Title: Operation of ML Facility Systems

Number: OA-BOSS-TOSC-08
Revision: Basic
Date: September 17, 2020

No.	Task / Description	Responsible Organization
1.0	**Purpose and Scope**	
1.1	The Purpose of this Operational Agreement (OA) is to define processes and interfaces for the systems transferred from the Base Operations and Spaceport Services contract (BOSS) 80KSC018C0017 to the Test and Operations Support Contract (TOSC), NNK13MA14C.	
1.1.2	The scope of this OA is limited to the TOSC and BOSS contracts	
1.2	Either Associate of this OA may initiate a revision or modification at any time. The initiating Associate is responsible for ensuring coordination between all involved group members, arranging review meetings and obtaining the appropriate concurrences.	
1.3	**Acronyms:** BOSS - Base Operations and Spaceport Services Contract CCC - Complex Control Center CTC - Contractor Test Conductor EWR - Electronic Work Request FAA - Federal Aviation Administration (lights) FSEU – Facilities, Systems, Equipment, and Utilities FR - Firing Room HVAC - Heating Ventilation and Air Conditioning IOPSS - Ignition Overpressure Protection and Sound Suppression System JBAC (call sign) - LCC CCC HVAC Console Operator JBFX (call sign) - LCC CCC Water Console Operator JBWC (call sign) - LCC CCC IOPSS Water Console Operator JSDY (call sign) – LCC CCC Institutional Work Center (Duty Office) JSTC (call sign) - LCC COF Institutional Contractor Test Conductor KCCS – Kennedy Complex Control System ML - Mobile Launcher 1 OA - Operational Agreement ODMS - Oxygen Deficiency Monitoring System TOSC - Test Operations Support Contract	
2.0	**General** This OA and any subsequent changes shall constitute the basic agreement between TOSC and BOSS for system monitoring, maintenance and operations support. Contract and Government signatures and their organizations shall be responsible for implementing this OA, as well as its ongoing administration and management.	

No.	Task / Description	Responsible Organization
	The signatures of this document indicate agreement to its content and that it is valid and has achievable objectives as related to the monitoring and support of the facility systems listed in section 5.1. Any modifications to this agreement require the review and approval of all parties. This document will be reviewed annually for currency, accuracy and completeness.	
3.0	**Period of Performance** This OA shall be in effect through the earliest end-date of the respective prime contracts, unless terminated in accordance with the appropriate clauses of the Associate Contract Agreement (ACA).	
4.0	**Responsibilities**	
4.1	**BOSS will**: a. BOSS will support operational testing of systems when scheduled/requested via the integrated schedule or utilizing the EWRS system when appropriate. • TOSC will submit planned integrated support requests though the EWRS system at least one week in advance of the date of the operation. • TOSC will provide the work plan to BOSS with the EWRS request. b. If TOSC requires console support from BOSS power or utility console operators, TOSC will submit a request through the BOSS EWRS and coordinate the request through BOSS Mission Support office. c. BOSS will continue to monitor/operate as performed from the CCC the systems shown in section 5.1, Transitioning Systems. d. BOSS will provide console operators to monitor and control FSEU systems connected to the KCCS Power Console and Utilities Console, from the CCC, 24 hours a day and seven days a week. BOSS will ensure proper training and certification of all KCCS console and workstation operators. e. BOSS console operators will acknowledge all KCCS alarms and take immediate action to report any alarms on TOSC operated/maintained ML or IOPSS systems to JSTC/JSDY. • A spreadsheet showing all KCCS configured alarms on TOSC operated/maintained ML or IOPSS systems will be provided to TOSC so they are aware of what alarms could be reported to them from the BOSS KCCS consoles f. JSTC/JSDY personnel will ensure that all console alarms and any noted abnormal conditions on TOSC operated/maintained ML or IOPSS systems are reported to the TOSC CTC. • If the TOSC CTC console is not manned, JSTC/JSDY personnel will notify the on-call CTC.	BOSS/TOSC

