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SNF Project Engineering Process Improvement Plan

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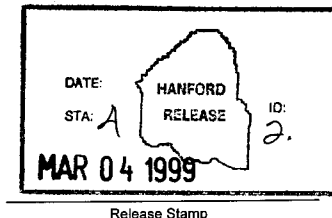
Key Words: HNF-PRO-1819, Engineering Process, Improvement Plan, Configuration Management, Management Assessments, Engineering Training, Graded Approach, Technical Baseline

Abstract: This Improvement Plan documents the actions to be taken by the SNF Project to complete a new set of engineering administrative procedures that are fully compliant with the PHMC Engineering Requirements, HNF-PRO-1819. All new procedures will be issued and implemented by September 30, 1999.

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**SNF PROJECT
ENGINEERING PROCESS IMPROVEMENT PLAN**

March 1999

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LIST OF TERMS

SNF	Spent Nuclear Fuel
Project	SNF Project
1819	HNF-PRO-1819
SSCs	Systems, Structures and Components
DAs	Design Authorities
APs	New engineering Administrative Procedures
1613	HNF-1613, Rev 0B
EPs	HNF-1613, Rev 0B engineering practices
Transition Period	From March 1, 1999 until new APs are issued and implemented
PHMC	Project Hanford Management Contract
PHMS	Project Hanford Management System

SNF PROJECT ENGINEERING PROCESS IMPROVEMENT PLAN

1.0 Introduction and Purpose

This Engineering Process Improvement Plan documents the activities and plans to be taken by the SNF Project (the Project) to support its engineering process and to produce a consolidated set of engineering procedures that are fully compliant with the requirements of HNF-PRO-1819 (1819). These requirements are imposed on all engineering activities performed for the Project and apply to all life-cycle stages of the Project's systems, structures and components (SSCs). This Plan describes the steps that will be taken by the Project during the transition period to ensure that new procedures are effectively integrated into the Project's work process as these procedures are issued. The consolidated procedures will be issued and implemented by September 30, 1999.

1.1 Compliance to HNF-PRO-1819 Requirements

Currently, the Project is performing its design and engineering work under the existing SNF Project Engineering Practices (EPs) documented in HNF-1613, Rev 0B (1613). These existing practices implement most requirements in 1819. Concurrently, the Project is completing new engineering procedures which explicitly comply with the 1819 requirements. However, not all of the new procedures will be completed by March 1, 1999, the implementation date of 1819. The Project will employ an integrated program of new 1819-compliant engineering administrative procedures (APs) in combination with some of the existing 1613 EPs. A Management Directive (SNF-MD-009) directs all Engineering Staff to comply with any additional requirements in 1819. Therefore, the Project is in compliance with 1819 as of March 1, 1999.

1.2 Transition

The Project will issue and implement new procedures periodically during this transition period. However, the Project recognizes that a combined program of the new APs along with the existing EPs will need to address issues related to the integration and implementation of the new APs with the existing EPs as new APs are being issued. These transition issues are addressed in Section 3 of this Plan and include introductory activities, conduct of training and indoctrination, performance of assessments, and completion of new APs. The remainder of this document describes the activities and plans of the Project to specifically address these transition issues.

1.3 Benefits

The implementation of the new APs provides the opportunity to accomplish a number of procedural and programmatic objectives:

- Update and correct organization references with reference to the PHMC within the existing procedures.
- Update and correct document and procedure references with respect to the PHMS.
- Assure incorporation of any new requirements.

- Assure incorporation of any new requirements.
- Assure elimination of any rescinded requirements.
- Merge the engineering procedures with the Project's administrative procedure system.
- Apply "lessons learned" from the 1613 EPs to the new APs.
- Resolve applicable procedure corrective actions.

2.0 Current Status of Implementation

The Project is currently performing its design and engineering work under the existing 1613 EPs. This procedural program is based on the existing HNF-PROs for engineering which were derived from the former Westinghouse Hanford Company Standard Engineering Practices, WHC-CM-6-1.

The Project intends to have the new 1819-compliant APs issued and implemented by September 30, 1999. A schedule for their issuance is shown in Appendix B. For the 1819-compliant APs not being issued and implemented by early March 1999, existing EPs will remain in effect to cover all engineering work processes.

Appendix A, "HNF-PRO-1819 SNF Project Engineering Requirements Compliance Matrix" indicates how the Project will comply with 1819 after all the new APs are issued. The 1819 requirements are identified in the first and second columns. The third column identifies the new AP that will implement the 1819 requirement.

Appendix B, "1819 Procedure Map and New AP Compliance to 1819 Requirements" lists all the new APs and the sections of 1819 with which each new procedure complies. This table also indicates EPs that will be replaced by the new AP along with the target issue date for the new AP. Also shown is the author/technical authority of each new AP.

The Project recognizes that a combined program of the new 1819-compliant APs along with the existing EPs will need to address integration and implementation issues. These transition issues are addressed in Section 3.

3.0 Implementation of Improvement Plan - Transition Issues

3.1 New AP Introduction Steps

The new program and the management directive was announced to all affected SNF Project personnel on February 26, 1999. The SNF Project personnel who will be affected by the new procedures have been identified. Specific orientation meetings will be conducted for the various affected groups of SNF Project personnel. Any differences in work processes between the new APs and the existing EPs will be described.

3.2 Assistance during the Transition Period

The authors/technical authorities of the new APs will be identified to all affected personnel and will be available by phone or e-mail. Any procedure user will be able to contact the authors/technical authorities and receive a prompt, accurate response to any question regarding the new procedures. The authors will support the orientation programs described in Section 3.1 and the training and indoctrination programs described

in Section 3.3. The authors/technical authorities will also receive suggestions for improvement of the new procedures. In addition, the questions received by the authors will be examined to *determine if revisions should be made to improve the new procedures.*

3.3 Training and Indoctrination

Engineering training and indoctrination take two separate paths. First, in response to Operational Readiness Review requirements, a performance-based, systematic approach to training is being instituted to address instructional needs assessments. This model analyzes what is to be learned, targets trainee population, specifies how learning is to occur, and subsequently evaluates the effectiveness of instruction. The model utilizes a sequential process of analysis, design, development, implementation, and evaluation.

Since performance-based instruction requires a long-term commitment for full implementation, and since the transition period begins on March 1, 1999, a second, concurrent path for training execution will be completed. This training path leads both new and existing personnel through procedurally-driven requirements for training and provides compliance to HNF-PRO-1819.

Activities along the secondary training path during March include required readings by personnel, compilation of a requirements matrix, and a review/assessment of management expectations (see section 3.5). New personnel will meet entry level requirements for technical staff positions as stipulated within AP-8-007. Additionally, both new and existing personnel will focus upon the critical elements of HNF-PRO-1819. Both past and new problems arising from procedurally-driven job functions will be emphasized as well.

Ongoing secondary training path activities during the transition period consist, in part, of an overall observation of tech staff job performance to identify any additional compensatory measures.

3.4 Use of Procedures during the Transition Period

During the transition period, new APs will be issued as they are approved. Each time a new set of APs is issued, an announcement will be made to affected SNF Project personnel. With each new issue of APs, the affected personnel within SNF Project will be identified and orientation meetings for them will be conducted. During these meetings any changes or impacts to the work processes will be described.

3.5 Monitoring of Procedure Use

Engineering management will develop an assessment plan. This plan will include a schedule of assessments with procedures to be assessed and assigned assessors. Guidance for performing the individual assessments will be provided in the plan.

