

**ENGINEERING CHANGE NOTICE**

1 ECN **652088**

Page 1 of 2

Proj ECN **NA**

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<b>2 ECN Category (mark one)</b> Supplemental <input type="radio"/> Direct Revision <input checked="" type="radio"/> Change ECN <input type="radio"/> Temporary <input type="radio"/> Standby <input type="radio"/> Supersedure <input type="radio"/> Cancel/Void <input type="radio"/>	<b>3 Originator's Name Organization MSIN and Telephone No</b> L R Hall, Project W211 QA, A3-04 372-0583	<b>4 USQ Required?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No	<b>5 Date</b> 1/31/00
	<b>6 Project Title/No /Work Order No</b> Intial Tank Retrieval Systems/Project W211	<b>7 Bldg /Sys /Fac No</b> Tank Farms	<b>8 Approval Designator</b> Q
	<b>9 Document Numbers Changed by this ECN (includes sheet no and rev)</b> HNE WIC-SD-W211-QAPP-001, Rev 2	<b>10 Related ECN No(s)</b> NA	<b>11 Related PO No</b> NA
<b>12a Modification Work</b> <input type="radio"/> Yes (fill out Blk 12b) <input checked="" type="radio"/> No (NA Blks 12b 12c 12d)	<b>12b Work Package No</b> NA	<b>12c Modification Work Completed</b> NA Design Authority/Cog Engineer Signature & Date	<b>12d Restored to Original Condition (Temp or Standby ECNs only)</b> NA Design Authority/Cog Engineer Signature & Date
<b>13a Description of Change</b> Direct revision to reflect the current responsibilities and interfaces under the Office of River Protection Updates made for the responsibility descriptions and the verification and inspection matrix		<b>13b Design Baseline Document?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No	
<b>14a Justification (mark one)</b> Criteria Change <input checked="" type="radio"/> Design Improvement <input type="radio"/> Environmental <input type="radio"/> Facility Deactivation <input type="radio"/> As Found <input type="radio"/> Facilitate Const <input type="radio"/> Const Error/Omission <input type="radio"/> Design Error/Omission <input type="radio"/>	<b>14b Justification Details</b> Revision made to meet yearly update requirements and establish current responsibilities and interfaces		
<b>15 Distribution (include name MSIN and no of copies)</b> See Distribution sheet		RELEASE STAMP <div style="border: 2px solid black; padding: 5px; text-align: center;">                     FEB 01 2000                      DATE                      STA 4                      HANFORD RELEASE                      ID (4)                 </div>	

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<b>16 Design Verification Required</b>  <input type="radio"/> Yes <input checked="" type="radio"/> No	<b>17 Cost Impact</b> <table style="width: 100%;"> <tr> <td style="text-align: center;"><b>ENGINEERING</b></td> <td style="text-align: center;"><b>CONSTRUCTION</b></td> </tr> <tr> <td>Additional <input type="radio"/> \$ <u>NA</u></td> <td>Additional <input type="radio"/> \$ <u>NA</u></td> </tr> <tr> <td>Savings <input type="radio"/> \$ <u>NA</u></td> <td>Savings <input type="radio"/> \$ <u>NA</u></td> </tr> </table>	<b>ENGINEERING</b>	<b>CONSTRUCTION</b>	Additional <input type="radio"/> \$ <u>NA</u>	Additional <input type="radio"/> \$ <u>NA</u>	Savings <input type="radio"/> \$ <u>NA</u>	Savings <input type="radio"/> \$ <u>NA</u>	<b>18 Schedule Impact (days)</b>  Improvement <input type="radio"/> <u>NA</u> Delay <input type="radio"/> <u>NA</u>
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Savings <input type="radio"/> \$ <u>NA</u>	Savings <input type="radio"/> \$ <u>NA</u>							

**19 Change Impact Review** Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 13. Enter the affected document number in Block 20.

