

Form CC1 ATLANTIS MoC REQUEST - CHANGE REQUEST

Initiator: Ryan Malone	Date: 09-07-2007	Change Request No.: SS-06-013 Rev3
Responsible Managers: Gene Hall		Project Team: Atlantis Subsea
Title of MoC Request: Atlantis Overall Subsea Phase 1 (SS1) MOC		
Reason for the MoC Request (<i>*Attach continuation sheets or additional documentation as needed</i>):		
In response to the Thunder Horse DC-41 manifold incident, the Atlantis Project Team has proactively taken precautions to avoid a similar incident within the Atlantis subsea system design. The lessons learned from Thunder Horse, via the Manifold Investigation Team (MIT), have identified risks associated with 8630/625 material interface, and Atlantis has developed the Subsea Phase 1 (SS1) concept which eliminates all of the 8630/625 material interfaces in production equipment. All 8630/625 material interfaces have been removed from all Atlantis Subsea equipment, with the exception of the Water Injection PLET which will be the subject of a separate MOC and decision process. Plans for Atlantis SS1 include the reconstruction of Atlantis Manifolds that will be a temporary design. The SS1, 3 header, valve-less manifolds will be replaced within the 5 year safe operating life of the manifold. SS1 also includes reconstructed, valve-less Pipeline End Terminations (PLETs) that have a 25 year design life. New build SS1 PLEMs contain reconstructed 9" gate valves and are landed at Drill Center 1 (DC 1) on newly installed 36" casing piles. Each of the 4 SS1 PLEMs (PT, PP, PP1, PP2/3) have varying safe operating lives which will be discussed in further detail below. PLEM PP2/3 has a safe operating life of 25 years, and PLEMs PT, PP and PP1 have a safe operating life of 3 years. The safe operating life of PLEM PP and PP1 can potentially be extended to 25 years if the Project implements a number of measures to protect against and mitigate under-deposit corrosion within the PLEMs. The Project is currently evaluating methods of implementation of these preventative and mitigating measures for PLEM PP and PP1. The SS1 concept, including the reconstruction of the manifolds and PLETs, and the new build PLEMs, is a departure from the Atlantis sanction case design. Likewise, the SS1 concept, which specifies that manifolds and certain PLEMs will be replaced within 5 and 3 years respectively, is a departure from typical industry practice. Atlantis SS1 equipment will be replaced with permanent Subsea Phase 2 (SS2) equipment within the previously determined safe operating life of the individual SS1 equipment. The safe operating life of each piece of equipment was the subject of intense study by a multi-discipline technical group, and the results of the study can be found within the Decision Support Papers (DSP's) and Management of Change (MOC) documents referenced in attachments to this MOC. ** The execution of this MOC (MOC SS-06-013 Rev3: Atlantis Overall Subsea Phase 1 (SS1) MOC), as well as the execution of the following MOC's immediately referenced below, will be contingent upon the completion of an SS1 equipment piping and structural design review and approval by Rod McFarlane, BP Technical Authority for Pressure Vessels and Piping. • MOC SS-07-016 Rev0: Atlantis SS1 PLEM Design & Construction • MOC SS-06-012 Rev5: Atlantis SS1 Manifolds Reconstruction • MOC SS-06-009 Rev3: Atlantis SS1 PLET's Reconstruction		
HSSE Change Review Required? No ☐ Yes ☒ (*If yes, which controlled or frozen documents changed)		
An externally facilitated HAZOP was conducted on November 07th-09th, 2006 to review the changes of the SS1 design as compared to the original base case design. The HAZOP Report can be viewed by accessing BP Document Number 1440-33-SB-PR-0129: <i>Atlantis Subsea Phase 1 (SS1) HAZOP – Draft Report</i>. Rod McFarlane has performed a detailed review of the SS1 equipment piping and structural design (referenced in the section above), and has provided his endorsement of the SS1 design on August 30th, 2007. Likewise, a SS1 Peer Review was held on September 12th-14th in Houston, Texas. Another SS1 Peer Review was held on April 11th-13th in Houston, Texas, and the Final SS1 Peer Review close-out took place on June 26th in Houston, Texas. Each of the mentioned Peer Reviews was facilitated by David Brookes, BP Subsea Chief Engineer. The Peer Review reports are referenced in the attachments to this MOC.		

