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Phased Startup Initiative Phase 3 Test Procedure (OCRWM)

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200
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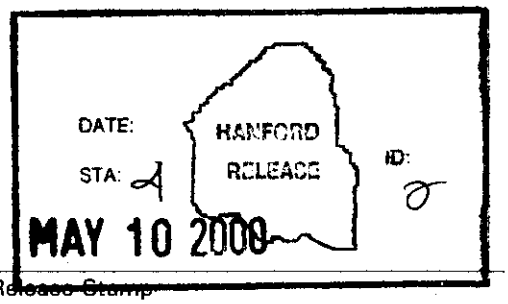

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Phased Startup Initiative
Phase 3 Test Procedure (OCRWM)

SNF-5952

Revision No. 0

Executive Summary

The purpose of this test procedure is to provide step-by-step instructions that guide test personnel through the initial testing of the FRS and IWTS with N Reactor fuel. This document supports the requirement for preparation of test procedures indicated in the Test Plan Content Guideline of EN-6-031-00, "Testing Process."

The scope of this test procedure is to separately process three stainless steel fuel canisters followed by three aluminum fuel canisters, plus contingency canisters, if necessary. This test procedure provides directions for the testing activities described in HNF-4898, Rev. 0, "Phased Startup Initiative Phases 3 and 4 Test Plan and Test Specifications (OCRWM)."

This test procedure is intended to be primarily used by the Test Engineer, Engineering Test Director, and Operations Test Director to ensure that data is recorded at specific steps during the operational use of Functional Test Procedures (FTPs) and Operating Procedures. The completed data sheets provide documentation of the test progress for each canister to satisfy test control and traceability requirements in HNF-PRO-286, "Test Control," and EN-6-031, "Testing Process."

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List of Acronyms

AJHA	Automated Job Hazard Analysis
CAM	Continuous Air Monitor
CCTV	Closed Circuit Television
DI	Deionized
DP	Data Point
ECN	Engineering Change Notice
EOC	Equipment Operations Center
ETD	Engineering Test Director
FRS	Fuel Retrieval System
FTP	Functional Test Procedure
HPU	Hydraulic Power Unit
KOP	Knockout Pot
IWTS	Integrated Water Treatment System
IXM	Ion Exchange Module
M&TE	Measuring and Test Equipment
MCO	Multi-Canister Overpack
PCM	Primary Cleaning Machine
PSI	Phased Startup Initiative
OCRWM	Office of Civilian Radioactive Waste Management
OTD	Operations Test Director
QA	Quality Assurance
RBA	Radiological Buffer Area
RMA	Radioactive Material Area
SNF	Spent Nuclear Fuel
TE	Test Engineer
TSB	Telescoping Stiffback

1.0 INTRODUCTION

The purpose of this test procedure is to safely operate the Fuel Retrieval System (FRS) and Integrated Water Treatment System (IWTS) with specific fuel canisters, and show that canisters containing fuel can be retrieved from the canister queue, decapped in the Canister Decapper, loaded into the Primary Clean Machine (PCM) for fuel cleaning, fuel sorted on the Process Table, then loaded back into fuel canisters and relocated in Basin Storage.

Additional Data are collected during this test, beyond that collected during production operations. These data support qualifying the cleaning performance of the PCM, assessing the quantity of scrap generated during the cleaning, and evaluating the impact of fuel retrieval operations on the Basin water quality. The additional data collected primarily consist of weighing fuel and scrap at selected points in the operation, as well as photographing fuel and scrap as it is processed. The time to perform operations is also monitored for comparison with design predictions. Water quality data are collected to establish a base line to predict the effectiveness of equipment design for control of contamination and visibility during production operation.

2.0 SCOPE

The scope of this test procedure is to validate the operation of FRS and IWTS components as a complete system. The test method is to individually process six specific fuel canisters through the FRS. Only Mark IV (0.95 wt% or less) fuel will be processed during this test. One fuel canister shall be completely processed in accordance with this test procedure before another canister is started in the process. The test sequence is to process three stainless steel Mark II canisters followed by three aluminum Mark I canisters. Contingency canisters have been identified and will be processed if cleaning parameter variation is required. The fuel canisters to be processed shall be listed in the Fuel Campaign Letter and are identified in HNF-4898, "Phased Startup Initiative Phases 3 and 4 Test Plan and Test Specifications (OCRWM)". (The acronym OCRWM is required to appear in titles of documents that collect data needed by the Office of Civilian Radioactive Waste Management.)

3.0 GENERAL REQUIREMENTS

3.1 This procedure is under the direct control of the Operations Test Director (OTD).

3.2 Direction for this procedure will come from the Engineering Test Director (ETD).

3.3 The ETD will coordinate the test, review test results, and determine corrective actions. Test Engineers (TE) will support the ETD in the recording and evaluation of data.

3.4 A pretest briefing for all personnel involved in the performance of the test shall be conducted at the beginning of each shift. When new test team members assume test duties, they can be briefed individually. The time and date of each briefing shall be documented in the test log.

3.5 Operations procedures, as applicable, including all safety procedures, shall apply to this test activity. All Test Personnel participating in the performance of this test procedure shall have read and be familiar with all applicable facility safety procedures prior to initiation of testing activities specified in this procedure. The Pre-Job Safety Briefing Signature Sheet shall attest to having read the required safety procedures, such as the current Automated Job Hazard Analysis (AJHA), criticality postings, and the ALARA Management Worksheet.

3.6 All engineers involved with testing activities shall have a PSI Qualification (Qual Card) and completed Office of Civilian Radioactive Waste Management (OCRWM) training.

3.7 Stuck fuel will not be processed during Conduct of this Procedure. If a canister is found to contain stuck fuel, it shall be noted on the data sheet and returned to basin storage.

3.8 All fuel shall be inspected by the Fuel Inspection Team per HNF-5271, "Planning Document for Spent Nuclear Fuel Cleanliness Inspection Process (OCRWM)".

3.9 All fuel shall be loaded back into canisters. No fuel shall be loaded into multi-canister overpack (MCO) Baskets. The MCO Baskets shall be in place in the Process Table to prevent dropped fuel from falling into the MCO Basket Sockets.

3.10 The Fuel Status Inventory that remains on the Process Table at the end of each shift shall be provided to K Area Security.

