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ENGINEERING DATA TRANSMITTAL

Page 1 of 1

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DP Lund DPLund 11-1-95 Signature of EDT Originator / Date	N/A Authorized Representative for Receiving Organization / Date	RR Borisch RRBorisch 11-1-95 Cognizant Manager / Date	☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments

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7. Abstract

The document contains the functions, function definitions, function interfaces, function interface definitions, Input Computer Automated Manufacturing Definition (IDEFO) diagrams, and a function hierarchy chart that describe what needs to be performed to deactivate the 300 Area Fuel Supply Facilities.

8. RELEASE STAMP

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DATE NOV 0 6 1995
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WHC-SD-FL-FAR-002, Revision 0

300 AREA
FUEL SUPPLY FACILITIES
DEACTIVATION
FUNCTION ANALYSIS REPORT

September 1995

Prepared for:

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300 AREA Working Group

300 AREA FUEL SUPPLY FACILITIES DEACTIVATION FUNCTION ANALYSIS REPORT

Table of Contents

1.0 INTRODUCTION

1.1 Objective

This report is the product of one of several steps in the system engineering approach and defines the content and interrelationships of the Hanford Site cleanup effort for the 300 Area Fuel Supply Facilities. A summary of the steps are listed below:

- Mission Analysis: This step established the problem to be solved and an acceptable end condition. It provides the basis for developing a system to resolve the problem. The mission is basically the purpose of the system which is to trnsform the initial conditions to final conditions. The product from this step is WHC-SD-FL-MAR-002 300 Area Fuel Supple Facilities Deactivation Mission Analysis Report.

- Functional Analysis: The functions that the 300 Area Fuel Supply Facilities must perform are derived in this step. These functions include technical functions that a system must perform, other functions that must be carried out in support of the technical functions (i.e., organizational/management functions), interdependencies among the functions, and functional performance criteria. The functional analysis process produces a functional hierarchy with detailed descriptions of all functions and interfaces.

- Requirement Identification: Statutory, regulatory, technical, social, and economic requirements with which a system must comply are identified in this step. These requirements fall into two classes: mission-driven requirements and externally imposed requirements. This step produces a baseline list including requirement sources and their descriptions.

- Requirements Allocation to System Functions: The identified requirements are allocated to the system functions producing a requirements baseline for the systems engineering process.

- Innovation of Alternative Solutions: Based on the products of the systems engineering steps described above different structural, physical and organizational configurations that provide system solutions are developed.

This report contains the products from the second step described above. The sections in this report are: 2.0 Functional Analysis, 3.0 Functional Interfaces and Dependencies, and 4.0 Issues. Addenda provide all of the back up information relating to the 300 Area Fuel Supply Facilities. The addenda are reports generated from RDD-100, a computer program by Ascent Logic.

1.2 Mission Statement

The 300 AREA FUEL SUPPLY FACILITIES Mission Statement was developed during mission analysis and is reported in WHC-SD-FL-MAR-002 300 Area Fuel Supply Facilities Deactivation Mission Analysis Report. It is repeated below:

> "The purpose of the 300 AREA FUEL SUPPLY FACILITIES Deactivation Project is to establish a passively safe and environmentally secure configuration of the 300 AREA FUEL SUPPLY FACILITIES , and turn over the 300 AREA FUEL SUPPLY FACILITIES (buildings will be turned over individually when deactivation is completed) to Decontamination and Decommissioning (D&D). The project removes, reduces, and/or stabilizes the special nuclear material and major remaining radioactive sources and hazardous chemicals within and around the 300 Area Fuel Supply Facilities. There will be no active systems or utilities within the facilities. During deactivation, all aspects of the safety envelope will be continually challenged and appropriate portions maintained to ensure deactivation takes place in a safe and regulatory compliant manner. Stakeholders will be actively involved during deactivation."

2.0 300 AREA FUEL SUPPLY FACILITIES FUNCTIONS

The ultimate function of the 300 AREA FUEL SUPPLY FACILITIES system is to perform operations that satisfy the mission need identified in WHC-SD-FL-MAR-002 300 Area Fuel Supply Facilities Deactivation Mission Analysis Report repeated below:

> "Because the 300 AREA FUEL SUPPLY FACILITIES no longer have a production mission due to the shutdown of the N Reactor; because the cost is too high to maintain the safety envelope; and because deactivation of the facilities will reduce the cost to operate; the DOE has ordered deactivation of the 300 AREA FUEL SUPPLY FACILITIES. Essentially, the problem is how to deactivate 300 AREA FUEL SUPPLY FACILITIES to a point where safe and compliant D&D operations can take place with acceptable risk, and where only minimum maintenance and surveillance is required until D&D."

2.1 Relationship to Hanford Site Functional Hierarchy

The 300 AREA FUEL SUPPLY FACILITIES mission statement developed during the 300 Area Fuel Supply Facilities mission analysis is consistent with the top level (0 Cleanup Hanford) and the first, second and third level functions (4.0 Remedy Unsafe and Unacceptable Conditions, 4.1 Deactivate Facilities and 4.1.1 Deactivate Facilities with Special Nuclear Materials and Nuclear Materials (Type 1 Facility)) first identified in WHC-EP-0722 "Systems Engineering Functions and Requirements for the Hanford Cleanup Mission: First Issue" of January 1994 and later revised and maintained as the Hanford Site Integrated Technical Baseline (HSITB). This function hierarchy is shown in Figure 1. The 300 AREA FUEL SUPPLY FACILITIES mission begins with function 4.1.1.6 Deactivate the 300 Area Fuel Supply Facilities.

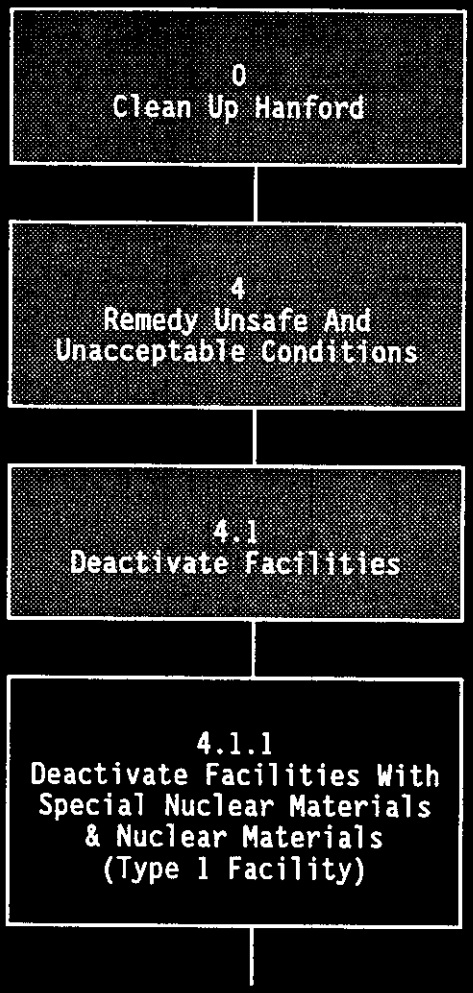


Figure 1. Hanford Site Function Hierarchy

2.2 Function Hierarchy

The detailed 300 AREA FUEL SUPPLY FACILITIES functional hierarchy is presented in Addendum 1. It begins at level two (4.1.1.1 Deactivate 300 Area Fuel Supply Facilities) and continues to level seven.

2.3 Function Definition Table

The definitions of the 300 Area Fuel Supply Facilities functions in the functional hierarchy in Addendum 1 are presented in Addendum 2.