Describe the MoC Request and Impact on Existing Systems*:

The reconstructed Atlantis Manifolds, PLETs and new-build PLEMs are designed to eliminate the direct metallurgy combination associated with the Thunder Horse DC41 manifold failure and to mitigate the risks of internal corrosion. Some aspects of the original manifold operability design have been preserved; however, there have been changes that will affect the overall operability of the manifold and subsea system. The primary requirement that will not be retained is the ability to switch the well to manifold header alignment. This means that each of the Atlantis wells will flow through a pre-determined flowline and riser, and all wells will be able to flow through the test line. Additionally, the ability to implement double isolation without impacting production will be reduced.

The SS1 manifolds will have 3 main headers instead of the 4 headers in the original design and the SS1 manifolds will have no valves to allow wells to produce into different flowlines. This has the potential to impact production and flow assurance optimization. The lack of valves in the SS1 manifold design has the potential to increase operations downtime due to the fact that parts of the subsea system might have to be shut-down to allow new well tie-ins to flush hydrocarbons from the 6" branch headers of the SS1 manifold. These impacts are well understood and accepted by the Project Team.

The SS1 system and individual components are designed to pass a pig (i.e. used 3-D bends, and maintained consistent use of nominal pipe size) but the system is incomplete with respect to round trip pigging paths. As a result, the SS1 pigging plan, including infrastructure requirements for round trip pigging, will be the subject of a separate MOC.

As previously mentioned, the SS1 manifold will be a 3-header design utilizing the previous manifold frames and majority of clad piping. All 21 (qty) of the 6" gate valves in the original design have been removed. The reconstructed manifolds will consist of partially-clad main headers, branch headers, and connections. A clad-to-unclad transition insert will be used to connect the manifold to the manifold hubs. Carbon steel welds will be applied at the connection of the unclad end of the transition insert and the hub, with all other welds being clad-to-clad. All 8630/625 buttered welds have been removed from the reconstructed manifold, PLET and new-build PLEM design.

The replacement of temporary SS1 components with Subsea Phase 2 (SS2) permanent subsea equipment is linked to the Atlantis asset Long-Term Plan (LTP), and the capital and expense associated with the re-build and re-installation is included in a supplemental Financial Memorandum (FM) that will be brought to the Resource Commitment Meeting (RCM) for funding approval in 2007.

The subsea safe operating life of the SS1 manifolds is 5 years. The safe operating life of the PLETs is 25 years. PLEM PP2/3 has a safe operating life of 25 years, and PLEM PT, PP and PP1 have a safe operating life of 3 years. The safe operating life of PLEM PP and PP1 can potentially be extended to 25 years if the Project implements a number of measures to protect against and mitigate under-deposit corrosion within the PLEM. The Project is currently evaluating methods of implementation of these preventative and mitigating measures for PLEM PP and PP1. Atlantis SS1 equipment will be replaced with permanent components within the safe operating life of each component.

The operating lives identified above require the following key items to ensure safe operations:

- A maximum corrosion rate of 2 mils/yr is required to achieve the designed 25 year safe operating life for the Atlantis flowlines and risers (minimum corrosion allowance = 0.12"). This corrosion rate can be obtained with a chemical availability of 95% and an inhibitor effectiveness of 97%. If this level of inhibition is achieved, then the corrosion allowances associated with the manifolds, PLEMs and PLETs are more than sufficient to cover their 3 - 25 year operating lives. The maximum corrosion rates for the PLEMs (minimum corrosion allowance = 0.323") and PLETs (minimum corrosion allowance = 0.238") which have 25 year safe operating lives are 14 mils/yr and 13 mils/yr, respectively. The corrosion inhibitor is formulated to mitigate bacterial growth and galvanic corrosion as well as general corrosion.
- In order to ensure effective inhibition, sand and other debris will need to be periodically removed from any unclad horizontal piping which has a planned safe operating life of 25 years. Note that the 3 yr PLEM design lives (PP, PP1 and PT) assume under deposit corrosion is occurring because of un-piggable dead legs. In addition, the SS1 manifolds do not require the removal of deposits because all the horizontal piping is clad.
- Production chemistry assumptions will need to be checked periodically to determine if the corrosivity of the produced fluid has changed and cumulative wall loss will need to be estimated and tracked for the entire system. Information from the corrosion coupons and monitors located on the topsides should be integrated into this evaluation.
- The water level in the manifolds under normal flowing and shut in conditions should not come in contact with the dead leg portions of the manifolds that remain unclad (piping below the 6" and 10" jumper hubs).