3.11 Elapsed time shall be measured for certain process operations by recording the "Start" and "End" clock time. Any process down time that interrupts the normal work procedure of a process being evaluated shall be recorded in the Comments section on Phase 3/4 FRS/IWTS Data Sheet. Examples of process down time are recording Photographs and Weights, Continuous Air Monitor (CAM) alarms, equipment malfunction or suspended operations.

3.12 For each canister the Test Process shall be documented and tracked by the Phase 3/4 FRS/IWTS Data Sheet, (Attachment A) and the End of Shift Test Status Report (Attachment E)

3.13 Data Sheets will be specific to a particular canister and assimilated into a canister specific Data package.

3.14 Checklists, Data Sheets, Photographs, and other test data collected as the tests are performed will be stamped in red ink as the "Test Control Copy." The test control copy of data will be maintained by the ETD/TE in the Test Data binder, located at the fuel inspection team desk in the basin Equipment Operations Center (EOC). At the end of each work day, the ETD/TE will make a copy of new data accumulated over the work day, stamp these data in red ink as "Duplicate of Original, Do Not Revise," and insert the data in the Back-Up Test Data binder located in MO-285, Room A-167.

4.0 TOOLS, EQUIPMENT, AND SUPPLIES

4.1 Weigh Station (shortened fuel canister hook with scale).

4.2 One VCR clock in the EOC shall be selected by the ETD and used to measure elapsed time to the nearest minute for certain operational activities and to record down time.

4.3 Special gage to measure scrap depth in canister.

4.4 Sludge Collection Tray.

4.5 Grid Plate with 1 inch markings.

4.6 One inch sieve for separating fine scrap.

4.7 Sludge Pickup Adapter and Installation Fixture.

4.8 Turbidimeter near Process Table.

4.9 PCM Discharge Radiation Monitor.

4.10 Continuous Air Monitor (CAM) with recording of Krypton 85 concentration in local operator area near Decapping Station.

4.11 Items Listed in Functional Test Procedures (FTPs):

4.10.1 Fuel basket.

4.10.2 Jib crane with empty basket grapple attached in corridor #7.

4.10.3 1 ton monorail hoist with empty basket grapple attached at monorail 27 extension.

4.10.4 Pallet jack in corridor #10.

4.10.5 Basin transfer cart in corridor #7.

4.10.6 Long pole hook.

4.10.7 Long pole tool.

4.10.8 Modified peters tool.

4.10.9 Rope hook.

4.10.10 Empty fuel canisters Type MK I and MK II fuel canisters.

4.10.11 Telescoping stiffback.

4.10.12 Decapping tools.

4.10.13 Debris bin.

4.10.14 Canister lid debris bin.

4.10.15 Closed Circuit Television CCTV.

4.10.16 Gas tube crimper and cutting tool.

4.10.17 Deionized (DI) water hose.

4.10.18 Air compressor (minimum 150 scfm, 90 psig) for IWTS air sparge process.

5.0 SAFETY, PRECAUTIONS, AND LIMITATIONS

5.1 General Safety

5.1.1 If an abnormal or unexpected condition arises during the performance of this test, the associated systems will be placed in a safe and stable condition. The OTD will evaluate and implement required actions.

5.1.2 Any equipment or facility damage resulting from an abnormal or unexpected condition requires that the test be terminated after placing the associated systems in a safe stable condition. The OTD, along with the Facility Manager (or designee), will determine restart conditions.

5.2 Personnel

5.2.1 All personnel on the test team shall conduct themselves and the test in accordance with ALARA practices. If testing is delayed or direct observation is not required unessential personnel will leave the RBA/RMA or report to the standby area as indicated on the survey map.

5.2.2 All personnel on the test team shall immediately bring any personnel safety concerns to the attention of the OTD, or the Facility Manager, Shift Supervisor for immediate resolution.

5.3 Equipment

5.3.1 The IWTS control system should not be started in an automatic sequence more than twice within any five minute period.

5.4 Environment

5.4.1 The HEPA filters associated with the filter vessel vent are an environmental effluent control device. The HEPA filters must be installed and operational before the filter vessels are allowed to vent or air sparging is allowed to take place with radioactive air emissions.

6.0 PERSONNEL REQUIREMENTS

6.1 Personnel of the following types will be needed to support performance of this test:

Classification	*Quantity
QA	1
Operator	4
Rad. Con.	2
Fuel Cleanliness Inspection Team (minimum of three during Test performance)	5
Test Engineers	2
Engineering Test Director	1
Operations Test Director	1

*Additional numbers of each personnel type may be required at different times during Test performance.

7.0 REQUIRED DOCUMENTS AND REFERENCES

7.1 Primary References

Procedure Number	Procedure Title
FTP-OP-PSI-054W, Current Rev.	Process Table Fuel Operations (OCRWM)
FTP-OP-PSI-055W, Current Rev.	Fuel Decap/Wash Operations
FTP-OP-PSI-059W, Current Rev.	Loading and Capping of Fuel/Scrap Canisters

7.2 Other References

Procedure Number	Procedure Title
FTP-OP-70-001W	Perform Normal IWTS Electrical Lineup at 105-KW
FTP-OP-70-002W	Perform Initial IWTS Manual Valve Lineup at 105-KW
FTP-OP-70-003W	Fill And Vent IWTS Filter System at 105-KW
FTP-OP-70-004W	Fill And Vent IWTS Distribution Header at 105-KW
FTP-OP-70-005W	Operate IWTS at 105-KW
FTP-OP-70-006W	Backwash Garnet Filter at 105-KW
FTP-OP-70-007W	Top Sparge Garnet Filter
FTP-OP-70-008W	Air Sparge Garnet Filter
FTP-OP-70-009W	Install IWTS IXMs at 105-KW
FTP-OP-70-0010W	Isolate Drain and Remove IWTS IXM at 105-KW
FTP-OP-70-0011W	Switch IWTS IXM Flow at 105-KW
FTP-OP-70-0012W	Perform FRS/IWTS Patrol
FTP-OP-70-0013W	Change Out Knockout Pots
FTP-OP-70-0014W	Basin Water Transfer
FTP-OP-70-0015W	Collect IWTS IXM Water Samples at 105-KW
FTP-OP-70-050W	Transfer Fuel Baskets from Corridor 10 to Basin
FTP-OP-70-051W	Normal Startup/Shutdown of Manipulator System
FTP-OP-70-053W	Assume EOC Operations
FTP-OP-70-056W	Flexible Transfer Crane
FTP-OP-70-057W	Exercise Manipulator Joints
FTP-OP-70-058W	Sample HPU Hydraulic Fluid
FTP-OP-70-060W	Exercise Manipulator Arms

FTP-OP-70-061W	Off Gas System Operation
OP-07-113W	Position and Secure Irradiated Fuel at 105 KW
OP-14-002	Perform Pre-Use Test on Hoists
OP-16-002W	Operate Demineralized Water Hose Bib System at 105 KW
OP-43-015	Collect Special Water Samples from Routine Sample Locations
OP-43-035W	Collect Center of Basin Air Permit Water Sample
RP-05-035	Operation of the Triton KR-85 Monitor

7.3 Drawings

H-1-83302	KW Fuel Storage Basin IWTS P&ID
H-1-83944	KW Fuel Storage Basin FRS P&ID

8.0 PREREQUISITE ACTIONS

Unless otherwise specified, prerequisite actions may be performed in any order.