SDD/DD <input type="checkbox"/>	Seismic/Stress Analysis <input type="checkbox"/>	Tank Calibration Manual <input type="checkbox"/>
Functional Design Criteria <input type="checkbox"/>	Stress/Design Report <input type="checkbox"/>	Health Physics Procedure <input type="checkbox"/>
Operating Specification <input type="checkbox"/>	Interface Control Drawing <input type="checkbox"/>	Spares Multiple Unit Listing <input type="checkbox"/>
Criticality Specification <input type="checkbox"/>	Calibration Procedure <input type="checkbox"/>	Test Procedures/Specification <input type="checkbox"/>
Conceptual Design Report <input type="checkbox"/>	Installation Procedure <input type="checkbox"/>	Component Index <input type="checkbox"/>
Equipment Spec <input type="checkbox"/>	Maintenance Procedure <input type="checkbox"/>	ASME Coded Item <input type="checkbox"/>
Const Spec <input type="checkbox"/>	Engineering Procedure <input type="checkbox"/>	Human Factor Consideration <input type="checkbox"/>
Procurement Spec <input type="checkbox"/>	Operating Instruction <input type="checkbox"/>	Computer Software <input type="checkbox"/>
Vendor Information <input type="checkbox"/>	Operating Procedure <input type="checkbox"/>	Electric Circuit Schedule <input type="checkbox"/>
OM Manual <input type="checkbox"/>	Operational Safety Requirement <input type="checkbox"/>	ICRS Procedure <input type="checkbox"/>
FSAR/SAR <input type="checkbox"/>	IEFD Drawing <input type="checkbox"/>	Process Control Manual/Plan <input type="checkbox"/>
Safety Equipment List <input type="checkbox"/>	Cell Arrangement Drawing <input type="checkbox"/>	Process Flow Chart <input type="checkbox"/>
Radiation Work Permit <input type="checkbox"/>	Essential Material Specification <input type="checkbox"/>	Purchase Requisition <input type="checkbox"/>
Environmental Impact Statement <input type="checkbox"/>	Fac Proc Samp Schedule <input type="checkbox"/>	Tickler File <input type="checkbox"/>
Environmental Report <input type="checkbox"/>	Inspection Plan <input type="checkbox"/>	<input type="checkbox"/>
Environmental Permit <input type="checkbox"/>	Inventory Adjustment Request <input type="checkbox"/>	<input type="checkbox"/>

**20 Other Affected Documents** (NOTE: Documents listed below will not be revised by this ECN) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number/Revision
NA	NA	NA

**21 Approvals**

Signature	Date	Signature	Date
Design Authority <u>NA</u>	<u>NA</u>	Design Agent <u>NA</u>	<u>NA</u>
Cog Eng <u>C A Rieck</u> <i>C. Rieck</i>	<u>1/25/00</u>	PE <u>NA</u>	
Cog Mgr <u>J E Van Beek</u> <i>J. Van Beek</i>	<u>1/25/00</u>	QA <u>NA</u>	
QA <u>J B Hebdon</u> <i>J. Hebdon</i>	<u>1/27/00</u>	Safety <u>NA</u>	
Safety <u>NA</u>	<u>NA</u>	Design <u>NA</u>	
Environ <u>NA</u>		Environ <u>NA</u>	
Other <u>NA</u>		Other <u>NA</u>	
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<u>NA</u>		<u>NA</u>	

**DEPARTMENT OF ENERGY**  
Signature or a Control Number that tracks the Approval Signature  
NA

**ADDITIONAL**  
NA  
NA  
NA



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# PROJECT SPECIFIC QUALITY ASSURANCE PLAN PROJECT W-211 INITIAL TANK RETRIEVAL SYSTEMS

LANNY R HALL  
FLUOR FEDERAL SERVICES  
Richland WA 99352  
U S Department of Energy Contract DE-AC06-96RL13200

EDT/ECN 652088 UC 2030  
Org Code 7C100 Charge Code 102070  
B&R Code 39EW31301 Total Pages 20

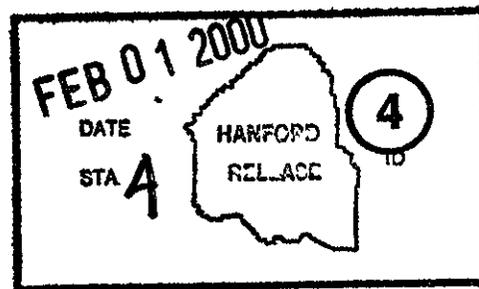
Key Words ITRS QUALITY ASSURANCE PROGRAM PLAN, PROJECT W211

Abstract Update revision for Project W211 project specific quality assurance plan to include Managing Contractor interfaces under the Office of River Protection

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QUALITY ASSURANCE PROGRAM PLAN

PROJECT W-211

Initial Tank Retrieval Systems

HNF-SD-W211-QAPP-001

Revision 3

CH2M HILL Hanford Group, Inc

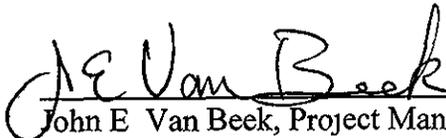
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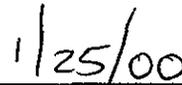
QUALITY ASSURANCE PROGRAM PLAN

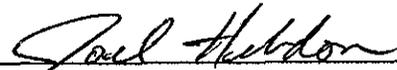
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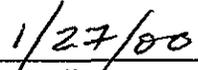
Initial Tank Retrieval Systems

HNF-SD-W211-QAPP-001  
Revision 3

  
\_\_\_\_\_  
John E. Van Beek, Project Manager  
Project W-211  
CH2M HILL Hanford Group, Inc

