



U.S. Department of Energy

P.O. Box 450, MSIN H6-60
Richland, Washington, 99352

12-WTP-0160

APR 30 2012

The Honorable Peter S. Winokur
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, D.C. 20004-2901

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DNFSB SAFETY BOARD

DEFENSE NUCLEAR FACILITIES SAFETY BOARD (DNFSB) RECOMMENDATION 2010-2
IMPLEMENTATION PLAN (IP) QUARTERLY PROGRESS REPORT FOR JANUARY THROUGH
MARCH 2012

Dear Mr. Chairman:

Reference: DOE-HQ letter from S. Chu to P. S. Winokur, DNFSB, "Department of Energy Plan to Address Waste Treatment and Immobilization Plant Vessel Mixing Issues, Revision 0, Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 2010-2," dated November 10, 2011.

The Quarterly Progress Report to DNFSB on Recommendation 2010-2 for the period January through March 2012 is attached. This report meets commitment 6.3.1 of the IP to provide quarterly progress reports and describes the status of activities undertaken and results achieved to meet the U.S. Department of Energy's commitments as described in the above Reference.

DOE has continued to make progress this quarter toward closing safety issues related to Pulse Jet Mixing at the Waste Treatment and Immobilization Plant. All deliverables due during this reporting period were submitted on schedule. Details may be found in the attached report.

If you have any questions, please contact me at (509) 376-6727 or your staff may contact Ben Harp, WTP Start-up and Commissioning Integration Manager at (509) 376-1462.

Sincerely,

A handwritten signature in black ink, appearing to read "Dale E. Knutson".

Dale E. Knutson, Federal Project Director
Waste Treatment and Immobilization Plant

WTP:WRW

Attachment

cc w/attach: (See Page 2)

Hon. Peter S. Winokur
12-WTP-0160

-2-

APR 30 2012

cc w/attach:

D. M. Busche, BNI
W. w. Gay, BNI
F. M. Russo, BNI
D. McDonald, Ecology
D. G. Huizinga, EM-1
J. D. Lorence, EM-41
M. B. Moury, EM-40
T. P. Mustin, EM-2
K. G. Picha, EM-20
C. S. Trummell, EM-1
A. C. Williams, EM-2.1
D. Chung, HS-1
M. J. Campagnone, HS-1.1
R. H. Lagdon, Jr., US
M. R. Johnson, WRPS
S. A. Saunders, WRPS
R. G. Skwarek, WRPS
M. G. Thien, WRPS
BNI Correspondence
WRPS Correspondence

ATTACHMENT
TO
12-WTP-0160

DEFENSE NUCLEAR FACILITIES SAFETY BOARD (DNFSB)
RECOMMENDATION 2010-2 IMPLEMENTATION PLAN (IP)
QUARTERLY PROGRESS REPORT FOR
JANUARY THROUGH MARCH 2012

PULSE JET MIXING
AT THE WASTE TREATMENT AND IMMOBILIZATION PLANT
7.0 Attachment – VCT Summary Schedule

(No. of Pages: 28, including cover page & VCT Attachment of 15 pgs)

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DNFSB SAFETY BOARD

Man	CNP-VSL-00004	CAP-VSL-00004	HOP-VSL-00903904	RDP-VSL-00002A,B,C	RLD-VSL-00007	RLD-VSL-00008	CNP-VSL-00003	LFP-VSL-00002A,B	CAP-VSL-00002A,B,C	LFP-VSL-00001A,B	FEF-VSL-00017A,B	PWD-VSL-00015	PWD-VSL-00044
PWD-VSL-00033	PWD-VSL-00043	HLP-VSL-00017A,B	TLP-VSL-00009A,B	HLP-VSL-00028	TCF-VSL-00001	HLP-VSL-00022	FRP-VSL-00002A,B,C,D						

DEFENSE NUCLEAR FACILITIES SAFETY BOARD
RECOMMENDATION 2010-2 QUARTERLY PROGRESS REPORT

PULSE JET MIXING AT THE WASTE TREATMENT
AND IMMOBILIZATION PLANT

JANUARY 1 TO MARCH 31, 2012

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EXECUTIVE SUMMARY

On December 17, 2010, the Defense Nuclear Facilities Safety Board (DNFSB) issued Recommendation 2010-2, *Pulse Jet Mixing at the Waste Treatment and Immobilization Plant*. The recommendation addressed the need for the U.S. Department of Energy (DOE) to ensure the Hanford Waste Treatment and Immobilization Plant (WTP), in conjunction with the Hanford Tank Farm waste feed delivery system, will operate safely and effectively during a 40-year operating life. The purpose is to eliminate safety hazards posed by Hanford Site tank wastes.

On November 10, 2011, U.S. Department of Energy Secretary Chu forwarded the DOE Implementation Plan (IP) for DNFSB recommendation 2010-2 to Chairman Winokur. This IP includes Commitment 6.3.1 to provide quarterly progress reports and briefings to the DNFSB and DNFSB staff, including updates on the status of completing actions identified in the IP. This quarterly report is for the period from January through March 2012.

All IP deliverables due during this quarterly reporting period were provided on schedule. Progress was made on readying test platforms for Large-Scale Integrated Testing (LSIT). Structural and platform modifications to accommodate an 8-ft acrylic test vessel at Mid-Columbia Engineering (MCE) were completed, and the vessel installed. Construction continued on the facility to house the 14-ft test vessel; the basemat and steel frame were completed, and siding is in the process of being installed.

During this reporting period, ongoing analysis of test results indicated current test data will not support the assumption that Newtonian techniques are appropriate to assess non-Newtonian vessel performance without extensive additional testing and development of new measurement and analysis techniques. IP Commitment 5.3.3.1, *Update Assessment of Use of Newtonian Analysis Techniques to Assess Non-Newtonian Vessel Performance*, will confirm that Newtonian techniques will not be used to assess non-Newtonian vessel performance based on the extent of testing and analyses needed to support the assumption. This commitment, currently scheduled for delivery by August, 31, 2012, is expected to be completed ahead of schedule.

The determination that Newtonian techniques will not be used to assess non-Newtonian vessel performance will require the IP to be revised. This revision will reflect the change in approach for design verification of non-Newtonian vessels by means other than Computational Fluid Dynamics (CFD) models. In addition, progress to date on accomplishing IP Commitments, activities to reconstitute the Pretreatment Facility authorization basis and improvements in integration between Tank Farm and WTP, per the One System approach, will impact IP Commitments. This has resulted in a recognition that a significant systematic review of the technical assumptions and schedule logic is needed to revise the IP in order to meet IP objectives. The revision to the IP is expected to be complete by the fourth quarter of this calendar year. An open dialogue with the DNFSB and its staff will be maintained as DOE proceeds with revising the IP.

The DOE IP for DNFSB Recommendation 2010-2 provides for advance notification if a commitment will not be completed by the planned milestone date. This report provides notice that submission of Deliverable 5.1.3.13, Scaling Basis, will not occur until July 30, 2012, instead of its planned date of April 30, 2012. Although this is a variance to the IP, it does not fundamentally change the scope or overall schedule of the plan.

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1. PURPOSE

On December 17, 2010, the Defense Nuclear Facilities Safety Board (DNFSB) issued *Recommendation 2010-2, Pulse Jet Mixing at the Waste Treatment and Immobilization Plant*. The recommendation identified safety issues associated with Pulse Jet Mixer (PJM) vessels mixing, sampling, and transfer capabilities in WTP. The Board also identified issues with integrating Tank Farm feed staging system mixing, sampling, and transfer system capabilities.

The DOE commitments outlined in *Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 2010-2*, submitted to the DNFSB on November 10, 2011, are fulfilled by a program of tests, analyses, and other activities. Each DOE commitment has a corresponding deliverable and a due date falling between January 30, 2012, and May 9, 2016. During this period, Commitment 6.3.1 to the DNFSB requires quarterly progress reports on completion of IP milestones and deliverables, the status of ongoing and planned activities, as well as a description of issues and identified risks and how they are being managed and closed. This Quarterly Progress Report fulfills that commitment.

2. HIGHLIGHTS FOR THIS QUARTER

2.1 DELIVERABLES SUBMITTED

In January 2012, DOE submitted the following deliverables to the DNFSB:

- 5.3.3.4 Analysis of data sets required to support CFD V&V
- 5.5.3.4 Identification of Tank Farm sampling and transfer capability test requirements to be documented in a test requirements document
- 5.7.3.1 Establish the plan and schedule to systematically evaluate the hazards of known technical issues, M3 vessel assessment summary reports, Low-Order Accumulation Model (LOAM) benchmark data, and LSIT results (initial submittal, with updates no less than annually)
- 5.7.3.4 Identify key inputs, assumptions, safety margin uncertainties, and nuclear safety parameters required to be included in the waste acceptance criteria

In March 2012, DOE submitted the following deliverables to the DNFSB:

- 5.1.3.2 Issue responses to recommendations from key stakeholders
- 5.5.3.5 Define simulants for Tank Farm performance testing
- 5.6.3.1 Define functional requirements for heel management system (initial submittal; will be updated after completion of IP Commitment 5.5.3.2, "Evaluation of Waste Transferred to WTP")

2.2 WORK COMPLETED

WTP

Deliverable-Related Activities

The initial deliverable for Commitment 5.7.3.1, 24590-PTF-PL-ENS-11-0007, Rev 0, *Plan and Schedule to Systematically Evaluate the Hazards of Known Technical Issues, M3 Vessel Assessment Summary Reports, LOAM Benchmark Data and LSIT Results*, provided a plan and target schedule for activities discussed in the report. The plan and schedule were summarized in Table 4 of the report. All the actions were entered into Bechtel National, Inc. (BNI) Problem Identification/Evaluation Reports (PIERs) or the Action Tracking System (ATS). Work on completion of these actions is ongoing. None were due during this quarter.

After careful deliberation, the deliverable for Commitment 5.1.3.13, *Scaling Basis*, will not be transmitted until July 30, 2012, instead of its planned date of April 30, 2012. It is a critical foundation document for near full-scale testing that requires careful consideration and review. It will also underpin the application of scaled testing information to assess full-scale mixing performance. This technically complex document must be accorded a thorough review by the technical community, both on and off the WTP Project. Additionally, adequate time must be allowed for full, transparent reconciliation of review comments. Our experience with the initial, less complex IP deliverables has indicated that a longer time must be allowed for this process than accounted for in the initial IP development. This lesson learned will be reflected in the revision of the IP discussed in Section 3.b. of this report.