3.6 Closure Activities during the Transition Period

The implementation of the new APs allows opportunity to close and resolve a number of procedural and programmatic issues during the completion. Closure of the issues during the transition period will achieve a number of benefits for the Project. In particular, the new engineering procedures will place emphasis on the establishment and maintenance of the design baseline for SSCs during the design, construction, and operations phases and focus the responsibility for the design baselines on the DAs. Other specific closure and completion issues to be addressed during the transition period for all of the new engineering procedures include the following:

- Engineering Work: All new engineering work will be performed under the new 1819-compliant program. For work in progress the DA will decide whether to continue under the existing procedure along with the management directive or to work under the new AP. If the DA decides to continue working under an existing procedure rather than a new AP, he shall obtain the approval of the Chief Engineer.
- Integration: During the transition period, the APs will be finalized as a set of integrated SNF Project engineering procedures. These APs will better reflect current SNF Project organization, titles and administrative practices; update and correct organizational references with respect to the PHMC; update and correct document and procedure references with respect to the PHMS; and capture Project procedural requirements related to the engineering process. Referrals from one AP to other related activity APs will be incorporated. During the transition period, crosswalk and mapping tools from the existing 1613 set of EPs to the new 1819 APs will be implemented to provide current status and guidance of “in-effect” procedures and practices.
- Administrative Control: During and after the transition period, the new APs will be administratively controlled and managed under the SNF Project administrative procedure system, along with the other Project-wide procedures. Under this system, the procedures will be consistent in format and level of detail and content and be accessible to the engineering personnel and easy to implement or revise.
- Finalization and Maintenance: The APs will be finalized as a set of SNF Project-specific and focused procedural requirements for the Project’s engineering activities. Focus will be on ensuring the development and maintenance of the design baseline from the engineering, design and construction stage to the operations stage. The APs will include new procedural requirements and eliminate any rescinded requirements. Actions required to address procedure issues or findings identified from audit activities will be incorporated into the new APs during the transition period.
- Training Requirements: During the transition period, training of affected engineering and support organization personnel, including those in QA, Safety and Operations, to the new APs will be performed. This training will include

more emphasis on previous problem areas and on new implementation requirements focusing on establishing the design baseline during design, engineering and construction; setting DA authorities and responsibilities; and maintaining the design baseline during operations.

- Updated Required Reading Lists: The Project will develop and update its required reading lists during the transition period. This will assure that revised requirements, references and new documentation are being conveyed to the engineering personnel.
- Traceability Of 1819 Requirements to Project Procedures: The new APs are being completed to comply with 1819 requirements. Appendix A provides traceability from each 1819 requirement to the procedure(s) that meets that requirement. Appendix A will be included in AP 6-030, Engineering Process.

3.7 Completion of Procedures

Engineering management is working with assigned procedure authors to complete all of the new engineering procedures. During the transition period, management will meet with the authors to support procedure completion and integration and to ensure that the new procedures are issued in a timely manner. Various coordination and integration issues will be discussed in these meetings. During the transition period engineering management will continue to devote the necessary resources to the completion of all new procedures. Procedure integration meetings will continue to be held until all new procedures are issued.

4.0 Schedule for Completion of New APs

The Project intends to issue all new engineering procedures identified in this plan (Appendix B) as soon as practical and no later than September 30, 1999. The new procedures will be reviewed to ensure that they are clear and that all interfaces among these procedures and with other site procedures are correct. In addition the assessments performed during the transition period will produce some "lessons learned." These "lessons learned" will be incorporated into the subsequent procedures where appropriate. By September 30, 1999, the new APs will be fully integrated with each other and with other site procedures.

5.0 Summary and Conclusions

The Project will issue and implement a number of new APs and the management directive. The Project has taken this new initiative as an opportunity to improve the overall engineering process and achieve benefits and enhancements. The new program will provide maintenance and documentation of the design baseline for operations.

A management directive has been issued requiring all personnel using the existing EPs to comply with the requirements of 1819. Thus, the Project is in compliance with 1819 as of March 1, 1999, the effective date of issuance of the management directive. When all new APs are issued the management directive will be cancelled.

The completion schedule for the Project's new 1819-compliant APs and the use and transition of existing 1613 EPs to the new 1819-compliant APs are described in this Engineering Process Improvement Plan. The SNF Project will have all of its new APs issued and implemented by September 30, 1999. The Project has developed this Plan to assist in the implementation of these new procedures and their management during this time period. This Plan addresses notification, communication, training and implementation issues for the transition period. The Plan will be under configuration control and revised as necessary. Its appendices will be updated periodically to reflect current status and requirements. During this transition period, the SNF Project will continue to issue the remaining procedures, conduct training and indoctrination, perform assessments and implement corrective actions, as needed.

APPENDIX A: HNF-PRO-1819 SNF PROJECT ENGINEERING REQUIREMENTS COMPLIANCE MATRIX

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HNF-PRO-1819 Requirements

Req# #	Requirements	Implementing SNF Procedure
2.0		
2.1	Qualifications	
2.1.1a	<p>Practice of Engineering</p> <p>Individuals will be considered qualified in the "practice of engineering" if:</p> <p>4. They have a bachelor of science or equivalent engineering or technical degree from an accredited university or college; <u>OR</u></p> <p>They are certified as a professional engineer by any state; <u>OR</u></p> <p>They have training beyond the high school level, have at least eight years of increasing responsibility practicing engineering under engineering supervision, and are documented as acceptable by the chief engineer for their companies.</p>	AP 6-004-03 / E-22
2.1.1b	<p>Practice of Engineering</p> <p>b. They document that they have been trained to the engineering procedures at the PHMC level by reading and understanding them, preferably as part of a required reading program for their companies.</p>	
2.1.2	<p>Design Authorities</p> <p>Design Authorities shall be qualified in the practice of engineering and shall have four years demonstrated job related experience including two years in their specific functional areas. For nuclear structures, systems, or components, they shall have at least one year nuclear experience. Qualifications for being a Design Authority shall include (but are not limited to) residing in (or specifically representing) the owner/operator organization; being familiar with project, plant, or program needs and priorities; and having an adequate technical background.</p>	
2.1.3	<p>Technical Support Staff</p> <p>Individuals designated as "technical support staff" for nuclear facility structures, systems, or components shall be qualified in accordance with DOE Order 5480.20a or HNF-PRO-494 "Appointments of Personnel NOT Meeting Selection Criteria" under the training program of the individual company or project. Any training or qualification requirements beyond the above are considered to be company or project specific. The company chief engineers shall be responsible for defining engineering training requirements for their companies.</p>	
2.1.4	General	
2.1.4.1	Engineers who stamp any material for use on the Hanford Site shall have a current Washington State Professional Engineer license.	
2.1.4.2	Personnel assigned to design activities shall be qualified individuals who are trained to conduct the assigned activity.	AP 6-004-03 / E-22