The subsea integrity management program will need to include a surveillance and monitoring program and pigging and / or flushing program to ensure that these requirements are met. Further, it is anticipated that unclad long term pressure caps will be recovered during new well tie-ins during the SS1 manifolds design life. This equipment, and other unclad equipment recovered, must have non-destructive test (NDT) inspections performed to confirm that corrosion rates are not higher than anticipated.

No other activities are required to confirm the safe operating lives of the SS1 equipment. However, opportunities do remain to provide additional monitoring and possibly optimize operating lives by using smart pigging technology and NDT inspection tools packaged for subsea use.

Affected Project Team(s) / Delivery System(s) / Discipline(s): (*Note: All affected parties must initial approval of this change.*)

☒ Subsurface	☐ Floating Systems	Disciplines:	Other:
☒ Wells Drilling	☒ Subsea	☐ Mechanical	☐ Electrical
☐ Wells Completion	☒ HSE&R	☐ Structural	☐ Instruments
☒ Topsides	☒ Operations	☐ Piping	☐ Estimating
☐ Integration	☒ Regulatory	☐ Process	☐ Procurement
		☐ HVAC	☐ Commissioning

CAPEX Impact (Labor/Non-Labor):	\$36.6MM	Start Date:	
		End Date:	
OPEX Impact:	\$82.7MM	/	
Net Schedule Impact: (+/-):	Weeks: +10		
Net Weight & COG Impact:	Tons: 0	x (ft)=	Y(ft)= z(ft)=

Technical & Economic Evaluation*:

The lessons learned from Thunder Horse DC-41 manifold system failure as well as subsea design fundamentals led the Atlantis Project Team to develop options for the reconstruction of PLETs and manifolds, as well as the construction of new-build PLEM.

A list of support documentation detailing the selection criteria and decision making process for the design, fabrication and installation of these subsea components is attached to this MOC. Also attached to this MOC, are lists detailing the revision and completion status of all Operations and Project and Engineering documentation that have been affected by the implementation of SS1.

Schedule impact was the primary reason that the valve-less manifold design, the reconstructed and valve-less PLET design and the new build PLEM design were recommended by the Atlantis Project Team. The complexity of qualifying appropriate weld procedures and material sourcing issues for the construction of permanent subsea equipment would have made it impractical for the Project to meet a first oil date in 2007.

Please refer to the individual Decision Support Packages for the decision criteria and technical and economic evaluation for each of the individual subsea components.

HSE&R Impact*:

The change in manifold design eliminates 8630/625 buttered welds. Without the change, an incident similar to Thunder Horse's DC-41 manifold failure could have potentially occurred, with the potential of leaking hydrocarbons into the Gulf of Mexico. This would impact the environment and BP's reputation.

Removing the valves from the original design means that Operating procedures will need to be put in place in order to flush the 6" branch headers, to further reduce the risk of hydrocarbon discharge, prior to future well tie-ins. Methods of flushing hydrocarbon from the 6" branch headers of the manifold have been tested in a full scale mock-up of the SS1 manifold at low pressures using clear plastic piping. A branch header flushing report and procedures have been generated, approved by Operations, and both are referenced in the list of documentation attached to this MOC.

The safe operating life of each component has been determined and accepted without the need for corrosion monitoring during the safe operating life of the equipment. However, the asset team will be working to develop options for future monitoring that may assist in the management of the SS1 kit.

Specifics of the corrosion mitigation and monitoring activities are covered within documents referenced in the list of documents attached to this MOC.

HSE Change Review Complete and Signed Off?