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Joel B. Hebdon, Manager  
Quality Assurance  
CH2M HILL Hanford Group, Inc

  
\_\_\_\_\_  
Date

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TABLE OF CONTENTS

1 0	SCOPE	1
2 0	PROJECT SPECIFIC ORGANIZATION RESPONSIBILITIES AND AUTHORITY	1
2 1	Organization	1
2 2	U S Department of Energy, Office of River Protection	2
2 3	CH2M HILL Hanford Group, Inc	3
2 4	Fluor Federal Services	6
2 5	Other On site Contractors	8
2 6	Offsite Contractors	8
3 0	PROJECT SPECIFIC REQUIREMENTS	8
3 1	General	8
3 2	Graded Approach	9
3 3	Quality Assurance Program Elements	10
3 3 1	Programs	10
3 3 2	Personnel Training and Qualification	10
3 3 3	Quality Improvement	10
3 3 4	Documents and Records	11
3 3 5	Work Process	12
3 3 6	Design	12
3 3 7	Procurement	12
3 3 8	Inspection and Acceptance Testing	13
3 3 9	Management Assessments	13
3 3 10	Independent Assessments	13
	ATTACHMENT 1	14

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**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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## **1 0 SCOPE**

This Quality Assurance Program Plan (QAPP) provides information on how the Project Hanford Quality Assurance Program is implemented by CH2M HILL Hanford Group Inc (CHG) for managing the Initial Tank Retrieval Systems (ITRS), Project W-211. This QAPP is responsive to the CHG Quality Assurance Program Description (QAPD) (LMH-MP-599) which provides direction for compliance to 10 CFR 830.120, "Nuclear Safety Management, Quality Assurance Requirements", and DOE Order 5700.6C, "Quality Assurance."

Project W-211 modifies existing facilities and provides systems for retrieval of radioactive wastes from selected double-shell tanks (DST). The contents of these tanks are a combination of supernatant liquids and settled solids. To retrieve waste from the tanks, it is first necessary to mix the liquid and solids prior to transferring the slurry to alternative storage or treatment facilities. The ITRS will provide systems to mobilize the settled solids and transfer the wastes out of the tanks. In so doing, ITRS provides feed for future processing plants, allows for consolidation of tank solids to manage space within existing DST storage capacity, and supports continued safe storage of tank waste. This project includes the design, procurement, construction, startup and turnover of these retrieval systems.

This QAPP identifies organizational structures and responsibilities. Implementing procedures used by CHG project management can be found in the CHG Quality Assurance Program (CHG QAP) Implementation Matrix located in HNF-IP-0842, Volume XI, Attachment. Proposed verification and inspection activities for critical items within the scope of project W-211 are identified in Attachment 1. W-211 Project participants will identify the implementing procedures used by their organization within their QAPPs. This project specific QAPP is used to identify requirements in addition to the QAPD and provide, by reference, additional information to other project documents.

## **2 0 PROJECT SPECIFIC ORGANIZATION RESPONSIBILITIES AND AUTHORITY**

### **2 1 Organization**

Major participants in Project W-211 include the U.S. Department of Energy (DOE), Office of River Protection (ORP), CH2M HILL Hanford Group, Inc., and other on and offsite contractors. The W-211 project team is comprised of a number of companies, of which CHG is the prime, hereby referred to as the Managing Contractor (MC).

Contractual relationships and responsibilities established between DOE and the MC are identified in the U.S. Department of Energy Contract AC06-99RL14047. The contract administration approach entails partnering with the MC and its subcontractors to achieve mutually beneficial results.

Responsibilities for the major project organizations are discussed in the following sections.

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**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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**2.2 U.S. Department of Energy, Office of River Protection**

The ORP Manager (or designee) is responsible for the definition, oversight, and acceptance of the work performed by the MC and its subcontractors. The ORP Manager has the authority to stop any work activity, add work, and/or withdraw work from the MC contract. In general terms, the role of ORP with regard to administering the MC contract is to

- Define success criteria/values
- Establish boundaries for integration
- Set priorities
- Establish strategic performance measures
- Define outcomes/deliverables
- Establish minimum site standards/evaluate results

Authority for contractual direction to the MC is limited to the ORP Contracting Officer (CO) and designated Contracting Officer Representatives (COR). The Operations Program Division (OPD) Director is assigned COR responsibilities for OPD sponsored projects, including Project W-211.