No.	Task / Description	Responsible Organization
	g. In the event of an emergency that requires BOSS console support, TOSC will contact the BOSS power or utilities consoles directly. h. BOSS will include TOSC in the scheduling of impacts and impact assessments to the systems shown in section 5.1, Transitioning Systems.	
4.2	**TOSC will**: a. Notify the BOSS KCCS consoles when working on any ML or IOPSS system that is monitored on KCCS that could produce alarms, change of state indications or other indications on the KCCS consoles so that BOSS console operators are aware of work being done by TOSC that would explain such console indications or alarms. TOSC cannot flow water (deluge or wash-down) on the ML without all of the following; • Activity placed on KICS schedule • Verification by BOSS Fire alarm that Zone 33, 'Fixed spray activated – KCCS is software disabled • Request to BOSS Water & Waste to support at the Pad Pump Station. • Prior notification to JBFX b. TOSC shall notify KCCS Water Console for any operations using water from Pad B Pump Station (such as wash down valves, trickle filling ML1 IOP Ring and IOPSS filling) that could cause fire pumps to inadvertently start. c. TOSC shall notify KCCS Water Console prior to draining back IOPSS water to Pad B reservoirs. d. TOSC acknowledges BOSS 'switching orders', (ref: BOSS procedure PPS-P-0004) will be required for the following: • Any switching that require substation medium voltage (BOSS) switching • Any time TOSC is switching main and tie breakers in SS-927 and SS-928A/B substations • TOSC will have to review and approve all switching orders. This review and approval will be required to be completed in the CCC. • TOSC will perform all low voltage switching in the SS-927 and SS-928A/B substations	TOSC/BOSS
5.0	**Lines of Demarcation:** Systems on the ML and Pad B for which TOSC has OM&E but requires BOSS to provide monitoring and in some cases operations control from the CCC and/or the FR.	

No.	Task / Description	Responsible Organization
	a. IOPSS: NH-K-00018- and K60-0047-01- ML1/Pad B IOPSS to include the elevated water tower (J7-0288). • TOSC will operate all IOPSS system components depicted on SMS 81K07033. • TOSC may operate water supply valve V422 leading from the pump station to the IOPSS system. • TOSC may operate the wash down valves in the IOPSS Valve Complex, such as V-111.2 and V-111.1 (ref: 79K40019). • TOSC may operate the Pad B water flume gates that direct water to the East and West Holding Ponds. • TOSC will operate fire suppression water valves CSAB61, FPAB62 and FPAB63 located in ML1 Compartment AB6 (reference 81K07638) for the purpose of trickle filling the ML IOP Ring piping from the Pad. • TOSC may isolate dedicated power circuit to the IOPSS flowmeters in the East Catacombs to perform O&M tasks (Reference Drawing 81K07595). b. HVAC: NH-K-00010- All equipment on ML1, including fan coil units, air handlers, supply air, and chilled water (NH-K-00016) is TOSC responsibility. • Demarcation point at the facility (VAB, Pad B, East Parksite) is at the connection of the interface piping to the passive facility piping. • TOSC will maintain the interface piping (e.g. swivel piping, flex hose, etc.) and perform all mate/demate operations including connecting/disconnecting the interface piping and operation of facility and ML valves. • BOSS will maintain the passive piping and valves at the facility. • TOSC may operate the facility isolation and/or drain valves. • JBAC shall be notified prior to and on completion of any operation of the facility isolation and/or drain valve. • If taking an active system out of service, a facility outage shall be requested and approved by BOSS and TOSC in accordance with MSO-P-0002 and section 6 of this OA.	

No.	Task / Description	Responsible Organization

	• TOSC may request remote operation of facility HVAC equipment (e.g. supply fans, air handlers, chilled water pumps, etc.) supporting the ML.
	  • Request shall be made by submitting a support request through EWRS in accordance with section 4.1 of this OA.
	  • If any supporting equipment cannot be operated remotely, then BOSS will operate the equipment locally as requested.
	c. Fire Suppression, Cooling Sprays, ML Deluge wash down System, including Washdown Hose Valves, Freeze Protection system, and Egress Sprays, and the riser/distribution are TOSC responsibility. Pre-Action Systems, Wet Pipe Systems, Fire Hose Valves (FHV), and the Fire Department Connection (FDC) are BOSS responsibility.
	  • Specific demarcation points on the ML are shown in drawing 81K07638.
	  • BOSS may operate the main ML isolation valve, FPAB91 and its 2” bypass valve in compartment AB9 for the purpose of maintenance downstream.
	  • JBFX shall be notified prior to and on completion of any operation of the main ML isolation valve.
	  • If taking an active system out of service, a facility outage shall be requested and approved by BOSS and TOSC in accordance with MSO-P-0002 and section 6 of this OA.
	  • Demarcation point at the facility (VAB, Pad B, East Parksite) is at the connection of the interface piping to the passive facility piping.
	  • TOSC will maintain the interface piping (e.g. swivel piping, flex hose, etc.) and perform all mate/demate operations including connecting/disconnecting the interface piping and operation of facility and ML valves.
	  • BOSS will maintain the passive piping and valves at the facility.
	  • TOSC may operate the facility isolation and/or drain valves.
	  • JBFX shall be notified prior to and on completion of any operation of the facility isolation and/or drain valve.
	  • If taking an active system out of service, a facility outage shall be requested and	