During review of Deliverable 5.1.3.13 it has become apparent that this large basis document will not be suitable for direct use by the Engineering staff involved in preparing test plans or in applying data from scaled tests. We determined that a companion document, focused on application of the scaling basis, would be highly desirable. Development of this document has begun and is being closely coordinated with the Pacific Northwest National Laboratory (PNNL) authors of the *Scaling Basis* document. It is our intent to submit both documents in fulfillment of Deliverable 5.1.3.13.

This deliverable is a foundation document for scaled testing that will begin after the completion of testing that supports V&V of the CFD tool. The CFD V&V testing will continue into the winter of 2012-2013. Thus, the completion of Deliverable 5.1.3.13 at the end of July 2012 will not adversely impact preparations for follow-on LSIT.

Testing- and Design-Related Activities

Modifications of the scaled test platform at Mid-Columbia Engineering (MCE) continued. Structural and platform modifications to accommodate an 8-ft acrylic test vessel at MCE were completed, and the vessel installed. Work on support systems continues, with component and water tests in progress.

Construction continued on the Engineering Laboratory Building at Washington State University, Tri-Cities. This is the facility that will house the 14-ft test vessel for LSIT of PJM-mixed vessel mixing, sampling, and transfer capabilities. Progress during the quarter included completion of the basemat and steel frame. Siding and roof installations are in progress.

The external review team (ERT) was actively engaged in reviewing the WTP and One-System test programs and preparing the IP deliverable preparation. The ERT reviewed deliverables for Commitments 5.1.3.13, 5.1.3.14, and 5.5.3.6 during this quarter. The ERT has been invited to visit Hanford the week of May 29th, 2012, to observe operation of the 8-ft test platform at MCE.

The previous quarterly report included information on development of the preferred pressure-based PJM control strategy discussed in 24590-WTP-RPT-ENG-10-001, Rev 1, *Integrated Pulse Jet Mixed Vessel Design and Control Strategy*. This approach could significantly reduce the potential for inadvertent overblows of PJMs. During this quarter, a statement of work and request for proposal was issued for a single PJM test platform to support development work on the PJM control system in advance of integrated 14-ft testing. The single PJM test platform will be a full-scale, single train system that uses actual WTP software, a full-length level/density bubbler, a jet pump pair, and a full-size PJM to assess control system performance. The platform will be capable of assessing the impacts on PJM control of chemical simulants and high temperature operations. This will allow confirmation of equipment selections, response times, mass flow rates, temperature and pressure thresholds, nozzle loss coefficients, and other information needed to complete the control system design.

WRPS

Documentation was completed and submitted in support of waste feed delivery mixing and sampling testing. Specifically, WRPS completed *Waste Feed Delivery Mixing and Sampling Program Plan and Test Requirements* document (Commitment 5.5.3.4) and *Waste Feed Delivery Mixing and Sampling Program Simulant Definition for Tank Farm Performance Testing* (Commitment 5.5.3.5). Installation of sample bottle mechanical handling equipment on the Remote Sampler Demonstration platform also was completed.

WRPS completed a three-day Test Plan Summit meeting to discuss and reach concurrence on testing information needs and technical approaches necessary to develop and implement platform specific test plans. This meeting included participation from Savannah River National Laboratory (SRNL), PNNL, mixing consultants, and Hanford personnel.

3. SUMMARY OF TEST RESULTS

3.1 TANK FARM FEED STAGING, MIXING, SAMPLING, AND TRANSFER TESTS

No specific Tank Farm testing was completed during this reporting period. The Tank Farm work has been focused on defining simulant needs and suppliers, developing test plans, and preparing the four test platforms for future testing. Highlights of this work include the following:

- Bench top development work to define simulant sampling techniques and equipment necessary to support the SRNL solids accumulation testing
- Off-tank simulant and equipment performance development work to define capability of the 10-ft tank transfer system to entrain large dense particles under quiescent and mixed conditions
- Installing the Pulse Echo settled solids detection spool piece in the Remote Sampler Demonstration platform
- Evaluating vendor proposals for the full-scale mixer pump limits of performance testing

3.2 WTP PJM MIXING, SAMPLING, AND TRANSFER TESTS

No testing was conducted during this period.

Analysis of data from proof of concept tests indicated that current test data will not support the assumption that Newtonian techniques are appropriate to assess non-Newtonian vessel performance without extensive additional testing and development of new measurement and analysis techniques. IP Commitment 5.3.3.1, *Update Assessment of Use of Newtonian Analysis Techniques to Assess Non-Newtonian Vessel Performance*, will confirm that Newtonian techniques will not be used to assess non-Newtonian vessel performance based on the extent of testing and analyses needed to support the assumption. The commitment, currently scheduled for delivery by August, 31, 2012, is expected to be completed ahead of schedule.

The determination that Newtonian techniques will not be used to assess non-Newtonian vessel performance will require a revision to the IP. This revision will reflect the change in approach for design verification of non-Newtonian vessels by means other than CFD models. The revised IP is expected to be complete by the fourth quarter of this calendar year.

4. DISCUSSION

4.1 IMPACT OF THE RESULTS ON WTP DESIGN AND CONTROL

Nothing to report.

4.2 ISSUES AND RISKS IN MIXING, SAMPLING, AND TRANSFER

4.2.1 PREVIOUSLY IDENTIFIED ISSUES AND RISKS

WTP

Commitment 5.7.3.1, *Establish the Plan and Schedule to Systematically Evaluate the Hazards of Known Technical Issues, M3 Vessel Assessment Summary Reports, LOAM benchmark data, and LSIT Results*, was submitted on January 30, 2012. The deliverable included a list of known technical issues for the Pretreatment (PT) Facility developed by evaluating issues and concerns documented in an established WTP system. The deliverable provided an overall plan and schedule for resolving the current list of known technical issues; however, it did not include specific planning or dates for completion for each individual issue resolution. Actions were established to track completion of activities to plan and accomplish issue resolution, integrate nuclear safety into PT Facility design, and develop a Documented Safety Analysis (DSA). Issues have been captured in Vessel Completion Team (VCT) tracking, and efforts continue to systematically resolve the issues and provide for developing the DSA. Until the WTP rebaselining efforts are complete, the revised schedule for the DSA development cannot be confirmed. WTP has initiated the efforts committed in reconstituting the hazards analysis for both the PT and High Level Waste (HLW) Facilities, which will support the ongoing Preliminary Documented Safety Analysis (PDSA) maintenance and subsequent development of the facility specific DSA's.

Tank Farm Issues and Risks

Previously identified Tank Farm critical risks TOC-12-64 and TOC-12-65 (formerly TOC-08-65) are being addressed through the continued implementation of the Tank Farm Mixing and Sampling Program as recently defined by *Waste Feed Delivery Mixing and Sampling Program Plan and Test Requirements* (Commitment 5.5.3.4) and *Waste Feed Delivery Mixing and Sampling Program Simulant Definition for Tank Farm Performance Testing* (Commitment 5.5.3.5). These two documents define the testing activities scheduled to occur during Fiscal Year 2012 and Fiscal Year 2013.

4.2.2 EMERGING ISSUES AND RISKS

Progress to date on accomplishing IP Commitments, activities to reconstitute the Pretreatment Facility authorization basis and improvements such as developing a

single integrated schedule to address integration between Tank Farm and WTP, per the One System approach, will affect the IP. This has resulted in a recognition that a significant systematic review of the technical assumptions and schedule logic is needed to revise the IP in order to meet IP objective. IP revision activities have been initiated and it is anticipated that an initial draft of a revised IP will be available for discussion with DNFSB staff in June 2012. Discussions with staff will include the approach and proposed changes and will be accomplished before making a formal submittal to the DNFSB.

Multiple test phases with four different Tank Farm test platforms make it impractical to issue one document (Commitment 5.5.3.6) to cover all Tank Farm performance testing. An IP modification will be proposed to allow for multiple test plans that are sequenced in time such that earlier testing informs the later test plans.

BNI requested that DOE provide direction with respect to how new information concerning the form and location of fissile material in the Tank Farms in the design of WTP should be considered. In response, DOE did not direct changes to the current WTP design basis associated with the information concerning the form, size, quantity, and density of plutonium oxide based on the new information. Rather, DOE requested BNI to provide a plan and schedule for updating the Criticality Safety Evaluation Report to evaluate the new information. Work on this plan is ongoing.

5. FORWARD LOOK

The DOE expects to submit conditional IP deliverables associated with CFD V&V testing (e.g., requests for technology development, test specs, test plans, and simulant basis documents) during the period from April 2012 to June 2012. IP deliverables due during this period are summarized below. With efforts ongoing to revise the IP, deliverables that are due between now and when the IP revision is complete are subject to change.

<u>Commitment</u>	<u>Title</u>	<u>Date</u>	<u>Status</u> (F-Forecast)
5.1.3.13	Scaling basis	4-30-12	7-30-12 (F)
5.1.3.14	Vessel configurations for testing	4-30-12	On Track
5.2.3.1	Physical properties important to mixing and scaling	5-1-12	On Track
5.1.3.11	Construction specifications	5-30-12	On Track
5.3.3.5	National Energy Technology Laboratory independent review of data sets to support CFD V&V	5-30-12	On Track

5.6.3.2	Heel management system design	5-30-12	On Track
5.5.3.6	Test plan to establish Tank Farm performance capability	5-31-12	On Track
5.0.1	Safety basis approval strategy document	6-30-12	On Track
5.5.3.2	Evaluation of waste transferred to WTP	6-30-12	On Track
5.3.3.1	Update assessment of using Newtonian analysis techniques to assess non-Newtonian vessel performance	8-31-12	5-31-12 (F)

Work on completing actions discussed in Deliverable 5.7.3.1 is ongoing. The following planned actions with target schedule dates of June 2012 are expected to be completed on time. Implementation is tracked under the indicated PIERs and ATS.