CORs are empowered to act as an authorized representative of the CO for specified functions. The CO/COR shall be fully responsible for providing technical and/or administrative direction to the MC, relative to their project or area of responsibility. In addition, the CO/COR shall be responsible for the following items:

- A. Provide technical oversight to ensure the products and services for which the CO/COR is responsible are delivered in accordance with the contract terms and conditions. Through oversight, ORP should ensure the work is being conducted consistent with the established contract and plans, and that applicable requirements (e.g., statutes, laws, DOE Orders, and policies) are being met. Oversight does not include controlling the way the contractor is doing the work, except where significant environmental, safety, or health hazards have been identified. Oversight is conducted through various means, and the methods used depend on the information needed. Much of the information needed to monitor the contractor performance is available through regular reporting mechanisms. Confirmation of this data can be made through periodic meetings and reviews, site visits, one-on-one discussions, observations, appraisals, audits, and walk-throughs.
- B. The CO, or duly designated representative, shall accept work completed by the MC.

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**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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- C Review invoices, as required
- D Provide approval of multi-year work plan documentation
- E Conduct periodic reviews, audits, surveillances, and DOE independent assessments, of the MC and its subcontractors to ensure compliance with the terms of the contract, and that the MC's administration of its subcontractors is effective. These reviews, audits, surveillances, and assessments shall be performed against established criteria to determine contractor progress and to identify any factors that may delay performance or adversely affect environmental protection or protection of worker health and safety. Surveillances may include formal reviews or informal observation and review of work activities.

The CO/CORs are assisted in carrying out their duties by the Waste Projects Manager and the Project W-211 ORP Project Manager. Primary oversight responsibility for Project W-211 has been delegated by the Assistant Manager for Tank Waste Storage & Retrieval (AMSR) and Operations Program Division (OPD) CORs to the Project W-211 ORP Project Manager. In interactions with the MC's subcontractors, this oversight is generally limited to information exchange, with formal communication being directed through the MC.

DOE-HQ, the regulators, and the Defense Nuclear Facility Safety Board may provide additional oversight. The oversight performed by these organizations will be done in coordination with the Cognizant ORP organization.

The Project W-211 ORP Project Manager reports to the Waste Projects Manager within OPD. The Waste Projects Manager reports to the OPD Director who reports directly to the AMSR.

### **2.3 CH2M HILL Hanford Group, Inc**

As the MC, CHG is responsible and accountable for management of all activities associated with Project W-211. The MC role includes defining the work necessary to accomplish the objectives established by ORP and working with ORP to establish specific Performance Incentives tied to MC award fee objectives. CHG's responsibilities include serving as the prime interface with ORP. All contractual and other formal communications concerning Project W-211 shall occur between CHG and ORP. CHG is responsible for managing its activities in compliance with a quality assurance program meeting the requirements of 10CFR830.120.

Programmatic sponsorship of Project W-211 is provided by the Tank Waste Retrieval & Disposal (TWRD) organization. This sponsoring organization provides programmatic direction defining projects and programmatic-related operational needs to the Project Management organization (PMO) within Project Delivery and to Tank Waste Operations (TWO). The Director, PMO, is responsible for the Project W-211 life cycle and has delegated responsibility to the W-211 CHG Project Manager (PM), including conceptual, Title I, and Title II designs, equipment procurement, construction, Title III engineering, and construction testing. TWO is

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**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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responsible for system readiness activities and operation of the Project W-211-supplied systems. The TWRD and PMO Directors report to the CHG Vice President of Project Delivery. The Vice President of TWO and the Vice President of Project Delivery report to the CHG President and General Manager. The PM, who reports to the PMO Director, has direct responsibility and accountability for day-to-day management of Project W-211. Key personnel for Project W-211 are identified in RPP-4852, "Project W-211 Organization Chart."

Numatec Hanford Corporation (NHC) provides matrixed project management personnel to CHG in support of Project W-211.

Specific project management and programmatic/operational responsibilities associated with Project W-211 include the following:

Project Management Responsibilities

- A Provide a dedicated project manager empowered to authorize and direct all work scope associated with project execution by supporting subcontractors, manage authorized project funds/resources, and approve project cost/schedule baselines.
- B Conduct project activities in accordance with this QAPP. Perform assessments to assess QA program implementation. Participate in the CHG corrective action management program. Ensure that quality affecting records providing objective evidence that design and construction activities comply with governing requirements are maintained, and that documentation/records providing a traceable project history are properly turned over to the designated project files depository for archive at project completion.
- C Develop project planning and baseline documents.
- D Provide contractual direction to the A/E and construction management subcontractors for the performance of design, procurement, and construction. Provide the project technical baseline and safety basis for design.
- E Ensure definitive design media is compliant with the project baseline considering safety, quality, operability, maintainability, environmental compliance, and cost effectiveness factors, and provide approval of the design. Involve Chief Engineer, Design Authority, Tank Waste Operations, Safety, Quality Assurance, Environmental Compliance, Radiological Engineering, etc., in project design reviews, as appropriate, and ensure documented closeout of Design Review Team comments.
- F Provide the administration of overall project baseline change control to assure appropriate management of scope, cost, and schedule commitments. Approve baseline changes.