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	approved by BOSS and TOSC in accordance with MSO-P-0002 and section 6 of this OA. d. Low Voltage Distribution- • TOSC will have responsibilities starting from the secondary bushing on SS-927 and SS-928A&B. • TOSC will connect\disconnect 480 volt cable to side 2 of the ML. BOSS will maintain those cables. • TOSC will perform all required 480 switching of sources feeding the ML. e. Potable Water- ML1 Interface, side 2 - • Demarcation point at the facility (VAB, Pad B, East Parksite) is at the connection of the interface piping to the passive facility piping. • TOSC will maintain the interface piping (e.g. swivel piping, flex hose, etc.) and perform all mate/demate operations including connecting/disconnecting the interface piping and operation of facility and ML valves. • BOSS will maintain the passive piping and valves at the facility. • TOSC may operate the facility isolation and/or drain valves. • JBFX shall be notified prior to and on completion of any operation of the facility isolation and/or drain valve. • If taking an active system out of service, a facility outage shall be requested and approved by BOSS and TOSC in accordance with MSO-P-0002 and section 6 of this OA. f. Sanitation/sewage - ML1 Interface, side 2. • Demarcation point at the facility (VAB, Pad B, East Parksite) is at the connection of the interface piping to the passive facility piping. • TOSC will maintain the interface piping (e.g. swivel piping, flex hose, etc.) and perform all mate/demate operations including connecting/disconnecting the interface piping and operation of facility and ML valves. • BOSS will maintain the passive piping and valves at the facility. • TOSC may operate the facility isolation and/or drain valves.	

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	g. KCCS- BOSS will be responsible for the wires between FICs and the downstream terminal box. TOSC will be responsible for the wire downstream of the terminal box and the equipment or related cabinets Compressed Air- ML1 Interface, side 4. TOSC will perform mate/demate of the compressed air system at the Pad/VAB. TOSC will operate/maintain the system on the ML. BOSS has responsibility for the system upstream of the ML interface. h. Compressed Air- ML1 Interface, side 4. • Demarcation point at the facility (VAB, Pad B, East Parksite) is at the connection of the interface piping to the passive facility piping. ◦ TOSC will maintain the interface piping (e.g. swivel piping, flex hose, etc.) and perform all mate/demate operations including connecting/disconnecting the interface piping and operation of facility and ML valves. ◦ BOSS will maintain the passive piping and valves at the facility. • TOSC may operate the facility isolation and/or drain valves. ◦ JBAC shall be notified prior to and on completion of any operation of the facility isolation and/or drain valve. • If taking an active system out of service, a facility outage shall be requested and approved by BOSS and TOSC in accordance with MSO-P-0002 and section 6 of this OA.	
5.1	**Transitioning Systems**	
	ML1 NH-K-00011 LOW VOLTAGE ML1 NH-K-00009 COMPRESSED AIR ML1 NH-K-00016 CHILLED WATER ML1 NH-K-00007 ELEVATOR ML1 NH-K-00027 GROUNDING ML1 NH-K-00010 HVAC ML1 NH-K-00028 SPECIAL LIGHTING- FAA LIGHTS ML1 NH-K-00029 LIGHTNING PROT ML1 NH-K-00008 ODMS ML1 NH-K-00012 STRUCTURES ML1 NH-K-00032 SANITATION/SEWAGE ML1 NH-K-00018 WATER, IOPSS PIPING ML1 NH-K-00017 DELUGE ML1 NH-K-00015 POTABLE WATER	

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	PAD 39B K60-0047-01 SOUND SUPPRESSION	
6.0	**Outage Coordination**	
	a. If BOSS needs to take an outage on any power or utility systems affecting TOSC operated ML or IOP/SS systems, an outage will be submitted in the BOSS Maximo System and outage will be routed to TOSC personnel for assessment. b. If TOSC needs to take an outage that affects a BOSS operated system, then TOSC will complete BOSS Form MSO-F-0004, "Request for Utility Outage" and send it, along with a full impact sheet, to the BOSS outage coordinators to enter in the BOSS Maximo outage system. The outage request will then be routed to affected personnel for assessment and allow WONs to be generated for any BOSS support required. c. Outages specifically involving SS-927 or SS-928A/B mains, tie or secondary main breakers should be done through the BOSS outage system to properly communicate and coordinate support for switching or other system impacts such as fire alarms. d. When using the BOSS outage process, TOSC will comply with MSO-P-0002. e. All work requiring a switching order will require a Maximo Outage request in the BOSS Outage System	

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