APPENDIX A: HNF-PRO-1819 SNF PROJECT ENGINEERING REQUIREMENTS COMPLIANCE MATRIX

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Implementing SNF Procedure

HNF-PRO-1819 Requirements

Req# #

Req# #	HNF-PRO-1819 Requirements	Implementing SNF Procedure
2.2	Design Authority Responsibilities	AP 6-004-03 / E-22
2.2.1	A Design Authority shall be assigned for each structure, system, or component. Each Design Authority shall establish and document the design baseline(s) for that structure, system, or component.	
2.2.2	A traceable method shall be established for determining each Design Authority. Each structure, system, or component shall be grouped into logical units of responsibility. A single Design Authority shall be assigned for each designated unit of responsibility and technical activity.	
2.2.3	The assignment of each Design Authority is formally approved by the responsible chief engineer. Each major subcontractor shall establish a single chief engineer, who is responsible and accountable for maintaining an orderly and disciplined approach to the conduct of engineering for that subcontractor. All major subcontractor chief engineers are delegated their authority by the Fluor Daniel Hanford Project Director of Engineering and Technology. The major subcontractor chief engineer may assign the Design Authority position to a person outside of that company.	
2.2.4	The Design Authority's responsibility shall be to maintain his or her design baseline consistent with the physical configuration of the structure, system, or component the baseline represents and ensure that the design baseline is technically correct and meets design requirements. Maintaining the design baseline includes approving modifications to an existing design baseline or establishing a new one.	
2.2.5	Additional responsibilities of a Design Authority include: establishing design requirements and ensuring that design documents accurately reflect the design baseline, informing affected organizations (e.g., Safety, Quality Assurance, Operations) of changes, and following the requirements of this document. The Design Authority may delegate design approval, but not responsibility. (DOE-STD-1073-93)	
2.3	Design Baseline	AP 6-004-03 / E-22
2.3.1	A design baseline is comprised of the technical constituents that describe the physical attribute(s) and function(s) of structures, systems, or components. Typical constituents include documents, computer software/data, and other forms of information generated as engineering documents, graphical depictions (e.g., drawings, sketches), vendor information, and specifications.	
2.3.2	A structure, system, or component designated as deactivated shall have for its baseline a deactivation plan that contains at least the following: <ol style="list-style-type: none"> Structure, System, or component in its final configuration status and criteria Review and determination of status for structures, systems, and components based on mission and life cycle phase Configuration management for missing or inaccurate design baseline documentation, voiding and downgrading design documents, and turnover of design baseline documents to the environmental restoration contractor. 	AP 6-033 / E-28

APPENDIX A: HNF-PRO-1819 SNF PROJECT ENGINEERING REQUIREMENTS COMPLIANCE MATRIX

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1819 Req# #	HNF-PRO-1819 Requirements	11:21 AM Implementing SNF Procedure
2.3.3	<p>Each Design Authority shall establish a list of "essential" drawings and ensure they are identified in the Hanford Document Control System. Essential drawings are those drawings from the design baseline necessary to directly support the safe operation or safe maintenance of the structure, system, or component. As a minimum, essential drawings should be considered from the following:</p> <ul style="list-style-type: none"> Process Systems <ul style="list-style-type: none"> ▪ Piping and Instrumentation Diagrams (P&ID) ▪ Engineering Flow Diagrams (EFD) ▪ Elementary/Schematic Drawings ▪ Process Flow Diagrams Electrical System <ul style="list-style-type: none"> ▪ Electrical One-Line Diagrams ▪ Panel Schedules ▪ Power and Lighting Diagrams Effluent Monitoring Systems <ul style="list-style-type: none"> ▪ Piping and Instrumentation Diagrams HVAC System <ul style="list-style-type: none"> ▪ Elementary/Schematic Diagrams ▪ Piping and Instrumentation Diagrams (P&ID) Civil/Structural <ul style="list-style-type: none"> ▪ Confinement/Containment ▪ Anchorage 	<p>AP 6-006 / E-5 AP 6-004-03 / E-22</p>

APPENDIX A: HNF-PRO-1819 SNF PROJECT ENGINEERING REQUIREMENTS COMPLIANCE MATRIX

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HNF-PRO-1819 Requirements

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Req#	Requirements	Implementing SNF Procedure
2.3.3	<p><u>Steam System</u></p> <ul style="list-style-type: none"> ▪ Steam Distribution Drawings ▪ Piping and Instrumentation Diagrams (P&ID) <p><u>Fire Protection System</u></p> <ul style="list-style-type: none"> ▪ Detector Scheme Drawings ▪ Elementary/Schematic Diagrams ▪ Radio Fire Alarm Reporting (RFAR) System Control Scheme Diagrams <p><u>Air/Water Distribution System</u></p> <ul style="list-style-type: none"> ▪ High Pressure Piping and Instrumentation Diagrams (P&ID) <p><u>Communication/Alarm Systems (Criticality, Evacuation, etc.)</u></p> <ul style="list-style-type: none"> ▪ Elementary Diagrams ▪ Detector Scheme Diagrams 	AP 6-006 / E-5
2.4	<p><u>Design Authority Approval</u></p>	
2.4.1	<p>A Design Authority's approval shall be required for new design baselines and modifications to an existing design baseline.</p>	AP 6-004-03 / E-22
2.4.2	<p>Design Authorities shall approve all design documents that affect their design baseline and that are to be issued for retrieval and subsequent revisions. A design document is approved after the Design Authority signs it and reviews have been completed that are required by HNF-PRO-233 "Review and Approval of Documents." A Design Authority shall ensure that a Washington State professional engineer's stamp is obtained when required by regulatory agencies or other reasons.</p>	AP 6-025 / E-3 AP 6-011 / E-4 AP 6-006 / E-5 AP 6-010 / E-11 AP 6-029 / E-14
2.4.3	<p>When further expertise is needed, the Design Authority shall ensure that design criteria and design baseline documents are reviewed by competent, qualified individuals.</p>	AP 6-004-03 / E-22
2.4.4	<p>The Design Authority shall ensure all design baseline documents are reviewed for limited use, classified, or sensitive information in accordance with HNF-PRO-407 "Obtaining Classification or Declassification Review" and HNF-PRO-184 "Information Clearance" for limited use information.</p>	AP 6-004-03 / E-22 AP 6-025 / E-3 AP 6-011 / E-4 AP 6-006 / E-5 AP 6-010 / E-11 AP 6-029 / E-14

APPENDIX A: HNF-PRO-1819 SNF PROJECT ENGINEERING REQUIREMENTS COMPLIANCE MATRIX

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1819 Req #	HNF-PRO-1819 Requirements	11:21 AM Implementing SNF Procedure
2.5	Recognition of Need	
2.5.1	A requestor of engineering services shall document the task scope and provide a description of requirements and deliverables, including cost and schedule constraints.	AP 6-030 / E-17
2.5.2	The responsible Design Authority(ies) shall review the request and determine if an existing design baseline will be affected or a new one will need to be established. If the design baseline is affected, then the Design Authority(ies) shall ensure that the appropriate design criteria are given to the design organization and that the design baseline(s) are changed to reflect the new information.	
2.5.3	Every proposed design baseline change shall be evaluated. The evaluation shall include not making the proposed change and aspects of the change that affect interfacing structures, systems, components, and other contractors. Such aspects include: design, performance, initial and life cycle cost, schedule, operational effectiveness, logistics support, transportability, and training.	
2.5.4	Additional evaluations shall be made concerning the following: a. Imminent hazards to personnel or the environment b. Safe condition of structures, systems, and components c. Radiological impacts on personnel and the environment d. Immovable hazardous materials e. Environmental compliance f. Required permits g. Security systems and procedures	
2.6	Plan Design Activity	
2.6.1	A design activity shall be documented in an engineering work plan. The work plan shall describe each task in sufficient detail to clearly establish the design criteria, estimated cost and schedule, and deliverables. The level of detail in a work plan shall be commensurate with the type and size of the task, as well as its complexity, associated risks, safety classification, work breakdown structure, and other related factors.	AP 6-030 / E-17
2.6.2	The engineering work plan shall be approved by the Design Authority and the design organization and shall be issued before beginning the design task. The work plan shall be updated as the design effort progresses.	
2.6.3	Structures, systems, and components requiring inspection or testing shall be identified early in the design phase. (10 CFR 830.120 Implementation Guide, Section 4.8.1 and Section 4.8.2)	
2.6.4	Additional requirements for planning of design for construction activities are defined in <u>HNFP-1997</u> .	
2.6.5	The process for design and fabrication of prototype, experimental, and other developmental equipment shall be controlled by individual PHMC company procedures. If developmental equipment is used in a structure, system, or component, then the Design Authority shall ensure that the equipment meets applicable codes, standards, and other requirements before being used. The Design Authority also shall ensure that requirements listed in this document pertaining to design baseline documentation are met.	AP 6-032 / E-27 AP 6-004-03 / E-22
2.7	Development of Design Criteria	