☐ No

☒ Yes

Comments / Recommendation *:

Responsible Manager's Recommendation:

Reject

☐

Approve

☒

Change Request Approval Signature(s):

Printed Name: Gene Hall

Atlantis Subsea Delivery Manager (BP)

Approval Signature:

Printed Name: Rick Oneto

Atlantis Operations Manager (BP)

Approval Signature:

Printed Name: Dean Rayburn

Atlantis HSSE Manager (BP)

Approval Signature:

Printed Name: Jonathan Sprague

Atlantis Wells Delivery Manager (BP)

Approval Signature:

Printed Name: Pramod Singh

Atlantis Subsurface Manager (BP)

Approval Signature:

Printed Name: Dennis Sustala

Atlantis Regulatory Compliance Manager (BP)

Approval Signature:

Printed Name: Donnie Carter

Atlantis Engineering Authority (BP)

Approval Signature:

Printed Name: Rob Marshall

GoM SPU Engineering Authority (BP)

Approval Signature:

Printed Name: Gary Imm

Atlantis Deputy Project Manager (BP)

Approval Signature:

Printed Name: Simon Todd

Atlantis Deputy Performance Unit Leader (BP)

Approval Signature:

Printed Name: Greg S. Sills

Atlantis Performance Unit Leader (BP)

Approval Signature:

When completed forward the MoC Coordinator for logging and distribution.

Atlantis Subsea Document Matrix (in preparation for First Oil)							
Document Name / Description	BP Doc. Number	Rev.	Responsible	Date Due	Status	Comments	
1 Atlantis SS1 MOC	MOC-SS-05-013	2	Ryan Malone		Pending	Issued for approval 6/15/2007	
2 Atlantis SS1 PLET's Reconstruction	MOC-SS-05-009	3	Ryan Malone	3/6/2007	Complete		
<u>Decision Support Package:</u> Atlantis Subsea Phase 1 - PLET Selection	1440-33-SB-PR-0098	6	Ryan Malone	2/22/2007	Complete		
<u>Corrosion Mitigation Study:</u> Alternative Subsea PLET Options	1440-33-SB-PR-0106	0	Connie Bargas	1/19/2007	Complete		
<u>Materials & Welding Design Book:</u> Subsea Phase 1 (SS1) Pressure Piping Arrangements, Weld Maps, & Materials Layouts	1440-34-PL-DSP-0224	0	Bob Evans	10/27/2006	Complete		
3 Atlantis SS1 Manifolds Reconstruction	MOC-SS-06-012	5	Ryan Malone		Pending	Issued for approval 6/10/2007	
<u>Decision Support Package:</u> Atlantis Subsea Phase 1 - Manifold Selection	1440-33-SB-PR-0104	2	Ryan Malone	4/25/2007	Complete		
<u>Corrosion Mitigation Study:</u> Alternative Subsea Manifold Options	1440-33-SB-PR-0116	0	Connie Bargas	4/7/2007	Complete		
<u>Materials & Welding Design Book:</u> Subsea Phase 1 (SS1) Pressure Piping Arrangements, Weld Maps, & Materials Layouts	1440-33-MN-DSP-0092	0	Bob Evans	12/12/2006	Complete		
4 Atlantis SS1 PLEM Design & Construction	MOC-SS-07-016	0	Ryan Malone	5/28/2007	Complete		
<u>Corrosion Assessment:</u> SS1 PLEM Design	1440-33-SB-PR-0119	3	Connie Bargas	4/19/2007	Complete		
<u>Materials & Welding Design Book:</u> Subsea Phase 1 (SS1) Pressure Piping Arrangements, Weld Maps, & Materials Layouts	1440-34-PL-DSP-0263	0	Richard Lau	4/25/2007	Complete		
5 ATL SS1 MOC Support					Pending		
Subsea Operations Procedures Updates			Ron Berger		Pending		
SS1 Documentation Tracking			Peter Chan		Pending		
Statement of Requirements	1440-10-AS-DC-0001	C	Connie Bargas	7/2/2007	Complete		
6 Manifold Flushing Test Results			Richard Lau		Complete		
Executive Summary	1440-33-MN-RP-0130	0	Richard Lau	7/23/2007	Complete		
Documentation of Approval from Operations	N/A		Richard Lau		Complete		
Compilation of Daily Testing Reports	N/A		Richard Lau		Complete		