3.0 FUNCTIONAL INTERFACES AND DEPENDENCIES

Another way to describe functions is using functional interface diagrams. They establish the dependencies between the functions defined in the functional hierarchy. By conceptualizing each function as a process where inputs, resources, and controls are transformed into outputs, the relationships between functions can be identified. The outputs of one function become the inputs of other functions. Function inputs (initial-state condition) enter from the left. Outputs (end-state condition) exit to the right. Controls enter from the top, and resources (sometimes called mechanisms) enter from the bottom. Inputs, outputs, controls and resources are all called interfaces and/or products and are defined for each system function.

3.1 IDEF Diagrams

The 300 Area Fuel Supply Facilities interface diagrams are provided in the form of ICOM Definition Method, ICOM is Input Controls Output Mechanisms (IDEF) diagrams produced form the RDD system model and are found in Addendum 3.

3.2 Interface Definitions

The 300 Area Fuel Supply Facilities interface definitions, presented in Addendum 4, provides descriptions of all the interfaces found on the IDEF diagrams in Addendum 3. Inputs, outputs, controls and resources are all considered interfaces.

4.0 ISSUES

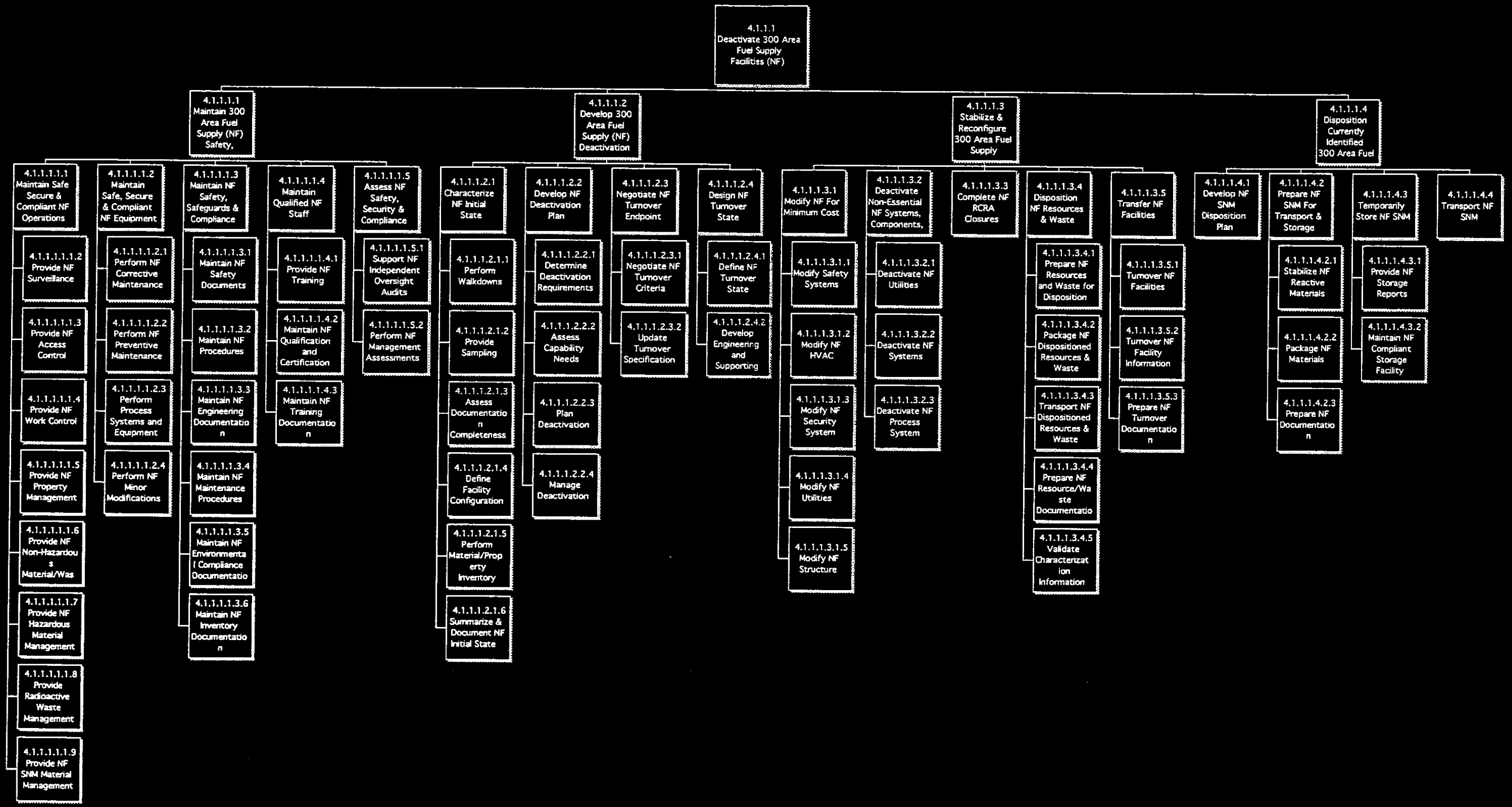
Listed below are issues that were identified in the 300 Area Fuel Supply Facilities Functional Analysis workshops. These issues will be further refined and clarified in order to effectively attached them to the functions and interfaces contained in the systems model in RDD-100.

- For the purposes of this analysis, the amount of current and future funding is assumed to be adequate to carry out the functions identified in this report. As the system alternatives and design are further developed, they will be compared to the MYPP and discrepancies will be reconciled.

- The acceptance criteria for the transfer 300 AREA FUEL SUPPLY FACILITIES to the ER contractor have not been developed. The Hanford Surplus Facility Program Criteria (100 Area Projects generic acceptance criteria for D&D) will be used to determine what needs to be done until actual acceptance criteria are negotiated.

- The ability to move the SNM and hazardous waste from the 300 AREA FUEL SUPPLY FACILITIES may be limited in options or timing due to either NEPA issues or policy agreements on SNM disposition. Facilities for the SNM storage and disposition have not been identified.

ADDENDUM 1 - FUNCTIONAL HIERARCHY


4.1.1.1 Deactivate 300 Area Fuel Supply Facilities (NF)
4.1.1.1.1 Maintain 300 Area Fuel Supply (NF) Safety,
4.1.1.1.1.1 Maintain Safe Secure & Compliant NF Operations
4.1.1.1.1.1.2 Provide NF Surveillance
4.1.1.1.1.1.3 Provide NF Access Control
4.1.1.1.1.1.4 Provide NF Work Control
4.1.1.1.1.1.5 Provide NF Property Management
4.1.1.1.1.1.6 Provide NF Non-Hazardous Material/Was
4.1.1.1.1.1.7 Provide NF Hazardous Material Management
4.1.1.1.1.1.8 Provide Radioactive Waste Management
4.1.1.1.1.1.9 Provide NF SNM Material Management
4.1.1.1.1.2 Maintain Safe, Secure & Compliant NF Equipment
4.1.1.1.1.2.1 Perform NF Corrective Maintenance
4.1.1.1.1.2.2 Perform NF Preventive Maintenance
4.1.1.1.1.2.3 Perform Process Systems and Equipment
4.1.1.1.1.2.4 Perform NF Minor Modifications
4.1.1.1.1.3 Maintain NF Safety, Safeguards & Compliance
4.1.1.1.1.3.1 Maintain NF Safety Documents
4.1.1.1.1.3.2 Maintain NF Procedures
4.1.1.1.1.3.3 Maintain NF Engineering Documentation
4.1.1.1.1.3.4 Maintain NF Maintenance Procedures
4.1.1.1.1.3.5 Maintain NF Environmental Compliance Documentatio
4.1.1.1.1.3.6 Maintain NF Inventory Documentation
4.1.1.1.1.4 Maintain Qualified NF Staff
4.1.1.1.1.4.1 Provide NF Training
4.1.1.1.1.4.2 Maintain NF Qualification and Certification
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4.1.1.1.2.1.4 Define Facility Configuration
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4.1.1.1.2.2.3 Plan Deactivation
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4.1.1.1.2.3.2 Update Turnover Specification
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4.1.1.1.3.1.4 Modify NF Utilities
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4.1.1.1.3.2.1 Deactivate NF Utilities
4.1.1.1.3.2.2 Deactivate NF Systems
4.1.1.1.3.2.3 Deactivate NF Process System
4.1.1.1.3.3 Complete NF RCRA Closures
4.1.1.1.3.4 Disposition NF Resources & Waste
4.1.1.1.3.4.1 Prepare NF Resources and Waste for Disposition
4.1.1.1.3.4.2 Package NF Dispositioned Resources & Waste
4.1.1.1.3.4.3 Transport NF Dispositioned Resources & Waste
4.1.1.1.3.4.4 Prepare NF Resource/Waste Documentatio
4.1.1.1.3.4.5 Validate Characterization Information
4.1.1.1.3.5 Transfer NF Facilities
4.1.1.1.3.5.1 Turnover NF Facilities
4.1.1.1.3.5.2 Turnover NF Facility Information
4.1.1.1.3.5.3 Prepare NF Turnover Documentation
4.1.1.1.4 Disposition Currently Identified 300 Area Fuel
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4.1.1.1.4.2 Prepare NF SNM For Transport & Storage
4.1.1.1.4.2.1 Stabilize NF Reactive Materials
4.1.1.1.4.2.2 Package NF Materials
4.1.1.1.4.2.3 Prepare NF Documentation
4.1.1.1.4.3 Temporarily Store NF SNM
4.1.1.1.4.3.1 Provide NF Storage Reports
4.1.1.1.4.3.2 Maintain NF Compliant Storage Facility
4.1.1.1.4.4 Transport NF SNM