- Update environmental & nuclear safety (E&NS) procedures to implement DOE-WTP contract direction for nuclear safety deliverables. 24590-WTP-ATS-MGT-12-0105
- Update Engineering procedures to implement DOE-WTP contract direction for nuclear safety deliverables. 24590-WTP-PIER-MGT-11-0979
- Issue project execution plan for the Pretreatment Facility safety basis development program. 24590-WTP-ATS-MGT-12-0106
- Complete an extent of condition review to determine safety bases not supported by a technical basis (CPR5-14). 24590-WTP-ATS-MGT-12-0108

6. ACRONYMS

ASME	American Society of Mechanical Engineers
ASX	WTP's automatic sampling system
BNI	Bechtel National, Incorporated
CFD	Computational Fluid Dynamics
CFR	Code of Federal Regulations
CCN	Correspondence control number
cP	Centipoise
CRESP	Consortium for Risk Evaluation with Stakeholder Participation
CSER	Criticality Safety Evaluation Report
DBE	Design Basis Event
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy

DQO	Data Quality Objective
DSA	Documented Safety Analysis
DST	Double-Shell Tank
EFRT	External Flowsheet Review Team
EM	Environmental Management
EPA	Environmental Protection Agency
ERT	Expert Review Team
FEP-17	Evaporator feed vessel 17
FLUENT	Software made by ANSYS Corporation used to model flow, turbulence, heat transfer, and chemical reactions
FRP-02	Feed receipt vessel 02
ft	Feet
FY	Fiscal Year
HAR	Hazards Analysis Report
HLP-22	High-Level Waste Feed Vessel 22
HLW	High-Level Waste
HPAV	Hydrogen In Piping and Ancillary Vessels
ICD	Interface Control Document
IDF	Interim Disposal Facility
IP	Implementation Plan
ISARD	Integrated Sampling and Analysis Requirements Document
LAW	Low-activity waste
LOAM	Low Order Accumulation Model
LSIT	Large-Scale Integrated Testing
ml	milliliter
NETL	National Energy Technology Laboratory
ORP	Office of River Protection
Pa	Pascal
PDSA	Preliminary Documented Safety Analysis
PJM	Pulse Jet Mixer
PNNL	Pacific Northwest National Laboratory
PT	Pretreatment (Facility)
RTD	Request for Technology Development
SAC	Specific Administrative Control
SDS	Safety Design Strategy
SRD	Safety Requirements Document
SRNL	Savannah River National Laboratory
SSC	Structures, Systems, and Components
TOC	Tank Farm Operations Contractor
UFP-01	Ultrafilter feed preparation vessel 01
V&V	Verification and Validation
VCT	Vessel Completion Team
WAC	Waste Acceptance Criteria

WRPS	Washington River Protection Solutions, Limited Liability Corporation (the Hanford Tank Farms operations contractor)
WTP	Waste Treatment and Immobilization Plant

7. ATTACHMENTS

VCT Summary Schedule (Attached Pages 1-15)

VCT Summary Schedule

Activity ID	Start	Finish	Setup Person	Total Hours	2012	2013	2014	2015	2017
WP 00 Summary	15-Jun-12	05-Aug-12	French	1107					
01 Summary	31-Oct-11 A	17-Oct-14	French	1742					
2BPRLIA003	02-Apr-12	02-Apr-12	French	2006					
2BPRLIA011	31-Oct-11 A	27-Apr-12	French	-4					
2BPRLIA019	05-Dec-11 A	30-Apr-12	French	-223					
2BPRLIA027	02-Apr-12	12-Jun-12	French	0					
2BPRLIA033	26-Mar-12 A	18-Jun-12	French	-257					
2BPRLIA041	16-May-12	15-Jul-12	French	31					
2BPRLIA049	16-Nov-11 A	07-Jan-13	French	2192					
2BPRLIA055	25-Jan-12 A	10-May-13	French	382					
2BPRLIA063	30-Nov-12	18-Nov-13	French	1972					
2BPRLIA071	02-Apr-12	30-Jan-14	French	-21					
2BPRLIA079	28-Apr-14	16-Jun-14	French	-181					
2BPRLIA087	19-Mar-14	17-Oct-14	French	1747					
04 Foot Vessel	15-Jun-12	16-Jan-14	French	1803					
2BPRLIA301	15-Jun-12	05-Aug-12	French	471					
2BPRLIA309	19-Jun-12	07-Aug-12	French	-121					
2BPRLIA317	15-Aug-12	10-Oct-12	French	100					
2BPRLIA325	07-Aug-12	16-Oct-12	French	471					
2BPRLIA333	11-Oct-12	30-Nov-12	French	407					
2BPRLIA341	17-Oct-12	05-Dec-12	French	100					
2BPRLIA349	17-Oct-12	20-Dec-12	French	541					
2BPRLIA357	05-Dec-12	01-Mar-13	French	437					
2BPRLIA365	07-Feb-13	14-Mar-13	French	407					
2BPRLIA373	11-Oct-12	14-Mar-13	French	407					
2BPRLIA381	05-Feb-13	03-Apr-13	French	541					
2BPRLIA389	17-Oct-12	03-Apr-13	French	541					
2BPRLIA397	19-Jun-12	12-Apr-13	French	-121					
2BPRLIA405	15-Jun-12	02-May-13	French	471					
2BPRLIA413	27-Sep-13	French	2006						
2BPRLIA421	27-Sep-13	French	2006						
2BPRLIA429	20-May-13	27-Sep-13	French	382					
2BPRLIA437	26-Aug-13	27-Sep-13	French	462					
2BPRLIA445	04-Nov-13	16-Jan-14	French	462					
2BPRLIA453	04-Jun-13	16-Jan-14	French	462					
2BPRLIA461	04-Nov-13	16-Jan-14	French	562					

PT - R&T - Integrated Testing - Develop Design Confirmation Independent Review Program.
 PT - R&T - Integrated Testing - Issue Simulant Properties Document.
 PT - R&T - Integrated Testing - Issue Vessel Selection Report.
 PT - R&T - Integrated Testing - Complete Revision #2 PJM Control Strategy.
 PT - R&T - Integrated Testing - Issue Testing Scaling Basis Document.
 PT - R&T - Integrated Testing - Issue Revision White Paper Newtonian Analysis of Non-Newtonian Vessels.
 PT - R&T - Integrated Testing - Develop Quality Requirement Independent Review.
 PT - R&T - Integrated Testing - Complete Trade Study.
 PT - R&T - Integrated Testing - Complete CFD WAV.
 PT - R&T - Integrated Testing - Perform Quality Requirement Independent Review - Existing Vessels.
 PT - R&T - Integrated Testing - Issue Updated CSER.
 PT - R&T - Integrated Testing - Perform Design Confirmation Independent Reviews.
 PT - R&T - Integrated Testing - Update PJM System Description.
 PT - R&T - Integrated Testing - Issue RTD.
 PT - R&T - Integrated Testing - Performance & Scaling - 4 Foot Vessel - Issue RTD.
 PT - R&T - Integrated Testing - Performance & Scaling - 4 Foot Vessel - Issue Test Spec.
 PT - R&T - Integrated Testing - Heel Management - 4 Foot Vessel - Issue Test Spec.
 PT - R&T - Integrated Testing - Performance & Scaling - 4 Foot Vessel - Issue Simulant Basis.
 PT - R&T - Integrated Testing - Heel Management - 4 Foot Vessel - Issue Test Plan.
 PT - R&T - Integrated Testing - Heel Management - 4 Foot Vessel - Issue Simulant Qualification Document.
 PT - R&T - Integrated Testing - Performance & Scaling - 4 Foot Vessel - Simulant.
 PT - R&T - Integrated Testing - Heel Management - 4 Foot Vessel - Issue Simulant Qualification Document.
 PT - R&T - Integrated Testing - Performance & Scaling - 4 Foot Vessel - Summary - 4 Foot Vessel - Test Preparations.
 PT - R&T - Integrated Testing - Heel Management - Summary - 4 Foot Vessel - Test Preparations.
 PT - R&T - Integrated Testing - Heel Management - Summary - 4 Foot Vessel - Complete Testing.
 PT - R&T - Integrated Testing - Performance & Scaling - 4 Foot Vessel - Complete Testing.
 PT - R&T - Integrated Testing - Performance & Scaling - Summary - 4 Foot Vessel - Testing.
 PT - R&T - Integrated Testing - Heel Management - Summary - 4 Foot Vessel - Testing.
 PT - R&T - Integrated Testing - Heel Management - 4 Foot Vessel - Issue Technical Evaluation Report.
 PT - R&T - Integrated Testing - Performance & Scaling - Summary - 4 Foot Vessel - Test Results / Reporting.
 PT - R&T - Integrated Testing - Performance & Scaling - 4 Foot Vessel - Issue Technical Evaluation Report.

VCT Summary Schedule

Activity ID	Start	Finish	Resp Person	Total Foot	Predecession	2012	2013	2014	2015	2016	2017
2BPRI1A024	10-Sep-13	16-Jun-14	French	486	2BPRI1G091, 2BPRI1H305						
08 Foot Vessel	24-Oct-11 A	17-Jun-14		193							
2BPRI1A362	25-Oct-11 A	24-Apr-12	French	-312	2BPRI1E910						
2BPRI1A363	28-Nov-11 A	30-May-12	French	-311	2BPRI1G271, 2BPRI1F900						
2BPRI1A002	23-Apr-12	23-May-12	French	-50	2BPRI1M222						
2BPRI1A001	24-Oct-11 A	23-May-12	French	-316	2BPRI1C411, 2BPRI1F303, 2BPRI1C399, 2BPRI1C401, 2BPRI1C340						
2BPRI1A341	02-Apr-12	14-Jun-12	French	-146	2BPRI1C340						
2BPRI1A311	02-Apr-12	18-Jun-12	French	-362	2BPRI1C340, 2BPRI1C331						
2BPRI1A312	07-May-12	27-Jul-12	French	-357	2BPRI1E910						
2BPRI1A313	26-Jun-12	17-Aug-12	French	-257	2BPRI1E910, 2BPRI1E911, 2BPRI1E912						
2BPRI1A342	15-Jun-12	22-Aug-12	French	-146	2BPRI1E910						
2BPRI1A344	23-Jul-12	24-Sep-12	French	-64	2BPRI1E910						
2BPRI1A343	23-Jul-12	27-Sep-12	French	-64	2BPRI1E911						
2BPRI1A314	30-Jul-12	01-Oct-12	French	-357	2BPRI1M124						
2BPRI1A381	17-Aug-12	02-Oct-12	French	-133	2BPRI1C356						
2BPRI1A003	25-May-12	06-Oct-12	French	-317	2BPRI1T305						
2BPRI1A307	06-Oct-12	06-Oct-12	French	2253	2BPRI1T435						
2BPRI1A382	05-Oct-12	11-Dec-12	French	-133	2BPRI1T436						
2BPRI1A345	29-Nov-12	04-Jan-13	French	-64	2BPRI1M158						
2BPRI1A027	23-Jul-12	04-Jan-13	French	-64	2BPRI1M151						
2BPRI1A315	06-Dec-12	11-Jan-13	French	-357	2BPRI1M154						
2BPRI1A008	02-Apr-12	05-Feb-13	French	-357	2BPRI1M127						
2BPRI1A026	02-Apr-12	05-Feb-13	French	-357	2BPRI1M125						
2BPRI1A384	12-Dec-12	15-Feb-13	French	-133	2BPRI1G331, 2BPRI1E910						
2BPRI1A383	07-Dec-12	04-Mar-13	French	-73	2BPRI1M154						
2BPRI1A008	05-Feb-13	10-May-13	French	-357	2BPRI1T444, 2BPRI1T544						
2BPRI1A347	10-May-13	10-May-13	French	2105	2BPRI1H345						
2BPRI1A317	04-Apr-13	10-May-13	French	2105	2BPRI1T544						
2BPRI1A028	12-Dec-12	28-May-13	French	-133	2BPRI1H345						
2BPRI1A385	23-Apr-13	28-May-13	French	-133	2BPRI1M155						
2BPRI1A006	23-Jul-12	20-Jun-13	French	-222	2BPRI1W000						
2BPRI1A386	11-Apr-13	20-Jun-13	French	-222	2BPRI1G911						
2BPRI1A026	17-Aug-12	26-Jun-13	French	-133	2BPRI1G918						
2BPRI1A039	31-Oct-11 A	27-Jun-13	French	-139	2BPRI1F101, 2BPRI1F139						
2BPRI1A037	28-Jun-13	09-Aug-13	French	-139	2BPRI1H365, 2BPRI1H364						