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**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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- G Act as a focal point for coordination and integration among participating sub-contractors for project activities, and provide appropriate direction to assure compliance with the project technical baseline and other technical design criteria
- H Provide for development of project design and construction schedules
- I Provide project direction to optimize the design in terms of quality, safety, cost, reliability, maintainability, environmental requirements, and accuracy Assure compliance with applicable codes, standards, criteria, regulations, and DOE Orders Assure that design/construction complies with applicable NEPA/safety documentation/permits
- J Provide design and construction reports as required
- K Ensure that quality affecting records providing objective evidence that Project W-211 design, procurement, and construction activities comply with governing requirements are maintained, and that documentation/records providing a traceable project history are properly dispositioned for archive at project completion
- L Assure the preparation, coordination, and approval (as applicable) of all local, state, and federal environmental documents/permits required for the project
- M Provide copies of project associated correspondence, reports, drawings, specifications, nonconformance reports, plans and schedules, cost estimates, QA records, audits, subcontracts, meeting minutes, test procedures, photographs, etc , to other team members
- N Provide timely notification of meetings, scheduled acceptance tests, and final inspections to participants and other appropriate parties
- O Prepare project reviews and reports, and data for budgetary exercises
- P Assure preparation of fair cost estimates, as required
- Q Provide appropriate level of oversight for work performed by other contractors
- R Coordinate construction activities with Operations personnel (Operations Liaison, PIC, Health Physics, Industrial Safety, etc ) and perform oversight of construction contractor safety programs Provide immediate notification of accidents, incidents, significant problems, and work stoppages
- S Assure as-built drawings are prepared
- T Support construction turnover activities performed in preparation of operational readiness

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**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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- U Provide technical support for reviews of the project documentation by off-site agencies to assure prompt and cost-effective resolution of identified issues
- V Procure long-lead equipment
- W Participate in the CHG corrective action management program to comply with LMH-PRO-052, "Corrective Action Management," for project activities
- X Coordinate development of safety analyses, Authorization Basis amendments, NEPA documentation, and other related documentation in support of Project W-211

Programmatic/Operational Responsibilities

- A Provide the technical baseline Function as the Facility Design Authority for the project
- B Provide expense funding for project related activities
- C Provide operations liaison between user/sponsor and Project W-211 personnel to minimize interface problems, promote integration, and facilitate project execution Operations liaison personnel will represent TFO interests as they relate to Project W-211 during project reviews, meetings, and other activities Operations responsibilities also include acceptance of the project's Acceptance for Beneficial Use (ABU) documentation
- D Provide programmatic, operations, safety, environmental, quality, and health physics support for Project W-211 design, construction, and testing
- E Ensure timely exchange of information, data, records, and guidelines for special conditions/requirements that may impact project cost (e g , radiation levels, security, safety, and escort requirements, etc ) to the PM
- F Issue excavation and/or core drilling and/or tie-in permits and welding and/or cutting permits as needed to support construction Prepare and/or approve radiation work procedures required for project construction
- G Participate and concur with final inspection and acceptance testing, perform operational testing, and accept completed facilities for operation
- H Develop operator procedures and training of operations personnel for Project W-211 systems
- I Perform readiness reviews and startup for completed Project W-211 systems and obtain approvals to operate those systems

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**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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**2.4 Fluor Federal Services**

Fluor Federal Services (FFS) has been hired as a private contractor to perform Title II design and Title III engineering for Project W-211. In addition, FFS will be contracted to provide fixed price construction management and In-Farm construction services.

Primary FFS responsibilities are as follows:

- A. Provide project design, construction, and inspection. Provide cost estimates and scheduling services for project activities described in Letters of Instruction and/or Statements of Work provided by the PM. Ensure that established project quality objectives and technical requirements are mutually understood and can be satisfied.
- B. Assure that design meets the applicable laws, standards, regulations, and the Project W-211 technical baseline.
- C. Conduct design status meetings, and issue meeting minutes. Participate in the design review and approval process, construction kickoff, and construction progress meetings.
- D. Provide onsite construction and construction management for work by offsite construction contractors, as directed by the PM.
- E. Develop cost estimates and schedules for Project W-211 design and construction, and prepare updates to these products as required.
- F. Provide welding procedures and welder qualification services.
- G. Review and approve vendor data submittals, and maintain and distribute record of status.
- H. Perform inspection of construction in accordance with the design.
- I. Process Engineering Change Notices and Nonconformance Reports. Provide supporting documentation and tracking status.
- J. Assure industrial safety and security requirements are implemented at the construction site.
- K. Assure that design and construction activities are performed consistent with the FFS Quality Assurance Program. Ensure that quality affecting records providing objective evidence that design and construction activities comply with governing requirements are maintained, and that documentation/records providing a traceable project history are properly turned over to the designated project files depository for archive at project completion.