ADDENDUM 2 - FUNCTION DEFINITIONS

Function	Definitions
4.1.1.1	**Deactivate 300 Area Fuel Supply (NF) Facilities** Deactivates the 300 Area Fuel Supply Facility (NF) containing special nuclear materials and may include radioactive or hazardous materials (e.g., Purex, PFP).
4.1.1.1.1	**Maintain 300 Area Fuel Supply (NF) Safety, Security, & Compliance** Maintains the 300 Area Fuel Supply Facilities (NF) structure, qualified staff, safe and compliant equipment, documentation and provides assessment of safety and compliance states. Provides for safe and compliant operation in accordance with governing safety codes and regulations.
4.1.1.1.1.1	**Maintain Safe, Secure, & Compliant NF Operations** *Performs necessary surveillance; access control; property, material, and waste management to maintain the 300 Area Fuel Supply Facilities (NF) in compliance with governing requirements while the facility is being deactivated.*
4.1.1.1.1.1.2	**Provide NF Surveillance** *Provides surveillance of the facility operations and operating systems, develop acutely unsafe condition action plans, perform OSR surveillance procedures, environmental monitoring, RCRA tracking, and surveillance of safety analysis compliance.*
4.1.1.1.1.1.3	**Provide NF Access Control** *Provides access control to and internal to the facility for safeguards and security, safety, and radiological purposes.*
4.1.1.1.1.1.4	**Provide NF Work Control** *Provides a job control system for the facility activities.*
4.1.1.1.1.1.5	**Provide NF Property Management** *Provides property management for the facility in accordance with DOE orders and WHC procedures.*
4.1.1.1.1.1.6	**Provide NF Non-Hazardous Material/Waste Management** *Provides containment, control, and documentation of non-hazardous material and waste in accordance with safe and applicable standards.*
4.1.1.1.1.1.7	**Provide NF Hazardous Material/Waste Management** *Provides containment, control, and documentation of hazardous materials and wastes in conformance with safety requirements and all applicable hazardous material/wastes codes and regulations.*

Function	Definitions
4.1.1.1.1.1.8	**Provide Radioactive Waste Management** *Provides containment, control, and documentation of radioactive material and waste in accordance with safety requirements and all applicable codes and regulations.*
4.1.1.1.1.1.9	**Provide NF SNM Material** *Provides all special SNM management operations in accordance with applicable codes and regulations including proper surveillance and security.*
4.1.1.1.1.2	**Maintain Safe, Secure, and Compliant NF Equipment & Structure** *Maintains the facility systems and infrastructure in the operational condition dictated by approved safety and compliance documentation (includes environmental regulations).*
4.1.1.1.1.2.1	**Perform NF Corrective Maintenance** *All maintenance that brings systems and equipment back to their operational states after failure.*
4.1.1.1.1.2.2	**Perform NF Preventive Maintenance** *Preventive maintenance activities to minimize all unplanned events and premature equipment failures.*
4.1.1.1.1.2.3	**Perform Process Systems and Equipment Calibrations** *Performs facility equipment, instrumentation, and process system calibrations to ensure accuracy.*
4.1.1.1.1.2.4	**Perform NF Minor Modifications** *Performs minor modifications to facility systems or structure to ensure safe and compliant operations during the facility deactivation process.*
4.1.1.1.1.3	**Maintain NF Safety, Safeguards, & Compliance Documentation** *Maintains all required facility safety, safeguards, compliance, engineering, inventory, and operating documentation during facility deactivation.*
4.1.1.1.1.3.1	**Maintain NF Safety Documents** *Maintains documentation necessary to ensure safe deactivation activities. This includes ISBs, CSERs, etc.*
4.1.1.1.1.3.2	**Maintain NF Procedures** *Maintains procedures for safety, safeguards, and security activities.*
4.1.1.1.1.3.3	**Maintain NF Engineering Documentation** *Maintains configuration drawings and associated engineering documentation required to operate and maintain the facility in a safe and compliant status.*

Function	Definitions
4.1.1.1.1.3.4	**Maintain NF Maintenance Procedures** *Maintains maintenance procedure documentation necessary for safe, efficient, and compliant operations.*
4.1.1.1.1.3.5	**Maintain NF Environmental Compliance Documentation** *Maintains appropriate regulatory files and other related environmental documentation to assure and prove environmental compliance.*
4.1.1.1.1.3.6	**Maintain NF Inventory Documentation** *Maintains nuclear materials documentation in compliance with DOE orders.*
4.1.1.1.1.4	**Maintain Qualified NF Staff** *Provides facility specific training, testing, and training records maintenance to ensure facility staff remain trained, qualified, and certified (as required) throughout the facility deactivation process*
4.1.1.1.1.4.1	**Provide NF Training** *Provides all training related to the activities necessary to deactivate the facilities and ensure they remain in a safe and compliant condition.*
4.1.1.1.1.4.2	**Maintain NF Qualification and Certification** *Provides periodic personnel skills check, assessment, and testing required to maintain necessary qualifications and certifications.*
4.1.1.1.1.4.3	**Maintain NF Training Documentation** *Maintains applicable worker training documentation. Documentation includes worker safety and competency qualification and certification.*
4.1.1.1.1.5	**Assess NF Safety, Security, & Compliance State** *Performs/responds to oversight assessments and perform appropriate self assessments of the facility deactivation activities to evaluate the facility and operations safety and compliance status.*
4.1.1.1.1.5.1	**Support NF Independent Oversight Audits** *Performs and responds to independent oversight audits.*
4.1.1.1.1.5.2	**Perform NF Management Assessments** *Performs self assessments of facility operations to ensure that safety, security, and compliance are maintained.*

