revision 1, March 23, 2000, Section 2.4, "Software Configuration Management," item 1, stipulates in part that: "The PHMC IRM services provider shall establish the rules for how the field engages the PHMC software configuration management system."

Finding _____ **Observation**: _____X_____.

Discussion:

The software configuration management plan (SCMP) for the cross-site transfer programmable logic controllers (PLCs) (SCMP HNF-2544) was similar in content to SCMP RPP-7142 for the saltwell leak detector station PLC and to other SCMPs for interim stabilization. However, there were differences in content and format between the two projects. For example:

- RPP-7142 identified the quality class (albeit obsolete) of the software, but HNF-2544 did not;
- HNF-2544 presented and referenced specific requirements for logging software forces[1], but RPP-7142 did not;
- RPP-7142 stipulated an objective to conduct assessments to ensure that the SCMP is effective in establishing and maintaining the technical requirements, but HNF-2544 did not mention assessments;
- HNF-2544 identified specific training requirements and access levels for personnel authorized to make changes, but RPP-7142 did not; and
- RPP-7142 identified and prescribed the use of software change requests (SCRs) per HNF-PRO-2778, but HNF-2544 did not. However, both SCMPs appropriately required the ECN process to be used for any software changes.

[1] A "software force" is a maintenance tool that is the equivalent of a hardware jumper.

After evaluating these conditions, the assessment team concluded that specific and uniform format and content requirements should be established for software configuration management plans governed by HNF-PRO-309. In most cases, the two projects appeared to use reasonable practices, but these practices had not always been documented in the SCMP or in other project procedures.

For example, in interviews, representatives of both projects described what appeared to be reasonable practices for control of software forces and for protection of data from viruses or other corruption. However, these practices were formally documented in the software configuration management plans (SCMPs) for one of the projects but not the other. Therefore, formal procedural controls for maintaining configuration integrity were not always evident to the assessment team.

Deficiency Form

Topical Area: System Maintenance		**Date**: 2/25/02 **ID #**: O-4

Issue: Lack of a foreign material exclusion program for maintenance and surveillance activities can adversely affect equipment and system operability.

Requirement: None

Reference(s):

Manual HNF-IP-0842, Section 7.1, "Tank Farm Contractor Work Control."

Manual HNF-IP-0842, Section 7.3, "Preventative Maintenance."

Finding _____ **Observation**: _____X_____.

Discussion:

The assessors observed the transfer leak detection LDE-DB-U-151 and LDE-DB-U-152 92-day TSR surveillance and saw a significant accumulation of dust and dirt inside the LDT-15 transmitter panel. The assessors noted the work package did not address weather conditions (wind) or other foreign material exclusion (FME) considerations before beginning the work. The production control manager explained that there was not a formal FME program for Tank Farm activities. After the assessment interview CHG management issued PER-2002-1134 to document the observation.

Deficiency Form

Topical Area: Safety Function Definition		**Date**: 2/22/2002 **ID #**: O-5

Issue: In describing the operability of the safety structures, systems, and components, the tank farms FSAR did not explicitly provide performance criteria relied upon in the accident analysis during normal, abnormal, and accident conditions.

Requirement: None.

Reference(s) (specific as to section):

a. The implementation plan for the phase II vital safety system assessment of the transfer leak detection system, under the safety function definition topical area, directed the assessor to:

"Review the appropriate safety/authorization basis documents, ...to determine if the definition/description of the system safety functions includes:

- Requirements and performance criteria for the system and its active components, including essential supporting systems, for normal, abnormal, and accident conditions relied upon in the hazard or accident analysis."

b. 10 CFR 830.204 (b) (3), as one element of what a documented safety analysis must do, states, "Evaluate normal, abnormal, and accident conditions, including consideration of natural and man-made external events, identification of energy sources or processes that might contribute to the generation or uncontrolled release of radioactive and other hazardous materials, and consideration of the need for analysis of accidents which may be beyond the design basis of the facility:"

Finding _____ **Observation**: X .

Discussion: The tank farms FSAR does not explicitly list performance criteria for the transfer leak detection system in terms of what the accident analysis assumes the system will do in normal, abnormal, and accident conditions.

Although the phase II vital safety system assessment review approach implies that the FSAR should provide this information, the assessor found no such requirement in the nuclear safety management rule or the DOE standard for preparation of nonreactor nuclear facility safety analysis reports. Reference b is the closest requirement to what the review approach describes. However, the context of this paragraph in the rule points to a comprehensive hazard and accident analysis of the facility's operations and conditions, and not to a description of safety system functions under a range of conditions.

During the phase I vital safety system assessment, ORP representatives required the contractor to define how the vital safety systems would perform under normal, abnormal, and accident conditions. As with nearly all the tank farm vital safety systems, the transfer leak detection safety functions changed little with respect to the different contrived conditions.

In the one instance where the contractor attempted to differentiate system operability between normal and abnormal conditions, they noted somewhat inaccurately that the transfer leak detection in abnormal conditions was intended to operate after a leak is detected. The TSR LCO 3.1.3 bases states, "A leak detection system in an activated state is considered inoperable, as it is incapable of providing indication of leakage during future transfers through its associated structure." While it is true that those individual leak detector elements which are not in an alarming state could detect further leakage, in many cases several individual leak detectors are grouped into a single alarm circuit. Therefore, when one detector in the group alarms, any further detector alarms in that group would not be received at a remote instrument building location.