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**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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- L Manage an effective cost and schedule control system for design and construction activities  
Provide construction work progress and cost information to the PM on a routine basis in project status reports
- M Provide construction site safety inspections and surveillances
- N Prepare as-built drawings
- O Purchase material required for construction, with the exception of long-lead equipment, including inspection of in-process and/or completed products to assure compliance with project requirements

**2 5 Other On site Contractors**

Pacific Northwest National Laboratory provides technical support to Project W-211 by evaluating instrument requirements and capabilities, developing computer modeling capabilities for waste mixing and transport, assessing waste dilution and heating affects, resolving gas issues, and assessing the potential for criticality

**2 6 Offsite-Contractors**

Offsite contractors provide fabrication of long-lead equipment, and construction of the control buildings and caustic supply systems Offsite contractor responsibilities are as defined in the respective contracts

**3 0 PROJECT SPECIFIC REQUIREMENTS**

**3 1 General**

Project management personnel will perform work in accordance with CHG procedures as identified in this QAPP or to the MC procedures, as directed by the contract documents

The Implementation Matrix, located in HNF-IP-0842, Volume XI Attachment, identifies how the QAPD requirements are implemented for project management through the use of CHG procedures

CHG procedures are identified within the site Project Hanford Management System (PHMS) and in the CHG RPP policies and procedures system Project participants control their own procedures as identified in their individual company or project specific QAPPs as directed by the contract documents

This project involves removal, upgrading, and modification of equipment used in the retrieval processing of stored nuclear waste and uses requirements or standards imposed by the CHG

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**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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QAPD No variances to the quality requirements in the QAPD have been identified for this project

### 3.2 Graded Approach

The quality requirements imposed by the QAPD are applicable to work performed on this project and are applied using a graded approach. The intent of the graded approach is to apply sufficient controls to maximize the probability of success. This graded approach is based on the requirements established in safety related documents. This information is passed on to the project through project contract agreement and technical design documents.

For work associated with Project W-211, a hazard analysis and design evaluation has been conducted using procedure LMH-PRO-704. The hazard and accident analysis, as defined in LMH-PRO-704, identifies design features and controls that the facility and project will rely on to mitigate the frequency or consequence of these identified hazardous conditions. Selected design features are given a more conservative safety designation based upon their importance and significance to safety. Critical characteristics are identified by the cognizant design organization for those design attributes of each structure, system, and component (SSC) necessary to preserve the safety support function. These SSCs, along with their functional requirements and critical characteristics, will then be identified on the RPP Safety Equipment List.

The project office, with assistance from the project QA engineer, provides the grading of the administrative controls that govern SSCs through the project phases by applying various functional area procedures. This grading is based on the safety classification of the items, and is primarily achieved through variations in the level of reviews and approvals required, details in the procedures used to control work, the extent and type of inspection or oversight required, the extent of corrective actions required, and the level of records maintained. This graded approach will help determine the applicable QA controls needed to assure that the necessary quality has been achieved to satisfy key characteristics. Programmatic QA controls will be imposed directly, through the use of consensus standards (NQA-1, ISO 9000, etc.) or through a combination of these. Appropriate technical and design documents (drawings, specifications, work instructions, etc.) will identify what items are to be verified, inspected and/or tested along with the acceptance criteria required to measure conformance to requirements and acceptance for use.

The safety classifications of SSCs have been identified in project Letters of Instruction (LOIs) 1.5.B.1-6 "Safety Requirements," Numatec Hanford Corporation (NHC) letter NHC-9761451, 1.5.B.1-10 "Piping" NHC letter NHC-9854679, 1.5.B.1-11 "Primary Piping" NHC letter NHC-9856035 for the W-211 project. These documents indicate which SSCs for this project have been classified as either safety class (SC), safety significant (SS), or general service (GS).

Activities associated with SC and SS SSCs require the use of appropriate design criteria, evaluated suppliers and imposition of appropriate QA requirements above those dictated by the

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**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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applicable codes and standards. QA requirements associated with GS procurements and contracts are to be in accordance with the applicable codes and standards assigned by the design documents (i.e., ANSI, ASHRAE, NFPA, etc.)

### 3.3 Quality Assurance Program Elements

#### 3.3.1 Programs

Collectively the applicable CHG procedures referenced or identified in this QAPP provide compliance to the CHG QAPP. Additional applicable MC procedures, which may be imposed through the contract documents, are not reflected in this QAPP.

Project participants are responsible for providing and maintaining a quality assurance system that addresses applicable requirements of this QAPP, identifying requirements in the applicable contract documents, and developing controls necessary to assure compliance. Applicable requirements are to be passed down to contractors and subcontractors through applicable contract documents.

