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1. Doc No: RPP-RPT-63393 Rev. 00				
2. Title: WTP Parts Acquisition Transition Plan				
3. Project Number: <input checked="" type="checkbox"/> N/A	4. Design Verification Required: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
5. USQ Number: <input checked="" type="checkbox"/> N/A RPP-27195	6. PrHA Number	Rev. <input checked="" type="checkbox"/> N/A	Clearance Review Restriction Type: ouo4	
7. Approvals				
Title	Name	Signature	Date	
Clearance Review	Ayers, Lynn M	<i>Ayers, Lynn M</i>	09/15/2021	
Document Control Approval	Alvarez, Efren	<i>Alvarez, Efren</i>	09/14/2021	
Originator	Peiffer, William A	<i>Peiffer, William A</i>	09/02/2021	
Responsible Manager	Exley, Allan	<i>Exley, Allan</i>	09/08/2021	
8. Description of Change and Justification				
this is a new document (no changes)				
9. TBDs or Holds <input checked="" type="checkbox"/> N/A				
10. Related Structures, Systems, and Components				
a. Related Building/Facilities <input checked="" type="checkbox"/> N/A	b. Related Systems <input checked="" type="checkbox"/> N/A	c. Related Equipment ID Nos. (EIN) <input checked="" type="checkbox"/> N/A		
11. Impacted Documents – Engineering <input checked="" type="checkbox"/> N/A				
Document Number	Rev.	Title		
12. Impacted Documents (Outside SPF):				
none				
13. Related Documents <input checked="" type="checkbox"/> N/A				
Document Number	Rev.	Title		
14. Distribution				
Name	Organization			
Colosi, Kris	WTP SPARES			
Exley, Allan	OPERATIONS PLANNING INTEGRATN			
Gerboth, Mark	PROGRAM INTEGRATION			
Grindstaff, Keith D	WASTE TREATMENT OPERATIONS			
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Renevitz, Joseph A	WASTE TREATMENT OPERATIONS			

WTP Parts Acquisition Transition Plan

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

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC27-08RV14800



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(5 U.S.C. 552) Exemption number(s) and category: _____

4-Commercial/Proprietary _____

Department of Energy review required before public release

Name/Org: William A Peiffer / WRPS Date: 09/15/21

Guidance (if applicable): NA

WTP Parts Acquisition Transition Plan

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Date Published
August 2021

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

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Office of River Protection under Contract DE-AC27-08RV14800



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Release Approval

Date

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Acronyms

AEL	Atkins Engineering Laboratory
AIA	Administrative Interface Agreement
BNI	Bechtel National Inc.
BTR	Buyers Technical Representative
C2V	LAW C2 Ventilation System
C3V	LAW C3 Ventilation System
C5V	LAW C5 Ventilation System
CCB	Consumable Changeout Box
DFLAW	Direct Feed Low-Activity Waste
DOE	U.S. Department of Energy
EOI	Expression of Interest
EPCC	Engineering Procurement Construction Commissioning
FES	Field Execution Schedule
GBL	Gas Barrier Lid (for LAW melter)
ILAW	Immobilized Low Activity Waste
ITDC	Integrated Tank Disposition Contractor
LAW	Low Activity Waste
LVP	LAW Secondary Offgas/Vessel Vent Process System
ORP	Department of Energy Office of River Protection
PBS	Program Baseline Summary
POC	Point of Contact
RFP	Request for Proposal
SAG	Spares Advisory Group
SCR	Selective Catalytic Reducer
SPF	Smart Plant Foundation
SRT	Supply Risk Tool
TCO	Thermal Catalytic Oxidizer
TOC	Tank Operations Contractor (aka WRPS)
VSL	Vitreous State Laboratory
WBS	Work Breakdown Structure
WRPS	Washington River Protection Solutions (aka TOC)
WTCC	Waste Treatment Completion Company
WTP	Waste Treatment and Immobilization Plant

1.0 PURPOSE

This transition plan describes the status and conditions of the Waste Treatment and Immobilization Plant (WTP) Parts Acquisition work scope to facilitate a seamless transition to the Integrated Tank Disposition Contractor (ITDC). This plan represents the results of a collaborative effort between Washington River Protection Solutions (WRPS) and the Department of Energy Office of River Protection (ORP) and is intended support coordination of WTP Parts Acquisition work scope transition between WRPS, ORP and the ITDC. This plan is considered a living document subject to progressive elaboration and development of information that is either not available or incomplete until the time of transition. Therefore, each revision of this plan contains the best information available at the time of release. Sections of this plan that require further development are identified.

2.0 BACKGROUND

The Waste Treatment and Immobilization Plant (WTP) Direct Feed Low-Activity Waste (DFLAW) project includes engineering, procurement, construction, and commissioning (EPCC) scope to complete the WTP Low Activity Waste (LAW) Facility and selected other WTP facilities such as the laboratory, effluent management facility, and balance of facilities. The DFLAW configuration also requires a LAW feed treatment and delivery system provided by the Tank Operations Contractor (TOC).

The authorized WTP Engineering Procurement Construction Commissioning (EPCC) scope for DFLAW project includes procurement of spares and consumables and completion of activities to achieve operational readiness through hot commissioning. However, the scope does not currently include activities associated with sustained steady-state operations following WTP hot commissioning and transition to the WTP operating contractor selected by the U.S. Department of Energy (DOE). Therefore, DOE requested and approved a proposal (CP-18-019) from the TOC to mitigate the risk that inadequate numbers or spares and consumables are available for the operations phase and upon which DFLAW depends to sustain operations (especially those with long lead times such as melters).

The work-scope and processes described in this plan are derived from the following WRPS proposals from 2017 to present.

Table 1 - History of WTP Parts Acquisition Scope

DOE RFP	WRPS Proposal	Scope	Status	PBS
17-CPM-0143, <i>Contract No. ED-AC-08RV14800 – Request for Proposal – Waste Treatment and Immobilization Plant Transition Support</i> , dated September 12, 2017	WRPS-1704213 R1, <i>Contract Number DE-AC27-08RV14800 – Washington River Protection Solutions LLC – Submittal Of The Change Proposal For The Waste Treatment And Immobilization Plant Transition Support</i> , CP-17-023	WRPS to prepare a strategy to support future operation of WTP in the DFLAW project configuration, addressing the following areas: <ul style="list-style-type: none"> An approach and requirements for operational spare parts and consumables Readiness approaches to support future transition to the WTP operating contractor 	Completed and supplemented/ superseded by CP-18-019	070

DOE RFP	WRPS Proposal	Scope	Status	PBS
		<ul style="list-style-type: none"> A strategy for spare melter procurement, assembly, and transportation to WTP. 		
18-CPM-0093, <i>Contract No. DE-AC27-08RV14800 - Request For Proposal - Waste Treatment And Immobilization Plant Parts Acquisition Transition Support</i> , dated July 3, 2018	WRPS-1801615 R1, <i>Contract Number De-AC27-08RV14800 – Washington River Protection Solutions LLC – Submittal Of The Change Proposal For The Waste Treatment And Immobilization Parts Acquisition Transition Support, CP-18-019</i> , dated September 6, 2018	WTP parts acquisition transition support to procure spare parts and consumables previously identified by WRPS and concurred by ORP as part of approved WTP Transition Support work scope in CLIN 3.1 of Tank Operations Contract No. DE-AC27-08RV14800.	On contract – basis for current work-scope	070
20-CPM-0171, <i>Contract No. DE-AC27-08RV14800 – Request For Proposal – Waste Treatment And Immobilization Plant Parts Acquisition Transition Support</i> , dated December 1, 2020	WRPS-2004246 R1, <i>Contract Number DE-AC27-08RV14800 – Washington River Protection Solutions LLC Submits Waste Treatment And Immobilization Plant Spare Parts Acquisition Transition Support, CP-21-005</i> , dated January 14, 2021	To reduce the U.S. Department of Energy’s (DOE) mission risk, the contractor shall procure MA758 alloy from an alternate supplier and demonstrate, through appropriate analysis, the material meets all of the performance standards required, providing confidence that the alternate material will be at least as effective as the material currently available.	On Contract - in progress with completion prior to transition	060

3.0 SCOPE

This transition plan applies to work associated with procurement, storage and maintenance of select long-lead time and/or high risk spare parts as authorized by ORP under PBS070 and PBS060 (for 20-CPM-017 “Evaluate alternate source of material for LAW melter bubbler leg production” scope only). The major activities and current status within the work scope being transferred are:

- Completion of LAW melter assembly, storage and transport preparations at the AEL as per existing sub-contract to Atkins
- Assembly of the first spare LAW melter (aka 3rd LAW melter) by sub-contract to Atkins
- Assembly of the second spare LAW melter (aka 4th LAW melter) by sub-contract to Atkins
- Completion of fabrication of the 4th LAW melters by sub-contract to Petersen Inc.
- Management, monitoring and delivery of the following procured spare parts and consumable items (see Table 6.1 for details).
 - 144 bubbler assemblies (procurement/fabrication in progress – completion in FY22)
 - Cooling panels (procurement/fabrication complete – in storage)
 - Fused cast refractory (procurement/fabrication complete – in storage)