VCT Summary Schedule

Activity ID	Start	Finish	Responsible Person	Year	2012	2013	2014	2015	2016	2017
2BPRIUA357	09-Aug-13	French	2042_2BPRIHL365							
2BPRIUA009	12-Feb-13	27-Aug-13	French	2042_2BPRIHL365						
2BPRIUA346	18-Jun-13	27-Aug-13	French	2042_2BPRIHL365						
2BPRIUA029	18-Jun-13	27-Aug-13	French	2042_2BPRIHL365						
2BPRIUA316	04-Jun-13	27-Aug-13	French	2042_2BPRIHL365						
2BPRIUA386	05-Nov-13	17-Jun-14	French	2042_2BPRIHL365						
14 Foot Vessel	15-Jun-12	27-Apr-17	1101							
2BPRIUA351	15-Jun-12	27-Jul-12	French	2042_2BPRIHL365						
2BPRIUA321	19-Jun-12	09-Aug-12	French	2042_2BPRIHL365						
2BPRIUA371	10-Aug-12	21-Sep-12	French	2042_2BPRIHL365						
2BPRIUA322	13-Jul-12	14-Nov-12	French	2042_2BPRIHL365						
2BPRIUA352	23-Aug-12	26-Dec-12	French	2042_2BPRIHL365						
2BPRIUA324	03-Dec-12	06-Feb-13	French	2042_2BPRIHL365						
2BPRIUA323	15-Nov-12	11-Feb-13	French	2042_2BPRIHL365						
2BPRIUA354	31-Dec-12	06-Mar-13	French	2042_2BPRIHL365						
2BPRIUA353	31-Dec-12	18-Mar-13	French	2042_2BPRIHL365						
2BPRIUA325	12-Apr-13	16-May-13	French	2042_2BPRIHL365						
2BPRIUA017	03-Dec-12	16-May-13	French	2042_2BPRIHL365						
2BPRIUA325	09-May-13	13-Jun-13	French	2042_2BPRIHL365						
2BPRIUA031	31-Dec-12	13-Jun-13	French	2042_2BPRIHL365						
2BPRIUA016	19-Jun-12	17-Jun-13	French	2042_2BPRIHL365						
2BPRIUA030	15-Jun-12	15-Jul-13	French	2042_2BPRIHL365						
2BPRIUA391	22-May-13	16-Jul-13	French	2042_2BPRIHL365						
2BPRIUA372	06-Nov-13	14-Jan-14	French	2042_2BPRIHL365						
2BPRIUA382	09-Dec-13	10-Feb-14	French	2042_2BPRIHL365						
2BPRIUA374	15-Jan-14	20-Mar-14	French	2042_2BPRIHL365						
2BPRIUA384	15-Jan-14	08-Apr-14	French	2042_2BPRIHL365						
2BPRIUA032	24-Feb-14	22-Apr-14	French	2042_2BPRIHL365						
2BPRIUA357	22-Apr-14	22-Apr-14	French	2042_2BPRIHL365						
2BPRIUA383	11-Feb-14	29-Apr-14	French	2042_2BPRIHL365						
2BPRIUA375	23-May-14	27-Jun-14	French	2042_2BPRIHL365						
2BPRIUA042	15-Jan-14	27-Jun-14	French	2042_2BPRIHL365						
2BPRIUA327	16-Jul-14	16-Jul-14	French	2042_2BPRIHL365						
2BPRIUA018	18-Jun-13	16-Jul-14	French	2042_2BPRIHL365						
2BPRIUA041	10-Aug-12	23-Jul-14	French	2042_2BPRIHL365						
2BPRIUA047	26-Mar-14	24-Jul-14	French	2042_2BPRIHL365						

VCT Summary Schedule

Category ID	Start	Finish	Host Nation	Lead Field Processors	2012	2013	2014	2015	2016	2017
2BPRI1A395	19-Jun-14	24-Jul-14	French	-104 2BPRI1SM180 2BPRI1SM178						
2BPRI1A046	06-Jun-13	16-Aug-14	French	-183 2BPRI1L020A 2BPRI1L020B						
2BPRI1A033	10-Mar-14	21-Aug-14	French	365 2BPRI1L300 2BPRI1L300						
2BPRI1A356	28-May-14	21-Aug-14	French	311 2BPRI1G091 2BPRI1G090						
2BPRI1A326	18-Sep-14	30-Oct-14	French	382 2BPRI1G056 2BPRI1G056						
2BPRI1A019	02-Jul-13	30-Oct-14	French	382 2BPRI1T262 2BPRI1L1177						
2BPRI1A377	13-Feb-15	French	1662 2BPRI1L818							
2BPRI1A043	31-Jul-14	13-Feb-15	French	-302 2BPRI1L3803 2BPRI1L3803						
2BPRI1A050	09-Jun-13	15-Jul-15	French	-155 2BPRI1F004 2BPRI1F004						
2BPRI1A378	19-May-15	29-Jul-15	French	36 2BPRI1L698 2BPRI1L698						
2BPRI1A044	14-Aug-14	29-Jul-15	French	36 2BPRI1L851 2BPRI1L854						
2BPRI1A397	13-May-16	French	1347 2BPRI1L1907							
2BPRI1A048	27-Aug-15	13-May-16	French	-302 2BPRI1L1907 2BPRI1L1907						
2BPRI1A396	16-May-16	09-Aug-16	French	-302 2BPRI1G091 2BPRI1G098						
2BPRI1A049	16-May-16	27-Apr-17	French	-302 2BPRI1G098 2BPRI1L006						
Test 6	10-Oct-11 A	25-Sep-12		91						
2BPRI1A208	25-Oct-11 A	10-May-12	French	92 2BPRI1F929 2BPRI1F936						
2BPRI1A202	24-Apr-12	18-May-12	French	103 2BPRI1L0979 2BPRI1L0967						
2BPRI1A207	10-Oct-11 A	18-May-12	French	103 2BPRI1L0711 2BPRI1L0711						
2BPRI1A201	31-Oct-11 A	05-Jun-12	French	92 2BPRI1G005 2BPRI1L0334						
2BPRI1A203	06-Jun-12	25-Jun-12	French	92 2BPRI1G703 2BPRI1G703						
2BPRI1A208	20-Apr-12	16-Jul-12	French	92 2BPRI1G093 2BPRI1G707						
2BPRI1A204	12-Jul-12	08-Aug-12	French	97 2BPRI1G747 2BPRI1L0753						
2BPRI1A209	17-Jul-12	25-Sep-12	French	92 2BPRI1G091 2BPRI1G098						
WP 101 HLP-28	16-May-14	17-Jun-14		160						
2BPRI1A421	16-May-14	French	2681 2BPRI1V0003 2BPRI1V0137							
2BPRI1A422	17-Jun-14	French	2646 2BPRI1V126 2BPRI1V4748							
WP 102 PWD-44	04-Apr-14	19-Aug-14		1768						
2BPRI1A423	04-Apr-14	French	2723 2BPRI1V0006 2BPRI1V0191							
2BPRI1A424	19-Aug-14	French	2666 2BPRI1V4748							
WP 103 HLP-27A/B	16-May-14	18-May-14		1848						
2BPRI1A425	16-May-14	French	2681 2BPRI1V0009 2BPRI1V0228							
WP 104 UFP-02A/B	26-Apr-14	27-May-14		1848						
2BPRI1A427	25-Apr-14	French	2702 2BPRI1V0012 2BPRI1V0271							
2BPRI1A428	27-May-14	French	2670 2BPRI1V0208 2BPRI1V0218							
WP 106 UFP-01A/B	04-Apr-14	05-May-14		1658						
2BPRI1A429	04-Apr-14	French	2723 2BPRI1V0015 2BPRI1V0315							

VCT Summary Schedule

Activity ID	Start	Finish	Responsible Person	Total Hours	2017	2018	2019	2020	2021	2022
2BPR1LA40										
WP 106 HLW RLD-07	14-Mar-14	14-Apr-14	French	197						
2BPR1LA41										
2BPR1LA42										
WP 107 HLW RLD-08	14-Mar-14	14-Apr-14	French	198						
2BPR1LA43										
2BPR1LA44										
WP 108 HLP-22	25-Apr-14	25-Jun-14	French	199						
2BPR1LA45										
2BPR1LA46										
WP 01 CFD New	28-Sep-12	03-Dec-12	French	402						
08 Foot Vessel	28-Sep-12	03-Dec-12	French	402						
2BPR1DP105										
2BPR1DP115										
2BPR1DP107										
2BPR1DP117										
2BPR1DP101										
2BPR1DP111										
WP 02 Performa	14-May-13	05-Aug-13	French	2046						
08 Foot Vessel	14-May-13	05-Aug-13	French	2046						
2BPR1DP125										
2BPR1DP121										
2BPR1DP123										
2BPR1DP127										
WP 10 - EPC	13-Sep-11 A	29-Mar-13	French	413						
01 Summary	02-Nov-11 A	13-Nov-12	Undenhi	222						
2BPR1LC500	02-Nov-11 A	13-Nov-12	Undenhi	222						
2BPR1LC570	07-Nov-11 A	15-Nov-12	Undenhi	222						
04 Foot Vessel	13-Sep-11 A	05-Dec-12	French	407						
2BPR1LU103										
2BPR1LU103										
2BPR1LU121										
2BPR1LU110										
2BPR1LU105										
2BPR1LU111										
2BPR1LU101										