This QAPP will be revised when significant changes occur in the CHG QA program, to the CHG implementation of the QA program, to the CHG management structure and responsibilities or to project baseline QA requirements. The QAPP will be reviewed annually, based on the date of latest revision, for incorporation of minor changes.

#### 3.3.2 Personnel Training and Qualification

The Site training program will be used for general training of project management personnel. Some training areas that may be utilized by project management are the responsibility of other site contractors (i.e., Hanford General Employee Training, inspector certification). Project specific training has been developed and is provided by project management under the "Project W-211 Qualification and Training Plan." When services are contracted from others, project management will require that subcontracted personnel be qualified, trained, certified as required, and indoctrinated in applicable aspects of the project (applicable QAPP(s), project requirements, and institutional safety programs, etc.). Project participants are responsible for maintenance of training records in accordance with their approved procedures.

#### 3.3.3 Quality Improvement

The requirements for control of nonconformances/deficiency reports and, as appropriate, the use of corrective action management will be imposed on other project participants through the applicable contract documents. Other project participants will provide reports of nonconformances/deficiency reports and corrective action as submittals to project management as defined in the applicable contract documents.

**CH2M HILL HANFORD GROUP, INC**  
**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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3 3 3 1 Deficiency Identification

CHG will apply the Deficiency Tracking System (LMH-PRO-653) for identifying, reporting and tracking deficiencies. CHG will continue to encourage and remind employees of the need to identify potential areas for improvement.

3 3 3 2 Corrective Action Management

CHG will apply the Corrective Action Management process (LMH-PRO-052) to ensure identified deficiencies are analyzed and resolved. The response and action verification will be documented and tracked in the site Deficiency Tracking System. Project participants are to provide timely response to assessments performed on their activities by project oversight organizations. Appropriate personnel (i.e., Tank Farm Operations/Construction) will be notified by lessons learned of conditions adverse to quality.

3 3 3 3 Nonconformance Control

CHG will apply the CHG procedure for reporting and controlling nonconforming items. This procedure (LMH-PRO-298) establishes the process for identifying, documenting, controlling, evaluating, and dispositioning nonconforming items, and processing a Nonconformance Report (NCR). Through the use of Buyer Technical Representative (BTR) for contractual QA obligations, CHG will control supplier generated documents and supplier-identified nonconforming materials or processes per the requirements established in LMH-PRO-268. The Design Authority will approve NCRs that affect technical baseline or existing facilities.

3 3 3 4 Performance Data Analysis

CHG will analyze project information (e.g., number and severity of issues identified during management assessments and duration for closing deficient items) for negative and positive trends. The results of the analyses will be reported to the appropriate levels of management. Adverse trends will be responded to quickly and needed corrective actions implemented.

3 3 4 Documents and Records

Project management will use CHG document and procedure control systems. When required, additional procedures needed for project specific activities will be developed and implemented by project management and issued and controlled under the CHG policy and procedure system. The MC record's control system will be utilized for project activities requiring record storage and control. Documents and records developed and maintained by other project participants are to be controlled by their approved procedures until turnover to project management. Final identification, logging, indexing, review, classification, safekeeping, storage, distribution, retention, retrieval, and tracking of quality assurance records are the responsibility of project management.

**CH2M HILL HANFORD GROUP, INC**  
**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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3.3.5 Work Process

Project management personnel and project participant employees are responsible for performing work in accordance with contract requirements, procedures, instructions, etc. They are also responsible for identifying problems related to quality and ensuring they are reported to the appropriate level of management for resolution.

Work activities performed by project management personnel will be controlled by procedures and systems provided by the MC. Work activities performed by other project participants will be in accordance with their approved procedures. Project management is responsible for establishing the proper work process interfaces between project participants in the contract documents. Project management is responsible for coordination of project activities and construction management interfaces with the ORP on a daily basis to obtain construction site support (HPTs, etc.).

3.3.6 Design

Engineering design and technical support for Project W-211 will be established by CHG in accordance with the applicable functional area procedures. CHG will provide technical direction to the AE for the design of project SSCs, and will be assisted by the Design Authority in verifying project requirements have been satisfied.

Project AE firms and equipment designers will work to their approved procedures as established in the contract documents. Major equipment and facility design will be contracted to a qualified AE firm. Contract documents will define requirements for the design processes. Project management is responsible for assuring that proper hardware and design interfaces are established between project participants and the facilities.

3.3.7 Procurement

Procurement of items and services by project management will be done under the CHG procurement procedures. The appropriate QA requirements from the QAPD will be imposed through the use of nationally recognized standards (i.e., ASME NQA-1, ISO 9000). QA requirements will be described in procurement or work agreement documents established by project participants.