All items must be satisfied prior to beginning Daily Pre-Startup Checklist.

Test Pre-Startup Checklist (perform once prior to starting test):

	Action	Initial/Date	Comments
1	All open items have been evaluated and verified to not affect the performance of this test NOTE: Type of open items to evaluate include Quality Assurance (QA) nonconformance reports, construction punch list, outstanding engineering or design change notices, startup field requests or test deficiency reports.		
2	A walkdown inspection of the equipment associated with this test procedure has been performed. All components are labeled in accordance with the approved drawings listed in Section 7.3.		
3	Perform an initial briefing for all personnel involved in the performance of this test.		
4	The ETD has determined appropriate interface and support personnel from other organizations has been notified and are available.		
5	All personnel who will be involved with this procedure have provided the required signature verification information on the "Pre-Job Safety Briefing Signature Sheet", Attachment F.		
6	OTD notified of scheduled Test and Time.		
7	EOC notified of scheduled Test and Time.		
8	Verify that the Fuel Inspection Team members are notified prior to commencement of testing. (preferably 24 hours)		
9	Verify that the Spent Nuclear Fuel (SNF) QA is notified prior to commencement of testing. (preferably 24 hours)		
10	Verify that the DOE facility representative is notified prior to commencement of testing. (preferably 24 hours)		
11	Verify that Security is notified prior to commencement of testing. (preferably 24 hours)		

12	Verify that FTP-OP-PSI-054W, FTP-OP-PSI-055W, and FTP-OP-PSI-059W in Section 7.1 list the current revision. If later revisions exist, record those documents along with the latest revision in the comments section of the Phase 3/4 FRS/IWTS Data Sheet.		
13	Installed equipment calibrations verified and logged on "Installed Equipment Calibration Log" Attachment D.		
14	Verify Measuring and Test Equipment (M&TE) required has current calibration and logged on "Test Equipment Calibration Log" Attachment C.		
15	Ensure three extra MKII canisters for testing are staged in the decapping staging area.		
16	Review prerequisite actions from reference FTPs and ensure no foreseeable conditions exist which would prevent completion of these prerequisites at the required time in the Phase 3 Test.		
17	All mock fuel and scrap removed from process table.		
18	Pre-operation Acceptance Test Procedure SNF-A.9-PAT-002A, Rev. 0, ITWS Knockout Pot, is complete and data indicating the initial Knockout Pot weight measured with hose connected are available for entry on the Phase 3/4 FRS/IWTS Data Sheet for the first canister.		
19	Preliminary tests defined in SNF-6030, Rev. 0, Weigh Station and Grid Plate Testing, are complete and data indicating the initial PCM strainer basket weight are available for entry on the Phase 3/4 FRS/IWTS Data Sheet for the first canister.		

I have reviewed the above prerequisites and initial conditions. The prerequisites and initial conditions that are required to commence Section 9.0 are complete. I recommend that this PSI Phase 3 Validation Test be released for performance.

Engineering Test Director _____ Date_____

I have reviewed the above prerequisites and initial conditions. The prerequisites and initial conditions that are required to commence Section 9.0 are complete. I recommend that this PSI Phase 3 Validation Test be released for performance.

Operations Test Director _____ Date_____
(OTD)

Data Package compiled for each canister to be processed, with extra copies available.

DAILY PRE-STARTUP CHECKLIST (perform prior to starting each day of test activity):

	Action	Initial/Date	Comments
1	Required Witnesses in Basin: QA ____ Fuel Inspection Team _____		
2	Test Support personnel in basin and signed in on "Pre-Job Safety Briefing Signature Sheet", Attachment F.		
3	Verify Test personnel and witnesses have read and signed ALARA Management Worksheet.		
4	Verify Test personnel and witnesses have read and signed AJHA.		
5	All personnel have attended a pre-job briefing.		
6	IWTS operational and in auto sequence 2		
7	FRS operational and ready to process fuel.		
8	Manipulator system started-up and ready to process fuel.		
9	Campaign Letter.		
10	Scrap Basket covers installed.		
11	Record center of basin grab sample number and obtain analysis results.		

Daily PreStartup Checklist Verified Complete_____Date_____

PSI Phase 3 Flow Diagram

9.1 Record Pretest Conditions
- Knockout Pot Weight
- Basin Water Sample (Radionuclides Analysis)
- Identify IXM in Service
- PCM Strainer Weight

9.2 Retrieve Fuel Canister
- Retrieve Canister from Basin and load into FRS Queue
  - Lid Number
  - Cubicle
  - Key

• OP-07-113W

9.3 Decap Fuel Canister
- Start IWTS
- Transfer Canister to Decapper
  - START TIME
- Decap Canister
  - Start Time
  - End Time

• FTP-OP-PSI-055W, Current Rev. (4.1 – 4.4)

9.4 Record Post-Decapping Data
- Transfer Canister to Canister Well
  - Photo
- Weigh Canister
  - Weight
- Transfer Canister to PCM

• FTP-OP-PSI-055W, Current Rev. (4.5)

9.5 Wash Fuel in PCM
- Wash Fuel
  - Rad Monitor On
  - Wash Parameters
  - Start Time
  - Turbidity
  - IXM Sampling
  - End Time
  - KOP ΔP

• FTP-OP-PSI-055W, Current Rev. (4.6)

9.6 Record Post-Wash Data
- Transfer Canister to Canister Well
  - Photo
- Weigh Canister
  - Weight
- Weigh KOP 3 times
  - Weight

• FTP-OP-PSI-055W, Current Rev. (4.6)
• FTP-OP-PSI-055W, Current Rev. (Attachment 6)