VCT Summary Schedule

Activity ID	Start	Finish	WSP Person	Total Hours	2012	2013	2014	2015	2016	2017
08 Foot Vessel	17-Oct-11 A	01-Oct-12		-116						
2BPRLU021	23-Apr-12*	01-Jul-12*	Omni	-252						
2BPRLU026	15-May-12	Anderson	-306	2BPRLSM104 2BPRLC350						
2BPRLU055	17-Oct-11 A	15-May-12	Omni	-22						
2BPRLU017	15-May-12	Anderson	-310	2BPRLU216 2BPRLU217 2BPRLSM203						
2BPRLU057	22-Mar-12 A	01-Oct-12	Omni	-120						
2BPRLU022	23-Feb-12 A	29-Mar-13	Omni	-34						
2BPRLU025	02-Jul-12*	01-Jul-12*	Omni	0						
2BPRLU030	02-Jul-12*	01-Jul-12*	Omni	0						
2BPRLU030	31-Aug-12*	01-Jul-12*	Omni	0						
2BPRLU026	15-Feb-13*	01-Jul-12*	Omni	-46						
2BPRLU046	15-Feb-13*	01-Jul-12*	Omni	-166						
2BPRLU056	15-Feb-13*	01-Jul-12*	Omni	-66						
2BPRLU036	15-Feb-13*	01-Jul-12*	Omni	-283						
2BPRLU051	19-Feb-13	19-Feb-13	Omni	-983	2BPRLU046 2BPRLU056					
2BPRLU016	29-Mar-13	Anderson	-312	2BPRLU054 2BPRLU054						
2BPRLU059	28-Feb-12 A	29-Mar-13	Omni	-312	2BPRLU015 2BPRLU001					
2BPRLU015	29-Mar-13*	01-Jul-12*	Omni	-312						
WP A Vessel Plt	03-Apr-13	26-Nov-14		116						
01 Summary	03-Apr-13	26-Nov-14		1716						
2BPRLA137	02-Apr-12	French	2386							
2BPRLA117	02-Oct-13	French	2006	4PP30031C						
2BPRLA172	08-Apr-14	French	13	2BPRL1E720 2BPRL1E135						
2BPRLA170	21-Apr-14	French	4	2BPRL1E135 2BPRL1E736						
2BPRLA131	07-May-14	French	1857	4H3810102						
2BPRLA135	07-May-14	French	1857	4H3810103						
2BPRLA107	12-May-14	French	11	2BPRL1E207						
2BPRLA175	12-May-14	French	11	2BPRL1E726 2BPRL1E190						
2BPRLA133	04-Jun-14	French	1838	4PP30021A9						
2BPRLA119	25-Jun-14	French	1823	4PP30002A						
2BPRLA129	10-Jul-14	French	1813	4PP30012AC						
2BPRLA125	31-Jul-14	French	1784	4PP30012AB						
2BPRLA127	21-Aug-14	French	1783	4PP30002B						
2BPRLA174	26-Aug-14	French	-149	2BPRL1E708						
2BPRLA709	17-Sep-14	French	-229	2BPRL1E716 2BPRL1E154						
2BPRLA171	17-Sep-14	French	-229	2BPRL1E194 2BPRL1E716						
2BPRLA173	17-Sep-14	French	-229	2BPRL1E716						

♦ PT - R&T - Integrated Testing - Large Scale - WTP - 8 Foot Platform Ready to Test (First Mating Test)
 ♦ PT - R&T - Integrated Testing - Large Scale - WTP - 8 Foot Platform Ready to Test (First Mating Test)
 ♦ PT - R&T - Integrated Testing - Large Scale - WTP - 8 Foot Platform Ready to Test (Cloud Height Test)
 ♦ PT - R&T - Integrated Testing - Large Scale - WTP - 8 Foot Platform Ready to Test (Cloud Height Test)
 ♦ PT - R&T - Integrated Testing - Large Scale - WTP - 8 Foot Platform Ready to Test (Cloud Height Test)
 ♦ PT - R&T - Integrated Testing - Large Scale - ES - 14 Foot - Procurement of 14 Foot Vessel
 ♦ PT - R&T - Integrated Testing - Large Scale - ES - 14 Foot - Procurement of 14 Foot Heads
 ♦ PT - R&T - Integrated Testing - Large Scale - ES - 14 Foot - Construction Complete
 ♦ PT - R&T - Integrated Testing - Large Scale - WTP - 14 Foot - HLP-27 Array
 ♦ PT - R&T - Integrated Testing - Large Scale - WTP - 14 Foot - RLD-06 Array
 ♦ PT - R&T - Integrated Testing - Large Scale - WTP - 14 Foot - HLP-22 Array
 ♦ PT - R&T - Integrated Testing - Large Scale - WTP - 14 Foot - UFP-02 Array
 ♦ PT - R&T - Integrated Testing - Large Scale - WTP - 14 Foot - Platform Ready to Test
 ♦ PT - R&T - Integrated Testing - Large Scale - ES - 14 Foot Platform Summary
 ♦ PT - R&T - Integrated Testing - Large Scale - ES - 14 Foot Platform Ready to Test
 ♦ PT - Vessel Installation - UFP-18
 ♦ HLW - R&T - Integrated Testing - DOE Vessel Release - RLD-06 (Early)
 ♦ HLW - R&T - Integrated Testing - DOE Vessel Release - RLD-07 (Early)
 ♦ HLW - Vessel Installation - RLD-07
 ♦ HLW - Vessel Installation - RLD-08
 ♦ PT - R&T - Integrated Testing - DOE Vessel Release - UFP-18 (Early)
 ♦ PT - R&T - Integrated Testing - DOE Vessel Release - UFP-1A (Early)
 ♦ PT - Vessel Installation - UFP-1A
 ♦ PT - Vessel Installation - UFP-2A
 ♦ PT - Vessel Installation - HLP-22
 ♦ PT - Vessel Installation - HLP-27B
 ♦ PT - Vessel Installation - UFP-2B
 ♦ PT - R&T - Integrated Testing - DOE Vessel Release - PWD-44 (Early)
 ♦ PT - R&T - Integrated Testing - DOE Vessel Release - UFP-2A (Early)
 ♦ PT - R&T - Integrated Testing - DOE Vessel Release - UFP-2B (Early)
 ♦ PT - R&T - Integrated Testing - DOE Vessel Release - HLP-22 (Early)