Deficiency Form

Topical Area: System Maintenance		**Date**: 11/14/00 **ID #**: O-6

Issue: The condition of transfer leak detection system's LDT-15 transmitter panel enclosure allowed the accumulation of dust and sand within the panel that was a significant contributor to the failure of the 151-U and 152-U 92-day TSR surveillance.

Requirement: None

Reference(s):

a. Procedure HNF-SD-WM-ER-736, Rev. 0, "Intrinsically Safe Leak Detector Circuit Description," stated, in part, that the transfer leak detection enclosures were exposed to the extremes of wind, dust, moisture, and temperature and that new enclosures were designed to NEMA Type 4 requirements.

b. NEMA Standard Publication 250-1997, "Enclosure for Electrical Equipment (1000 Volts Maximum)," stated that type 4 enclosures were gasketed, water tight, and sealed against windblown dust and rain.

Finding _____ **Observation**: _____X_____.

Discussion:

The Procedure HNF-SD-WM-ER-736, Rev. 0, "Intrinsically Safe Leak Detector Circuit Description," stated, in part, that the transfer leak detection enclosures were exposed to the extremes of wind, dust, moisture, and temperature and that new enclosures were designed to NEMA Type 4 requirements. NEMA Standard Publication 250-1997, "Enclosure for Electrical Equipment (1000 Volts Maximum)," stated that type 4 enclosures were gasketed, water tight, and sealed against windblown dust and rain.

The assessors observed that the old enclosure for LDT-15 transmitter panel did not provide adequate protection from blowing dust and rain. Specifically, the assessor observed that the LDT-15 transmitter panel's enclosure door was missing a seal to provide a degree of protection against blowing dust. Additionally, the assessors observed the accumulation of sand and dust within the LDT-15 transmitter panel's enclosure. In discussions with the assessors, craft explained that absence of the enclosure door seal was major contributor to the accumulation of dirt and dust in the LDT-15 transmitter panel's enclosure and the cause for the unit to not operate as design. Specifically, the LDT-15 transmitter panel was receiving the tripped signal from both leak detectors LDE-DB-U-151 and LDE-DB-U-152 but the accumulated dirt and duct kept the mechanical rotary switch from operating. Therefore, the LDT-15 transmitter panel was not sending the unique signal to the Gamewell® system, which was to alert the operator in the 242-S

evaporator building through an audible alarm and a control panel light. The operator would then take the appropriate actions to respond to the leak.

Deficiency Form

Topical Area: Safety Function Definition		**Date**: February 11, 2002 **ID #**: O-7

Issue: CHG has not instituted the human factors program described in the FSAR.

Requirement: N/A

Reference(s) (specific as to section):

a. 10 CFR 830.204(b) states, "The documented safety analysis for a hazard category 1, 2, or 3 DOE nuclear facility must, as appropriate for the complexities and hazards associated with the facility... (5) Define the characteristics of the safety management programs necessary to ensure the safe operation of the facility, including (where applicable) quality assurance, procedures, maintenance, personnel training, conduct of operations, emergency preparedness, fire protection, waste management, and radiation protection..." This regulation references DOE-STD-3009-94, "Preparation Guide for U.S. DOE Nonreactor Nuclear Facility Safety Analysis Reports" as the normal method for satisfying this requirement.

b. DOE-STD-3009-94, chapter 13, "Purpose" states, "This chapter demonstrates that human factors are considered in facility operations where humans are relied upon for preventive actions (e.g., surveillance and maintenance activities during normal operations), and for operator mitigative actions during abnormal and emergency operations. In this respect, the human-machine interface is an integral part of facility safety and, thus, requires special treatment in the SAR. The emphasis is on human-machine interfaces required for ensuring the safety function of safety SSCs that are important to safety and on the provisions made for optimizing the design of those human-machine interfaces to enhance reliable human performance."

c. HNF-SD-WM-SAR-067, Tank Waste Remediation System Final Safety Analysis Report

d. DOE-RL letter 99-TSD-034, Maureen A. Hunemuller to R. D. Hanson, Fluor Daniel Hanford, Inc., "Guidance for Preparations for Tank Waste Remediation System Final Safety Analysis Report Approval," dated February 2, 1999. (This letter transmitted the DOE safety evaluation report for the Tank Farms final safety analysis report.)

Finding _____ **Observation:** X .

Discussion:

Chapter 13 of Reference c addressed the CHG program for human factors. It acknowledged that CHG did not have a program governing the design of human-machine interfaces and other

program requirements in the Tank Farms, although it described appropriate features of a prospective program.

The safety evaluation report (SER) of Reference d documented DOE's evaluation and acceptance of the FSAR. The transmittal letter contained a statement that "The program chapters 6-17 shall be treated as descriptions of programs implementing TSR administrative control 5.24, 'Safety Management Programs,' and updated to reflect current practices at,the next FSAR update." The SER itself said, "Directed change: As directed by fiscal year planning, the contractor shall formalize the human factors program as described in FSAR Revision H, Chapter 13.0, *Human Factors*, which includes human factors safety analysis."

When the assessment team discussed this with CHG management, they pointed out that the Nuclear Safety and Licensing organization had an action to address this issue, but commitment dates had been extended. At the time of this assessment, the Nuclear Safety and Licensing task list specified a commitment date for formalizing the human factors program of April 10, 2003.

While CHG has yet to formalize its human factors program, there are features of the program that can be implemented relatively easily. For example, developing and using the human-machine interface checklists on facility modifications, as described in the FSAR, would not need to wait for formalization of the program.

After discussing this issue with the assessment team, CHG management prepared and submitted a problem evaluation request.