

OPERATIONAL AGREEMENT

between

Lockheed Martin Space Systems Company (LMSSC)
Orion Program

and

URS Federal Technical Services, KSC Institutional
Services Contract (ISC)

Joint Operations of the O&C Building Industrial Operating Zone HVAC System

LMSSC-ORION-KSC-020

Revision – Basic

24 May 2010

Introduction

- 1.1. This Operational Agreement (OA) establishes the roles and responsibilities between Lockheed Martin Space Systems Company (LMSSC) and ISC regarding the Operations, Maintenance, Engineering, and User (OMEU) of the Industrial Operating Zone (IOZ) HVAC system in building M7-355 (Operations and Checkout).
- 1.2. The intent of this document is to provide the business policy in order to operate and maintain the IOZ HVAC System, Program Model Numbers: K60-0624-02, IOZ HVAC and K61-3784 -001, IOZ HVAC Chilled Water Loop.
- 1.3. The document establishes the basis for ISC to successfully provide quality service for Sustaining Engineering, Operations and Maintenance of the IOZ HVAC while minimizing impact to LMSSC, in order to protect the LMSSC assets and ensure a continued production environment is maintained.

2. Scope

- 2.1. This OA is to define the IOZ HVAC technical requirements and operational parameters, scheduled and unscheduled maintenance, and notifications and response.
- 2.2. This OA applies to all HVAC equipment and controls required to maintain environmental conditions within the IOZ (see Attachment I) inclusive of the equipment and controls in the offline areas (i.e. Liebert conditioning units and roof top self contained units).
- 2.3. The West Mechanical Room (Southwest corner of the IOZ) contains ancillary equipment (pumps, water heaters, boilers, etc) which are integral to the entire O&C building and are not a part of the scope of this document. Please refer to the applicable drawings for equipment jurisdictional boundaries.

3. Definitions

- 3.1. Scheduled Maintenance includes preventive maintenance (PMI/OMI's), predictive testing and inspection, Scheduled repair projects, programmed maintenance, replacement of obsolete items, and restoration/modernization associated with building systems/components.
- 3.2. Unscheduled Maintenance includes corrective maintenance, trouble calls and breakdown repairs.

4. IOZ Cleanliness Standards

- 4.1.1. IOZ cleanliness shall be maintained per the LMSSC IOZ Contamination Control Plan (LM-ORN-0149)

5. Security and Access

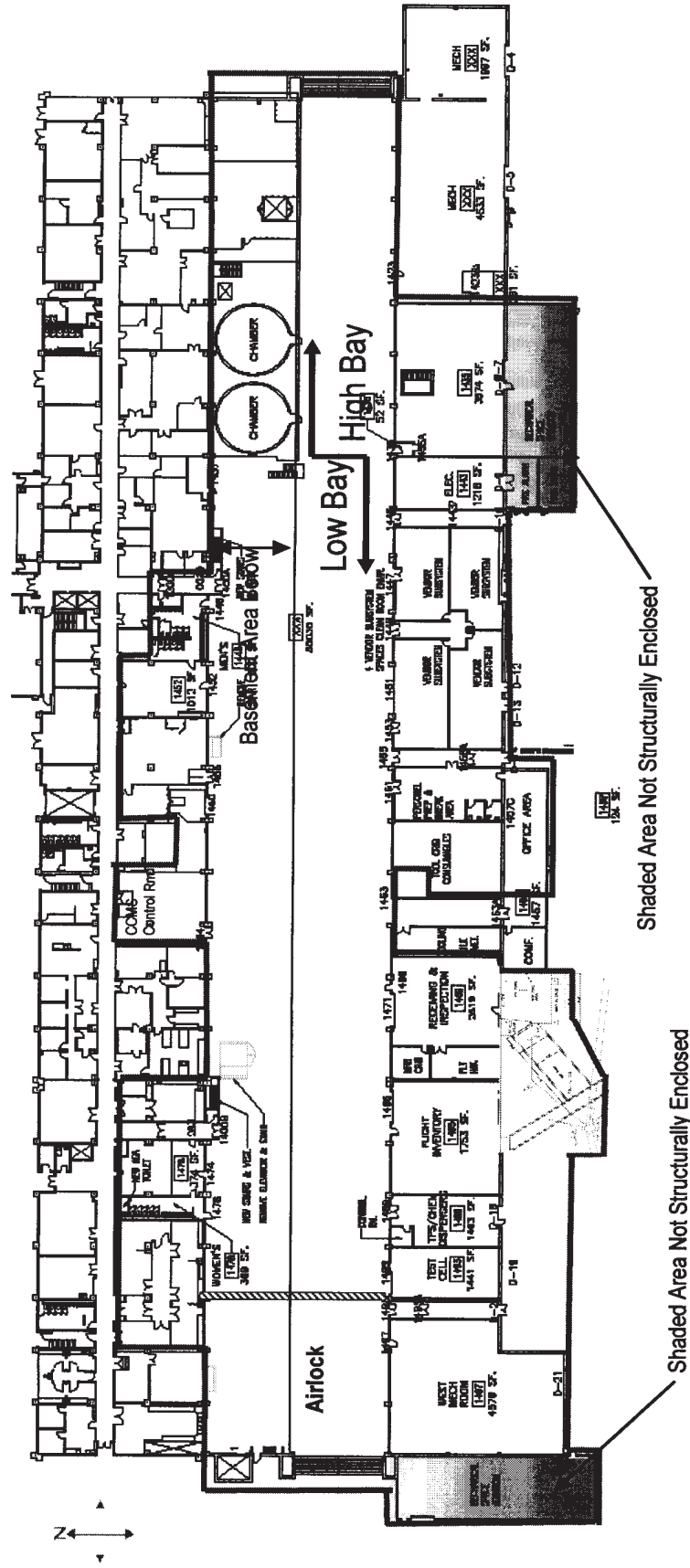
- 5.1.1. IOZ access shall be per the LMSSC IOZ Security / Access Plan (LM-ORN-0024).
- 5.1.2. IOZ entry requires check-in at operations desk and follow LM protocol
- 5.1.3. IOZ access for scheduled maintenance will be coordinated with LM through the ISC maintenance schedule at all times. LM will be provided the ISC maintenance schedule a minimum of two weeks in advance of scheduled maintenance activity to provide for security coordination.