- 15,000 pounds of Inconel MA-758 for use in future bubbler fabrication (procurement/fabrication in progress – completion in FY22)
- Normal service (C2V/C3V) HEPA filters (procurement/fabrication in progress – completion in FY22)
- Melter power supply components (procurement/fabrication in progress – completion in FY22)
- Melter feed agitators (procurement/fabrication in progress – completion in FY22)
- LVP Uninterruptible Power Supply components (procurement/fabrication in progress – completion in FY22)
- LVP Exhauster components (procurement/fabrication in progress – completion in FY22)
- TCO/SCR skid components (procurement/fabrication in progress – completion in FY22)
- Auto-sampler spares and consumables (procurement/fabrication in progress – completion in FY22)
- ILAW containers (procurement/fabrication in progress – completion in FY22)
- Extreme service (LVP/C5V) HEPA filters (procurement/fabrication in progress – completion in FY22)
- Gamma Gate (procurement/fabrication in progress – completion in FY22)
- Consumable Changeout Box (CCB) Import Gate (procurement/fabrication in progress – completion in FY22)

4.0 PROJECT ORGANIZATION

4.1 Scope Contract Status

Table 2 provides a summary report of the historic and active contract status linked to the Work Breakdown Structure (WBS) for the WTP Parts Acquisition work-scope available at the time this transition plan was issued. The most recent version of this table is available from the identified Buyers Technical Representative (BTR).

Table 2 - WTP Parts Acquisition Scope and Contract Status¹

<u>BTR</u>	<u>CONTRACT #</u>	<u>RELEASE</u>	<u>REQUISITION</u>	<u>AMOUNT</u>	<u>VENDOR SUPPLY NAME</u>	<u>CONTRACT TITLE</u>	<u>STATUS</u>	<u>START DATE</u>	<u>END DATE</u>	<u>BUYER NAME</u>	<u>COST SPECIALIST NAME</u>	<u>WBS</u>	<u>WBS & Title</u>	<u>CAM</u>
FULLMER, TRENT	00039504	00209	00305769	\$1,417,094.79	ATKINS ENERGY FEDERAL EPC INC	LAW MELTER HAUL DEMO	CLOSED	11/21/2017	09/30/2018	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.1 WTP Transition Support	Exley, Allan
FULLMER, TRENT	00039504	00223	00309877	\$8,935.01	ATKINS ENERGY FEDERAL EPC INC	ROS FOR WTP TRANSITION SUPPORT (BMA 39504)	CLOSED	04/25/2018	09/30/2018	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.1 WTP Transition Support	Exley, Allan
FULLMER, TRENT	00039504	00241	00314294	\$5,713.29	ATKINS ENERGY FEDERAL EPC INC	WTP TRANSITION SUPPORT (ATKINS ROS)	CLOSED	11/14/2018	09/30/2019	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.5 WTP Acquisitions Project Support	Exley, Allan
FULLMER, TRENT	00039504	00243	00315463	\$185,529.00	ATKINS ENERGY FEDERAL EPC INC	LAW MELTER BUBBLER LIFE EXTENSION STUDY (ROS)	COMPLETE	12/10/2018	09/30/2019	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.7 WTP Acquisitions - Design Optimization Studies	Exley, Allan
FULLMER, TRENT	00039504	00246	00317707	\$1,283,278.06	ATKINS ENERGY FEDERAL EPC INC	ROS - MELTER ASSEMBLY SUPPORT	CLOSED	03/14/2019	09/30/2019	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.14 WTP Acquisitions - Melter Assembly Support	Exley, Allan
FULLMER, TRENT	00039504	00247	00318485	\$260,264.00	ATKINS ENERGY FEDERAL EPC INC	ILAW CONTAINER COST REDUCTION & OPTIMIZATIONS STUDY	CLOSED	03/25/2019	09/30/2019	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.6 WTP Acquisitions - Cost Reduction Analyses	Exley, Allan
FULLMER, TRENT	00039504	00248	00324465	\$290,223.61	ATKINS ENERGY FEDERAL EPC INC	ROS - BUBBLER AIR TESTING	CLOSED	04/18/2019	09/30/2019	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.7 WTP Acquisitions - Design Optimization Studies	Exley, Allan
FULLMER, TRENT	00039504	00257	00331109	\$260,084.00	ATKINS ENERGY FEDERAL EPC INC	ROS MELTER ASSEMBLY SUPPORT	COMPLETE	10/01/2019	10/31/2019	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.14 WTP Acquisitions - Melter Assembly Support	Exley, Allan
FULLMER, TRENT	00039504	00259	00330981	\$67,562.00	ATKINS ENERGY FEDERAL EPC INC	ROS WTP TRANSITION SUPPORT	COMPLETE	10/10/2019	09/30/2020	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.18 IP20 - WTP Acquisitions - Optimization Studies	Exley, Allan
FULLMER, TRENT	00039504	00272	00333370	\$6,973.00	ATKINS ENERGY FEDERAL EPC INC	ROS - ALLAN EXLEY MULTI-TRIP TRAVEL	COMPLETE	01/13/2020	09/30/2020	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.19 IP20 - WTP Acquisitions - Project Support	Exley, Allan
FULLMER, TRENT	00039504	00282	00340991	\$53,792.05	ATKINS ENERGY FEDERAL EPC INC	WTP TRANSITION SUPPORT (ATKINS) (39504)	ISSUED	10/01/2020	09/30/2021	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.28 IP21 - WTP Acquisitions - Project Support	Exley, Allan
FULLMER, TRENT	00039505	00282	00314200	\$0.00	AMENTUM TECHNICAL SERVICES LLC	WTP TRANSITION SUPPORT (ROS)	CLOSED	10/01/2018	09/30/2019	MARTIN, KARAM	Cash, Stacy A	005003012003002	5.3.12.3.2.5 WTP Acquisitions Project Support	Exley, Allan
FULLMER, TRENT	00053706	00011	00309408	\$99,272.00	BECHTEL NATIONAL INC	WTP TRANSITION SUPPORT (BMA 53706)	ISSUED	05/21/2018	12/31/2019	MARTIN, KARAM	Cash, Stacy A	005003012003002	5.3.12.3.2.5 WTP Acquisitions Project Support	Exley, Allan
FULLMER, TRENT	00053706	00012	00331056	\$41,080.00	BECHTEL NATIONAL INC	WTP TRANSITION SUPPORT (BMA 53706)	ISSUED	12/12/2019	09/30/2020	MARTIN, KARAM	Cash, Stacy A	005003012003002	5.3.12.3.2.19 IP20 - WTP Acquisitions - Project Support	Exley, Allan
FULLMER, TRENT	00053706	00013	00339278	\$114,866.10	BECHTEL NATIONAL INC	COOLING PANEL SURVEILLANCE	ISSUED	09/14/2020	09/30/2021	MARTIN, KARAM	Cash, Stacy A	005003012003002	5.3.12.3.2.28 IP21 - WTP Acquisitions - Project Support	Exley, Allan
FULLMER, TRENT	00053706	00014	00341385	\$44,309.10	BECHTEL NATIONAL INC	WTP TRANSITION SUPPORT (BMA 53706)	ISSUED	10/01/2020	09/30/2021	MARTIN, KARAM	Cash, Stacy A	005003012003002	5.3.12.3.2.28 IP21 - WTP Acquisitions - Project Support	Exley, Allan
FULLMER, TRENT	00068277		00315915	\$41,285.96	LUCAS ENGINEERING &	MELTER ASSEMBLY FUNCTIONS AND REQUIREMENTS DOCUMENT	CLOSED	12/20/2018	06/30/2019	STRUWE, MARISA M	Cash, Stacy A	005003012003002	5.3.12.3.2.14 WTP Acquisitions - Melter Assembly Support	Exley, Allan

¹ S contracts are not related to PBS070 or 060 but are included for completeness to encompass the full work scope of Operations Planning and Integration