9.7 Dump Fuel on Process Table
- Dump Fuel
- Verify Can Empty
- Transfer Canister to Canister Well
  - Photo
- Video Fuel on PT
  - Photo
  - Turbidity
- Weigh Empty Can
  - Weight
- Inspect Can for Reuse
- Place Empty Canister in Canister Well

• FTP-OP-PSI-055W, Current Rev. (4.7)

9.8 Separate and Inspect Fuel
- Separate Fuel Assembly
  - Start Time
- Inspect Fuel Elements
  - Fuel Condition
  - Cleanliness
  - End Time

• FTP-OP-PSI-054W, Current Rev. (4.2)

9.9 Sort and Load Debris
- Transfer Debris to Grid Plate
  - Start Time
  - End Time
  - Photo
- Transfer Debris to Debris Can

• FTP-OP-PSI-054W, Current Rev. (4.3 – 4.5)

9.10 Sort and Load Fuel in Canister
- Weigh Empty Canister
  - Weight
- Load Acceptable Fuel in Canister
  - Start Time
- Sort Fuel Based on Go/No-Go Gauge
  - End Time
- Weigh Loaded Fuel Canister
  - Weight
- Transfer Fuel Canister to FRS Queue
- Transfer Fuel Canister to Basin Storage Rack

• FTP-OP-PSI-059W, Current Rev. (4.1)
• OP-07-113W

9.11 Load Scrap Fuel
- Transfer Scrap Canister from FRS Queue to Canister Well
- Weigh Scrap Canister
  - Weight
- Load Scrap Fuel into Canister
  - Start Time
  - End Time
- Weigh Scrap Canister
  - Weight

• FTP-OP-PSI-059W, Current Rev. (4.2)

9.12 Sort and Load Coarse Scrap
- Sort Scrap Using 1 inch Sieve
  - Start Time
  - End Time
- Place Coarse Scrap on Grid Plate
  - Photo
- Rearrange Coarse Scrap
  - Photo
- Load Coarse Scrap in Scrap Canister
  - Start Time
  - End Time
- Weigh Scrap Canister
  - Weight

• FTP-OP-PSI-059W, Current Rev. (4.3)

9.13 Load Fine Scrap
- Transfer Remaining Scrap to Grid Plate Using Water Wand
  - Start Time
- Remove Sludge Particles (<1/4 in.) Using Vacuum Wand
- Distribute Fine Scrap on Grid Plate
  - Photo
- Rearrange Fine Scrap
  - Photo
- Transfer Scrap from Tray into Scrap Canister
  - End Time
- Weigh Scrap Canister
  - Weight
- Transfer Scrap Canister from Canister Well to FRS Queue

• FTP-OP-PSI-059W, Current Rev. (4.4)

9.14 Load Scrap From PCM Wash and Strainer Baskets
- Remove Wash Basket from PCM and dump contents on Process Table
  - Start Time
  - End Time
- Transfer PCM Wash Basket Scrap to Grid Plate
  - Photo
- Remove Strainer Basket from PCM and transfer to Process Table
  - Start Time
  - End Time
- Weigh Strainer Basket
  - Weight
- Dump Strainer Basket Contents on Process Table
  - Start Time
  - End Time
- Weigh Strainer Basket
  - Weight
- Transfer Strainer Basket Scrap to Grid Plate
- Remove Sludge using Vacuum Wand
- Distribute Scrap on Grid Plate
  - Photo
- Rearrange PCM Scrap
  - Photo
- Transfer Scrap Canister from FRS Queue to Canister Well
- Transfer Scrap From Tray into Scrap Canister
  - Start Time
  - End Time
- Weigh Scrap Can
  - Weight

• FTP-OP-PSI-059W, Current Rev. (4.5)

9.15 Process Scrap Canister
- If next Fuel Canister is different Key, clean out Decapper and Process Table Strainers and load into Scrap Canister
- Weigh Scrap Can
  - Weight
- Measure Scrap Depth in Canister
  - Depth 1st bbl
  - Depth 2nd bbl
- Transfer Scrap Canister to FRS Queue
  - END TIME

• FTP-OP-PSI-059W, Current Rev. (4.6 – 4.8)

Repeat Process for Next Canister (return to 9.1)

9.0 PROCEDURE STEPS

9.1 Record Pretest Conditions

1. Signature verifications on Section 8.0 Checklists signify that the Prerequisite Actions are complete.

2. Signature verification on Phase 3/4 FRS/IWTS Data Sheet signifies that the current procedure revision of FTP-OP-PSI-054W, FTP-OP-PSI-055W, and FTP-OP-PSI-059W is being used to cross reference procedure steps. This verification also confirms that any changes to the primary references in Section 7.1 have been incorporated into this Test Procedure by an Engineering Change Notice (ECN) approved by Engineering, Environmental, Operations, Nuclear Safety, and Quality Assurance.

DP-1 3. Record Knockout Pot (KOP) Load Cell Tare Weight indicated on the Phase 3/4 FRS/IWTS Data Sheet for the previous canister processed, note data source in data sheet comments.

DP-2 4. Record KOP weight data from the end weights indicated on the Phase 3/4 FRS/IWTS Data Sheet for the previous canister processed, note data source in data sheet comments.

NOTE: If this is the first canister processed, Knockout Pot weight is obtained from Pre-operational Acceptance Test SNF-A.9-PAT-002A results.

DP-3 5. Record sample number for the center of basin grab sample, obtained per Process Standard 408, on the Phase 3/4 FRS/IWTS Data Sheet.

DP-4 6. Identify Ion Exchange Modules (IXMs) in service and record on Phase 3/4 FRS/IWTS Data Sheet.

DP-5 7. Record PCM Strainer Scale Tare Weight indicated on the Phase 3/4 FRS/IWTS Data Sheet for the previous canister processed, note data source in data sheet comments.

DP-6 8. Record PCM Strainer Weight data from the end weight indicated on the Phase 3/4 FRS/IWTS Data Sheet for the previous canister processed, note data source in data sheet comments.

NOTE: If this is the first canister processed, the empty PCM strainer weight is obtained from preliminary tests defined in SNF-6030.