MOC Database for SS1				Document Description				Document Owner				Document Number			
Description	FDS	Dwgs	Pro/Test	Others	Other Vendors	Document Owner	Technic No	Rev	BP No	Technic No	Rev	BP No			
Atlantic Subsea Design Basis Document				X		Andy Will	3478-BSS-PA-0001	1	1440-30-SB-DG-0033	None		None			
Atlantic Project Execution Plan				X		Andy Will	3478-BSS-PA-0001	3	1440-30-SB-DG-0033	None		None			
SS1 MOC				X		Ryan Malone	None		None			SS-07-016			
Field Architecture with Equipment Designations		X				Julie Bales	3478-BSS-DC-0227	1	1440-30-SB-DG-0051-001	3478-BSS-DB-1001-01	8	1440-30-SB-DG-0343-001			
Pipeline End Manifold (PEMs)															
PEM Functional Specifications	X					John Schewbel	None		None	3478-BSS-SA-0057	A	1440-33-MN-SP-0084			
DC1 PEM Design Report						George Wang	None		None	3478-BSS-RA-0235	A	1440-33-MN-RP-0107			
PEM Pile Analysis				X		Jim Stewart									
TP PEM DC1 (SS1) Manufacturing Dwgs		X				John Schewbel	None		None	3478-BSS-DO-1000-01	4	1440-30-SB-DG-0345-001			
RP PEM DC1 (SS1) Manufacturing Dwgs		X				John Schewbel	None		None	3478-BSS-DO-1001-01	5	1440-30-SB-DG-0346-001			
PP1 PEM DC1 (SS1) Manufacturing Dwgs		X				John Schewbel	None		None	3478-BSS-DO-1002-01	4	1440-30-SB-DG-0347-001			
PP2 PEM DC1 (SS1) Manufacturing Dwgs		X				John Schewbel	None		None	3478-BSS-DO-1003-01	4	1440-30-SB-DG-0348-001			
PEM AS Built Drawings		X				Jeff King									
SS1 PP PEM FAT Procedure			X			John Schewbel	None		None	3478-BSS-PA-0176	0	1440-34-SB-PR-0246			
SS1 TP PEM FAT Procedure			X			John Schewbel	None		None	3478-BSS-PA-0177	0	1440-34-SB-PR-0247			
SS1 PP1 PEM FAT Procedure			X			John Schewbel	None		None	3478-BSS-PA-0178	0	1440-34-SB-PR-0248			
SS1 PP2 PEM FAT Procedure			X			John Schewbel	None		None	3478-BSS-PA-0179	0	1440-34-SB-PR-0249			
SS1 PEMs FAT Procedure Supplement HWHR Flow Rate Testing			X			John Schewbel	None		None	3478-BSS-PA-0185	0	1440-34-SB-PR-0262			
SS1 PEM Unit Test and Running Frame Supplement				X		Brian Moreno	None		None	3478-BSS-PA-0128		1440-34-SB-PR-0297			
SS1 PEM Piling Report									None	3478-BSS-PA-0127		1440-34-SB-PR-0298			
Welding Materials Book				X		Ryan Malone	None		None	None	0	1440-34-PL-DSP-0263			
Corrosion Paper				X		Ryan Malone	None		None	None	3	1440-33-SB-PR-0119			
PEM MOC				X		Ryan Malone	None		None	None	0	SS-07-016			
Manifolds															
Subsea Production Manifold Functional Specification	X					Brian Moreno	3478-BSS-SA-0017	3	1440-33-MN-SP-0001	3478-BSS-SA-0069	3	1440-33-MN-SP-0088			
Manifold Pile Analysis				X	GEMS	Daniel Gutierrez						0			
Manifold Manufacturing Drawings		X			OSI	John Schewbel / Bob Evans	FMC Files								
Manifold As-built Drawings		X			OSI	John Schewbel / Bob Evans	FMC Files								
Manifold Testing Procedures			X		OSI	John Schewbel / Bob Evans	FMC Files								
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0161	PRE	1440-34-SB-PR-0230			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0162	PRE	1440-34-SB-PR-0231			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0163	PRE	1440-34-SB-PR-0232			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0164	PRE	1440-34-SB-PR-0233			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0165	PRE	1440-34-SB-PR-0234			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0166	PRE	1440-34-SB-PR-0235			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0167	PRE	1440-34-SB-PR-0236			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0168	PRE	1440-34-SB-PR-0237			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0169	PRE	1440-34-SB-PR-0238			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0170	PRE	1440-34-SB-PR-0239			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0171	PRE	1440-34-SB-PR-0240			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0172	PRE	1440-34-SB-PR-0241			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0173	PRE	1440-34-SB-PR-0242			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0174	PRE	1440-34-SB-PR-0243			
SS1 ManTIS SIT Procedure			X		OSI	John Schewbel / Bob Evans	None		None	3478-BSS-PA-0175	PRE	1440-34-SB-PR-0244			
Atlantic Subsea Phase 1 (SS1) Manifold Systems Integration Test (SIT) Hot Water Remediation (HWHR) Test			X			Jeff Staples	None		None	3478-BSS-PA-0182	0	1440-33-SB-PR-0115			
Atlantic Subsea Phase 1 (SS1) Manifold Systems Integration Test (SIT) Long Term Pressure Cap Interface Test			X			Jeff Staples	None		None	3478-BSS-PA-0181	0	1440-33-SB-PR-0110			
Atlantic Subsea Phase 1 (SS1) Manifold Systems Integration Test (SIT) Manifold Lifting and Handling Procedure			X			Jeff Staples	None		None	3478-BSS-PA-0182	0	1440-33-SB-PR-0111			
Atlantic Subsea Phase 1 (SS1) Manifold Systems Integration Test (SIT) System Piling Procedure			X			Jeff Staples	None		None	3478-BSS-PA-0185	0	1440-33-SB-PR-0114			
Atlantic Subsea Phase 1 (SS1) Manifold Systems Integration Test (SIT) Verifying Hub Sizes Procedure			X			Jeff Staples	None		None	3478-BSS-PA-0183	0	1440-33-SB-PR-0112			