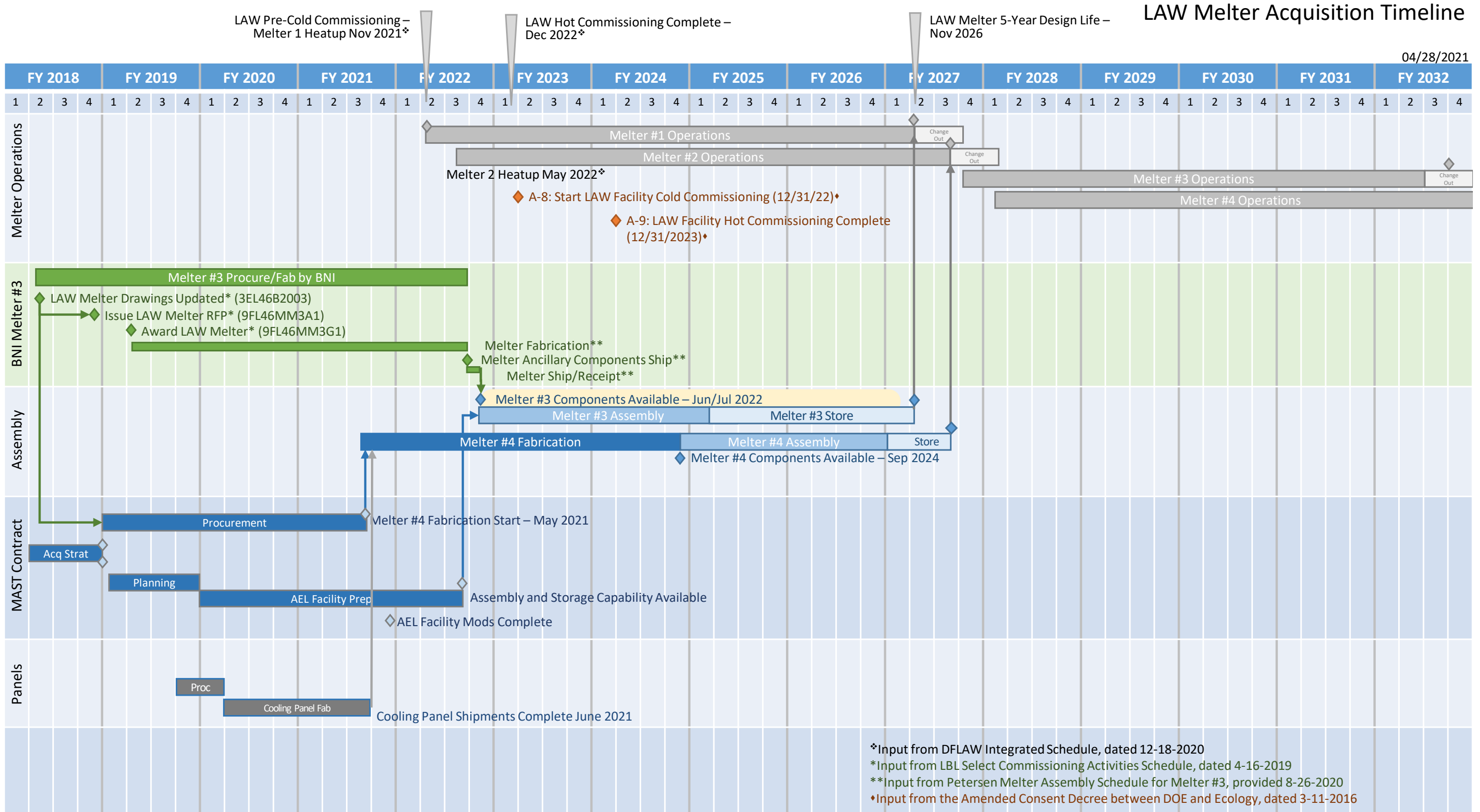
<u>BTR</u>	<u>CONTRACT #</u>	<u>RELEASE</u>	<u>REQUISITION</u>	<u>AMOUNT</u>	<u>VENDOR SUPPLY NAME</u>	<u>CONTRACT TITLE</u>	<u>STATUS</u>	<u>START DATE</u>	<u>END DATE</u>	<u>BUYER NAME</u>	<u>COST SPECIALIST NAME</u>	<u>WBS</u>	<u>WBS & Title</u>	<u>CAM</u>
					MANAGEMENT SERVICES INC									
FULLMER, TRENT	00068914	00001	00328965	\$0.00	PETERSEN INC	LAW MELTER 4 FAB AND TRANSPORT (FY20, 21, 22) APPROVALS FOR BMA	ISSUED	11/16/2020	10/12/2023	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.13 IP20 - WTP Acquisitions - 4th Melter Fabricatio	Exley, Allan
FULLMER, TRENT	00068914	00002	00343911	\$11,179,411.55	PETERSEN INC	LAW MELTER DESIGN AND MATERIAL PROCUREMENT (BMA 68914)	ISSUED	12/17/2020	09/30/2023	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.23 IP21 - WTP Acquisitions - 4th Melter Fabricatio	Exley, Allan
FULLMER, TRENT	00068914	00003	00348490	\$1,129,332.09	PETERSEN INC	LAW MELTER FABRICATION(BMA 68914)	ISSUED	04/12/2021	09/30/2022	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.23 IP21 - WTP Acquisitions - 4th Melter Fabricatio	Exley, Allan
FULLMER, TRENT	00068922	00001	00328539	\$0.00	TRANTER INC	LAW MELTER COOLING PANELS (APPROVALS FOR BMA)	ISSUED	02/20/2020	06/21/2021	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.13 IP20 - WTP Acquisitions - 4th Melter Fabricatio	Exley, Allan
FULLMER, TRENT	00068922	00002	00336452	\$152,594.00	TRANTER INC	LAW COOLING PANELS ENGINEERING (BMA 68922) PHASE 1	ISSUED	03/10/2020	06/21/2021	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.13 IP20 - WTP Acquisitions - 4th Melter Fabricatio	Exley, Allan
FULLMER, TRENT	00068922	00003	00336584	\$1,351,300.67	TRANTER INC	LAW COOLING PANELS FABRICATION (BMA 68922) PHASE 2	ISSUED	03/10/2020	06/21/2021	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.13 IP20 - WTP Acquisitions - 4th Melter Fabricatio	Exley, Allan
FULLMER, TRENT	00069377	00001	00326222	\$3,828,758.33	PETERSEN INC	LAW BUBBLER LEG MATERIALS (BMA 69377)	ISSUED	07/11/2019	09/30/2021	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.15 IP20 - WTP Acquisitions - LAW Bubblers	Exley, Allan
FULLMER, TRENT	00069377	00002	00328441	\$6,586,325.69	PETERSEN INC	BUBBLER PLUG (BMA 69377) PHASE 2	ISSUED	11/18/2019	09/30/2022	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.15 IP20 - WTP Acquisitions - LAW Bubblers	Exley, Allan
FULLMER, TRENT	00069377	00003	00328444	\$466,821.50	PETERSEN INC	LAW BUBBLER FABRICATION (BMA 69377) - PHASE 3	ISSUED	01/01/2020	09/30/2022	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.15 IP20 - WTP Acquisitions - LAW Bubblers	Exley, Allan
FULLMER, TRENT	00069377	00004	00349606	\$0.00	PETERSEN INC	LAW BUBBLER STORAGE AND DELIVERY (BMA69377)	ISSUED	05/10/2021	09/30/2022	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.24 IP21 - WTP Acquisitions - LAW Bubblers	Exley, Allan
FULLMER, TRENT	00069377	00005	00349536	\$3,424,763.89	PETERSEN INC	BUBBLER BUFFER STOCK MATERIAL (BMA 69377)	ISSUED	05/04/2021	06/30/2022	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.24 IP21 - WTP Acquisitions - LAW Bubblers	Exley, Allan
FULLMER, TRENT	00069390	00001	00328447	\$2,366,987.28	MONOFRAX LLC	LAW REFACTORY MATERIAL AND ASSEMBLY (BMA 69390)	COMPLETE	07/10/2019	09/30/2020	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.17 IP20 - WTP Acquisitions - 4th Melter Refractory	Exley, Allan
FULLMER, TRENT	00069390	00002	00336066	\$803,089.56	MONOFRAX LLC	PACKAGE AND SHIP REFRATORIES (BMA 69390)	COMPLETE	02/10/2020	09/30/2020	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.17 IP20 - WTP Acquisitions - 4th Melter Refractory	Exley, Allan
FULLMER, TRENT	00070749	00001	00329864	\$1,874,898.00	ATKINS ENERGY FEDERAL EPC INC	LAWMAST PHASE 2A DESIGN (BMA 70749)	ISSUED	10/28/2019	09/30/2021	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.20 IP20 - WTP Acquisitions - LAWMAST Phase II	Exley, Allan
FULLMER, TRENT	00070749	00002	00333399	\$87,596.70	ATKINS ENERGY FEDERAL EPC INC	EARLY LAW MAST FUSED CAST REFRACTORY STORAGE SERVICES (BMA 70749)	COMPLETE	01/28/2020	09/30/2020	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.20 IP20 - WTP Acquisitions - LAWMAST Phase II	Exley, Allan
FULLMER, TRENT	00070749	00003	00334439	\$12,335.00	ATKINS ENERGY FEDERAL EPC INC	LAW LID FLIPPER (BMA 70749)	COMPLETE	01/29/2020	09/30/2020	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.20 IP20 - WTP Acquisitions - LAWMAST Phase II	Exley, Allan
FULLMER, TRENT	00070749	00004	00337497	\$294,275.52	ATKINS ENERGY FEDERAL EPC INC	LAW MAST AEL UPGRADE CONSTRUCTION PERMITTING (BMA 70749)	ISSUED	04/30/2020	12/31/2020	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.20 IP20 - WTP Acquisitions - LAWMAST Phase II	Exley, Allan
FULLMER, TRENT	00070749	00005	00338550	\$476,010.00	ATKINS ENERGY FEDERAL EPC INC	LAWMAST FACILITY LEASE	ISSUED	07/01/2020	09/30/2021	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.26 IP21 - WTP Acquisitions - LAWMAST Phase II	Exley, Allan
FULLMER, TRENT	00070749	00006	00338264	\$4,984,577.63	ATKINS ENERGY FEDERAL EPC INC	LAWMAST CONSTRUCTION (BMA 70749)	ISSUED	10/28/2020	09/30/2021	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.20 IP20 - WTP Acquisitions - LAWMAST Phase II	Exley, Allan