Function	Definitions
4.1.1.1.2	**Develop 300 Area Fuel Supply (NF) Deactivation Plan, Negotiate Turnover Endpoint, and Provide Facility Specific Engineering** *Assesses the current state of the 300 Area Fuel Supply (NF), identify and/or negotiate equipment disposition requirements, develop plans to deactivate facility, and negotiate and administratively maintain the desired facility turnover endpoint specifications. Establish and maintain a long-term archive of facility information. Provides necessary facility-specific engineering.*
4.1.1.1.2.1	**Characterize NF Initial State** *Identifies the current state of the facility infrastructure, process systems, and other facility systems, facility contents, equipment, instrumentation, and utilities.*
4.1.1.1.2.1.1	**Perform Walkdowns** *Performs walkdowns to compare actual facility state with available documentation.*
4.1.1.1.2.1.2	**Provide Sampling** *Obtains samples to characterize contamination and verify contamination levels, and to assist with SNM inventory verification.*
4.1.1.1.2.1.3	**Assess Documentation Completeness** *Assesses existing documentation for completeness and verifies with walkdowns, sampling, and other observations.*
4.1.1.1.2.1.4	**Define Facility Configuration** *Reviews facility drawings packages to determine accuracy and develop additional configuration control documents as required to document actual configuration of facility infrastructure, utilities, process systems, equipment, and instrumentation.*
4.1.1.1.2.1.5	**Perform Material/Property Inventory** *Performs inventory of all property and materials.*
4.1.1.1.2.1.6	**Summarize and Document NF Initial State** *Develops and provides a documentation summary of matrix that clearly and completely defines facility state.*
4.1.1.1.2.2	**Develop NF Deactivation Plan** *Develops strategies to best implement deactivation requirements, plans the facility deactivation, and identifies and/or negotiates facility equipment disposition requirements.*

Function	Definitions
4.1.1.1.2.2.1	**Determine Deactivation Requirements** *Determines and documents all facility specific administrative, safety, environmental, regulatory, DOE orders, codes, standards, and other requirements.*
4.1.1.1.2.2.2	**Assess Capability Needs** *Assesses personnel, material, equipment, facility, and technology needs necessary to support facility deactivation activities.*
4.1.1.1.2.2.3	**Plan Deactivation** *Develops deactivation strategy, plans, and schedules.*
4.1.1.1.2.2.4	**Manage Deactivation** *Develops plan for management of deactivation activities.*
4.1.1.1.2.3	**Negotiate NF Turnover Endpoint** *Negotiates and maintains the desired facility turnover endpoint criteria.*
4.1.1.1.2.3.1	**Negotiate NF Turnover Criteria** *Negotiates turnover criteria with D&D or the transition of resources to beneficial uses organization.*
4.1.1.1.2.3.2	**Update Turnover Specification** *Maintains the negotiated facility deactivation turnover specification.*
4.1.1.1.2.4	**Design NF Turnover State** *Specifies turnover facility, equipment, and material status; develops facility deactivation turnover specification; develops deactivation engineering documentation and other supporting analyses.*
4.1.1.1.2.4.1	**Define NF Turnover State** *Defines configuration specifics and develops negotiated facility deactivation turnover specification.*
4.1.1.1.2.4.2	**Develop Engineering and Supporting Analyses** *Provides engineering and supporting analyses to support engineered deactivation package development. Examples include safety analyses, transportation analyses, and development of NEPA documentation.*
4.1.1.1.3	**Stabilize & Reconfigure 300 Area Fuel Supply Facilities (NF) for Minimum Surveillance (and Maintenance)** *Deactivates nonessential systems, system components, and physical structures, and takes other actions as required to minimize environmental, public, and personnel hazards. Takes these actions consistent with minimizing continuing facility costs.*

Function	Definitions
4.1.1.1.3.1	**Modify NF for Minimum Cost** *Reconfigures plant systems and structure to minimize cost of maintenance and operation during deactivation phase and while waiting for D&D while retaining minimum acceptable compliance with safety and environmental requirements.*
4.1.1.1.3.1.1	**Modify Safety Systems** *Makes any appropriate modifications to safety systems such as elimination or conversion (wet to dry) of fire systems.*
4.1.1.1.3.1.2	**Modify NF HVAC** *Modifies HVAC for minimum acceptable heating, ventilation, and radiological containment requirements.*
4.1.1.1.3.1.3	**Modify NF Security System** *Reconfigures security systems consistent with SNM inventory and security requirements.*
4.1.1.1.3.1.4	**Modify NF Utilities** *Modifies or downsizes utility systems to satisfy reduced needs.*
4.1.1.1.3.1.5	**Modify NF Structure** *Modifies structural aspects if savings can be obtained (e.g., adding a firewall rather than maintaining a fire suppression system).*
4.1.1.1.3.2	**Deactivate Non-Essential NF Systems, Components, and Structures** *Deactivates water, sewer, electrical, HLAN, steam, telephone, power, fire system as appropriate to still maintain minimum safety and environmental compliance.*
4.1.1.1.3.2.1	**Deactivate NF Systems** *Deactivates facility systems to minimize operating and maintenance costs and still maintain minimum safety and environmental compliance.*
4.1.1.1.3.2.3	**Deactivate NF Process System** *Drains, flushes, removes, etc., process systems in accordance with negotiated turnover specifications.*
4.1.1.1.3.3	**Complete NF RCRA Closures** *Completes cleanup, deactivation, and closes RCRA designated sites.*
4.1.1.1.3.4	**Disposition NF Resources & Waste** *Accumulates, packages, and dispositions resources and waste for the NF facilities.*