MOC Database for SS1		Document Description				Document Number			
Description	FDS	Owgs	Pro/Test	Others	Other Vendors	Document Owner	Technic No	Rev	Doc No
Atlantis Subsea Phase 1 (SS1) Manifold Systems Integration Test (SIT)			X			Jeff Staples	None	None	3478-BSB-PA-0184
Jumpers Angle Verification Procedure									0 1440-33-SB-PR-0113
Welds and Materials Book				X		Ryan Malone	None	None	0 1440-33-MN-DSP-0092
Corrosion Paper				X		Ryan Malone	None	None	0 1440-33-SB-PR-0116
Decision Support Package				X		Ryan Malone	None	None	2 1440-33-SB-PR-0104
Manifold MOC				X		Ryan Malone	None	None	5 SS-06-012
Pipeline End Terminations (PENTs)									
Subsea PLET Functional Specification	X				OMEGA	Brian Marino	3478-BSB-SA-0016	E	1440-33-MN-SP-0062
ADG PLET and REM Fabrication Specification				X		Brian Marino	None	None	3478-BSB-SA-0061
Atlantis DC-1 PLET Design Record						Brian Marino	None	None	3478-BSB-SA-0061
PLET AS Built Drawings		X			OMEGA	Jeffrey Boy Velasquez	None	None	3478-BSB-SA-0061
PLET		X				Brian Marino	0368-04-TP-1100	1	3478-BSB-DB-1004-01
Y-PIPE		X				Brian Marino	0368-04-YP-1100	1	3478-BSB-DB-1005-01
TEST PROC		X				Brian Marino	0368-04-TP-1120	1	3478-BSB-DB-1006-01
Water Injection PLET						Brian Marino	0368-04-WIP-1140	1	Pending Modification
Welds and Materials Book				X		Ryan Malone	None	None	0 1440-33-SB-PR-0106
Corrosion Paper				X		Ryan Malone	None	None	0 1440-33-SB-PR-0116
Decision Support Package				X		Ryan Malone	None	None	6 1440-33-SB-PR-0069
PLET MOC				X		Ryan Malone	None	None	3 SS-06-009
Jumpers									
Jumpers Specification	X				Fourchon		None	None	3478-BSB-SA-0047
Welds, Materials and Interfacial Jumpers EDS	X						3478-BSB-SA-0037	3	1440-33-SB-PR-0076
Atlantis DC-1 Subsea Jumper Analysis Report						Bob Velasquez	None	None	3478-BSB-SA-0047
Jumpers Drawings					Fourchon	Bob Velasquez	None	None	3478-BSB-SA-0047
Jumpers AS Built Drawings						Bob Velasquez	None	None	3478-BSB-SA-0047
Subsea Jumper Interface Pressure Test Procedure - Phase 1 Modeling						Bob Velasquez	None	None	3478-BSB-SA-0047
Subsea Jumper Interface Pressure Test						Bob Velasquez	None	None	3478-BSB-SA-0047
Jumpers Assembly Fabrication And Factory Acceptance Test Procedure						Bob Velasquez	None	None	3478-BSB-SA-0047
P and ID									
DC-1 Subsea P & ID Flow Arrangement						John Baker	3478-BSB-DC-1005	1	1440-33-SB-PR-0095
DC-1 Subsea P & ID SS1-13 Manifold Configuration						Ryan Malone	None	None	3478-BSB-DC-1005-01
DC-1 Subsea P & ID SS1-13 Manifold Configuration						Ryan Malone	None	None	3478-BSB-DC-1005-01
DC-1 Subsea P & ID SS1-14 Manifold Configuration						Ryan Malone	None	None	3478-BSB-DC-1005-01
Cables									
P & ID Cable						Robert Smith	3478-BSB-DC-1005-01	0	1440-33-SB-PR-0113
P & ID Cable P & ID and EDS						Robert Smith	3478-BSB-DC-1005-01	0	1440-33-SB-PR-0113
P & ID Cable						Robert Smith	3478-BSB-DC-1005-01	0	1440-33-SB-PR-0113
P & ID Cable						Robert Smith	3478-BSB-DC-1005-01	0	1440-33-SB-PR-0113
HAZIDs and HAZOPs									
Atlantis Subsea Phase 1 (SS1) HAZOP				X		Rick Sloan	None	Draft	None
Installation									
Field Testing									
Honeywell HMI									
Update Honeywell HMI graphic to reflect SS1 P&ID				X					