<u>BTR</u>	<u>CONTRACT #</u>	<u>RELEASE</u>	<u>REQUISITION</u>	<u>AMOUNT</u>	<u>VENDOR SUPPLY NAME</u>	<u>CONTRACT TITLE</u>	<u>STATUS</u>	<u>START DATE</u>	<u>END DATE</u>	<u>BUYER NAME</u>	<u>COST SPECIALIST NAME</u>	<u>WBS</u>	<u>WBS & Title</u>	<u>CAM</u>
FULLMER, TRENT	00070749	00007	00342165	\$942,000.00	ATKINS ENERGY FEDERAL EPC INC	LAWMAST OVERSIGHT (BMA 70749)	ISSUED	10/26/2020	09/30/2021	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.26 IP21 - WTP Acquisitions - LAWMAST Phase II	Exley, Allan
FULLMER, TRENT	00070749	00008	00342641	\$319,500.00	ATKINS ENERGY FEDERAL EPC INC	LAW MAST ASSEMBLY SUPPORT SYSTEMS ENGINEERING (BMA 70749)	ISSUED	11/16/2020	09/30/2021	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.26 IP21 - WTP Acquisitions - LAWMAST Phase II	Exley, Allan
FULLMER, TRENT	00070749	00009	00343623	\$2,991.00	ATKINS ENERGY FEDERAL EPC INC	RECEIVING MELTER PROPERTY (70749)	ISSUED	11/17/2020	09/30/2021	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.26 IP21 - WTP Acquisitions - LAWMAST Phase II	Exley, Allan
FULLMER, TRENT	00071399		00330329	\$665,885.40	POLESTAR TECHNICAL SERVICES INC	DFLAW READINESS PREPARATION AND WTP PARTS ACQUISITION SUPPORT	ISSUED	10/01/2019	09/30/2021	DORSEY, ANDREA M	Cash, Stacy A	005003012003002	5.3.12.3.2.28 IP21 - WTP Acquisitions - Project Support	Exley, Allan
FULLMER, TRENT	00073433		00336609	\$93,911.00	ATKINS ENERGY FEDERAL EPC INC	CARBON STEEL ILAW CONTAINER SPECIFICATION DEVELOPMENT	COMPLETE	04/09/2020	09/30/2020	JOHNSON, KAYLEA J	Cash, Stacy A	005003012003002	5.3.12.3.2.18 IP20 - WTP Acquisitions - Optimization Studies	Exley, Allan
FULLMER, TRENT	00074703		00338458	\$2,544.00	MONOFRAX LLC	MELTER REFRACTORY REMILLING	COMPLETE	10/15/2020	12/17/2020	FRANZ, CHRISTOPHER J	Cash, Stacy A	005003012003002	5.3.12.3.2.19 IP20 - WTP Acquisitions - Project Support	Exley, Allan

4.3 Schedule Overview

Figure 1 below depicts a summary timeline of activities to prepare melters 3 (spare melter 1) and 4 (spare melter 2) for delivery to the LAW facility. Note that there is currently about 24 and 8 months of predicted float for delivery of melters 3 and 4 respectively

Figure 1 - Melter Acquisition and Delivery Timeline



4.4 Risk

WTP Parts Acquisition procurement strategies were developed to mitigate risks in providing spare parts and consumables, and melter replacements in support of future WTP operations in the DFLAW configuration after transition from BNI. WTP Parts Acquisition related risks have been determined to be ORP-owned risks. Table 3 contains the mitigated ORP owned risks.

Table 3 - Mitigated Risks

Risk ID	Title	Risk Owner	Ownership Org.	Description/Causes	Current				Handling Actions	Handling Action Percent Complete	Risk Level	
					Likelihood	Cost	Schedule	Risk Level				
DFLAW-0797-T	Inadequate Spares/Consumables Available To Support Sustained Operations Following Hot Commissioning	Exley, Allan	DOE ORP	<p>The WTP capital line item project includes the provision of minimal spares to support the cold and hot commissioning phases of the project. These spares are likely to be significantly depleted by the time the project transitions from hot commissioning to the future operator and to date no effective analysis has been completed to systematically evaluate the spares required to support sustained operation of the facility or to procure the spares at the levels required. BNI is required to "Provide a spare parts list that supports WTP operations for one (1) year following completion of hot commissioning, storage locations shall be identified for storage of the spare parts." Contract deliverable requires that this is available 12 months prior to cold commissioning currently targeted as 12/15/21. Additionally BNI are only contractually required to procure those parts that will support the operation of the facility through hot commissioning which is only a short timescale reduced throughput operational period.</p> <p>If not addressed and mitigated this risk is likely to result in significant facility outages and excessive delays in the ramp up to sustained full throughput operations.</p> <p>Recognizing the limited time available to procure an adequate spares holding to support sustained operations DOE has initiated early release of funding under PBS 070 to begin the procurement of long lead high risk spares in recognition of this risk.</p> <p>800. Build contractor establishes spares inventory for commissioning only. 801. Operating spares are the responsibility of the operating contractor. 802. Commissioning spares are depleted during commissioning.</p>	Very Likely	Significant	Significant	High	<p>3/17/21 RFP to vendor for 15000lbs of additional MA758 material has been issued. This will provide enough specialty alloy for up to 15 sets of bubblers. With the current order for 144 bubblers plus anticipated leftover MA758 this should provide enough material for approximately 6 years of operation at anticipated lifecycle. The alternate MA758 procurement is progressing through the procurement process following negotiation completion of the contract proposal and should be awarded within the next few months handling action completion moved from 5 to 50% complete. Preparations are ongoing for next release of the melter fabrication contract to allow procurement of materials. Modifications on schedule for the melter assembly facility all work will be complete this year awaiting delivery of the first melter shell from BNI for assembly in FY22.</p> <p>4/21/21 Proposal received for additional special alloy MA758 from US supplier anticipate award by end of May to continue existing production run. RFP issued to vendor for alternate MA758 material proposal anticipated early May Melter assembly facility modifications on track for completion this FY 1st set of spare operational bubblers on schedule for completion this FY Funding available and vendor released to procure all materials for 2nd spare melter fabrication. Shell due for completion late 2024</p> <p>5/18/21 - Additional bubbler leg material 15000lbs now on order delivery due Q3 2022. Beginning to order material for melter fabrication - vendor has identified that raw material prices have increased by up to 40%. Cooling panel delivery for spare melter anticipated completion July 2021. Beginning development of procurement documentation for additional spares following funding release; melter power supplies, HEPA filters, ADS pumps, Agitators exhausters,</p>	<p>(1) Develop spare parts/consumables/melter procurement strategies (2) Undertake supply chain risk evaluation for operational melter consumables and spares (3) Prepare proposal to procure the ORP agreed to high priority long lead spares/consumables (4) Procure the ORP agreed to high priority long lead Melter spares/consumables (5) Work with ORP to identify the next priority level long lead spares/consumables (6) Work with ORP to request additional funding for PBS-070 during DOE funds planning cycle (7) Undertake cost saving and optimization studies to support sustained long term operation of LAW (8) Develop recommended spare parts list for initial years operation (9) Create Master Equipment List (10) Develop a cost estimate for initial spares stocking for sustained facility operations on completion of the spares list (11) Identify options to address sole source risk supplier for bubbler leg alloy MA758</p>	<p>(1) 100.00 % (2) LOE (3) 100.00 % (4) LOE (5) LOE (6) LOE (7) LOE (8) 50.00 % (9) 10.00 % (10) LOE (11) 50.00 %</p>	High
DFLAW-1495-T	WTP HEPA filter availability LTA	Exley, Allan	DOE ORP	<p>The Environmental condition requirements for some WTP HEPA filters are far in excess of those standard AG-1 qualified HEPA filters are required to achieve. This has resulted in ORP, WTP and a commercial vendor developing a filter capability of demonstrably operating concurrently in higher pressures, temperatures and humidity levels than commercial filters have previously been capable of. The cost of these filters are currently three to four times higher than standard AG-1 qualified radial HEPA filters. WTP has chosen to use these filters throughout the facility regardless of the environmental conditions present in the individual system e.g. the lab has approximately 128 filters which are not required to meet the more severe environmental conditions experienced in other systems, e.g. the melter off gas system LOP and some C5 systems. Dependent on the frequency of filter replacement in LVP which at this stage is assumed to be potentially every 60 days, the facility could exhaust the total supply of filters during cold and hot commissioning, leaving none available for routine operations beyond hot commissioning. Currently there is only one supplier of these filters. Procurement of these</p>	Likely	Marginal	Marginal	Medium	<p>3/17/21 handling action 2 closed DOE have confirmed the intent to develop a reduced spec for the non off gas related filters and allow these filters to be used in non off gas related systems. This will allow the higher spec filters to be preserved for the higher integrity systems extending the life of the expensive higher spec spares available.</p> <p>Handling action 3 added to update the specification and order additional lower spec filters for use at WTP. WTP are supporting the update of this specification.</p> <p>4/21/21 - Drafted less onerous spec and provided to WTP for review and agreement, increased handling action 3 from 20 to 40%. Included additional filter procurement of high and low spec filters in 2022 planning proposals</p> <p>5/18/21 - Awaiting specification approval from BNI/WTCC to allow procurement of lower specification filter for use in non off gas related systems. Plans to procure 40 this year and approximately 200 high and 200 low spec filters next year</p>	<p>(1) Evaluate options for alternate filters (2) Evaluate permit change to remove limitation to use only PORVAIR high Specification filter and revise operating constraints (3) Procure filters to be used in non high integrity LAW HVAC systems</p>	<p>(1) 100.00 % (2) 100.00 % (3) 40.00 %</p>	Low