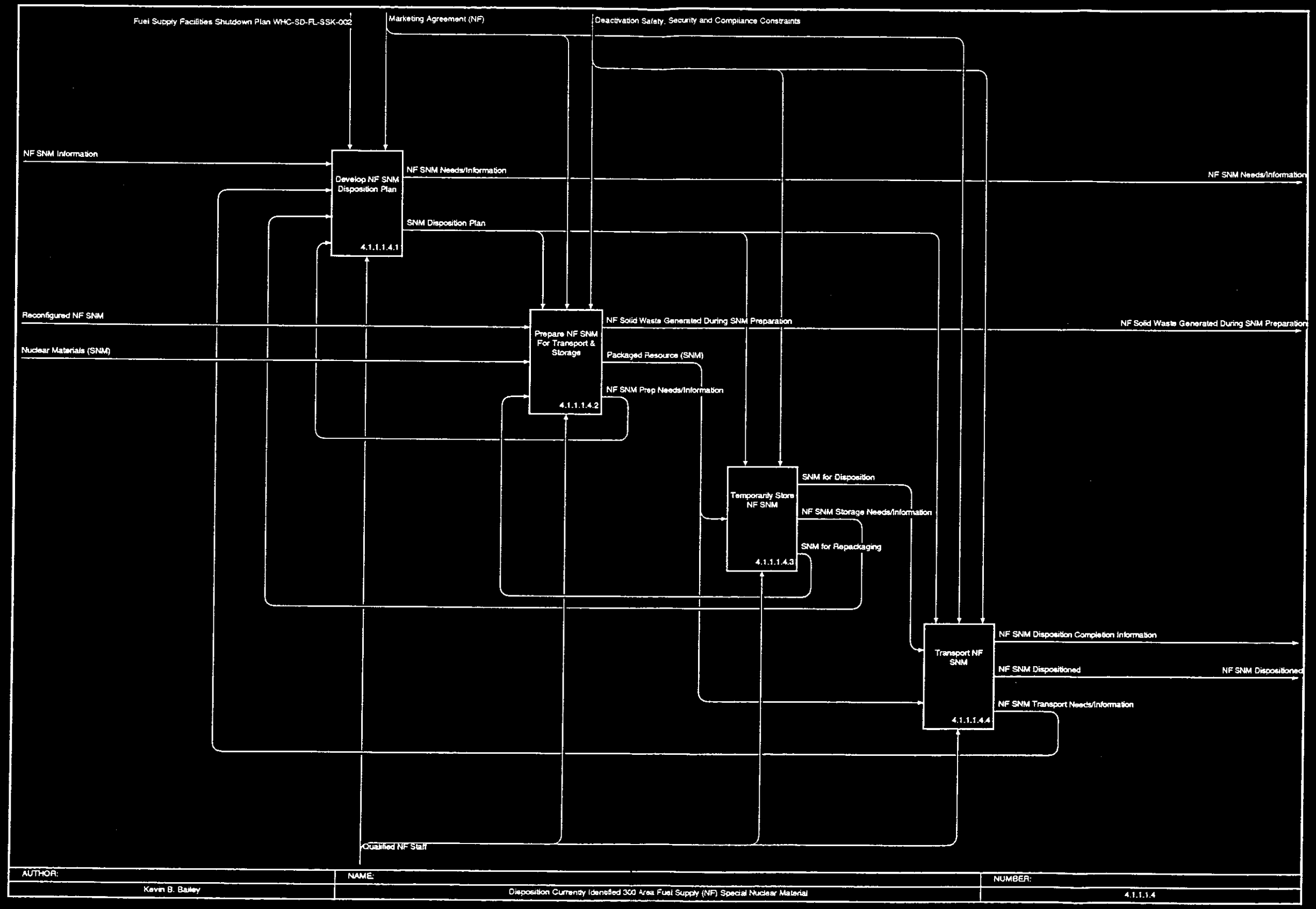
Function	Definitions
4.1.1.1.3.4.1	**Prepare NF Resources and Waste for Disposition** *Accumulates, drains, collects, and dispositions equipment, consumables, etc., and waste or resources for disposal or reuse.*
4.1.1.1.3.4.2	**Package NF Dispositioned Resources & Waste** *Packages resources and waste for disposal or reuse.*
4.1.1.1.3.4.3	**Transport NF Dispositioned Resources & Waste** *Transports resources and waste to disposal or reallocation sites.*
4.1.1.1.3.4.4	**Prepare NF Resource/Waste Documentation** *Prepares any documentation required for disposal or certification for reuse or excess.*
4.1.1.1.3.5	**Transfer NF Facilities** *Maintains and effects transfer of facility structure and surrounding area to D&D organizations for remediation or to transition organization for reuse, privatization, etc.*
4.1.1.1.3.5.1	**Turnover NF Facilities** *After deactivation is complete, maintains and manages the facility until transfer for beneficial user or D&D is accomplished. Performs actual transfer of facility.*
4.1.1.1.3.5.2	**Turnover Facility Information** *Transfers actual information on facility status and characterization to receiving organization.*
4.1.1.1.3.5.3	**Prepare NF Turnover Documentation** *Prepares appropriate documentation on the facility status and supporting information in accordance with turnover specification.*
4.1.1.1.4	**Disposition Currently Identified 300 Area Fuel Supply (NF) Special Nuclear Material** *Collects and prepares materials for temporary storage and transfer, and transports materials out of the facility.*
4.1.1.1.4.1	**Develop NF SNM for Disposition Plan** *Develops and obtains approval for disposition of SNM.*
4.1.1.1.4.2	**Prepare NF SNM for Transport & Storage** *Stabilizes and packages SNM for temporary storage or transportation to an alternate company or permanent storage or for other use.*
4.1.1.1.4.2.1	**Package NF Materials** *Packages SNM for temporary storage or shipment.*

Function	Definitions
4.1.1.1.4.2.2	**Prepare NF Documentation** *Prepares all documentation for storage, shipping, or alternate use.*
4.1.1.1.4.3	**Temporarily Store NF SNM** *Stores SNM until alternate, temporary, or permanent storage or beneficial use is identified.*
4.1.1.1.4.3.1	**Provide NF Storage Reports** *Prepares and maintains required storage reports.*
4.1.1.1.4.3.2	**Maintain NF Compliant Storage Facility** *Maintains facility and equipment qualifications and operating requirements for compliant storage.*
4.1.1.1.4.4	**Transport NF SNM** *Transport materials to alternate storage or a beneficial use.*

ADDENDUM 3 - IDEFO DIAGRAMS

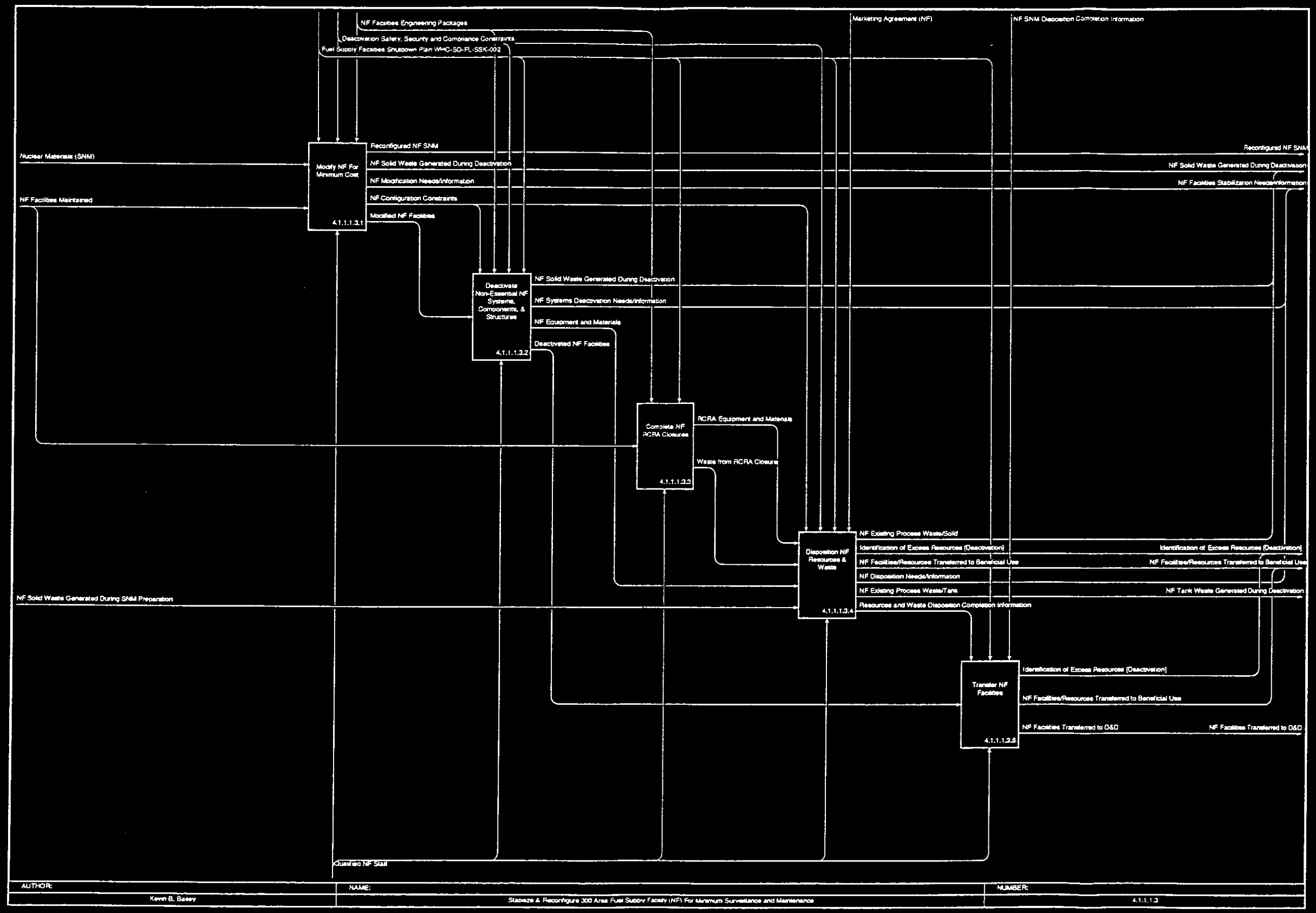
IDEF0 Diagram
[4.1.1.1.4] Disposition Currently Identified 300 Area Fuel Supply (NF) Special Nuclear Material