9.2 Retrieve Fuel Canister

1. Request Operations to position fuel canister listed in the Fuel Campaign letter in fuel queue. (OP-07-113W)

DP-7 2. Record the following data on Phase 3 /4 FRS/IWTS Data Sheet:

Date

Phase

Canister Lid #

Cubicle Location

Key #

9.3 Decap Fuel Canister

1. Request RadCon Supervisor to verify that Krypton 85 Monitor is in operation per RP-05-035.
2. Request Operations to proceed with Decapping process (FTP-OP-PSI-055W, Current Rev., Sections 4.1 through 4.4).

DP-8 3. Record Retrieve Canister/START TIME on Phase 3/4 FRS/IWTS Data Sheet at start of Section 4.1.

DP-9 4. Record Decapping Start Time on Phase 3/4 FRS/IWTS Data Sheet at start of Step 4.2.5.

DP-10 5. Record Decapping End Time on Phase 3 /4 FRS/IWTS Data Sheet at Step 4.3.35 for a MKI canister or at Step 4.4.29 for a MKII canister.

9.4 Obtain Post-Decapping Data

1. Request Operations to remove decapped canister (FTP-OP-PSI-055W, Current Rev., Section 4.5).

DP-11 2. Record Top View Photograph of fuel in decapped canister at end of Step 4.5.3.

NOTE: Signature verification on Phase 3/4 FRS/IWTS Data Sheet signifies that Top Photo has been recorded.

3. Notify EOC that photograph has been recorded.

DP-12 4. Record Scale Tare Weight on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.6.

DP-13 5. Record Canister Weight on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.7.

9.5 Wash Fuel in PCM

1. Request that IXM Inlet and Outlet Water Samples are taken during the PCM wash cycle in accordance with (OP-43-015, "Collect Special Water Samples from Routine Sample Locations").

DP-14 2. Record IXM Inlet and Outlet Sample Numbers on Phase 3/4 FRS/IWTS Data Sheet.

3. Activate PCM discharge radiation monitor.

   NOTE: Signature verification on Phase 3/4 FRS/IWTS Data Sheet signifies that the PCM Radiation Monitor is activated.

4. Request Operations to set high pressure pump flowrate, PCM Rotation Rate and PCM Rotation Time per Test Engineer Direction (Initial setup is approximately 40 gpm, and 4 rpm for 20 minutes.) (Step 4.6.1)

5. Request Operations to start PCM Wash Cycle (FTP-OP-PSI-055W, Current Rev., Section 4.6).

DP-15 6. Record PCM Start Time on Phase 3/4 FRS/IWTS Data Sheet.

7. Request Reading for Turbidity of Water 10 minutes after starting PCM Wash Cycle.

DP-16 8. Record Turbidity data on Phase 3/4 FRS/IWTS Data sheet.

DP-17 9. Record PCM End Time on Phase 3/4 FRS/IWTS Data Sheet at Step 4.6.15.

DP-18 10. Record Knockout Pot Pressure Drop on Phase 3/4 FRS/IWTS Data Sheet.

9.6 Record Post-Washed Data

1. Record canister information and operating parameters on Phase 3/4 Cleaning Process Data Sheet (OCRWM).

DP-19 2. Record Top View Photograph of washed fuel in canister at end of Step 4.6.16.

   NOTE: Signature verification on Phase 3/4 FRS/IWTS Data Sheet signifies that Top Photo has been recorded.

3. Notify EOC that photograph has been recorded.

DP-20 4. Record Scale Tare Weight on Phase 3/4 FRS/IWTS Data Sheet.

DP-21 5. Record Canister Weight on Phase 3/4 FRS/IWTS Data Sheet.

6. Request Operations to weigh Knockout Pot three times (FTP-OP-PSI-055W, Current Rev., Attachment 7).

DP-22 7. Record Load Cell Tare Weight on Phase 3/4 FRS/IWTS Data Sheet.

DP-23 8. Record KOP Weight on Phase 3/4 FRS/IWTS Data Sheet.

9.7 Dump Fuel on Process Table

1. Request Operations to Dump Fuel onto Process Table (FTP-OP-PSI-055W, Current Rev., Section 4.7).

DP-24 2. Record Top View Photograph of empty canister at Step 4.7.13.

NOTE: Signature verification on Phase 3/4 FRS/IWTS Data Sheet signifies that Empty Canister Top Photo has been recorded.

DP-25 3. Record Photograph of dumped fuel at Step 4.7.15.

Note: Signature verification on Phase 3/4 FRS/IWTS Data Sheet signifies Dumped Fuel Photo has been recorded.

4. Notify EOC that fuel and canister photographs have been recorded.

DP-26 5. Record Turbidity on Phase 3/4 FRS/IWTS Data Sheet. (Step 4.7.17)

NOTE: If canister contains stuck fuel at Step 4.7.10, the dumped fuel shall be placed back into the canister and returned to Basin Storage.

NOTE: If dumped fuel cannot be returned to the canister, it will be packaged into a new canister and returned to Basin Storage.

DP-27 6. Record "Yes" or "No" for Stuck Fuel on Phase 3/4 FRS/IWTS Data Sheet.

DP-28 7. Record Scale Tare Weight on Phase 3/4 FRS/IWTS Data Sheet.

DP-29 8. Record Empty Canister Weight on Phase 3/4 FRS/IWTS Data Sheet.

9.8 Separate and Inspect Fuel

1. Ensure a minimum of three members of the fuel inspection team are present to evaluate fuel separation.

2. Request Operations to Proceed with sorting fuel elements (FTP-OP-PSI-054W, Current Rev., Section 4.2).

DP-30 3. Record Fuel Inspection Start Time on Phase 3/4 FRS/IWTS Data Sheet at Step 4.2.1.

4. Start video recording of fuel inspection.

5. Record Inspection Team Fuel Condition assessment of each fuel element/assembly viewed on Phase 3/4 FRS Cleaning Process Data Sheet (FTP-OP-PSI-054W, Current Rev. Attachment 1, Step 2).

6. Request OTD to provide alternate assembly view, if required.

7. Record Inspection Team Cleanliness Assessment of Each Fuel Element viewed on Phase 3/4 FRS Cleaning Process Data Sheet (FTP-OP-PSI-054W, Current Rev., Attachment 1, Step 3).

8. Request OTD to provide alternate element views, if required.

9. Notify OTD when element inspection is complete.

10. Request OTD to clean sludge collection tray using vacuum wand or sludge pickup adapter if requested by Inspection Team.

11. Perform Steps 5 through 10 for each acceptable fuel element/assembly viewed in FTP-OP-PSI-054W, Current Rev., Attachment 1.