APPENDIX A: HNF-PRO-1819 SNF PROJECT ENGINEERING REQUIREMENTS COMPLIANCE MATRIX

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1819 Req# #	HNF-PRO-1819 Requirements	Implementing SNF Procedure
2.7.1	<p>Design criteria shall consider the following: technical adequacy; safety requirements; low as reasonably achievable (ALARA); economic operation and maintenance functions; constructability; quality assurance requirements; authorization basis requirements; and life-cycle cost considerations, including programmatic, fabrication, decontamination and decommissioning, environmental, security, and energy conservation.</p>	AP 6-030 / E-17
2.7.2	<p>The Design Authority shall approve the documented design criteria for each proposed modification to a design baseline. It is expected that the application of these criteria will differ between a minor modification and a new large task. For example, the minor modification may only contain a, b, c, and g of the list, while a major modification may require all of them. Typical design criteria include, but are not limited to, the following items:</p> <ul style="list-style-type: none"> a. Description of and basis for the modification b. Functional and operational requirements for the modification c. Description of existing structures, systems, or components and the design baselines that are to be modified d. Any requirements related to interfaces with other structures, systems, or components or their design baselines e. Applicable information from any feasibility studies that have been performed f. Applicable DOE orders, regulatory requirements, standards/requirements identification document (SRID) requirements, and national consensus codes and standards g. Constraints (e.g., waste handling, permitting, hazard classification, process hazards, functional and physical interfaces, unreviewed safety question evaluations) h. Other technical considerations to assist in evaluating alternative solutions during design development (e.g., preferred technology, major assumptions, previous studies, construction considerations, ALARA, design objectives) 	
2.7.3	<p>The criteria being used for each engineering task affecting the design baseline shall be compliant with DOE Order 6430.1A, as it applies, and with the structure, system, or component safety or hazards analysis. (DOE Order 6430.1A, Division 1, Section 0101-2(03))</p>	
2.7.4	<p>The design organization shall review the design criteria for technical adequacy. Additional design criteria (e.g., codes and standards) shall be identified and documented by the design organization.</p>	
2.7.5	<p>Changes to approved design criteria shall include the reason for the changes, be documented in the work plan, and be approved by both the responsible Design Authority(ies) and responsible design organization. (10 CFR 830.120(c)(2)(ii) and DOE Order 5700.6C (9)(b)(2)(6))</p>	
2.7.6	<p>Structures, systems, and components shall be identified as either safety class, safety significant, or general service in accordance with the safety analysis (if applicable) as required by HNF-PRO-704 "Hazard and Accident Analysis Process." Safety class and safety significant structures, systems, and components shall be subject to more stringent design criteria and verification requirements than those that are general service. Design criteria shall be consistent with the authorization basis.</p>	

APPENDIX A: HNF-PRO-1819 SNF PROJECT ENGINEERING REQUIREMENTS COMPLIANCE MATRIX

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HNF-PRO-1819 Requirements

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2.7.7	Measures shall be taken to maintain radiation exposure to ALARA through the design of a structure, system, or component as well as equipment design and administrative control. The primary methods used shall be physical design features. Administrative controls and procedural requirements shall be employed only as supplemental methods to control radiation exposure. See HNF-PRO-1622 "Radiological Design Review Process" for implementation requirements. (10 CFR Part 835, Section 835.1001)	AP 6-030 / E-17
2.7.8	Designs shall provide for appropriate inspection, testing, and maintenance to ensure continuing reliability and safety of the structure, system, or component, and to address appropriate disassembly and disposal requirements. (10 CFR 830 Part 120(c)(2)(ii))	
2.7.9	Structures, systems, and components whose conceptual design began after October 15, 1997, shall be designed and constructed using HNF-PRO-097 "Engineering Design and Evaluation" to withstand the effects of natural phenomena hazards. Structures, systems, and components whose conceptual design began before October 15, 1997, may use HNF-PRO-097, or the previous governing documents.	
2.7.10	National consensus codes and standards (e.g., American Society of Mechanical Engineers (ASME), American National Standards Institute (ANSI), National Electrical Code (NEC), and model building codes shall be used as applicable whenever DOE criteria and standards do not explicitly apply or are not required by contract. (DOE Order 5480.28, Section 10.a.(1))	
2.7.11	Organizational and technical interfaces between different groups that provide input into the design process shall be defined and the necessary information documented, transmitted, and reviewed as deemed necessary by the Design Authority.	
2.7.12	Designs requiring status indicators of systems and components shall use standards NUREG 0700 or MIL-STD-1472 if there is no system, structure, or component specific standard. (10 CFR 830.120(c)(2)(i), DOE Order 5700.6C(9)(b)(2)(a), and DOE Order 6430.1a)	AP 6-021 / E-18 AP 6-004-03 / E-22 AP 6-030 / E-17
2.7.13	The current revision of design documents, including all released engineering change notices (ECNs), shall be used in the actual performance of design work.	
2.7.14	All design activities shall include a review for potential impact by National Environmental Policy Act (NEPA) requirements. See HNF-PRO-452 "NEPA, SEPA, Cultural and Natural Resources" for implementation. (10 CFR 1021)	
2.8	Develop Solution	
	The requirements in this section apply when developing engineering documentation that will be maintained as part of either a design basis or design baseline.	
2.8.1	Design analysis	
2.8.1.1	Design calculations used as a design basis for a design baseline shall be identifiable by subject (including structure, system, or component to which the calculation applies), originator, reviewer, and date, or by other data so that the calculations are retrievable. (10 CFR 830.120(c)(2)(ii) and DOE Order 5700.6C (9)(b)(2)(b))	AP 6-010 / E-11
2.8.1.2	Design analyses or calculations supporting the design baseline shall be sent to Hanford Site document control for release, change control, retention and retrieval in accordance with HNF-PRO-224 "Document Control."	