VCT Summary Schedule

Activity ID	Start	Finish	Recap Person	Total Hours	Predecessors	2012	2013	2014	2015	2016	2017			
2BPRIVS012	10-Apr-12	25-Apr-14	Osion	174	2BPRIVS276, 2BPRIVS257									
WP 105 UFP-01A/B	05-Dec-11 A	04-Apr-14	1879											
2BPRIVS013	12-Dec-11 A	31-Jul-12	Underhill	3	2BPRIVS285									
2BPRIVS014	29-Feb-12 A	22-Aug-13	Underhill	-128	2BPRIVS297, 2BPRIVS300, 2BPRIVS301, 2BPRIVS302									
2BPRIVS015	28-Jun-12	04-Apr-14	Osion	61	2BPRIVS330, 2BPRIVS303									
WP 106 HLW RLD-07	03-Jun-12 A	14-Mar-14	1864											
2BPRIVS016	03-Jun-12 A	12-Jun-12	Osion	3	2BPRIVS323									
2BPRIVS017	17-Jun-12 A	16-Dec-13	Underhill	-222	2BPRIVS337, 2BPRIVS329, 2BPRIVS331									
2BPRIVS018	15-May-12	14-Mar-14	Osion	94	2BPRIVS347, 2BPRIVS351									
WP 107 HLW RLD-08	03-Jun-12 A	19-Feb-14	1911											
2BPRIVS019	03-Jun-12 A	12-Jun-12	Osion	3	2BPRIVS365									
2BPRIVS020	17-Jan-12 A	19-Nov-13	Underhill	-305	2BPRIVS369, 2BPRIVS370, 2BPRIVS371, 2BPRIVS389									
2BPRIVS021	01-Jun-12	18-Feb-14	Osion	74	2BPRIVS391, 2BPRIVS393									
WP 108 HLP-22	03-Apr-12	25-Nov-14	1654											
2BPRIVS022	20-Jun-12	21-Aug-12	Osion	3	2BPRIVS403									
2BPRIVS023	20-Jun-12	22-Aug-13	Underhill	-113	2BPRIVS405, 2BPRIVS411, 2BPRIVS412									
2BPRIVS024	10-Apr-12	25-Apr-14	Osion	174	2BPRIVS427, 2BPRIVS431, 2BPRIVS432, 2BPRIVS433									
WP 109 CNP-VSL-00003	05-Nov-12	26-Mar-14	1751											
2BPRIVS025	23-Aug-13	13-Sep-13	Osion	1506	2BPRIVS445, 2BPRIVS447, 2BPRIVS448									
2BPRIVS026	16-Sep-13	27-Dec-13	Underhill	1506	2BPRIVS459, 2BPRIVS463, 2BPRIVS464, 2BPRIVS465									
2BPRIVS027	05-Nov-12	26-Mar-14	Osion	1744	2BPRIVS471, 2BPRIVS472, 2BPRIVS473, 2BPRIVS474									
WP 110 CNP-VSL-00004	19-Nov-12	09-Apr-14	1761											
2BPRIVS028	09-Sep-13	04-Oct-13	Osion	1531	2BPRIVS487, 2BPRIVS489, 2BPRIVS490, 2BPRIVS491, 2BPRIVS492, 2BPRIVS493, 2BPRIVS494									
2BPRIVS029	30-Sep-13	13-Jan-14	Underhill	1526	2BPRIVS495, 2BPRIVS496, 2BPRIVS497, 2BPRIVS498, 2BPRIVS499, 2BPRIVS500, 2BPRIVS501, 2BPRIVS502, 2BPRIVS503, 2BPRIVS504, 2BPRIVS505, 2BPRIVS506, 2BPRIVS507, 2BPRIVS508, 2BPRIVS509, 2BPRIVS510, 2BPRIVS511, 2BPRIVS512, 2BPRIVS513, 2BPRIVS514, 2BPRIVS515, 2BPRIVS516, 2BPRIVS517, 2BPRIVS518, 2BPRIVS519, 2BPRIVS520, 2BPRIVS521, 2BPRIVS522, 2BPRIVS523, 2BPRIVS524, 2BPRIVS525, 2BPRIVS526, 2BPRIVS527, 2BPRIVS528, 2BPRIVS529, 2BPRIVS530, 2BPRIVS531, 2BPRIVS532, 2BPRIVS533, 2BPRIVS534, 2BPRIVS535, 2BPRIVS536, 2BPRIVS537, 2BPRIVS538, 2BPRIVS539, 2BPRIVS540, 2BPRIVS541, 2BPRIVS542, 2BPRIVS543, 2BPRIVS544, 2BPRIVS545, 2BPRIVS546, 2BPRIVS547, 2BPRIVS548, 2BPRIVS549, 2BPRIVS550, 2BPRIVS551, 2BPRIVS552, 2BPRIVS553, 2BPRIVS554, 2BPRIVS555, 2BPRIVS556, 2BPRIVS557, 2BPRIVS558, 2BPRIVS559, 2BPRIVS560, 2BPRIVS561, 2BPRIVS562, 2BPRIVS563, 2BPRIVS564, 2BPRIVS565, 2BPRIVS566, 2BPRIVS567, 2BPRIVS568, 2BPRIVS569, 2BPRIVS570, 2BPRIVS571, 2BPRIVS572, 2BPRIVS573, 2BPRIVS574, 2BPRIVS575, 2BPRIVS576, 2BPRIVS577, 2BPRIVS578, 2BPRIVS579, 2BPRIVS580, 2BPRIVS581, 2BPRIVS582, 2BPRIVS583, 2BPRIVS584, 2BPRIVS585, 2BPRIVS586, 2BPRIVS587, 2BPRIVS588, 2BPRIVS589, 2BPRIVS590, 2BPRIVS591, 2BPRIVS592, 2BPRIVS593, 2BPRIVS594, 2BPRIVS595, 2BPRIVS596, 2BPRIVS597, 2BPRIVS598, 2BPRIVS599, 2BPRIVS600									
2BPRIVS030	19-Nov-12	09-Apr-14	Osion	1751	2BPRIVS501, 2BPRIVS507									
WP 111 CXP-VSL-00004	05-Nov-12	23-Apr-14	1731											
2BPRIVS031	23-Sep-13	25-Oct-13	Osion	1546	2BPRIVS529									
2BPRIVS032	14-Oct-13	28-Jan-14	Underhill	1546	2BPRIVS537, 2BPRIVS538, 2BPRIVS539, 2BPRIVS540, 2BPRIVS541, 2BPRIVS542, 2BPRIVS543, 2BPRIVS544, 2BPRIVS545, 2BPRIVS546, 2BPRIVS547, 2BPRIVS548, 2BPRIVS549, 2BPRIVS550, 2BPRIVS551, 2BPRIVS552, 2BPRIVS553, 2BPRIVS554, 2BPRIVS555, 2BPRIVS556, 2BPRIVS557, 2BPRIVS558, 2BPRIVS559, 2BPRIVS560, 2BPRIVS561, 2BPRIVS562, 2BPRIVS563, 2BPRIVS564, 2BPRIVS565, 2BPRIVS566, 2BPRIVS567, 2BPRIVS568, 2BPRIVS569, 2BPRIVS570, 2BPRIVS571, 2BPRIVS572, 2BPRIVS573, 2BPRIVS574, 2BPRIVS575, 2BPRIVS576, 2BPRIVS577, 2BPRIVS578, 2BPRIVS579, 2BPRIVS580, 2BPRIVS581, 2BPRIVS582, 2BPRIVS583, 2BPRIVS584, 2BPRIVS585, 2BPRIVS586, 2BPRIVS587, 2BPRIVS588, 2BPRIVS589, 2BPRIVS590, 2BPRIVS591, 2BPRIVS592, 2BPRIVS593, 2BPRIVS594, 2BPRIVS595, 2BPRIVS596, 2BPRIVS597, 2BPRIVS598, 2BPRIVS599, 2BPRIVS600									
2BPRIVS033	05-Nov-12	23-Apr-14	Osion	1731	2BPRIVS551, 2BPRIVS558									
WP 112 CXP-VSL-00025A/B/C	19-Nov-12	14-May-14	1726											
2BPRIVS034	07-Oct-13	15-Nov-13	Osion	1561	2BPRIVS565									
2BPRIVS035	28-Oct-13	19-Feb-14	Underhill	1561	2BPRIVS567, 2BPRIVS568, 2BPRIVS569, 2BPRIVS570, 2BPRIVS571, 2BPRIVS572, 2BPRIVS573, 2BPRIVS574, 2BPRIVS575, 2BPRIVS576, 2BPRIVS577, 2BPRIVS578, 2BPRIVS579, 2BPRIVS580, 2BPRIVS581, 2BPRIVS582, 2BPRIVS583, 2BPRIVS584, 2BPRIVS585, 2BPRIVS586, 2BPRIVS587, 2BPRIVS588, 2BPRIVS589, 2BPRIVS590, 2BPRIVS591, 2BPRIVS592, 2BPRIVS593, 2BPRIVS594, 2BPRIVS595, 2BPRIVS596, 2BPRIVS597, 2BPRIVS598, 2BPRIVS599, 2BPRIVS600									
2BPRIVS036	19-Nov-12	14-May-14	Osion	1726	2BPRIVS593, 2BPRIVS594									
WP 113 UFP-VSL-00062A/B/C	05-Nov-12	03-Jun-14	1921											
2BPRIVS037	21-Oct-13	10-Dec-13	Osion	1576	2BPRIVS609									
2BPRIVS038	11-Nov-13	12-Mar-14	Underhill	1586	2BPRIVS615, 2BPRIVS616, 2BPRIVS617, 2BPRIVS618, 2BPRIVS619, 2BPRIVS620, 2BPRIVS621, 2BPRIVS622, 2BPRIVS623, 2BPRIVS624, 2BPRIVS625, 2BPRIVS626, 2BPRIVS627, 2BPRIVS628, 2BPRIVS629, 2BPRIVS630, 2BPRIVS631, 2BPRIVS632, 2BPRIVS633, 2BPRIVS634, 2BPRIVS635, 2BPRIVS636, 2BPRIVS637, 2BPRIVS638, 2BPRIVS639, 2BPRIVS640, 2BPRIVS641, 2BPRIVS642, 2BPRIVS643, 2BPRIVS644, 2BPRIVS645, 2BPRIVS646, 2BPRIVS647, 2BPRIVS648, 2BPRIVS649, 2BPRIVS650, 2BPRIVS651, 2BPRIVS652, 2BPRIVS653, 2BPRIVS654, 2BPRIVS655, 2BPRIVS656, 2BPRIVS657, 2BPRIVS658, 2BPRIVS659, 2BPRIVS660, 2BPRIVS661, 2BPRIVS662, 2BPRIVS663, 2BPRIVS664, 2BPRIVS665, 2BPRIVS666, 2BPRIVS667, 2BPRIVS668, 2BPRIVS669, 2BPRIVS670, 2BPRIVS671, 2BPRIVS672, 2BPRIVS673, 2BPRIVS674, 2BPRIVS675, 2BPRIVS676, 2BPRIVS677, 2BPRIVS678, 2BPRIVS679, 2BPRIVS680, 2BPRIVS681, 2BPRIVS682, 2BPRIVS683, 2BPRIVS684, 2BPRIVS685, 2BPRIVS686, 2BPRIVS687, 2BPRIVS688, 2BPRIVS689, 2BPRIVS690, 2BPRIVS691, 2BPRIVS692, 2BPRIVS693, 2BPRIVS694, 2BPRIVS695, 2BPRIVS696, 2BPRIVS697, 2BPRIVS698, 2BPRIVS699, 2BPRIVS700									
2BPRIVS039	05-Nov-12	03-Jun-14	Osion	1673	2BPRIVS635, 2BPRIVS619									

VCT Summary Schedule

Activity ID	Start	Finish	Responsible Person	Total Hours	Predecessors	2012	2013	2014	2015	2016	2017
WP 114 FEP-VSL-00017A/B	19-Nov-12	02-Jul-14		1562							
28PRIVS040	04-Nov-13	02-Jan-14	Osborn	1567	28PRIVS047						
28PRIVS041	25-Nov-13	08-Apr-14	Undomill	1567	28PRIVS045						
28PRIVS042	19-Nov-12	02-Jul-14	Osborn	1567	28PRIVS051						
WP 115 FRP-VSL-00002A/B	05-Dec-12	07-Aug-14		1667							
28PRIVS043	11-Nov-13	24-Jan-14	Osborn	1562	28PRIVS067						
28PRIVS044	11-Dec-13	13-May-14	Undomill	1562	28PRIVS097						
28PRIVS045	05-Dec-12	07-Aug-14	Osborn	1667	28PRIVS702						
WP 116 RDP-VSL-00002A/B	05-Dec-12	17-Jul-14		1662							
28PRIVS048	05-Dec-12	17-Jul-14	Osborn	1662	28PRIVS705						
WP 117 HOP-VSL-00003A/B/C/D	10-Dec-12	14-Aug-14		1663							
28PRIVS049	25-Nov-13	14-Feb-14	Osborn	1602	28PRIVS735						
28PRIVS050	26-Dec-13	20-May-14	Undomill	1637	28PRIVS733						
28PRIVS051	19-Dec-12	14-Aug-14	Osborn	1662	28PRIVS736						
WP 118 TCP-VSL-00001	19-Dec-12	05-Sep-14		1647							
28PRIVS052	11-Dec-13	10-Mar-14	Osborn	1567	28PRIVS771						
28PRIVS053	10-Jan-14	11-Jun-14	Undomill	1632	28PRIVS777						
28PRIVS054	19-Dec-12	05-Sep-14	Osborn	1647	28PRIVS796						
WP 119 TLP-VSL-00005A/B	19-Dec-12	10-Oct-14		1613							
28PRIVS055	26-Dec-13	31-Mar-14	Osborn	1592	28PRIVS803						
28PRIVS056	27-Jan-14	17-Jul-14	Undomill	1612	28PRIVS803						
28PRIVS057	19-Dec-12	10-Oct-14	Osborn	1612	28PRIVS835						
WP 120 PWD-VSL-00015/16	04-Jan-13	24-Oct-14		1917							
28PRIVS058	10-Jan-14	21-Apr-14	Osborn	1587	28PRIVS846						
28PRIVS059	22-Apr-14	21-Aug-14	Undomill	1587	28PRIVS843						
28PRIVS060	04-Jan-13	24-Oct-14	Osborn	1612	28PRIVS849						
WP 121 PWD-VSL-00003	04-Jan-13	14-Nov-14		1597							
28PRIVS061	27-Jan-14	12-May-14	Osborn	1592	28PRIVS881						
28PRIVS062	06-May-14	21-Aug-14	Undomill	1587	28PRIVS883						
28PRIVS063	04-Jan-13	14-Nov-14	Osborn	1697	28PRIVS896						
WP 122 PWD-VSL-00043	20-Jan-14	02-Dec-14		1587							
28PRIVS064	10-Feb-14	09-Jun-14	Osborn	1587	28PRIVS916						
28PRIVS065	20-May-14	05-Sep-14	Osborn	1587	28PRIVS923						
28PRIVS066	20-Jan-14	02-Dec-14	Osborn	1587	28PRIVS923						
WP D - Design V	07-Apr-14	19-Aug-14		27							
WP 101 HEP-28	17-Jun-14	17-Jun-14		-21							
28PRIDV108	17-Jun-14	Kaufman		-21	28PRIDV157						