Revision

12-Jun-2007

Per iBACKUP 13-apr

-> ASSURANCE REVIEW STATUS

Doc #	Title	First Oil	Phase I	REV	SS Ops Reviewed	SSOP ER	HSE Ops		HSE Design		FA ER		Mustang ER		Ops Interface		PQ ER		BH ER	
							Required	Reviewed	Required	Reviewed	Required	Reviewed	Required	Reviewed	Required	Reviewed	Required	Reviewed	Required	Reviewed
1440-BS-OP-PR-3011	Welding Prevention	Y	Y	0	8-10-2007	8-10-2007														
1440-BS-OP-PR-3011	Well Rate Testing	Y	Y	0	8-10-2007	8-10-2007														
1440-BS-OP-PR-3031	RCV Manual Valve Operations	Y	Y	0	8-10-2007	8-10-2007														
1440-BS-OP-PR-3033	Separate Service Operations	Y	Y	0	8-10-2007	8-10-2007														
1440-BS-OP-PR-3035	Reference	Y	Y	B																
1440-BS-OP-PR-3035	Gas Lifting Installation		Y	F	8-10-2007	8-10-2007														
1440-BS-OP-PR-3024	Pigging - Production Riser to Production Riser		Y	C		N5			X	N5			X	N5	X	N5				
1440-BS-OP-PR-3025	Pigging - Water Injection Riser to Production Riser		Y	C		N5			X	N5			X	N5	X	N5				
1440-BS-OP-PR-3035	ROY Opportunities Procedure		Y	n/a		N5	X	N5	X	N5			N5	N5	N5	N5				

Procedure in development / pending modification.
 Pending review of procedure
 Review of procedure COMPLETED
 Pending Pending pre-requisite review (e.g. MER)
 PFO Post first oil
 N4 Not a detailed procedure, requires Safe Work Plan at time of job
 N5 Rough Draft available, not ready for review
 N6 No Draft started
 N7 Submitted for review 8-Jan-2007
 N8 On Hold