June 8, 1995 7:21:16 am



IDEF0 Diagram
[4.1.1.1.3] Stabilize & Reconfigure 300 Area Fuel Supply Facility (NF) For Minimum Surveillance and Maintenance

June 8, 1995 7:21:16 am

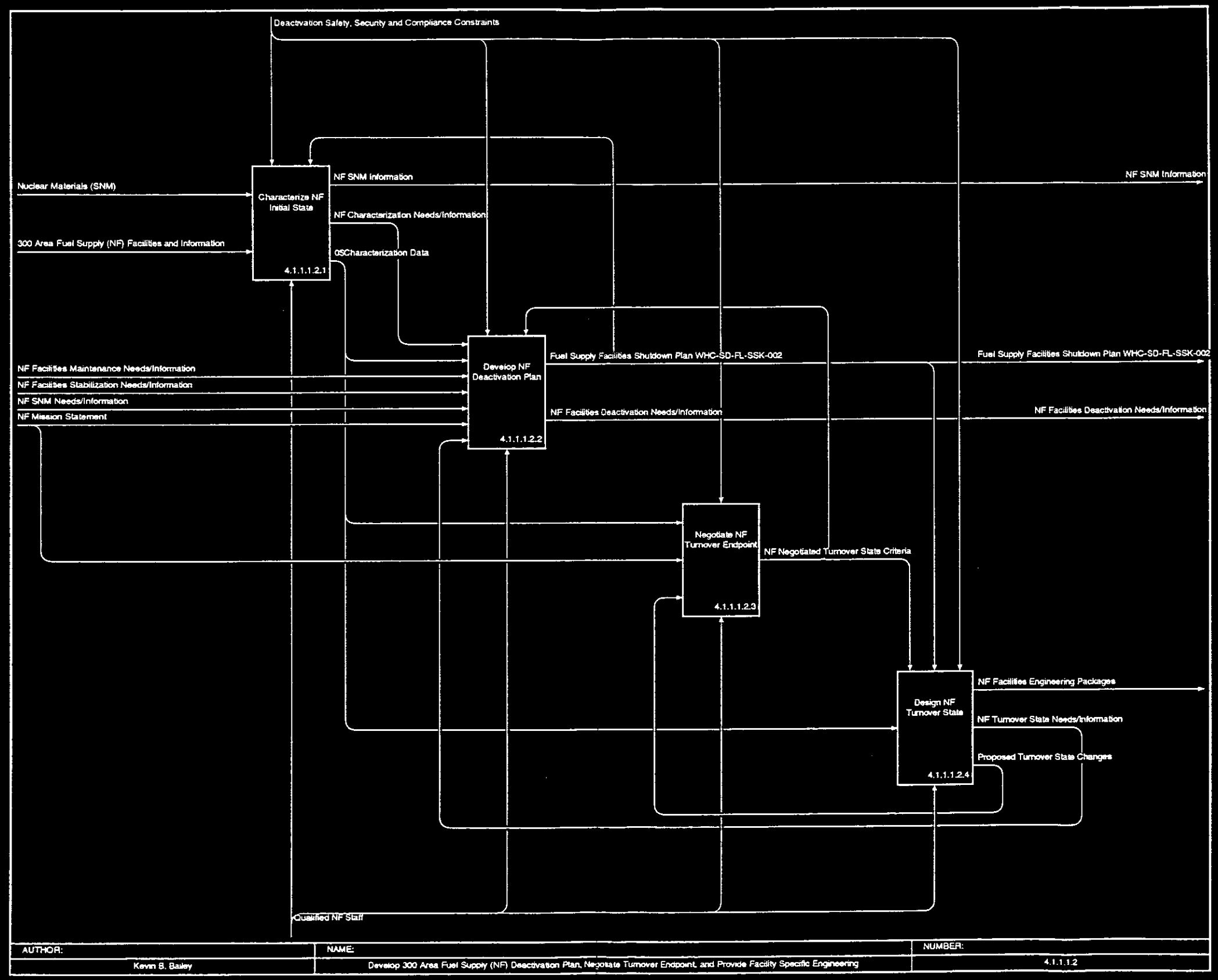


March 31, 1995 Technical Baseline

IDEF0 Diagram

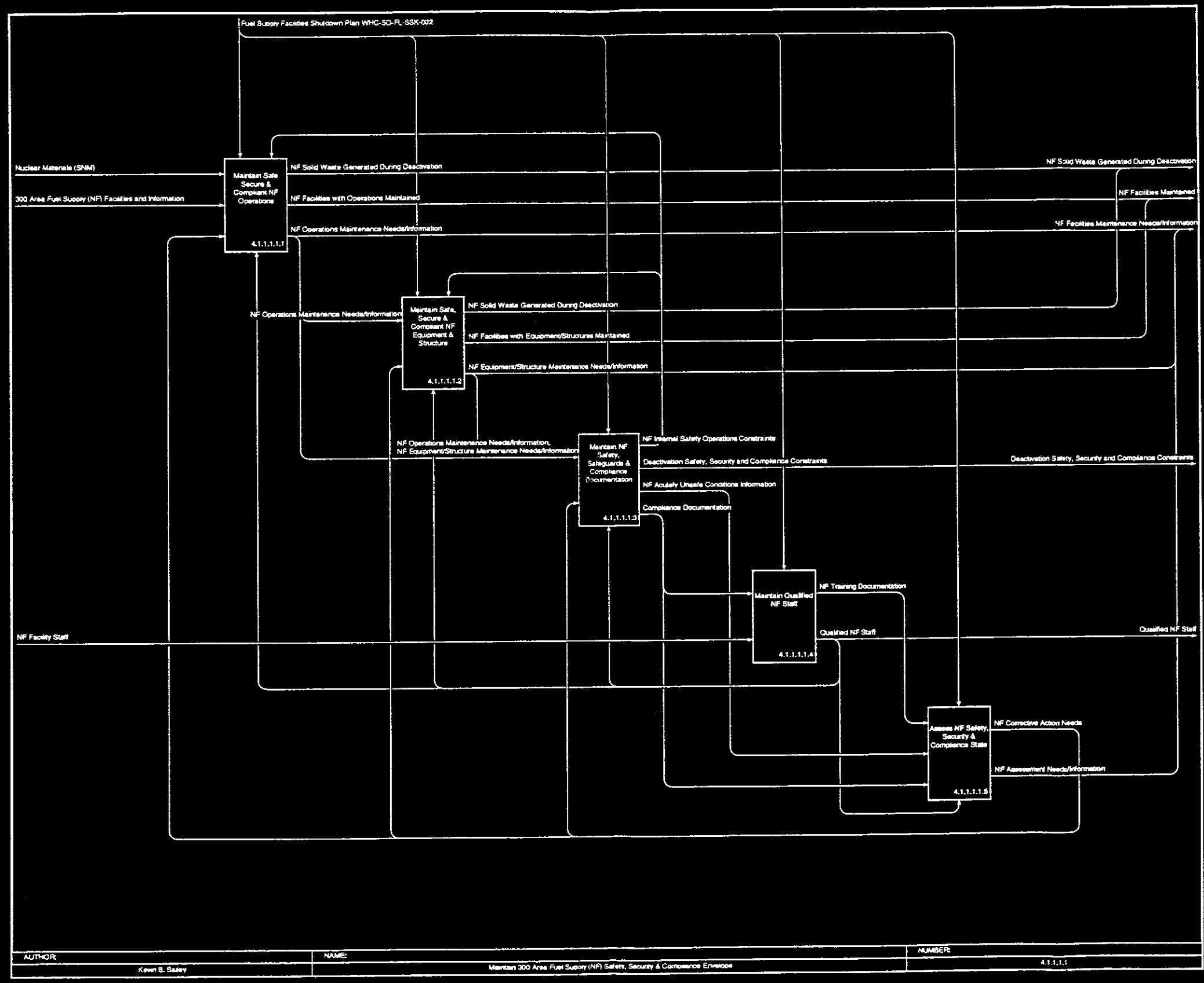
June 8, 1995 7:21:16 am

[4.1.1.1.2] Develop 300 Area Fuel Supply (NF) Deactivation Plan, Negotiate Turnover Endpoint, and Provide Facility Specific Engineering