◆ PT - R&T - Design Verification H.E.P-28 - Issue Design Verification Report for Vessel Installation

VCT Summary Schedule

Activity ID	Start	Finish	Wkly Person	Total Hours	2012	2013	2014	2015	2016
2BPRLJ110	12-Jun-12	01-Jul-12	Olson	35	2BPRLG250				
2BPRLJ133	11-Jul-12	01-Aug-12	Olson	16	2BPRLG196				
2BPRLJ132	30-Jul-12	01-Aug-12	Olson	2	2BPRLG146				
2BPRLJ131	01-Aug-12	01-Aug-12	Olson	0	2BPRLG145				
2BPRLJ121	01-Aug-12	01-Aug-12	Julia	0	2BPRLG122				
2BPRLJ111	10-Aug-12	25-Sep-12	Hanson	72	2BPRLG216				
2BPRLJ171	25-Sep-12	18-Jan-13	Hanson	911	2BPRLG702				
2BPRLJ155	18-Jan-13	18-Jan-13	Bucche	387	2BPRLG813				
2BPRLJ205	18-Jan-13	18-Jan-13	Hanson	387	2BPRLG813				
2BPRLJ208	18-Jan-13	18-Jan-13	Hanson	64	2BPRLG823				
2BPRLJ166	18-Jan-13	18-Jan-13	Danarow	387	2BPRLG813				
2BPRLJ168	18-Jan-13	18-Jan-13	Danarow	64	2BPRLG823				
2BPRLJ158	18-Jan-13	18-Jan-13	Bucche	64	2BPRLG823				
2BPRLJ228	05-Feb-13	05-Feb-13	Danarow	212	2BPRLG824				
2BPRLJ225	05-Feb-13	05-Feb-13	Danarow	212	2BPRLG814				
2BPRLJ154	28-Mar-13	28-Mar-13	Bucche	407	2BPRLG816				
2BPRLJ204	28-Mar-13	28-Mar-13	Danarow	407	2BPRLG816				
2BPRLJ154	28-Mar-13	28-Mar-13	Danarow	407	2BPRLG816				
2BPRLJ224	12-Apr-13	17-Apr-13	Danarow	2125	2BPRLG817				
2BPRLJ167	17-Apr-13	17-Apr-13	Danarow	541	2BPRLG826				
2BPRLJ207	17-Apr-13	17-Apr-13	Hanson	541	2BPRLG826				
2BPRLJ157	17-Apr-13	17-Apr-13	Bucche	541	2BPRLG826				
2BPRLJ227	02-May-13	31-May-13	Danarow	2111	2BPRLG827				
2BPRLJ166	31-May-13	31-May-13	Danarow	362	2BPRLG816				
2BPRLJ206	31-May-13	31-May-13	Hanson	362	2BPRLG819				
2BPRLJ156	31-May-13	31-May-13	Bucche	362	2BPRLG819				
2BPRLJ153	11-Jun-13	11-Jun-13	Bucche	133	2BPRLG810				
2BPRLJ203	11-Jun-13	11-Jun-13	Danarow	133	2BPRLG810				
2BPRLJ276	17-Jun-13	17-Jun-13	Danarow	2060	2BPRLG820				
2BPRLJ172	20-Jun-13	20-Jun-13	Hanson	726	2BPRLG816				
2BPRLJ223	26-Jun-13	26-Jun-13	Danarow	2073	2BPRLG811				
2BPRLJ209	27-Jun-13	27-Jun-13	Hanson	146	2BPRLG829				
2BPRLJ159	27-Jun-13	27-Jun-13	Bucche	146	2BPRLG829				
2BPRLJ229	15-Jul-13	18-Sep-13	Danarow	2061	2BPRLG830				
2BPRLJ175	18-Sep-13		Hanson	664	2BPRLG844				

VCT Summary Schedule

Activity ID	Start	Finish	Key Person	Total Hours	2012	2013	2014	2015	2016	2017
2BPRL1J78		18-Sep-13	Hanson	684						
2BPRL1J79		31-Dec-13	Busche	0						
2BPRL1J80		16-Jan-14	Hanson	582						
2BPRL1J81		17-Jan-14	Hanson	581						
2BPRL1J82		30-Jan-14	Busche	20						
2BPRL1J83		07-Feb-14	Hanson	567						
2BPRL1J84		10-Feb-14	Daniel	666						
2BPRL1J85		25-Jun-14	Daniel	471						
2BPRL1J86		08-Jul-14	Busche	387						
2BPRL1J87		08-Jul-14	Hanson	357						
2BPRL1J88		08-Jul-14	Hanson	357						
2BPRL1J89		23-Jul-14	Daniel	1800						
2BPRL1J90		01-Aug-14	Busche	274						
2BPRL1J91		01-Aug-14	Busche	104						
2BPRL1J92		01-Aug-14	Daniel	104						
2BPRL1J93		01-Aug-14	Hanson	285						
2BPRL1J94		18-Aug-14	Daniel	1785						
2BPRL1J95		18-Aug-14	Daniel	274						
2BPRL1J96		18-Aug-14	Daniel	1785						
2BPRL1J97		28-Aug-14	Hanson	426						
2BPRL1J98		20-Nov-14	Hanson	367						
2BPRL1J99		08-Jan-15	Daniel	232						
2BPRL1J100		29-Jul-15	Hanson	166						
2BPRL1J101		27-Oct-15	Daniel	133						
2BPRL1J102		21-Sep-15	Hanson	94						
2BPRL1J103		21-Sep-15	Underhill	64						
2BPRL1J104		21-Sep-15	Hanson	94						
2BPRL1J105		21-Sep-15	Underhill	64						
2BPRL1J106		21-Sep-15	Daniel	94						
2BPRL1J107		21-Sep-15	Daniel	94						
2BPRL1J108		01-Aug-14		448						
2BPRL1J109		27-Apr-12	Hanson	-266						
2BPRL1J110		20-Apr-12	Hanson	2						
2BPRL1J111		01-May-12	Hanson	0						
2BPRL1J112		18-May-12	Hanson	62						
2BPRL1J113		18-Jan-13	Hanson	387						
2BPRL1J114		18-Jan-13	Hanson	64						

- PT - RBT - DNFSB - 5.1.3.07.06 - Analysis of Test Results - 8 Foot Heel Mgmt Test
- PT - DNFSB - 5.1.3.04 - Update the CSER
- PT - RBT - DNFSB - 5.1.3.07.07 - Analysis of Test Results - 4 Foot Heel Mgmt Test
- PT - RBT - DNFSB - 5.1.3.07.03 - Analysis of Test Results - Single P.M
- PT - DNFSB - 5.1.3.04 - Update the CSER Target
- PT - RBT - DNFSB - 5.1.3.07.04 - Analysis of Test Results - 4 Foot Performance Test
- PT - RBT - DNFSB - 5.1.3.15.01 - Decision point on the need for larger scale testing - CFD
- PT - RBT - DNFSB - 5.1.3.15.03 - Decision point on the need for larger scale testing - Heel Management
- PT - RBT - DNFSB - 5.1.3.05.10 - Define and document functional requirements - Integrated 14 Foot Operations Test
- PT - RBT - DNFSB - 5.1.3.06.10 - Develop test plans - Integrated 14 Foot Operations Test
- PT - RBT - DNFSB - 5.1.3.10.10 - Documented test objectives - Integrated 14 Foot Operations
- PT - RBT - DNFSB - 5.1.3.05.11 - Define and document functional requirements - Performance Limits Testing
- PT - RBT - DNFSB - 5.1.3.08.11 - Develop test plans - Performance Limits Test
- PT - RBT - DNFSB - 5.1.3.10.11 - Documented test objectives - Performance Limits Testing
- PT - RBT - DNFSB - 5.1.3.10 - Documented test objectives
- PT - RBT - DNFSB - 5.1.3.12.11 - Test Specifications - Performance Limits Testing
- PT - RBT - DNFSB - 5.1.3.06 - Develop test plans
- PT - RBT - DNFSB - 5.1.3.12 - Test Specifications
- PT - RBT - DNFSB - 5.1.3.07.09 - Analysis of Test Results - 14 Foot Heel Mgmt Test
- PT - RBT - DNFSB - 5.1.3.15.02 - Decision point on the need for larger scale testing - Performance and Scaling
- PT - RBT - DNFSB - 5.1.3.07.10 - Analysis of Test Results - Integrated 14 Foot Test
- PT - RBT - DNFSB - 5.1.3.15.04 - Decision point on the need for larger scale testing - Integrated 14 Foot O
- PT - RBT - DNFSB - 5.1.3.07.11 - Analysis of Test Results - F
- PT - RBT - DNFSB - 5.1.3.09 - Rpt addressing extn of P.M
- PT - RBT - DNFSB - 5.1.3.07 - Analysis of Test Results
- PT - RBT - DNFSB - 5.1.3.06 - Assess the need to test in ind
- PT - RBT - DNFSB - 5.1.3.15 - Decision point on the need for
- PT - RBT - DNFSB - 5.2.3.02.02 - Qualification reports for simulators - CFD V&V
- PT - RBT - DNFSB - 5.2.3.01 - Physical properties important to mixing and scaling Target
- PT - RBT - DNFSB - 5.2.3.01 - Physical properties important to mixing and scaling
- PT - RBT - DNFSB - 5.2.3.02.01 - Qualification reports for simulators - Test 5
- PT - RBT - DNFSB - 5.2.3.02.01 - Qualification reports for simulators - Heel Management - 8 Foot
- PT - RBT - DNFSB - 5.2.3.02.07 - Qualification reports for simulators - Heel Management - 8 Foot