Risk ID	Title	Risk Owner	Ownership Org.	Description/Causes	Current				Handling Actions	Handling Action Percent Complete	Risk Level	
					Likelihood	Cost	Schedule	Risk Level				Risk Level Description
				filters from the currently identified sole source will require additional testing before a new batch can be produced due to obsolescence of the potting compound used, requiring an alternative to be requalified to meet the requirements of AG-1 including WTP environmental conditions. By reference the WTP permit application (24590-WTP-RPT-ENV-18-002, Rev 1) currently specifies the use of the sole source supplier PORVAIR filters rather than a performance specification. The WTP permit specifies a maximum operating pressure drop for the LVP filters 4.5" dp despite the testing that demonstrates filter capability in excess of 10" dp. This reduced range will cause filters to be replaced more quickly than currently assumed. Permit requirements and cold commissioning schedule may preclude the ability to substitute high cost filters for standard filters in some low temperature/ low humidity conditions.								
DFLAW-1552-T	The current LAW Melter Assembly and Storage Facility may not be available to support long term melter storage or future melter assembly for the duration of the LAW project.	Exley, Allan	DOE ORP	<p>The WTP melters have a design life of approximately 5 years after which it is assumed replacement will be necessary. There is no provision in the scope of the capital line item project for spare melters or the facility to assemble spare melters. Recognizing this as a potential risk, DOE tasked WRPS with the assembly of the first two spare melters to replace the currently installed melters at the end of their useful life. The most cost effective solution was to utilize an appropriately modified existing facility off the Hanford site to provide the assembly and storage capability for the first two spare melters. Modifications are underway to the Atkins Engineering laboratory (AEL), currently under long term lease to Atkins from Washington State University (WSU). DOE's concern is that the AEL facility is owned by WSU and may not be available to support storage and assembly of melters for the foreseeable future placing continued operations of the LAW facility at considerable risk. Melters are currently anticipated to take around two years to fully assemble and the current plan is for one spare to be available around two years ahead of the end of projected life for the first melter and less than a year before projected failure of the second melter. Assuming the melters continue to achieve their 5 year design life it is prudent that assembly of the third and fourth spare melters would be in process upon failure of the first melters.</p> <p>Causes: 1554. Melter design life (anticipated 5 years) 1555. Lengthy assembly time for spare melters (estimated 2 years) 1556. No capital line-item scope provision for spare melters 1557. No capital line-item scope provision for spare melter assembly facility 1558. Alternative assembly locations owned by third party</p>	Somewhat Likely	Significant	Significant	Medium	3/16/2021 - Initial data entry. 4/21/21 - Atkins have contacted WSU to discuss potential commitment to long term melter assembly and WSU are "absolutely interested in a long term agreement to use the facility" 5/18/21 - Working with procurement to evaluate mechanism to initiate long term mutually binding lease arrangement. Preparing to develop comparative ROM assessment for building a new on site facility	(1) Identify alternative on site facilities (existing or new) and locations which may be suitable as long term melter assembly facilities. (2) Develop cost and schedule estimates modify and install systems required to support melter assembly. (3) ORP obtain long term binding commitment from WSU for continued use of the melter assembly facility for a mutually acceptable period.	(1) 0.00 % (2) 0.00 % (3) 0.00 %	Medium

4.5 Project Points of Contact

The table below provides the key project points of contact (POC) for the WTP Parts Acquisition work scope.

Table 4 - WTP Parts Acquisition Project Points of Contact

Topic	WRPS	ORP	WTP
Project Management	<ul style="list-style-type: none"> Allan Exley -Manager 	<ul style="list-style-type: none"> Joe Renevitz Keith Grindstaff 	N/A
Project Controls	<ul style="list-style-type: none"> Tim Bussman - Manager Stacy Cash – Project Controls Engineer 	<ul style="list-style-type: none"> Ellen Kriskovich 	N/A
Quality Assurance	<ul style="list-style-type: none"> Dale Roberson - Manager Jerry Heany - QAE Judith McClusky - QAE 	N/A	N/A
Engineering	<ul style="list-style-type: none"> Kris Colosi - Manager Lawrence Curtis - DA 	N/A	<ul style="list-style-type: none"> Ian Milgate
Procurement (refer to Table 2 for specific contract assignments)	<ul style="list-style-type: none"> Jose Legarreta - Mgr Chris Franz – Procurement Specialist (Material Procurement) Kaylea Johnson – Procurement Specialist (Subcontract Procurement) Kara Martin – Procurement Specialist (Subcontract Procurement) Trent Fullmer - BTR 	N/A	N/A
WTP Interface	<ul style="list-style-type: none"> Allan Exley 	<ul style="list-style-type: none"> Joe Renevitz 	<ul style="list-style-type: none"> John Schuette– WTCC Plant Engineering Richard Garrett – WTCC Plant Engineering Ian Milgate – BNI Engineering

5.0 WTP INTERFACE

5.1 Spares Advisory Group

The WTP spares and consumables acquisition strategy includes the establishment of a Spares Advisory Group (SAG) to provide senior level expert advice to ORP and to conduct analysis, planning and implementation actions related to operations phase spares and consumables procurements (current charter provided in Appendix A). The SAG is established to:

1. Provide advice and recommendations to ORP regarding WTP-DFLAW spares and consumables identifications, procurement priorities (what to procure, when to procure and how much to procure) and other actions specifically pertaining to the operations phase; and
2. Identify and recommend spares and consumables procurement optimization opportunities (such as bulk procurements to take advantage of economies of scale)

SAG review and concurrence is intended prior to recommending procurement actions to ORP that do not include a formal engineering evaluation (i.e. Reliability Centered Maintenance) to determine the need for a spare. ORP approved procurement recommendations are then implemented in accordance with WRPS procurement procedures. Meeting minutes of all SAG meetings conducted from 2018 to present are located in IDMS (search Spares Advisory Group or SAG).

5.2 Administrative Interface Agreement (AIA)

An Administrative Interface Agreement (TOC-AIA-WTP-00075, Rev. 0) is established to define the roles and responsibilities of WTP and TOC for ensuring the configuration of the spare parts and consumable components procured by TOC and subsequently provided to WTP for use in the DFLAW operations phase meet all design configuration and technical requirements for use at WTP.

5.3 Configuration Management Documents

Engineering guidance documents were initially developed to ensure configuration control of WTP approved design media (drawings and specifications) relied upon to procure spares and consumables within the WRPS system. The guidance documents are in the process of conversion to WRPS procedures. A future update of this plan will provide reference to the approved procedures.