Procurement QA activities will be performed, as required by the MC contract, by Fluor Daniel Hanford (FDH) Acquisition Verification Services (AVS). These services include supplier evaluation as well as source and receiving inspection. Monitoring of supplier/contractor performance during the procurement/construction phase may be performed by project QA personnel or delegated to AVS. Project management and quality assurance will support procurement activities as necessary and provide FDH AVS information on the performance of FDH evaluated suppliers/contractors used by project management when requested.

**CH2M HILL HANFORD GROUP, INC**  
**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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3.3.8 Inspection and Acceptance Testing

Project participants, in accordance with their approved procedures, will carry out the inspection and testing requirements. Project participants are responsible for their individual inspection and testing activities to assure applicable design requirements have been satisfied through the use of approved acceptance criteria. Attachment 1 identifies proposed verification and inspection points based on the scope of work as defined in the LOIs. These verification and inspection points may be revised due to changes during definitive design.

Inspection and testing will be performed in accordance with the CGH procedures and contract documents. When responsibilities for the supply of critical SSC's are assigned to CHG, project management representatives will verify and document final acceptance of those SSCs. QA engineering and verification services will be contracted from the Construction Management contractor or FDH AVS. Project management will manage and review inspection and testing activities to assure the applicable design requirements have been satisfied and acceptance criteria met.

3.3.9 Management Assessments

Project management will perform assessments to determine the condition of its management processes. Problems discovered during assessments will be identified and corrected in accordance with the corrective action management system procedures. Project participants will perform assessments of their activities on a scheduled basis, track and report to project management any identified conditions which could adversely impact successful project completion.

3.3.10 Independent Assessments

Independent assessments are provided, in part, by CHG through their independent assessment program. Project management is responsible for interfacing with the independent assessment organization in planning, preparing and performing independent project assessments. Project management may utilize contracted organizations to provide additional independent assessments as deemed appropriate by project management. Project management is responsible for the prompt correction of identified problems related to project activities.

**CH2M HILL HANFORD GROUP, INC**  
**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

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ATTACHMENT 1

**VERIFICATION AND INSPECTION MATRIX**

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**QUALITY ASSURANCE PROGRAM PLAN FOR PROJECT W-211**

Structures systems and components (SSC) noted in this table are based on information contained in the project Letter of Instructions (LOIs) 1 5 B 1 6 Safety Requirements NHC letter NHC 9761451 1 5 B 1 10 Piping NHC letter NHC 9854679 and 1 5 B 1 11 Primary Piping NHC letter NHC 9856035 Type of verifications and inspections are contained within this table for planning purposes only Actual verifications and inspections will be defined within the detailed design drawings specifications and procurement documents

STRUCTURE SYSTEM COMPONENT (Safety Classification)	TYPES OF VERIFICATION AND INSPECTION	VERIFICATION AND INSPECTION		REMARKS
		ON SITE	OFF SITE	
Transfer line encasement piping (SC)	D	1 2 3 4 6 7	1 2 3 4 7	Critical Characteristics for the SSC s listed within this attachment are identified in detail in the above listed LOIs
Cover Blocks (SC)	D	1 4 5 6	1 3 4 5 6 7	
Pit Leak Detectors (SC)	D F	4 5 6 7	5 7	This attachment accounts for all the Safety Class (SC) and Safety Significant (SS) SSC s for Project W 211 All other SSC s are considered to be General Service (GS)
Pressure Switch or alternate(Radiation Monitor) (SC)	D F	4 5 6 7	5 7	
Pump Supports (SS)	D	2 4 6	2 3 4	
DST Temperature Probes (SS)	D F	4 5 6 7	3 7	
DST Level Detectors (SS)	D F	4 5 6 7	5 7	
Primary Transfer piping (SC) (NHC 9856035 LOI 1 5 B 1 11)	D	1 2 3 4 6 7	1 2 3 4 7	
Transfer pipeline location markers (SS)	G	1 4 6	NA	
Caustic piping (SS)	D	2 4 6 7	3 4 7	
Service water flow totalizers (SS)	D F	4 5 6 7	NA	
Backflow preventors (SS)	D F	4 5 6 7	NA	
Impact Limiters (SS)	D	1 3 4 6	NA	

Legend Types of Verifications and Inspections (LMH PRO 261)

- D Detailed inspection to verify details and to perform inspection for quality assurance reasons
- F Functional inspection to determine overall compliance with contract drawings and specifications
- G General inspection to ascertain that workmanship and kind and quality of materials conforms to the contract specifications

Verification and inspection

- 1 Receipt of materials
- 2 Prior to first weld or NDE
- 3 In process
- 4 Final inspection
- 5 Upon receipt
- 6 Installation
- 7 Testing