APPENDIX A: HNF-PRO-1819 SNF PROJECT ENGINEERING REQUIREMENTS COMPLIANCE MATRIX

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1819 Req# #	HNF-PRO-1819 Requirements	Implementing SNF Procedure
2.8.1.3	Design analysis documents using computer calculations shall include in the document the computer type, computer program (i.e., name), revision identification, inputs, outputs, evidence of or reference to the computer program verification, and the bases (or reference thereto) supporting application of the computer program to the specific physical problem.	AP 6-010 / E-11
2.8.1.4	Computer software used in performing calculations and analyses shall be verified and validated for use before approval of the design baseline documents. Verification and validation methods for software shall be performed in accordance with HNF-PRO-2778 "IRM Application Software System Life Cycle Standard."	
2.8.1.5	All calculations and analyses shall be checked to ensure completeness and accuracy. The person checking the calculations shall not be the person who prepared the original document.	
2.8.2	Design Output - Documents in General	
2.8.2.1	The completed design products shall be recorded in design documents such as drawings, specifications, test/inspection plans, maintenance requirements, report, calculations, studies, vendor information, and environmental engineering documentation. (10 CFR 830.120 Implementation Guide, Section 4.6.4)	AP 6-030 / E-17
2.8.2.2	Each design document (excluding drawings) shall have a unique identification number assigned to it per HNF-PRO-604 "Hanford Document Number System."	AP 6-025 / E-3 AP 6-011 / E-4 AP 6-010 / E-11 AP 6-029 / E-14 HNF-PRO-440 / E-15
2.8.2.3	Each page of the design document shall identify the document number, page number, and revision status with the exception of documents supplied by vendors (vendor information).	AP 6-025 / E-3 AP 6-011 / E-4 AP 6-006 / E-5 AP 6-010 / E-11 AP 6-029 / E-14 HNF-PRO-440 / E-15
2.8.2.4	Design documents shall be prepared using the metric measurement system (i.e., units belonging to the International System of Units, abbreviated SI). The metric measurement system shall be used except as exempted or waived in DOE/RL-94-0070 "Hanford Metric Implementation Plan." English units may be used only in accordance with the above procedure. This requirement is waived per DOE/RL-94-0070 for facilities that have little remaining useful life, that will not be renovated, or are waiting to be transferred to the Environmental Restoration Program.	SNF Project is an exception to the plan.

APPENDIX A: HNF-PRO-1819 SNF PROJECT ENGINEERING REQUIREMENTS COMPLIANCE MATRIX

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1819 Req. #	HNF-PRO-1819 Requirements	Implementing SNF Procedure
2.8.2.5	Vendor information items shall be uniquely identified and retrievable. For a structure, system, or component in deactivation, vendor information that will affect the safety of the structure, system, or component (such as ventilation equipment that continues to operate after personnel have been removed) shall still be maintained. All other vendor information shall be handled according to the Design Authority.	AP 6-026 / E-7 AP 6-033 / E-28
2.8.2.6	Transmittal of design information from one organization to another shall be documented and controlled. (10 CFR 830.120©(2)(ii) and DOE Order 5700.6C (9)(b)(2)(6))	AP 6-025 / E-3 AP 6-011 / E-4
2.8.2.7	Original design documents shall be transmitted by an engineering data transmittal to Hanford Site document control for retention and retrieval. See HNF-PRO-244 "Engineering Data Transmittal Requirements" for further requirements and the applicable form(s).	AP 6-006 / E-5 AP 6-010 / E-11 AP 6-029 / E-14 HNF-PRO-440 / E-15
2.8.3	Design Output - Drawings	
2.8.3.1	Drawings that depict a Hanford structure, system, or component, including those provided by design organizations or other suppliers, shall meet the standards of HNF-PRO-709 "Preparation and Control Requirements for Engineering Drawings."	AP 6-006 / E-5 HNF-PRO-440 / E-15
2.8.3.2	An "H-series" identification number shall be assigned to drawings that depict permanent installation of structures, systems, and components in a Hanford structure, system, or component. Drawing numbers shall be obtained through Hanford Site document control.	
2.8.3.3	Each PHM&C chief engineer shall submit formally to the Hanford Site document control a list of drawings that his or her company is responsible for maintaining. No two companies shall be responsible for the same drawing. Changes to this list including responsibility transfers shall be submitted to Hanford Site document control.	
2.8.3.4	The vendor or design organization that prepares drawings shall "as-built" the drawings that have been designated by the Design Authority. An as-built drawing shall have all work completed changes incorporated and be field verified to ensure that the drawing reflects the actual completed installation (i.e., remove reference to construction specifications) and conforms to the design requirements. The as-built drawing status shall be designated in the Hanford Document Control System. When the drawing is revised, the statement "as-built" shall be added to the drawing.	
2.8.3.5	Classified engineering drawing revisions shall be processed in accordance with HNF-PRO-184, "Information Clearance."	
2.8.3.6	If a vendor drawing in the Hanford retrieval system (i.e., drawings identified by numbers and title blocks external to the Hanford contractors) requires revision, then a drawing shall be created and released as an "H-series" drawing. The vendor information number and vendor drawing number (if there is one) shall be referenced on the new drawing. A copy (and all changes thereafter) of the new drawing and its engineering data transmittal shall be inserted into the vendor information file where the vendor drawing being changed is retained.	AP 6-026 / E-7 HNF-PRO-440 / E-15
2.8.3.7	Design drawings shall include unique identifiers for installed components that are required for safe operation, maintenance, and deactivation. Unless otherwise specified, labeling between the drawing and the component tag shall be consistent with the existing structure, system, or component that will contain the new design. NUREG 0700 or MIL-STD-1472 shall be used as a standard if there is no existing structure, system, or component-specific standard.	AP 6-006 / E-5 HNF-PRO-440 / E-15 AP 6-005/E-26

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HNF-PRO-1819 Requirements

Implementing SNF Procedure

1819 Req #

Req #	HNF-PRO-1819 Requirements	Implementing SNF Procedure
2.8.4	Design Output - Specifications and Procurement Documents	AP 6-011 / E-4 AP 6-026 / E-7 AP 6-020 / E-9 AP 6-036 / E-20
2.8.4.1	Specifications shall require that vendor information be traceable to the hardware.	
2.8.4.2	Procurement documents shall indicate if the material or item is intended to be dedicated for use in a safety class or safety significant installation or application. See HNF-PRO-123 "The Written Requisition Process." (10 CFR 830.120(c)(2)(iii) and DOE Order 5700.6C(9)(b)(2)(c)) [do we need to include ORCWM here?]	AP 6-011 / E-4 AP 6-035 / E-30 AP 6-020 / E-9 AP 6-036 / E-20
2.8.4.3	Procurement documents for safety class and safety significant structures, systems, or components or services shall include the following, as they apply: a. Technical requirements specified by reference to specific drawings, specifications, codes, standards, regulations, procedures, or instructions b. Identification of test, inspection, and acceptance requirements c. Quality assurance program requirements to be met by the supplier d. Identification of documentation required to be submitted by the supplier for information, review, or approval by the purchaser, including the submittal schedule (10 CFR 830.120(c)(2)(iii) and DOE Order 5700.6C(9)(b)(2)(c))	
2.8.4.4	Specifications shall be written to comply with federal, state, and DOE pollution prevention and waste minimization requirements in accordance with <u>HNF-PRO-462</u> "Pollution Prevention."	AP 6-011 / E-4 AP 6-020 / E-9 AP 6-036 / E-20
2.8.4.5	Safety class and safety significant structures, systems, or components shall be procured as either commercial grade items (CGIs) or from a vendor on the site evaluated supplier list. For an item to be procured as a CGI, all of the following criteria must be met: a. The item is not subject to design or specification requirements that are unique to nuclear facilities b. The item is used in applications other than nuclear facilities c. The item is ordered from the manufacturer/supplier on the basis of specifications set forth in the manufacturer's published product description (e.g., a catalog or national standard such as American Society for Testing and Materials).	AP 6-011 / E-4 AP 6-035 / E-30 AP 6-020 / E-9 AP 6-036 / E-20
2.8.4.6	Note: Nuclear facilities are defined in 10 CFR 830.3. For safety class and safety significant structures, systems, and components, it shall be demonstrated that each procured CGI is suitable for use in its intended application and that the item will perform its safety function. This requires a documented engineering evaluation that establishes and verifies critical characteristics before the item is relied on for operation. Safety functions shall be consistent with the structure, system, or component safety analysis and other authorization basis documents.	