6.0 PARTS PROCUREMENT STATUS AND INVENTORY

Table 5 - Parts Procurement Status and Inventory²

Parts Procurement Activity	WTP Parts Designator	Documents Repository	Status	Storage Inventory ³				Points of Contact					Notes
				Count	Location	Custodian	Material Control Document	Engineering	QA	BTR	Procurement Spec	WTP	
Fused Cast Refractory (WRPS)	N/A	SPF - search subcontracts *69390*	Delivered	50 pallets/crates	AEL	Trent Fullmer	70749-002-GPT-001	Gene Biggs	Jerry Heaney	Trent Fullmer	Chris Franz	Dick McGrew	1. These blocks will be used for assembly of the 3 rd LAW melter (spare melter #1). This minimizes overall handling of refractory blocks currently in WTP storage.
Fused Cast Refractory (WTP)	N/A	SPF - search subcontracts *74703*	Transferred	4 pallets/crates	AEL	Trent Fullmer	DECEX-AS-20-0147	Gene Biggs	Jerry Heaney	Trent Fullmer	Chris Franz	Dick McGrew	1. Four pallets of refractory transferred to WRPS for relief cuts on Blocks B-1-20, -21 and B-1-2, -3. Cuts were completed and blocks in storage at AEL. 2. These blocks as well as those in storage by WTP will be used to assemble the 4 th LAW melter (spare melter #2). This
Cooling Panels for 4th LAW Melter	N/A	SPF search subcontracts *68922*	Delivered	SST/Econo-10 SST/Plate-74 Haselloy-14	SST/Econo – Petersen SST/Plate – Petersen Hastelloy - AEL	Petersen Inc (SST) Trent Fullmer (Hastelloy)	68922-003-GPT-001	Gene Biggs	Dale Roberson	Trent Fullmer	Chris Franz	Dick McGrew	31 crates (17 for SST panels, 14 for Hastelloy panels)
Spare bubbler assemblies	TBD	SPF search subcontracts *69377*	In Progress FY22 Delivery	144 bubblers	Petersen Inc.	Petersen Inc	TBD	Sam Baker	Jerry Heaney	Trent Fullmer	Chris Franz	Dick McGrew	
Buffer Stock MA-758 from Special Metals Huntington	NA	SPF search subcontracts *69377*	In Progress FY22 Delivery	15,000 lbs TBD pieces	Petersen Inc	Petersen Inc	TBD	Sam Baker	Jerry Heaney	Trent Fullmer	Chris Franz	N/A	
MA-758 from Special Metals India	N/A	SPF search -TBD	In Progress FY22 Delivery	~2000lbs	Petersen Inc	Petersen Inc	TBD	Sam Baker Lawrence Curtis	N/A	Trent Fullmer	Chris Franz	N/A	
3rd LAW Melter assembly (spare melter #1)	LMP-MLTR-S0001	SPF search subcontracts *70749*	In Progress FY22 Delivery	1 fully assembled melter	AEL	TBD	TBD	William Young	Dale Roberson	Trent Fullmer	Kaylea Johnson	John Schuette-for acceptance criteria	
4th LAW Melter fabrication (spare melter #2)	LMP-MLTR-S0002	SPF search subcontracts *68914*	In Progress – FY24 Delivery	1 melter shell 1 shield lid 2 pour spout assy. 2 air lift lances	Petersen Inc.	TBD	TBD	Lawrence	Jerry Heaney Judy McClusky	Trent Fullmer	Chris Franz	Dick McGrew	1. Startup heaters not included with melter #4 (2 nd spare melter) since assumed existing startup heaters will be refurbished if needed. Fit of startup heaters should be confirmed with go/no-go gauge prior to installation.
4th LAW Melter assembly (spare melter #2)	LMP-MLTR-S0002	SPF search subcontracts *70749*	Forecast FY27 Delivery	1 fully assembled melter	AEL	TBD	TBD	William Young	Dale Roberson	Trent Fullmer	Kaylea Johnson	John Schuette-for acceptance criteria	
Melter Power Supply Spares	TBD	TBD	In Progress FY22 Delivery	TBD	TBD	TBD	TBD	Gene Biggs	TBD	Trent Fullmer	Chris Franz	Michael Kee	
Uninterruptable Power Supply Spares	TBD	TBD	In Progress FY22 Delivery	TBD	TBD	TBD	TBD	Gene Biggs	TBD	Trent Fullmer	Chris Franz	Mario Curiel	
LVP Exhauster Spares	TBD	TBD	In Progress FY22 Delivery	TBD	TBD	TBD	TBD	Gene Biggs	TBD	Trent Fullmer	Chris Franz	Jared Scott	

² This table is preliminary and requires additional development

³ See Appendix B for analysis of storage requirements

Parts Procurement Activity	WTP Parts Designator	Documents Repository	Status	Storage Inventory ³				Points of Contact					Notes
				Count	Location	Custodian	Material Control Document	Engineering	QA	BTR	Procurement Spec	WTP	
Process Vessel Agitators	LFP-AGT-00001/2 LCP-AGT-00001/2	TBD	In Progress FY22 Delivery	2 agitators	TBD	TBD	TBD	Gene Biggs	TBD	Trent Fullmer	Chris Franz	Ian Kemp	
Normal Service Radial HEPA Filters (C2V/C3V)	N/A	TBD	In Progress FY22 Delivery	200 filters	TBD	TBD	TBD	Kris Colosi Sam Baker	TBD	Trent Fullmer	Chris Franz	Don Winder (PENG) Gary Dalton (HVAC)	
Auto Sampler Spares & Consumables	TBD	TBD	In Progress FY22 Delivery	TBD	TBD	TBD	TBD	Sam Baker	TBD	Trent Fullmer	Chris Franz	TBD	
ILAW Containers	N/A	TBD	To begin in FY22	TBD	TBD	TBD	TBD	Gene Biggs	TBD	Trent Fullmer	Chris Franz	TBD	
Thermal Catalytic Oxidizer/Selective Catalytic Reduction (TCO/SCR) Skid	TBD	TBD	In Progress FY22 delivery	TBD	TBD	TBD	TBD	Gene Biggs	TBD	Trent Fullmer	Chris Franz	Jared Scott	
Extreme Service (LVP/C5V) HEPA Filters	N/A	TBD	In Progress FY22 Delivery	250 filters	TBD	TBD	TBD	Gene Biggs	TBD	Trent Fullmer	Chris Franz	Don Winder (PENG) Gary Dalton (HVAC)	
Gamma Gate	LSH-GG-00001	TBD	In Progress FY22 Delivery	1 gamma gate	TBD	TBD	TBD	Gene Biggs	TBD	Trent Fullmer	Chris Franz	Baudelio Martinez	
CCB Consumable Import/Export Gate	LSH-HTCH-00001/00003	TBD	In Progress FY22 Delivery	1 CCB gate	TBD	TBD	TBD	Gene Biggs	TBD	Trent Fullmer	Chris Franz	Baudelio Martinez	

7.0 GOVERNMENT FURNISHED EQUIPMENT INVENTORY

The melter assembly work scope performed at the Atkins Engineering Laboratory required the design and acquisition of a number of specialty items of equipment. Table 6 provides an inventory of these specialty items designated and controlled as Government Furnished Equipment (GFE). Note that most of these items have not yet been acquired and Table 6 will be updated in a future revision of this plan.

Table 6 - Government Furnished Equipment Inventory

Item	Inventory	Location	Controlling Document/Form	Custodian
Gantry Crane	1	AEL	TBD	TBD
Hoist	1	AEL	TBD	TBD
Melter Lifting Beam	1	AEL	TBD	TBD
Castable Drying System	1	AEL	TBD	TBD
Go/No Go Gauge	1	AEL	TBD	TBD
Block Grapple	1	AEL	TBD	TBD
Components Grapple	1	AEL	TBD	TBD
Winch	1	AEL	TBD	TBD
Lid Stands	2	AEL	TBD	TBD
Gas Barrier Lid (GBL) Flipping Frames	2	AEL	TBD	TBD
Castable Skiffs	2	AEL	TBD	TBD
Melter Mockup	1	AEL	TBD	TBD
Acceleration Monitoring System (AMS)	1	AEL	TBD	TBD

8.0 COST IMPROVEMENT AND OPTIMIZATION ACTIONS

The PBS070/060 work scope included analysis, studies and evaluations to determine potential long-term supply options and operational cost/risk reduction opportunities associated with the current WTP designs and specifications for selected items. Table 8.0 provides a summary of the studies and evaluations conducted and these are further discussed in subsequent sections below.

Table 7- Summary of Cost Improvement and Optimization Actions

Title	Objective	Study/Report No.	Location
Supply Risk Tool (SRT)	Develop spreadsheet tool for use in forecasting supply risks	N/A – Informally controlled document	Contact David Tate or Michael Beasley
Alternative Source MA-758	Evaluate an alternative source for Inconel MA-758	TBD	SPF
ILAW Container Cost Reduction and Optimization Study	Determine the potential for cost savings for the Immobilized Low Active Waste (ILAW) containers over the mission life of the WTP.	RPT-ILAWCOS-EG-0001, Rev 0/WRPS Document 39504-247-SUB-004-001	SPF
Final Draft Carbon Steel ILAW Container Specification	Develop draft specification to conduct market survey (Expression of Interest)	ILAW-SP-0001 REV 0 - TM-ILAWSP-GE-0003/WRPS	SPF

Title	Objective	Study/Report No.	Location
		Document 73433-000-SUB-002-001	
Final formal approved ILAW production container stress analysis with ANSYS	Supporting calculation for Final Draft Carbon Steel ILAW Container Specification	CALC-ILAWSP-ST-0001 Rev B - TM-ILAWSP-GE-0009/WRPS Document 73433-000-SUB-004-001	SPF
LAW Melter Bubbler Life Extension and Re-Use Study	Identify and evaluate design options to reduce the cost of LAW melter bubbler replacements through salvage and re-use of the bubbler head assembly and overall life extension of the bubbler assembly components.	RPT-3427-EG-0001 - TM-3427-EG-0027/WRPS Document 39504-243-SUB-003-001	SPF
Final Report LAW Bubbler Air Supply Testing	Conduct prototypic performance testing of the LAW melter bubbler to determine if the installation air supply system could be discontinued.	VSL-19R4650-1 - TM-324465-EG-0014/WRPS Document 39504-248-SUB-003-001	SPF

8.1 Supply Risk Tool

The Supply Risk Tool (SRT) is a spreadsheet oriented list of equipment for use in forecasting DFLAW equipment and consumables supply risks (typically long lead time, proprietary design or bespoke design). The SRT was developed by WRPS as a means to identify and evaluate spare parts and consumables supply risks associated with the operations phase of DFLAW. The SRT provides prioritized supply chain risks, bases for prioritization and associated actions necessary to eliminate or mitigate the risks. The results of this evaluation are intended to be used to inform decisions regarding necessary procurement actions. The SRT may also support definition of focused cost-benefit and trade-off studies. Note that the SRT is not a configuration controlled tool and is not a substitute for formal WTP conducted Reliability Centered Maintenance or other analyses that define spare parts and consumables requirements or needs for WTP. Access to the completed SRT is under development.