12. Stop Fuel Inspection Video Tape.

NOTE: Signature verification on Phase 3/4 FRS/IWTS Data Sheet signifies that video of inspections has been recorded.

DP-31 13. Record on Phase 3/4 FRS/IWTS Data Sheet the Inspection End Time.

9.9 Sort and Load Debris

1. Request Operations to sort and load debris (FTP-OP-PSI-054W, Current Rev., Sections 4.3 through 4.5).

DP-32 2. Record Debris Sorting Start Time on Phase 3/4 FRS/IWTS Data Sheet at Step 4.3.1.

DP-33 3. Record Debris Sorting End Time on Phase 3/4 FRS/IWTS Data Sheet upon completion of Step 4.4.4.

DP-34 4. Record Photograph of debris.

NOTE: Signature verification on Data Sheet signifies that Photo of Debris has been recorded.

5. Notify OTD that debris photograph has been recorded.

9.10 Sort and Load Fuel in Canister

1. Request Operations to Sort and Load fuel in canister (FTP-OP-PSI-059W, Current Rev., Section 4.1).

DP-35 2. Record scale tare weight on Phase 3/4 FRS/IWTS Data Sheet.

DP-36 3. Record Fuel Starting Canister Weight on Phase 3/4 FRS/IWTS Data Sheet.

DP-37 4. Record Fuel Sort and Load Start Time reported to OTD at Step 4.1.5 on Phase 3/4 FRS/IWTS Data Sheet.

DP-38 5. Record Fuel Sort and Load End Time reported to OTD at Step 4.1.12 on a Phase 3/4 FRS/IWTS Data Sheet.

DP-39 6. Record Scale Tare Weight on Phase 3/4 FRS/IWTS Data Sheet.

DP-40 7. Record Loaded Canister Weight on Phase 3/4 FRS/IWTS Data Sheet.

8. Request Operations to transfer loaded fuel canister to Basin per OP-07-113W at end of Step 4.1.21.

9.11 Load Scrap Fuel

1. Request Operations to load scrap fuel (FTP-OP-PSI-059W, Current Rev., Section 4.2).

DP-41 2. Record Scale Tare Weight on Phase 3/4 FRS/IWTS Data Sheet. (Step 4.2.6)

DP-42 3. Record Scrap Fuel Canister Weight on Phase 3/4 FRS/IWTS Data Sheet. (Step 4.2.6)

DP-43 4. Record Scrap Fuel Loading Start Time on Phase 3/4 FRS/IWTS Data Sheet at Step 4.3.8.

DP-44 5. Record Scrap Fuel Loading End Time on Phase 3/4 FRS/IWTS Data Sheet upon Completion of Step 4.2.12.

DP-45 6. Record Scale Tare Weight reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.2.13.

DP-46 7. Record Scrap Canister Weight reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.2.13.

9.12 Sort and Load Coarse Scrap

1. Request Operations to sort and load coarse scrap (FTP-OP-PSI-059W, Current Rev., Section 4.3).

DP-47 2. Record Coarse Scrap Sorting Start Time reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.3.1.

DP-48 3. Record Coarse Scrap Sorting End Time reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at completion of Step 4.3.6.

DP-49 4. Record first photograph of coarse scrap on grid plate at completion of Step 4.3.7.

NOTE: Signature Verification on Data Sheet signifies that First Photo of coarse scrap on grid plate has been recorded.

5. Notify OTD that first coarse scrap photograph has been recorded.

DP-50 6. Record second photograph of coarse scrap on grid plate at completion of Step 4.3.9.

NOTE: Signature Verification on Data Sheet signifies that Second Photo of coarse scrap on grid plate has been recorded.

7. Notify OTD that second coarse scrap photograph has been recorded.

DP-51 8. Record Coarse Scrap Loading Start Time as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.3.11.

DP-52 9. Record Coarse Scrap Loading End Time as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet upon completion of Step 4.3.13.

DP-53 10. Record Scale Tare Weight as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.3.15.

DP-54 11. Record Scrap Canister Weight as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.3.15.

9.13 Load Fine Scrap

1. Request Operations to load fine scrap into canister (FTP-OP-PSI-059W, Current Rev., Section 4.4).

DP-55 2. Record Fine Scrap Loading Start Time as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.4.1.

DP-56 3. Record first photograph of scrap on grid plate at Step 4.4.5.

NOTE: Signature Verification on Data Sheet signifies that First Photo of fine scrap on grid plate has been recorded.

4. Notify OTD that first fine scrap photograph has been recorded.

DP-57 5. Record second photograph of fine scrap on grid plate at Step 4.4.7.

NOTE: Signature Verification on Data Sheet signifies that Second Photo of fine scrap on grid plate has been recorded.

6. Notify OTD that second fine scrap photograph has been recorded.

DP-58 7. Record Fine Scrap Loading End Time on Phase 3/4 FRS/IWTS Data Sheet upon completion of Step 4.4.10.

DP-59 8. Record Scale Tare Weight as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.4.12.

DP-60 9. Record Scrap Canister Weight as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.4.12.

9.14 Load Scrap from PCM Wash and Strainer Baskets

1. Request Operations to load PCM wash and strainer basket scrap into canister per FTP-OP-PSI-059W, *Current Rev., Section 4.5.*

DP-61 2. Record PCM Wash Basket Clean-Out Start Time as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet Step 4.5.1.

DP-62 3. Record PCM Wash Basket Clean-Out End Time on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.4.

DP-63 4. Record PCM wash basket scrap photograph on grid plate at Step 4.5.7.

NOTE: Signature Verification on Data Sheet signifies that PCM Wash Basket photograph has been recorded.

5. Notify OTD that PCM wash basket scrap photograph has been recorded.

DP-64 6. Record PCM Strainer Removal Start Time as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.9.

DP-65 7. Record PCM Strainer Removal End Time as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.12.

DP-66 8. Record Scale Tare Weight as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.13.

DP-67 9. Record Strainer Weight as reported to OTD at Step 4.5.13.

DP-68 10. Record PCM Strainer Cleanout Start Time as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.14.

DP-69 11. Record PCM Strainer Cleanout End Time as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.18.

DP-70 12. Record Scale Tare Weight as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.19.

DP-71 13. Record PCM Strainer Weight as reported to EOC for recording on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.19.

DP-72 14. Record first PCM wash and strainer scrap photograph on grid plate at Step 4.5.22.