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2.8.5	Engineering Change Notice - Modification to a Design Baseline	AP 6-030 / E-17
2.8.5.1	With the exception of vendor information and classified drawings, all design baseline documents retained by Hanford Site document control shall be revised with an ECN. See HNF-PRO-440 "Engineering Document Change Control Requirements" for further requirements and the applicable form(s).	
2.8.5.2	An ECN shall not be field worked until the ECN has been approved by the affected Design Authority(ies) and meets the other approval requirements listed in this procedure for a design baseline document.	
2.8.5.3	Essential drawings shall have ECNs incorporated within 30 calendar days from the date the ECN is signed as work-completed.	
2.8.5.4	Other design baseline drawings depicting safety class or safety significant structures, systems, or components shall have all work-completed ECNs incorporated within 90 calendar days from the date the sixth work-completed ECN is signed as work completed, or when clarification of the drawing is required before the accumulation of six ECNs. If a design baseline drawing does not depict safety class or safety significant structure, system, or component, then it shall be revised when clarification of the depicted information is required by the Design Authority. For a structure, system, or component in deactivation, the 30- or 90-day incorporation period can be extended on a case-by-case basis. The chief engineer shall approve and document the new incorporation period.	
2.9	Verification of Solution	
2.9.1	General	AP 6-027 / E-8
2.9.1.1	When technically feasible, verifications for the adequacy of a design shall be completed and documented before relying on the structure, system, or component to perform its function and before installation becomes irreversible. (10 CFR 830.120 Implementation Guide, Section 4.6.5, paragraph 3)	
2.9.1.2	When it is not technically feasible to verify a design (or part of a design), then the unverified portion of the design shall be identified and documented. If a part cannot be verified, then the Design Authority shall use engineering judgement to determine if the part can still be used, and shall document that justification. (10 CFR 830.120 Implementation Guide, Section 4.6.5, paragraph 3)	AP 6-004-03 / E-22 AP 6-027 / E-8
2.9.1.3	Design verification shall be required for a new application of a design and when any of the design criteria or features to the original design have been changed for the same application.	AP 6-027 / E-8
2.9.1.4	Design adequacy shall be verified by qualified persons other than those who designed the structure, system, or component. (Section 6.3.3.3, QAPD and DOE Order 6430.1A, Division 1, Section 0140 (07 and 08))	
2.9.1.5	Verifications of design outputs shall be performed by one or more of the following methods: reviews, alternate calculations, and/or qualification testing. A review occurs when a qualified individual or group of individuals evaluates the documentation to verify that it meets the design criteria. Alternate calculations involve the use of one or more different methods of analysis to ensure the correctness and applicability of pertinent design calculations, using both hand and computer calculations. Qualification testing is a physical evaluation during which a piece of equipment is operated. In all cases, the Design Authority shall determine what verification documents shall be part of the design basis.	
2.9.1.6	After verification has been completed, designs and their associated design baseline shall be reviewed and approved by the Design Authority to ensure adequacy of the design (both final design and subsequent changes/revisions) for the intended applications.	AP 6-004-03 / E-22 AP 6-027 / E-8

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Req #	HNF-PRO-1819 Requirements	11:21 AM Implementing SNF Procedure
2.9.1.7	Changes to final designs, field changes, modifications to operating facilities, and nonconforming items dispositioned use-as-is or repair shall be justified and subject to design control measures commensurate with those applied to the original design. These measures shall include assurance that the design analyses for the structure, system, or component are still valid. For a structure, system, or component in deactivation, design control measures shall be consistent with either the original design or the deactivation plan.	AP 6-027 / E-8
2.9.2	Testing and Inspections	
2.9.2.1	The following requirements shall apply if testing or inspections are used as a method for verification: Inspection or test procedures shall be written to define the requirements for activities that verify conformance of systems, or components with specified requirements. (10 CFR 830.120 Implementation Guide, Section 4.8.1 and Section 4.8.2)	AP 6-012 / E-25 AP 6-031 / E-21
2.9.2.2	The Design Authority shall specify acceptance parameters, inspection or test requirements, and the appropriate referenced sections of approved codes or standards as part of the design documentation and work planning process, and include them in work control documents. Results of these activities shall be documented and retained as retrievable records. (10 CFR 830.120(c)(2)(iv) and DOE Order 5700.6C(9)(b)(2)(D))	AP 6-004-03 / E-22 AP 6-012 / E-25 AP 6-031 / E-21
2.9.2.3	Inspection/test documentation shall contain at least the following: a. Identification of characteristics to be examined; b. Required qualifications of individuals who perform the examination; c. Description of examination methods, including equipment and calibration requirements; d. Acceptance and rejection criteria; e. Suitable environmental conditions; f. Required safety measures; g. Mandatory hold points (10 CFR 830.120 Implementation Guide, Section 4.8.1 and Section 4.8.2)	AP 6-012 / E-25 AP 6-031 / E-21
2.9.2.4	The Design Authority shall approve test results and shall have the results incorporated into the original test or inspection document. Otherwise, a separate report shall be generated.	AP 6-004-03 / E-22 AP 6-012 / E-25 AP 6-031 / E-21
2.9.2.5	The field verification program documentation that supports the as-building process or reverification of design baseline documents for existing facilities shall be implemented when determined necessary by the Design Authority. The documented field verification program shall verify, by means of field inspection and design verification, that the selected drawings describe the actual hardware configuration of the structure, system, or component.	AP 6-004-03 / E-22 AP 6-012 / E-25 AP 6-031 / E-21
2.9.2.6	Inspection and acceptance testing procedures shall ensure that measuring and test equipment used to verify conformance to design requirements are of the proper type, range, accuracy, and are uniquely identified and traceable to their calibration data. (10 CFR 830.120 Implementation Guide, Section 4.8.3)	AP 6-031 / E-21
2.9.2.7	Acceptance inspection of construction, where required by contract, shall be performed by an organization that is independent of the construction organization. The authorized inspector role is further described in HNF-PRO-1997 "Construction Program Overview." (10 CFR 830.120(c)(2)(iv) and DOE Order 5700.6C(9)(b)(2)(D))	AP 6-012 / E-25

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Req #	HNF-PRO-1819 Requirements	Implementing SNF Procedure
2.10	Turn Over of Design Documentation	
	The following applies to the turnover of engineering design documentation:	
2.10.1	The provider of design services shall submit to the Design Authority drawings, specifications, and any other design documentation designated as new or modified design baseline information. All changes will be incorporated and field verified.	AP 6-030 / E-17
2.10.2	The Design Authority shall determine, before turnover, if the drawings are to be considered "essential," and shall have the drawings reflect this per HNF-PRO-709 "Preparation and Control Requirements for Engineering Drawings." The essential drawing list shall also be updated.	
2.10.3	The Design Authority(ies) shall be responsible for modifying existing design baselines and establishing new baselines to reflect construction activity changes. The modifications shall be done via the required method (e.g., an ECN, new drawing).	
2.10.4	Design Authorities shall be responsible for issuing new and modified approved design baseline documents (drawings, ECNs, specifications, etc.) to Hanford Site document control in accordance with HNF-PRO-224 "Document Control."	