8.2 Alternative Source MA-758

Procurement and testing of MA-748 from an alternative foreign source is in progress and results will be provided in a revision to this transition plan.

8.3 Carbon Steel ILAW Containers

In 2019 a study (*ILAW Container Cost Reduction and Optimization Study*, RPT-ILAWCOS-ENG-0001, Rev 0/WRPS Document 39504-247-SUB-004-001) was performed to examine the potential for cost savings for the Immobilized Low Active Waste (ILAW) containers over the mission life of the WTP. The study builds on earlier study assessments 24590-LAW-RPT-M-01-001 Rev 0 ILAW Product Container Specifications Optimization Study and DOE/ORP-2013-02 Rev 0 Decision Analysis of Low-Active Waste Container Finishing Handling System Alternatives.

A key driver for the study was the fact that the WTP design and installed equipment has evolved over an extended period ~20 years. Consequently, some of the existing requirements for the ILAW containers may no longer be applicable under current plans where the glass filled

containers are placed into the Integrated Disposal Facility (IDF) rather than stacked in an engineered purpose-built ventilated store as originally envisioned.

The study team concluded that the use of carbon steel was a viable option for the ILAW container material with A36 carbon steel (i.e. most common grade carbon steel) providing the greatest saving. The study and associated supporting documents are located in SPF using the “subcontracts” search term in conjunction with search criterion *39504-247*.

Based on the recommendations identified in the *ILAW Container Cost Reduction and Optimization Study*, a draft procurement specification for carbon steel ILAW containers was prepared in 2020. The draft specification was then used by WRPS to conduct a market survey of potential commercial ILAW container suppliers via the Expression of Interest (EOI) process. The EOI generated a response from 6 potential suppliers. The EOI responses indicated an average cost benefit of ~\$3.5k/container (~\$6M/year) compared to the stainless steel container price in 2020. The draft specification is available in SPF using the “subcontracts” search term in conjunction with search criterion * 73433*.

8.4 LAW Melter Bubbler Life Extension

In 2019 WRPS authorized Atkins to conduct an engineering study to identify and evaluate design options to reduce the cost of LAW melter bubbler replacements through salvage and re-use of the bubbler head assembly and overall life extension of the bubbler assembly components. The Atkins study RPT-3427-EG-0001 Rev. 0, *LAW Melter Bubbler Life Extension and Re-Use Study* dated June 11, 2019 presented the following key results:

Objective	Results	Recommendations	ROM Life-Cycle Savings*
Bubbler Head Salvage & Reuse	<ul style="list-style-type: none"> Bubbler head assemblies can be made replaceable Replaceable bubbler tubes enable re-use of bubbler head Bubbler head will last the life of the melter Glovebox concept defined to perform bubbler replacements Conceptual bubbler replacement approach defined Conceptual approach to simplify head design by eliminating pre-submergence air supply 	<ul style="list-style-type: none"> Thermocouples may become life limiting and needs further study Glovebox needs further design development Bubbler tube replacement approach and associated glovebox needs mock-up testing to define design and operational procedure input Testing required to document bubbler installation without air supply 	\$129.9 Million
Bubbler Life Extension	<ul style="list-style-type: none"> Retain current design except for protective sleeve (shin guard) 	<ul style="list-style-type: none"> Alternatives to MA-758 require further 	\$309.9 Million

	<ul style="list-style-type: none"> • Change shin guard material to sintered chromium • Options are available as an alternative to current material of construction (Inconel MA-758) 	development and testing	
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* Costs do not take into account the future value of money, disposal cost savings, or facility modifications

As indicated above, implementation of the study recommendations may result in substantial life cycle cost savings over the 40 year life of the LAW facility. The study and associated supporting documents are located in SPF using the “subcontracts” search term in conjunction with search criterion *39504-243*.

8.5 **Bubbler Air Supply**

In 2019 WRPS authorized Atkins in collaboration with the Vitreous State Laboratory (VSL) to conduct prototypic performance testing of the LAW melter bubbler to determine if the installation air supply system could be discontinued. For each test, a bubbler with essential prototypical features was immersed in the DM1200 melt pool with variable amounts of time prior to attempting initiation of air flow. Successive tests differed in the amount of time between immersion and attempted initiation of bubbler flow. At the conclusion of each test, the bubbler was removed from the melter and inspected. Air flow was discontinued once the bubbler was removed from the melt pool. The operating conditions were monitored and recorded electronically throughout the tests. Visual observations of the melt surface through view ports were made periodically and recorded throughout the tests. The VSL test report VSL-19R4650-1, *Final Report LAW Bubbler Air Supply Testing* dated September 3, 2019 demonstrate that the installation air supply is not necessary for the installation of prototypic LAW bubblers. Specifically, testing demonstrated that bubblers could be installed into the melter without an air supply for up to 2 hours without negatively affecting the initiation of bubbling. Consequently, the test results may provide a basis for future removal of the installation air supply from the LAW melter bubbler design, which could in turn greatly simplify the design of the head and therefore the cost of the bubbler assembly. The study and associated supporting documents are located in SPF using the “subcontracts” search term in conjunction with search criterion *39504-248*.

Appendix A - Spares Advisory Group Charter (Rev. 1)

Spares Advisory Group Charter (Rev. 1)

Allan Exley, Operations Planning Integration Manger
Washington River Protection Solutions LLC

Date Approved
May 1, 2018

1.0 BACKGROUND

In September 2017, the Department of Energy Office of River Protection (ORP) directed the Tank Operations Contractor (TOC) Washington River Protection Solutions LLC. (WRPS), to prepare a proposal and strategy to support future operation of WTP in the DFLAW configuration (WTP-DFLAW). The WRPS response⁴ to the ORP letter of direction⁵ includes a technical strategy for identification and procurement of operational phase spare parts and consumables to support WTP-DFLAW. The proposed spares and consumables strategy includes the establishment of a Spares Advisory Group (SAG) to provide senior level expert advice to ORP and to conduct analysis, planning and implementation actions related to operations phase spares and consumables procurements.

2.0 PURPOSE

This charter identifies the objectives, composition and functions of the Spares Advisory Group (SAG). The SAG is established to:

1. Provide advice and recommendations to ORP regarding WTP-DFLAW spares and consumables identifications, procurement priorities (what to procure, when to procure and how much to procure) and other actions specifically pertaining to the operations phase; and
2. Identify and recommend spares and consumables procurement optimization opportunities (such as bulk procurements to take advantage of economies of scale)

3.0 MEMBERSHIP

The SAG is proposed to consist of membership from ORP, TOC and/or WTP operating contractor (once awarded), WTP Project and selected (federal or contractor) subject matter experts (SMEs). ORP provides informal concurrence with each member of the SAG. The TOC, as the owner of the work scope, will provide the SAG chairperson. SAG meetings are intended to be open to observers and others directly supporting SAG activities.

4.0 SCOPE

SAG review and concurrence is intended prior to recommending procurement actions to ORP that do not include a formal engineering evaluation (i.e. Reliability Centered Maintenance) to determine the need for a spare. ORP approved procurement recommendations are then implemented in accordance with WRPS procurement procedures.

5.0 ROLES & RESPONSIBILITIES

A. ORP

1. Provides informal (e.g. email or verbal) concurrence with SAG charter
2. Attends SAG as an observer
3. Unilateral authority to veto or direct amendments to SAG recommendations

B. WRPS One System

⁴ Waste Treatment and Immobilization Plant Transition Support Change Proposal, CP-17-023

⁵ 17-CPM-0143, *Contract No. ED-AC-08RV14800 – Request for Proposal – Waste Treatment and Immobilization Plant Transition Support*, dated September 12, 2017

1. Manages the SAG process
2. Designates a SAG chairperson (Operations Planning Integration Manger or equivalent)

C. SAG Chairperson

1. Nominates team members (and alternates) and support personnel in collaboration with ORP.
2. Organizes, schedules and chairs the meetings
3. Coordinates the preparation of SAG documentation and communications (such as meeting agendas and minutes)
4. Maintains status of SAG activities and actions
5. Coordinates SAG process

D. SAG Member

1. Reviews and evaluates spares and consumables procurement recommendations
2. Provides input and advice regarding the spares and consumables procurements
3. Identifies concerns, questions and/or concurrence in a timely manner
4. Recommends solutions to concerns, questions, or other issues addressed by the SAG
5. Updates SAG on actions status

E. Non-SAG Subject Matter Expert Support Personnel

1. Present interim and final spares and consumables work products to the SAG.
2. Investigates or obtains assistance in investigating answers to the SAG questions.
3. Maintain metrics to communicate to ORP progression towards completion of authorized procurements

6.0 RULES of PRACTICE

- The SAG will formally convene as directed by the chairperson.
- SAG members will work independently from the formal meeting to complete action items.
- At the discretion of the chairperson, meetings may be accomplished electronically, by telecom, or by other means.
- A quorum consisting of the chairperson (or alternate) and designated members (or alternates) are required to conduct a meeting. To establish a quorum, the meeting may include participation of quorum member(s) by teleconference. This will be at the discretion of the chairperson.
- A designated alternate may substitute for a standing member in the event the standing member cannot attend.
- When practicable, documents/work products will be disseminated to the members/alternates for review and comment prior to the meeting.
- Meeting minutes will be distributed for review.
 - In the event the prior minutes are found to be in error, they may be approved by the chairperson with appropriate corrections documented.
 - Erroneous minutes will be corrected and reissued.
- Meeting minutes shall be retained by the chairperson for the life of the SAG and should include:
 - Date and time of convening and adjourning the meeting
 - Location of the meeting
 - Members present, including alternates and for whom they were attending

- Names and titles of non-members who attended the meeting
- A concise, detailed account of the business of the meeting, including responsibilities and actions recommended to address open items with due dates

8.0 RECORDS

No records are expected to be generated as a result of SAG activities.