NOTE: Signature Verification on Data Sheet signifies that first photo of PCM wash and strainer scrap has been recorded.

15. Notify OTD that first PCM wash and strainer scrap photograph has been recorded.

DP-73 16. Record second photograph of scrap on grid plate at Step 4.5.24.

NOTE: Signature Verification on Data Sheet signifies that second photo of PCM Strainer Scrap has been recorded.

17. Notify OTD that second PCM wash and strainer basket scrap photograph has been recorded.

DP-74 18. Record PCM Wash and Strainer Scrap Loading Start Time as reported to EOC on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.32.

DP-75 19. Record PCM Wash and Strainer Scrap Loading End Time on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.34.

DP-76 20. Record Scale Tare Weight as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.35.

DP-77 21. Record Scrap Canister Weight as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.5.35.

9.15 Process Scrap Canister

1. Request Operations to process scrap canister per FTP-OP-PSI-059W, Current Rev., Section 4.6 to 4.8.

DP-78 2. Record Scale Tare Weight as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.6.10, if applicable.

DP-79 3. Record Scrap Canister Weight as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.6.10, if applicable.

DP-80 4. Record Scrap Depth as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at Step 4.7.2. (DP-81)

DP-81 5. Record END TIME as reported to OTD on Phase 3/4 FRS/IWTS Data Sheet at step 4.8.5. (DP-82)

10.0 DATA SHEETS

Examples of the following data sheets are attached.

Attachment A	Phase 3/4 FRS/IWTS Data Sheet.
Attachment B	FRS Cleaning Process Data Sheet (Attachment 1, FTP-OP-70-054W)
Attachment C	Test Equipment Calibration Log
Attachment D	Installed Equipment Calibration Log
Attachment E	End of Shift Test Status Report
Attachment F	Pre-Job Safety Briefing Signature Sheet

ATTACHMENT A PHASE 3/4 FRS/IWTS DATA SHEET

Date _____	Phase _____	Phase 3/4 FRS/IWTS Data Sheet	Canister Lid Number _____
Step	**DP**	**Data**	**Comments/Down Time/ Date Change**
9.1 Record Pretest Conditions		Procedure Revision Numbers Current and Incorporated _____/_____	
Complete _____/_____	DP-1	Load Cell Tare Weight _____ lb.	
	DP-2a	1st KOP Weight _____ lb.	
	DP-2b	2nd KOP Weight _____ lb.	
	DP-2c	3rd KOP Weight _____ lb.	
	DP-3	Basin Water Radionuclides _____	
	DP-4	IXMs in Service _____	
	DP-5	Scale Tare Weight _____lb.	
	DP-6	PCM Strainer Weight _____lb.	
9.2 Retrieve Fuel Canister	DP-7	Cubicle _____	
Complete _____/_____	DP-7	Key Number _____	
9.3 Decap Fuel Canister	DP-8	Retrieve Canister/START TIME _____	
Complete _____/_____	DP-9	Decapping Start Time _____	
	DP-10	Decapping End Time _____	
9.4 Obtain Post-Decapping Data	DP-11	Top Photo _____	
Complete _____/_____	DP-12	Scale Tare Weight _____ lb.	
	DP-13	Canister Weight _____ lb.	

ATTACHMENT A PHASE 3 /4 FRS/IWTS DATA SHEET

Date _____	Phase _____	Phase 3/4 FRS/IWTS Data Sheet	Canister Lid Number _____
Step	**DP**	**Data**	**Comments/Down Time/ Date Change**
9.5 Wash Fuel in PCM	DP-14a	IXM Inlet _____	
Complete _____/_____	DP-14b	IXM No. 1 Outlet _____	
	DP-14c	IXM No. 2 Outlet _____	
	DP-14d	IXM No. 3 Outlet _____	
		PCM Discharge Radiation Monitor On _____/_____	
	DP-15	PCM Start Time _____	
	DP-16	Turbidity _____ NTU	
	DP-17	PCM End Time _____	
	DP-18	KOP Δ P _____ psi	
9.6 Record Post Washed Data	DP-19	Top Photo _____	
Complete _____/_____	DP-20	Scale Tare Weight _____ lb.	
	DP-21	Canister Weight _____ lb.	
	DP-22	Load Cell Tare Weight _____ lb.	
	DP-23a	1st KOP Weight _____ lb.	
	DP-23b	2nd KOP Weight _____ lb.	
	DP-23c	3rd KOP Weight _____ lb.	

ATTACHMENT A PHASE 3 /4 FRS/IWTS DATA SHEET

Date _____	Phase _____	Phase 3/4 FRS/IWTS Data Sheet	Canister Lid Number _____
Step	DP	Data	Comments/Down Time/ Date Change
9.7 Dump Fuel on Process Table Complete _____/_____	DP-24	Empty Canister Top Photo _____/_____	
	DP-25	Dumped Fuel Photo _____/_____	
	DP-26	Turbidity _____ NTU	
	DP-27	Stuck Fuel? Yes _____ No _____	
	DP-28	Scale Tare Weight _____ lb.	
	DP-29	Empty Canister Weight _____ lb.	
9.8 Separate and Inspect Fuel Complete _____/_____	DP-30	Fuel Inspection Start Time _____ Inspection Video Recorded _____/_____	
	DP-31	Fuel Inspection End Time _____	
9.9 Sort and Load Debris Complete _____/_____	DP-32	Debris Sorting Start Time _____	
	DP-33	Debris Sorting End Time _____	
	DP-34	Debris Photo _____/_____	
9.10 Sort and Load Fuel in Canister Complete _____/_____	DP-35	Scale Tare Weight _____ lb.	
	DP-36	Starting Canister Weight _____ lb.	
	DP-37	Fuel Sort and Load Start Time _____	
	DP-38	Fuel Sort and Load End Time _____	
	DP-39	Scale Tare Weight _____ lb.	
	DP-40	Loaded Canister Weight _____lb.	