APPENDIX B: 1819 Procedure Map and New AP Compliance to 1819 Requirements

Cross Hatched Area indicates that the procedure is no longer planned for implementation

Temp No.	New AP #	1819 Req'ts	Tech Owner / POC	Summary Description	New AP Title	Current 1613 Procedures	Target Date of Issuance
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E-1							
E-2							
E-3	6-025	2.4.1 2.4.2 2.4.4 2.8.2.2 2.8.2.3 2.8.2.6 2.8.2.7	Zlamik	This new procedure describes the process for identification, preparation, approval, release, revision, and accountability of supporting documents.	Supporting Document Requirements	EP-1.1.2 EP-7.1, Attach-1.2	3/15/99
E-4	6-011	2.4.1 2.4.2 2.4.4 2.8.2.2 2.8.2.3 2.8.2.6 2.8.2.7 2.8.4 all	Cassidy	Procedure is essentially a reformatting of EP-1.2. This procedure provides the requirements associated with the preparation, review, approval, release, and revision of specifications prepared by or for Spent Nuclear Fuel Project for such items as engineered equipment or software.	Engineering Specification Requirements	EP-1.2 EP-7.1, Attach-1.2 & Q	5/1/99
E-5	6-006	2.3.3 2.4.1 2.4.2 2.4.4 2.8.2.3 2.8.2.6 2.8.2.7 2.8.3 all(except 2.8.3.6)	Cassidy	Procedure combines EP-1.3 and existing AP-6-006. This procedure defines the requirements associated with preparation, verification, approval, release, and revision of engineering drawings initiated by or prepared for Spent Nuclear Fuel Project. New significantly revised processes: <ul style="list-style-type: none"> • Redlining of Drawings • Maintenance of Baseline Drawing List 	Engineering Drawing Requirements	EP-1.3 AP 6-006	5/1/99
E-6							
E-7	6-026	2.8.2.5 2.8.3.6 2.8.4.1	Mildon / Dillsi	This procedure defines the requirements for the identification, receipt, acceptance, tracking, distribution, revision, and filing of documents provided by vendors. The documents covered here are those specifically requested in the Purchase Requisition or Specification. The procedure replaces and updated the current EP-3.3.	Vendor Information Requirements	EP-3.3	5/1/99

APPENDIX B: 1819 Procedure Map and New AP Compliance to 1819 Requirements

Cross Hatched Area indicates that the procedure is no longer planned for implementation

Temp No.	New AP #	1819 Req'ts	Tech Owner / POC	Summary Description	New AP Title	Current 1613 Procedures	Target Date of Issuance
E-8	6-027	2.9.1 all	Forehand / Yanochko	<p>This is a new administrative procedure which implements the engineering requirements contained in HNF-PRO-1819, PHMC Engineering Requirements related to the Design Verification. This procedure replaces HNF-1613, Design Verification Requirements, EP-4.1. This Procedure: Consolidates existing design verification requirements and implements a minimal number of new requirements. Documents the requirements and describes the process for performing 5 types of design verification.</p> <p>Contains design verification requirements for those activities identified in Table 3-1 of HNF-SD-SNF-RPT-007, Application of the Office of Civilian Radioactive Waste Management Quality Assurance Requirements to the Hanford Spent Nuclear Fuel (SNF) Project.</p> <p>Documents requirements governing project verification plans. Incorporates requirements of HNF-1613, Design Verification Requirements, EP-4.1, Revision 6, Change2.</p> <p>Incorporates requirements of Engineering Practice Guidelines, WHC-IP-1026, to the extent identified in HNF-1613, EP-4.1.</p> <p>Implements design control requirements identified in HNF-1613, Design Control for Office of Radioactive Waste Management (OCRWM) – Related Activities, EP-7.1, Revision 0, section 3.2.4, Design Verification.</p> <p>Addresses Corrective Action Plan Concern 06.7, Resulting from Gap Analysis of Configuration Management Plan and SNF Procedures, dated January 19, 1999.</p> <p>Address SNF Project Conduct of Engineering Initiatives, Initiative No. 6, Graded Design Verification Procedure, dated January 25, 1999. Provides a graded design verification procedure using existing Administrative Procedures and HNF-MP-599, Quality Assurance Program, as a basis.</p>	Design Verification Requirements	EP-4.1 EP-7.1, Attach-4.1	4/1/99
E-9	6-020	2.8.4 all	Mildon / Dillsi	<p>The procedure defines the engineering and procedures requirements associated with the procurement of structures, systems, and components (SSCs); dedication of commercial grade items (CGIs) for safety, i.e. safety class and safety significant, SSCs applications; and the management of spares.</p> <p>It replaces and updates the current EP-5.3.</p>	Procurement of Safety Class Items and Management of Spares	EP-5.3	4/1/99

APPENDIX B: 1819 Procedure Map and New AP Compliance to 1819 Requirements

Cross Hatched Area indicates that the procedure is no longer planned for implementation

Temp No.	New AP #	1819 Tech Owner / POC	Req'ts	Summary Description	New AP Title	Current 1613 Procedures	Target Date of Issuance
E-10	6-028	Cassidy	None, driven by 10 CFR 830.120 req'ts	The graded approach process determines the appropriate application of requirements through the consideration of prescribed factors, such as the : Nuclear safety classification of the item or activity. Level of risk and impact associated with a failure of deficiency. Age, status, and condition of a facility, process, or an item. History of problems at a facility, with a process, or an item. Adequacy of existing controlling documentation. Complexity of products or activities involved. Control of potential project delays and costs if failures or deficiencies occur.	Graded Approach	NEW	6/1/99
E-11	6-010	Kessie / Frederickson / Friberg	2.4.1 2.4.2 2.4.4 2.8.1 all 2.8.2.2 2.8.2.3 2.8.2.6 2.8.2.7	This procedure establishes the requirements and process to be used for the preparation, documentation, review, approval, and retention of design analyses and calculations. Specific requirements are also provided for (SSCs); activities; and documents at the SNF Project from OCRWM Quality Assurance Requirements and Description (QARD) Q-List. (No significant changes to requirements.)	Calculations	NEW (EP-1.11)	5/1/99
E-12	6-022	T. Bergman	None	The purpose of this procedure is to establish clear expectations for identifying, tracking, and documenting closure of technical issues affecting the SNF Project.	Issue Closure	NEW	3/15/99
E-14	6-029	Morgan / Garvin / Libs	2.4.1 2.4.2 2.4.4 2.8.2.2 2.8.2.3 2.8.2.6 2.8.2.7	Defines the method for developing, documenting, reviewing, approving, and maintaining the Safety Equipment List (SEL). Is a new procedure, developed in part from previous Hanford Management systems and guidelines. Incorporates requirements from HNF-PRO-1819 and specifies that OCRWM QARD SSCs are to be designated in the Q-List.	Safety Equipment List	NEW	4/1/99
E-15	HNF-PRO-440	Langevin	2.8.2.2 2.8.2.3 2.8.2.6 2.8.2.7 2.8.3 all	This procedure will be updated to correct references.	Engineering Document Change Control	EP-2.2	3/15/99
E-16	6-019	Cassidy	None	Negligible Change only revised to update references.	Acceptance for Beneficial Use	AP 6-019	4/1/99