Appendix B – Spares Storage Requirements Analysis

Note: The information provided in the table below is preliminary for illustrative purposes only and is under continued development.

Component or ID #	Item Description	Mfg	Mfg Part Number (Vendor Internal No.)	Qty Unit (EA, FT, GL, etc.)	Intended to be Repaired (Y/N)	Storage Preservation Maintenance (Y/N)	Storage Level (A,B,C,D)	Shelf Life (Y/N)	Special Storage Requirements	Unit Storage Footprint (WxDxH), (inches)	Unit Storage Weight (lbs)	Total Storage Footprint (sq.ft.)	Total Storage Weight (lbs)	Comments	Vendor Contact
LVE-PSUP-20001 / LVE-PSUP-20002	Hirschmann Switch Power Supply	HIRSCHMANN	943435-001	EA	N	N	A	N/A	N	6x6x6	1	0.5	2	Engineering Judgment used for Footprint	
LVE-PSUP-20001 / LVE-PSUP-20002	Hirschmann Switch Interface Module	HIRSHMANN	943720-101	EA	N	N	A	N/A	N	6x6x6	1	0.5	2	Engineering Judgment used for Footprint	
LVE-PSUP-20001 / LVE-PSUP-20002	Circuit Breaker S7, 3 Pole, Adjustable 400-1000A	ABB CONTROL	S7H1000BW	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint	
LVE-PSUP-20001 / LVE-PSUP-20002	Control Relay, 2NO-2NC-120VAC Coil	ABB CONTROL	N22E-84	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint	
LVE-PSUP-20001 / LVE-PSUP-20002	Contact Block, 1 NC for Emergency Stop	ALLEN-BRADLEY	800F-X01	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint	
LVE-PSUP-20001 / LVE-PSUP-20002	PM856K01 Processor (AC800M)	ABB AUTOMATION	3BSE018104R1	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint	
LVE-PSUP-20001 / LVE-PSUP-20002	SD821 Power Supply, 24VDC, 2.5A Output	ABB AUTOMATION	3BSC610037R1	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint	
LVE-PSUP-20001 / LVE-PSUP-20002	DI820-S800 I/O Module, 120 VAC	ABB AUTOMATION	3BSE008512R1	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint	
LVE-PSUP-20001 / LVE-PSUP-20002	DO820-S800 I/O Module, N.O. Contact	ABB AUTOMATION	3BSE008514R1	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint	
LVE-PSUP-20001 /	TU811V1 - Modular Termination Unit (MTU), 250v Max	ABB AUTOMATION	3BSE013231R1	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint	

LVE-PSUP-20002																
LVE-PSUP-20001 / LVE-PSUP-20002	CI854A Profibus DP Interface	ABB AUTOMATION	3BSE030220R1	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint		
LVE-PSUP-20001 / LVE-PSUP-20002	Profibus Connector (12M Baud), 90 Deg., Cable Outlet	SIEMENS	6ES7 972-0BA12-0XA0	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint		
LVE-PSUP-20001 / LVE-PSUP-20002	Control Transformer 1KVA, Pri: 240/480, Sec: 120/20	HAMMOND	PH1000MQMJ	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint		
LVE-PSUP-20001 / LVE-PSUP-20002	Disconnect Switch, Fusible, 30A, Class CC	ABB CONTROL	OS30ACC12	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint		
LVE-PSUP-20001 / LVE-PSUP-20002	Fuse, Class CC, 5.0A, 600 VAC	BUSSMANN	FNQ-R-5	EA	N	N	A	N/A	N	6x6x6	1	0.5	2	Engineering Judgment used for Footprint		
LVE-PSUP-20001 / LVE-PSUP-20002	Circuit Breaker, 1-Pole, 8 Amp	ABB CONTROL	S201U-K8	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint		
LVE-PSUP-20001 / LVE-PSUP-20002	Circuit Breaker, 1-Pole, 2 Amp	ABB CONTROL	S201-K2	EA	N	N	A	N/A	N	6x6x6	1	0.5	2	Engineering Judgment used for Footprint		
LVE-PSUP-20001 / LVE-PSUP-20002	Circuit Breaker, 1-Pole, 3 Amp	ABB CONTROL	S201-K3	EA	N	N	A	N/A	N	6x6x6	1	1	4	Engineering Judgment used for Footprint		
LVE-PSUP-20001 / LVE-PSUP-20002	Circuit Breaker, 1-Pole, 1 Amp	ABB CONTROL	S201-K1	EA	N	N	A	N/A	N	6x6x6	1	0.5	2	Engineering Judgment used for Footprint		
LVE-PSUP-20001 / LVE-PSUP-20002	Door Limit Switch, 2 N.O. Contacts	ABB CONTROL	LS35P31L20/ OR LS45P31L20	EA	N	N	A	N/A	N	6x6x6	1	0.25	1	Engineering Judgment used for Footprint		
LVE-PSUP-20001 / LVE-PSUP-20002	Frequency Converter, ACS8040260500000030150043E0000000000000	ABB FIDRI	3AFE68380596	EA	N	N	A	N/A	N	6x6x6	1	0.75	3	Engineering Judgment used for Footprint		
LVE-PSUP-20001 / LVE-PSUP-20002	Drive Control Unit	ABB FIDRI	3AFE64607901	EA	N	N	A	N/A	N	6x6x6	1	0.75	3	Engineering Judgment used for Footprint		
LVE-PSUP-20001 / LVE-PSUP-20002	Panel Connection ACS 800-07 RPMP-01	ABB FIDRI	3AFE68300991	EA	N	N	A	N/A	N	6x6x6	1	0.75	3	Engineering Judgment used for Footprint		
LVE-PSUP-20001 / LVE-PSUP-20002	Control Panel CDP-312R	ABB FIDRI	3AFE64378660	EA	N	N	A	N/A	N	6x6x6	1	0.75	3	Engineering Judgment used for Footprint		

LVE-PSUP-20001 / LVE-PSUP-20002	Profibus-DP RPBA-01	ABB FIDRI	3AFE64379232	EA	N	N	A	N/A	N	6x6x6	1	0.75	3	Engineering Judgment used for Footprint
LVE-PSUP-20001 / LVE-PSUP-20002	Switch Fuse OES400J12P	ABB FIDRI	3AFE64689878	EA	N	N	A	N/A	N	6x6x6	1	0.75	3	Engineering Judgment used for Footprint
LVE-PSUP-20001 / LVE-PSUP-20002	Fuse JJS-400	ABB FIDRI	3AFE64690647	EA	N	N	A	N/A	N	6x6x6	1	2.25	9	Engineering Judgment used for Footprint
LVE-PSUP-20001 / LVE-PSUP-20002	Profibus Connector (12M Baud), 90 Deg., Cable Outlet	SIEMENS	6ES7 972-0BA12-0XA0	EA	N	N	A	N/A	N	6x6x6	1	0.75	3	Engineering Judgment used for Footprint
LVE-PSUP-20001 / LVE-PSUP-20002	Circuit Breaker T4, 3-Pole, 600V, Adjustable 100-250A	ABB CONTROL	T4N250BW	EA	N	N	A	N/A	N	6x6x6	1	4.5	18	Engineering Judgment used for Footprint
LVE-PSUP-20001 / LVE-PSUP-20002	Circuit Breaker T4, AUX Contact, 1 Form C + 1BA	ABB CONTROL	KT5AS	EA	N	N	A	N/A	N	6x6x6	1	4.5	18	Engineering Judgment used for Footprint
LVE-PSUP-20001 / LVE-PSUP-20002	Line Reactor	TCI	KLR300CCB	EA	N	N	A	N/A	N	6x6x6	1	0.75	3	Engineering Judgment used for Footprint
LVE-PSUP-20001 / LVE-PSUP-20002	Capacitor Bank, 200 Micro	ELECTRONIC CONCEPTS	MP9-20934K	EA	N	N	A	N/A	N	6x6x6	1	1.5	6	Engineering Judgment used for Footprint