VCT Summary Schedule

Activity ID	Start	Finish	Responsible Person	Total Hours	2012	2013	2014	2015	2016	2017
2BPRTL0273	28-Mar-13	28-Mar-13	Hanson	407						
2BPRTL0276	17-Apr-13	17-Apr-13	Hanson	541						
2BPRTL0275	31-May-13	31-May-13	Hanson	362						
2BPRTL0279	11-Jun-13	11-Jun-13	Hanson	133						
2BPRTL0278	27-Jun-13	27-Jun-13	Hanson	146						
2BPRTL0284	08-Jul-14	08-Jul-14	Hanson	357						
2BPRTL0285	01-Aug-14	01-Aug-14	Hanson	104						
2BPRTL0270	01-Aug-14	01-Aug-14	Hanson	446						
5.3.3 - Model Verification and Validation	15-May-12	08-Jun-15		232						
2BPRTL0281	15-May-12	15-May-12	Olson	76						
2BPRTL0300	30-May-12	30-May-12	ORP	47						
2BPRTL0302	19-Jun-12	19-Jun-12	Olson	31						
2BPRTL0291	19-Jul-12	19-Jul-12	ORP	113						
2BPRTL0301	19-Jul-12	19-Jul-12	ORP	153						
2BPRTL0303	31-Jul-12	31-Jul-12	ORP	0						
2BPRTL0280	31-Aug-12	31-Aug-12	Olson	0						
2BPRTL0370	31-Oct-12	31-Oct-12	Hanson	0						
2BPRTL0340	31-Oct-12	31-Oct-12	Nyja	0						
2BPRTL0371	14-Nov-12	14-Nov-12	Hanson	10						
2BPRTL0290	31-Dec-12	31-Dec-12	ORP	0						
2BPRTL0300	28-Feb-13	28-Feb-13	ORP	0						
2BPRTL0350	28-Feb-13	28-Feb-13	ORP	0						
2BPRTL0341	20-Jun-13	20-Jun-13	Underhill	159						
2BPRTL0351	27-Jun-13	27-Jun-13	ORP	84						
2BPRTL0381	27-Jun-13	27-Jun-13	Daniel	45						
2BPRTL0381	05-Jul-13	05-Jul-13	Underhill	40						
2BPRTL0380	30-Aug-13	30-Aug-13	Underhill	0						
2BPRTL0350	30-Aug-13	30-Aug-13	Daniel	0						
2BPRTL0350	08-Jun-15	08-Jun-15	Underhill	232						
5.4.3 - Sampling in Vessels	10-Aug-12	18-Mar-16		36						
2BPRTL0431	10-Aug-12	10-Aug-12	Olson	34						
2BPRTL0411	24-Aug-12	24-Aug-12	Olson	24						
2BPRTL0410	28-Sep-12	28-Sep-12	Olson	0						
2BPRTL0430	28-Sep-12	28-Sep-12	Olson	0						
2BPRTL0400	30-Dec-13	30-Dec-13	Olson	0						
2BPRTL0420	31-Dec-13	31-Dec-13	Buatoe	0						

** Preliminary Input Pending Engineering Validation as of 4/24/2012 Page 13 of 15

VCT Summary Schedule

Activity ID	Start	Finish	Resp Person	Total Hours Production	2012	2013	2014	2015	2016	2017
2BPRTLJ421	30-Jan-14	30-Jan-14	Buache	-21	2BPRTL4160					
2BPRTLJ421	30-Jan-14	30-Jan-14	Osbon	-21	2BPRTL4161					
2BPRTLJ441	30-Jan-14	30-Jan-14	Buache	-21	2BPRTL421					
2BPRTLJ450	20-Mar-14	20-Mar-14	Damenow	530	2BPRTL7955					
2BPRTLJ460	31-Mar-14	31-Mar-14	Buache	0	2BPRTL1001					
2BPRTLJ470	29-Jul-15	29-Jul-15	Hanson	136	2BPRTL4038					
2BPRTLJ480	29-Jul-15	29-Jul-15	Hanson	36	2BPRTL4038					
2BPRTLJ490	18-Mar-15	18-Mar-15	Hanson	36	2BPRTL460					
2BPRTLJ500	11-Apr-16	11-Apr-16	Osbon	867	2BPRTL4038					
2BPRTLJ510	02-Apr-12	02-Apr-12	Osbon	150	2BPRTL461					
2BPRTLJ520	02-Apr-12	02-Apr-12	Thorn	610	2BPRTL461					
2BPRTLJ541	31-May-12	31-May-12	Thorn	0	2BPRTL461					
2BPRTLJ550	25-Jun-12	25-Jun-12	Thorn	0	2BPRTL461					
2BPRTLJ600	31-Dec-12	31-Dec-12	Osbon	0	2BPRTL461					
2BPRTLJ610	31-Dec-12	31-Dec-12	Thorn	0	2BPRTL461					
2BPRTLJ620	29-Mar-13	29-Mar-13	Thorn	0	2BPRTL461					
2BPRTLJ630	29-Mar-13	29-Mar-13	Thorn	0	2BPRTL461					
2BPRTLJ640	29-Aug-14	29-Aug-14	Thorn	0	2BPRTL461					
2BPRTLJ650	29-May-15	29-May-15	Osbon	0	2BPRTL461					
2BPRTLJ660	09-Aug-16	09-Aug-16	Osbon	360	2BPRTL0098					
2BPRTLJ670	11-Apr-18	11-Apr-18	Osbon	867	2BPRTL1009					
2BPRTLJ680	15-Aug-15	15-Aug-15	Osbon	154	2BPRTL460					
2BPRTLJ690	15-Aug-15	15-Aug-15	Osbon	154	2BPRTL460					
2BPRTLJ700	08-May-17	08-May-17	JuJA	143	2BPRTL428					
2BPRTLJ710	30-May-17	30-May-17	JuJA	0	2BPRTL461					
2BPRTLJ720	30-Nov-17	30-Nov-17	JuJA	0	2BPRTL461					
2BPRTLJ730	27-Jun-13	27-Jun-13	Damenow	600	2BPRTL1169					
2BPRTLJ740	05-Nov-13	05-Nov-13	Buache	-154	2BPRL1E534					
2BPRTLJ750	21-Aug-14	21-Aug-14	Hanson	311	2BPRTL460					
2BPRTLJ760	13-Feb-15	13-Feb-15	Osbon	311	2BPRTL460					
2BPRTLJ770	13-Feb-15	13-Feb-15	Osbon	311	2BPRTL460					
2BPRTLJ780	05-Aug-15	05-Aug-15	Osbon	154	2BPRTL460					
2BPRTLJ790	25-Jul-15	25-Jul-15	Osbon	154	2BPRTL460					
2BPRTLJ800	25-Jul-15	25-Jul-15	Osbon	154	2BPRTL460					
2BPRTLJ810	30-Jan-13	30-Jan-13	Osbon	625	2BPRTL720					
2BPRTLJ820	30-Jan-13	30-Jan-13	DOE HQ	0	2BPRTL660					
2BPRTLJ830	30-Jan-13	30-Jan-13	Buache	0	2BPRTL660					

VCT Summary Schedule

Activity ID	Start	Finish	Temp Person	Total Full Production	2012	2013	2014	2015	2016	2017
2BPRLJ692				0	2BPRLJ681					
2BPRLJ704				573	2BPRLJ691					
2BPRLJ702				445	2BPRLJ720					
2BPRLJ693				0	2BPRLJ692					
2BPRLJ706				311	2BPRLJ670					
2BPRLJ703				232	2BPRLJ690					
2BPRLJ694				0	2BPRLJ691					
2BPRLJ705				64	2BPRLJ681					
2BPRLJ701				64	2BPRLJ702					
2BPRLJ700				64	2BPRLJ700					
2BPRLJ701				64	2BPRLJ701					
6.3.1 - Reporting	30-Apr-12	31-Oct-14		0						
2BPRLJ735				0	2BPRLJ730					
2BPRLJ740				0	2BPRLJ735					
2BPRLJ745				0	2BPRLJ740					
2BPRLJ750				0	2BPRLJ745					
2BPRLJ755				0	2BPRLJ750					
2BPRLJ760				0	2BPRLJ755					
2BPRLJ765				0	2BPRLJ760					
2BPRLJ770				0	2BPRLJ765					
2BPRLJ775				0	2BPRLJ770					
2BPRLJ780				0	2BPRLJ775					
2BPRLJ785				0	2BPRLJ780					

<ul style="list-style-type: none"> PT - RAT - DNFSB - 5.7.3.01 - Update plan and sched. to eval the hazard of known tech issues - 2014 PT - RAT - DNFSB - 5.7.3.03.04 - Eval the closure doc for each sub-recommendation to verify results can be implemented PT - RAT - DNFSB - 5.7.3.03.02 - Eval the closure doc for each sub-recommendation to verify results can be implemented PT - RAT - DNFSB - 5.7.3.01 - Update plan and sched. to eval the hazard of known tech issues - 2015 PT - RAT - DNFSB - 5.7.3.03.03 - Eval the closure doc for each sub-recommendation to verify results can be implemented PT - RAT - DNFSB - 5.7.3.01 - Update plan and sched. to eval the hazard of known tech issues - 2014 PT - RAT - DNFSB - 5.7.3.03.05 - Eval the closure doc for each sub-recommendation to verify results can be implemented PT - RAT - DNFSB - 5.7.3.01 - Update plan and sched. to eval the hazard of known tech issues - 2014 PT - RAT - DNFSB - 5.7.3.03.01 - Eval the closure doc for each sub-recommendation to verify results can be implemented
<ul style="list-style-type: none"> PT - RAT - DNFSB - 6.3.1 - Quarterly Progress Report and briefing to the DNFSB and staff - Apr 2012 PT - RAT - DNFSB - 6.3.1 - Quarterly Progress Report and briefing to the DNFSB and staff - Jul 2012 PT - RAT - DNFSB - 6.3.1 - Quarterly Progress Report and briefing to the DNFSB and staff - Oct 2012 PT - RAT - DNFSB - 6.3.1 - Quarterly Progress Report and briefing to the DNFSB and staff - Jan 2013 PT - RAT - DNFSB - 6.3.1 - Quarterly Progress Report and briefing to the DNFSB and staff - Apr 2013 PT - RAT - DNFSB - 6.3.1 - Quarterly Progress Report and briefing to the DNFSB and staff - Oct 2013 PT - RAT - DNFSB - 6.3.1 - Quarterly Progress Report and briefing to the DNFSB and staff - Jan 2014 PT - RAT - DNFSB - 6.3.1 - Quarterly Progress Report and briefing to the DNFSB and staff - Apr 2014 PT - RAT - DNFSB - 6.3.1 - Quarterly Progress Report and briefing to the DNFSB and staff - Jul 2014 PT - RAT - DNFSB - 6.3.1 - Quarterly Progress Report and briefing to the DNFSB and staff - Oct 2014