APPENDIX B: 1819 Procedure Map and New AP Compliance to 1819 Requirements

Cross Hatched Area indicates that the procedure is no longer planned for implementation

Summary Description

Temp No.	New AP #	1819 Req'ts	Tech Owner / POC	Summary Description	New AP Title	Current 1613 Procedures	Target Date of Issuance
E-17	6-030	2.3 all 2.6.1 to 2.6.4 2.7.1 to 2.7.10 2.7.12 to 2.7.14 2.7.14 2.8.2.1 2.8.5 all 2.10 all	Forehand / Desai	Describes the engineering process for SNF Project including an overview of engineering procedures. Is a new procedure developed in part from previous Hanford Engineering Practices Guidelines. Lists HNF-PRO-1819 compliance matrix referencing applicable engineering procedures. Incorporates following requirements from HNF-PRO-1819 and additional OCRWM/QARD requirements: <ul style="list-style-type: none"> • Recognition of need for engineering work • Plan design activity • Development of design criteria • Develop engineering solution • Design inputs • Engineering change notice • Control of special processes in OCRWM/QARD activities • Turn over of designed solution 	Engineering Process	EP-7.1, Attach-2.0 EP-7.2 EP-7.4 EP-7.5	4/1/99
E-18	6-021	2.7.11	Forehand	Resolution of EP-1.5 into Administrative Procedure (AP) format; Resolution of Configuration Management (CM) Gap Analysis actions and Interface Control Assessment actions; Resurrection of Interface Control Working Group (ICWG); Revisions to EC database and Administration Controls.	Interface Control Requirement	EP-1.5	4/1/99
E-19	6-036	2.8.4 all	Langevin	Reformatting of procedure EP-2.3. No new requirements.	Engineering Procurement Waiver Requirements	EP-2.3	5/1/99
E-21	6-031	2.9.2.1 to 2.9.2.6 (for verification)	Haller	This procedure establishes the method for documenting and approving requests to waive requirements identified in engineering documents used in the procurement process. This AP applies to testing activities conducted by the SNF Project for SSCs and computer software. This AP does not apply to ASME in-service inspection (ISI) programs, non-destructive examinations (NDEs), routine maintenance testing, routine system compliance testing, or routine radiation or other environmental/surveillance activities	Testing Requirements	EP-4.2 EP-7.1, Attach-4.2 EP-7.3	4/1/99

APPENDIX B: 1819 Procedure Map and New AP Compliance to 1819 Requirements

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Temp No.	New AP #	1819 Req'ts	Tech Owner / POC	Summary Description	New AP Title	Current 1613 Procedures	Target Date of Issuance
E-22	6-004	2.1 all 2.2 all 2.3.1 2.3.3 2.4 all 2.6.5 2.7.11 2.9.1.2 2.9.1.6 2.9.2.2 2.9.2.4 2.9.2.5	Medford	<p>This procedure covers the selection and approval process for SNF Project design authorities and cognizant engineers. The current revision of this procedure covers SNF Project chief engineer, design authorities, and cognizant engineer responsibilities.</p> <p>The new revision will include a more complete coverage of design authority responsibilities consistent with HNF-PRO-1819. The version will also include qualification requirements and the procedure for documenting education and experience requirement equivalencies for all those who practice engineering within SNF Project.</p>	Engineering Personnel Qualifications and Responsibilities	AP 6-004 EP-7.1, Attach-5.9	4/1/99
E-23	6-016	None	D. Bergmann	This administrative procedure describes the process used to control physical samples collected in support of OCRWM QARD related SNF Project activities.	OCRWM Sample Control	AP 6-016	4/1/99
E-24	6-024	None	Kessie	This procedure applies to the Chem-Nuclear Subcontractor and SNF Projects K Basins/Integrated Water Treatment System (IWTS) subproject's personnel in the preparation of design documents for the IWTS subproject.	Field Change Request	AP 6-024	3/15/99
E-25	6-012	2.9.2 all except 2.9.2.6	Medford	<p>This procedure defines the process of how changes to a subcontracted design are to be implemented and identifies the required reviews and approvals.</p> <p>This procedure describes the field walkdown verification program to be used by the SNF Project to validate the accuracy of field information for the development of as-built drawings issued at the completion of construction activities. The new revision of this procedure will include a more detailed field verification process that is based on HNF-PRO-1819 requirements.</p> <p>The procedure provides administrative requirements and process for the control and accuracy of Job Control System component database. It ensures that field labels are consistent with H-1 drawings component numbers. This procedure implements DOE Orders 5480.19 and 4330/4B, Section 5.3.1 for master equipment list.</p>	As-Built Verification Process	AP 6-012	5/1/99
E-26	6-005	2.8.3.7	Mildon / Call	This procedure will replace two existing procedures dealing with labeling, namely: AP-2.022-02, Equipment and Piping Labeling, and AP-2-006-01, Temporary Identification of Equipment and Controls.	Component Identification and Labeling	AP 6-005	5/1/99

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Summary Description

Temp No.	New AP #	1819 Req'ts	Tech Owner / POC	Summary Description		New AP Title	Current 1613 Procedures	Target Date of Issuance
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E-27	6-032	2.6.5	Forehand	Translation of EP-2.4 & EP-7.1 into AP format.		Development Control Requirement	EP-2.4, EP-7.1 Attach. 2.4	8/1/99
E-28	6-033	2.3.2 2.8.2.5	Langevin	This AP describes the process for special fabrication and development associated with prototypical and experimental equipment. This AP establishes the process to ensure configuration of a facility is maintained during the transition from operation to deactivation and final disposition.		Facility Deactivation Requirements	EP-2.5	9/1/99
E-29	6-034	None	Mildon / Langevin	This new AP describes the process for performing and documenting functional and requirements analyses.		Functions and Requirements	NEW	9/1/99
E-30	6-035	All below only for dedication activities in Specs: 2.8.4.2 2.8.4.3 2.8.4.5 2.8.4.6	Libs	Describes the procedural requirements and processes for dedication of new and replacement commercial grade items (CGIs) used as SSCs in Safety Project facilities. Is a new procedure, including in part, the dedication process from HNF-PRO-447. Incorporates HNF-PRO-1819 requirements with respect to CGI dedication and refers to OCR WM certification of CGIs as an extension of the CGI dedication process. Includes the following: <ul style="list-style-type: none"> • Applies dedication process to before and after procurement • Applies dedication process to engineered equipment • Applies dedication process to new and replacement spares • Provides criteria for determining if SSCs can be CGIs • Provides procedural aspects of dedication process • Includes discussion of Seismic and Environmental Qualification • Discusses CGI lot formation and sampling plan 		CGI Dedication	NEW	4/1/99
E-31	6-023	None	Cleveland / Kessie	The purpose of this procedure is to define the field change notice process and the required level of approval for field changes. Figure 3 provides a visual representation of this process. This is a new procedure and training on the process will be provided.		Field Change Notices		4/1/99
E-32	6-037	None	Kessie	This is a new procedure that expands the AP 6-024 process for field change requests to all projects in the SNF Project.		Field Change Request (global)		4/1/99
E-33	6-038	None	Kessie	The purpose of this AP is to provide a consistent process and approach in dealing with Requests for Information (RFIs) and other types of Field Requests on the SNF Project. This is a new procedure and training on the process will be provided.		Request for Information (constructor to engr)		4/1/99

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