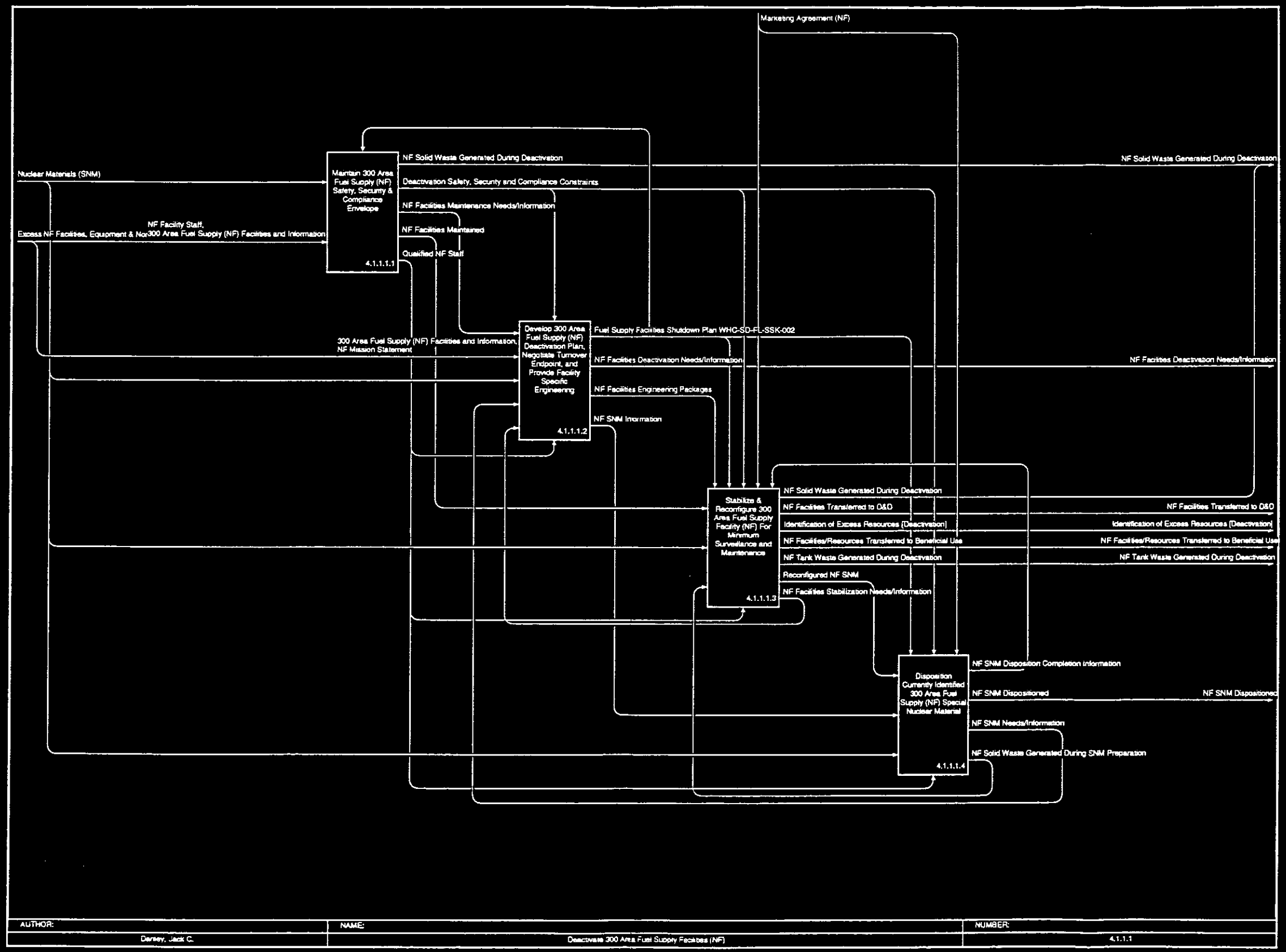
IDEF0 Diagram
[4.1.1.1.1] Maintain 300 Area Fuel Supply (NF) Safety, Security & Compliance Envelope

June 8, 1995 7:21:16 am



IDEF0 Diagram
[4.1.1.1] Deactivate 300 Area Fuel Supply Facilities (NF)

June 8, 1995 7:21:16 am



ADDENDUM 4 - INTERFACE DEFINITIONS

[4.1.1.1] Deactivate 300 Area Fuel Supply Facilities (NF)

Interface	*Constituents*
0$Characterization Data *Information collected from facility walkdowns and documentation review about the actual physical configuration of the facility, status of process and other facility systems, material contents, and contamination areas and levels.*	
300 Area Fuel Supply (NF) Facilities and Information *The systems, structures, equipment and minor facilities in and around 15 buildings previously associated with fuel fabrication and material processing in the 300 area. Included is configuration and status information. These buildings are hereafter referred to as "NF facilities".*	
Compliance Documentation *NFPA, OSHA, and other safety and compliance documents including safety basis documents.*	
Deactivated NF Facilities *NF facilities with all non-essential systems, equipment, and structures deactivated.*	
Deactivation Safety, Security and Compliance Constraints *Constraints required to maintain the safety, security, and compliance envelope. Examples include HVAC system requirements, configuration, electrical system requirements/configuration, instrument requirements/configuration, material storage configuration/location, fire alarm system, etc.*	
Excess NF Facilities, Equipment & Non-Nuclear Materials *NF facilities, including all equipment and materiel associated with those facilities, that supported the Hanford production mission and are not needed to support the cleanup mission*	• 300 Area Fuel Supply (NF) Facilities and Information • NF Facility Staff • NF Mission Statement
Fuel Supply Facilities Shutdown Plan WHC-SD-FL-SSK-002 *300 Area fuel supply facility deactivation plan containing the requirements defined in the turnover specification that must be met before D&D will accept the facility. Certain systems may need to be deactivated. Contaminated areas will need stabilization. Materials and equipment may need to be removed, ie. ER.*	

[4.1.1.1] Deactivate 300 Area Fuel Supply Facilities (NF)

Interface	*Constituents*
Identification of Excess Resources [Deactivation] *Identification of potentially transferable resources which consists of excess inventory information.*	• Identification of Excess B Plant Resources [Deactivation] • Identification of Excess FFTF Resources [Deactivation] • Identification of Excess NF Resources [Deactivation] • Identification of Excess PFP Resources [Deactivation] • Identification of Excess PL Resources [Deactivation] • Identification of Excess PR Resources [Deactivation] • Identification of Excess PUREX Resources [Deactivation] • Identification of Excess Resources (K Basin Deactivation)
Marketing Agreement (NF) *The agreement on the final SNM disposition and associated disposition criteria.*	
Modified NF Facilities *NF facility that has been placed into a configuration that requires minimal cost, maintenance, surveillance, and security.*	
NF Acutely Unsafe Conditions Information *Nuclear or chemically unsafe conditions and information, does not include OSHA, for example. These are conditions detected during the cleanup operations which need to be immediately fed back to the program management function for consideration which may result in new direction & control, defined work packages, and/or mission requirements.*	
NF Assessment Needs/Information *Information and needs developed during assessment of the safety, security & compliance state.*	
NF Characterization Needs/Information *Identification of needed characterization data regarding configuration of facility, status of process and other facility systems, material contents, SNM/NM/NF and contamination areas and levels.*	