ATTACHMENT A PHASE 3 /4 FRS/IWTS DATA SHEET

Date _____	Phase _____	Phase 3/4 FRS/IWTS Data Sheet	Canister Lid Number _____
Step	**DP**	**Data**	**Comments/Down Time/ Date Change**
9.11 Load Scrap Fuel Complete _____/_____	DP-41	Scale Tare Weight _____ lb.	
	DP-42	Scrap Fuel Canister Weight _____lb.	
	DP-43	Scrap Fuel Loading Start Time _____	
	DP-44	Scrap Fuel Loading End Time _____	
	DP-45	Scale Tare Weight _____ lb.	
	DP-46	Scrap Canister Weight _____ lb.	
9.12 Sort and Load Coarse Scrap Complete _____/_____	DP-47	Coarse Scrap Sorting Start Time _____	
	DP-48	Coarse Scrap Sorting End Time _____	
	DP-49	1st Photo Coarse Scrap _____/_____	
	DP-50	2nd Photo Coarse Scrap _____/_____	
	DP-51	Coarse Scrap Loading Start Time _____	
	DP-52	Coarse Scrap Loading End Time _____	
	DP-53	Scale Tare Weight _____lb.	
	DP-54	Scrap Canister Weight _____ lb.	

ATTACHMENT A PHASE 3 /4 FRS/IWTS DATA SHEET

Date _____	Phase _____	Phase 3/4 FRS/IWTS Data Sheet	Canister Lid Number _____
Step	DP	Data	Comments/Down Time/ Date Change
9.13 Load Fine Scrap	DP-55	Fine Scrap Loading Start Time _____	
Complete _____/_____	DP-56	1st Photo Fine Scrap _____/_____	
	DP-57	2nd Photo Fine Scrap _____/_____	
	DP-58	Fine Scrap Loading End Time _____	
	DP-59	Scale Tare Weight _____ lb.	
	DP-60	Scrap Canister Weight _____ lb.	

ATTACHMENT A PHASE 3 /4 FRS/IWTS DATA SHEET

Date _____	Phase _____	Phase 3/4 FRS/IWTS Data Sheet	Canister Lid Number _____

Step	DP	Data	Comments/Down Time/ Date Change
9.14 Load Scrap from PCM Wash and Strainer Baskets Complete _____/_____	DP-61	PCM Wash Basket Cleanout Start Time _____	
	DP-62	PCM Wash Basket Cleanout End Time _____	
	DP-63	PCM Wash Basket Scrap Photo _____/_____	
	DP-64	PCM Strainer Removal Start Time _____	
	DP-65	PCM Strainer Removal End Time _____	
	DP-66	Scale Tare Weight _____ lb.	
	DP-67	PCM Strainer Weight _____ lb.	
	DP-68	PCM Strainer Cleanout Start Time _____	
	DP-69	PCM Strainer Cleanout End Time _____	
	DP-70	Scale Tare Weight _____lb.	
	DP-71	PCM Strainer Weight _____ lb.	
	DP-72	1st PCM Scrap Photo _____/_____	
	DP-73	2nd PCM Scrap Photo _____/_____	
	DP-74	PCM Scrap Loading Start Time _____	
	DP-75	PCM Scrap Loading End Time _____	
	DP-76	Scale Tare Weight _____ lb.	
	DP-77	Scrap Canister Weight _____ lb.	

ATTACHMENT A PHASE 3 /4 FRS/IWTS DATA SHEET

Date _____	Phase _____	Phase 3/4 FRS/IWTS Data Sheet	Canister Lid Number _____
Step	DP	Data	Comments/Down Time/ Date Change
9.15 Process Scrap Canister	DP-78	Scale Tare Weight _____ lb.	
Complete _____/_____	DP-79	Scrap Canister Weight _____ lb.	
	DP-80a	Scrap Depth 1st barrel _____ in.	
	DP-80b	Scrap Depth 2nd barrel _____ in.	
	DP-81	END TIME _____	

ATTACHMENT B PHASE 3/4 FRS CLEANING PROCESS DATA SHEET (OCRWM) PAGE 1 OF 2

Date: _____ Time: _____ CANISTER ID: _____

CANISTER INFORMATION

Canister Type: ____ Mark I Aluminum, ____ Mark I Stainless Steel, ____ Mark II Stainless Steel

Fuel Type: MKIV, ____ MKIA, ____ SPR, ____ NAT

Key Number_____

OPERATING PARAMETERS

Cleaning Cycle Time = _____ minutes

Canister Rotation Speed: _____ rpm

High Pressure Flush Nozzles Flow Rate: _____ gpm

Flush Nozzles Pressure: _____ psig

Discharge Flow Rate (75 gpm or greater):

Assembly	Inner/Outer	Fuel Condition				Inspection Results		*Comments*
		Intact	Breached	Defective	Bad	Clean	Not Clean	
1	Inner							
	Outer							
2	Inner							
	Outer							
3	Inner							
	Outer							
4	Inner							
	Outer							
5	Inner							
	Outer							
6	Inner							
	Outer							
7	Inner							
	Outer							
8	Inner							
	Outer							
9	Inner							
	Outer							
10	Inner							
	Outer							
11	Inner							
	Outer							
12	Inner							
	Outer							
13	Inner							
	Outer							
14	Inner							
	Outer							
Total								

Attachment B Phase 3/4 FRS Cleaning Process Data Sheet (OCRWM) Page 2 of 2

Comments:

Fuel Inspection Team Members Signatures

Print Name	Signature	Date

ATTACHMENT C TEST EQUIPMENT CALIBRATION LOG

Measuring and Test Equipment (M&TE) Calibration Log

Page _____ of _____

M&TE No.	M&TE Description (include accuracy)	Calibration Due Date	Range Used	Initial/Date

Notes:

ATTACHMENT D INSTALLED EQUIPMENT CALIBRATION LOG

Installed Equipment Calibration Log

Page _____ of _____

Equipment No.	Equipment Description	Calibration Due Date	Range Used	Procedure Steps Where Used	Post-Test Calibration Date	Initial/Date

Note:

ATTACHMENT E END-OF SHIFT TEST STATUS REPORT, PSI PHASE 3/4

Page 1 of 1

Date/Time: _____

Canister In-Process: _____ (original lid # or N/A)

End of Shift Procedure Status

SNF-5952 Test Procedure Step

Completed through end of shift: _____

Referenced FTP Step completed

Through end of shift: FTP #: _____

Step #: _____

Comments:

Expected Test Restart Description

Continue with SNF-5952 Test Procedure Step: _____

By performing (if required) FTP #: _____

Step #: _____

Comments (clarify planned next procedure step after daily prestart completed):

Prepared by: _____

Name/Signature/Date

ATTACHMENT F PRE-JOB SAFETY BRIEFING SIGNATURE SHEET

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SPENT NUCLEAR FUEL PROJECT			
NAME (PRINTED)	SIGNATURE	INITIALS	DATE