[4.1.1.1] Deactivate 300 Area Fuel Supply Facilities (NF)

Interface	*Constituents*
NF Configuration Constraints *Constraints placed on the deactivation of systems, equipment, and structures, and disposition of resources and waste by modifications to the facility to minimize cost, maintenance, surveillance, and security.*	
NF Corrective Action Needs *Actions that must be taken to ensure that the safety and compliance envelope of the facility is maintained.*	
NF Disposition Needs/Information *Identification of additional necessary actions to complete disposition of resources or waste.*	
NF Equipment and Materials *Equipment and materials removed from NF facilities as a result of deactivation activities. These are potentially transferable resources.*	
NF Equipment/Structure Maintenance Needs/Information *Information on maintenance, calibration, and minor modifications activities, as well as status of equipment and structure, compliance state, and design & configuration information.*	
NF Existing Process Waste/Solid *Includes spent ion exchange columns, liquid waste and TRU surface contamination, non-radioactive building waste (including asbestos) in a form appropriate for disposal; contaminated solvents, acids, soil and other material.*	
NF Existing Process Waste/Tank *Waste from previous process activities in the facility that exist in tanks or transfer lines.*	
NF Facilities Deactivation Needs/Information *Information, developed during performance of NF facilities deactivation, provided to program management functions to support decision-making essential to managing the NF facilities deactivation process.*	
NF Facilities Engineering Packages *Detailed procedures and work packages necessary for the stabilization and reconfiguration activities.*	
NF Facilities Maintained *NF facilities maintained in a safe condition by appropriate surveillance, preventative, and corrective maintenance activity.*	• NF Facilities with Equipment/Structures Maintained • NF Facilities with Operations Maintained

[4.1.1.1] Deactivate 300 Area Fuel Supply Facilities (NF)

Interface	*Constituents*
NF Facilities Maintenance Needs/Information *Capabilities and needs discovered while operating the system; consists of staffing needs, control, facility status, required reports, staff and resource allocation.*	• NF Assessment Needs/Information • NF Equipment/Structure Maintenance Needs/Information • NF Operations Maintenance Needs/Information
NF Facilities Stabilization Needs/Information *Information and needs developed during stabilization and reconfiguration activities, which are utilized for developing the Deactivation Plan, for negotiating the turnover endpoint, and for facility specific engineering.*	• NF Disposition Needs/Information • NF Modification Needs/Information • NF Systems Deactivation Needs/Information
NF Facilities Transferred to D&D *NF facilities turned over for D&D in accordance with acceptance criteria defined for initiation of D&D activities.*	
NF Facilities with Equipment/Structures Maintained *NF facility equipment/structures maintained by appropriate preventive and corrective maintainance.*	
NF Facilities with Operations Maintained *NF facilities maintained in a safe condition by appropriate surveillance, access control, and material management.*	
NF Facilities/Resources Transferred to Beneficial Use *Physical and intellectual resources (e.g., facilities, equipment, materials, infrastructure, land, technology, and scientific data) that remain after facility deactivation and can be transferred to other areas in the public or private domains.*	
NF Facility Staff *NF facilities deactivation direct staff and indirect support staff prior to necessary training and testing qualifications.*	
NF Internal Safety Operations Constraints *Safety constraints derived from NF safety basis radiological safety procedures, occupational safety codes and standards, DOE safety orders, etc.*	
NF Mission Statement *Includes the project scope, mission statement, project objectives, and mission defiinition developed for the 300 Area Fuel Supply Facilities Deactivation Mission Analysis Report.*	
NF Modification Needs/Information *Identification of additional modifications necessary to place facilities in minimal cost state for surveillance, maintenance, and security.*	

[4.1.1.1] Deactivate 300 Area Fuel Supply Facilities (NF)

Interface	*Constituents*
NF Negotiated Turnover State Criteria *Definition of the condition of the NF facilities at turnover to D&D (e.g., turnover acceptance criteria). The condition represents a safe, minimum cost, dormant state condition for NF facilities.*	
NF Operations Maintenance Needs/Information *Information and needs developed during activities to maintain the facility safety and compliance envelope, which are utilized for developing the Deactivation Plan, for negotiating the turnover endpoint, and for facility specific engineering.*	
NF SNM Disposition Completion Information *Certification that disposition of SNM is complete.*	
NF SNM Dispositioned *Nuclear materials transferred to final disposition during NF deactivation.*	
NF SNM Information *Information from characterization on the location, nature, and amounts of SNM in the NF facilities.*	
NF SNM Needs/Information *Information and capability needs identified during performance of SNM handling, treatment, storage, and/or disposition activities, provided to program management functions to support decision-making essential to managing the SNM material processes.*	
NF SNM Prep Needs/Information *Information and capability needs identified during preparation for transport and storage of NF SNM, which are utilized for development of the NF SNM Disposition Plan.*	
NF SNM Storage Needs/Information *Information and capability needs identified during temporary storage of NF SNM, which are utilized for development of the NF SNM Disposition Plan.*	
NF SNM Transport Needs/Information *Information and capability needs identified during transport of NF SNM, which are utilized for development of the NF SNM Disposition Plan.*	

[4.1.1.1] Deactivate 300 Area Fuel Supply Facilities (NF)

Interface	*Constituents*
NF Solid Waste Generated During Deactivation *Contaminated tools, equipment and materials generated as a direct result of facility deactivation activities; including used cleaning solvents, rags, stack filters and similar items requiring processing prior to disposal or transfer to a useful function within or outside the Cleanup Hanford mission*	• NF Existing Process Waste/Solid
NF Solid Waste Generated During SNM Preparation *Contaminated tools, equipment and materials generated as a direct result of preparing SNM for disposition.*	
NF Systems Deactivation Needs/Information *Information and needs identified during deactivation of non-essential systems, components, & structures necessary to place facility in minimal cost state for surveillance.*	
NF Tank Waste Generated During Deactivation *Contaminated waste from tanks or transfer lines that is generated as a direct result of facility deactivation activities.*	• NF Existing Process Waste/Tank
NF Training Documentation *Documentation on NF deactivation staff training records, qualifications, and certifications.*	
NF Turnover State Needs/Information *Needs and information identified during design of the NF turnover state, which are utilized for development of the NF Deactivation Plan.*	
Nuclear Materials (SNM) *Special nuclear materials, including over 1900 metric tons of natural and low enriched uranium, 3.4 metric tons of uranium powder, and 0.47 metric tons of thorium powder in facilities.*	
Packaged Resource (SNM) *SNM prepared for storage and/or transport.*	
Proposed Turnover State Changes *Potential changes to the turnover state criteria based on facility engineering activities.*	
Qualified NF Staff *Staff that has had the necessary training and testing to perform the facility deactivation and material disposition activities in a safe and compliant manner.*	

Interface	*Constituents*
RCRA Equipment and Materials *Contaminated equipment and materials generated from a RCRA closure activity, including hazardous and mixed waste.*	
Reconfigured NF SNM *SNM collected during stabilization and reconfiguration activities.*	
Resources and Waste Disposition Completion Information *Certification that removable waste and resources have been dispositioned and other deactivation activities are complete.*	
SNM Disposition Plan *Plan for the activities necessary to assure the SNM meets the disposition criteria.*	
SNM for Disposition *SNM transferred from storage for disposition.*	
SNM for Repackaging *SNM requiring repackaging for continued storage and/or disposition.*	
Waste from RCRA Closure *Hazardous and mixed waste generated from RCRA closure activities.*	