- 5.1.4. LM will authorize a KSC issued Task Key (KH-122) for access to the IOZ. The Task Key shall be used for emergency or emerging condition requiring immediate access during LM off shift periods only. The issued Task Key shall be maintained in a locked and controlled cabinet at all times when not in use in the Industrial Area Chiller Plant (IACP).
- 5.1.5. The West Mechanical Room shall be available for access at any time for authorized scheduled and / or unscheduled maintenance. The West Mechanical Room shall be locked at all times when access is not required. The lock shall be the same lock series (KH-122) as authorized by LM. A placard shall be applied adjacent to the access door lock denoting location of the Task Key (in the IACP) as maintained per the previous paragraph.
- 5.1.6. A log of IOZ access Task Key usage shall be maintained at the IACP.
- 5.1.7. Emergency and emergent condition access into the IOZ (except for West Mechanical Room) shall be denoted in the IOZ HVAC Log book located at the IOZ Operations Desk. Detail shall include as a minimum:
 - 5.1.7.1. Reason for entry
 - 5.1.7.2. Time of entry
 - 5.1.7.3. Action taken
 - 5.1.7.4. Time of exit
- 6. Scheduled maintenance
 - 6.1. ISC shall be responsible for all scheduled maintenance of the IOZ HVAC system.
 - 6.2. Scheduled maintenance shall be coordinated with the LM Orion Facilities Manager, Tom Mott
 - 6.3. Scheduled maintenance shall be integrated into the LMSSC Production Master Schedule.
 - 6.4. Scheduled maintenance shall not adversely affect ongoing Orion Production operations within the IOZ.
 - 6.5. ISC shall be responsible for the system operations.
- 7. Unscheduled maintenance
 - 7.1. ISC shall be responsible for all Unscheduled maintenance of the IOZ HVAC system.
 - 7.2. Unscheduled maintenance due to failures or anomalies that render the system un-operational or at high risk shall have immediate response (30 min). Notification via ISC trouble call desk to the primary LMSSC contacts shall be made as soon as possible.
 - 7.3. Notification of an emergency or emergent condition and requirement for entry / work shall be per Attachment II. The LM prime point of contact is Tom Mott.
 - 7.4. ISC shall develop a plan in the event of a failure to ensure the IOZ and its contents are protected. The primary consideration for protection shall be the Spacecraft elements, Test Hardware, and Tooling.
 - 7.5. ISC shall be responsible for the system operations during Unscheduled maintenance activities to ensure safe and effective maintenance processes.

8. System Modifications and Configuration Control
 - 8.1. From time to time modifications / additions may be required on the HVAC system. LMSSC may desire to implement such changes to the system however in all cases configuration changes will be vetted through the existing ISC Support Request and change management systems.
 - 8.2. ISC may desire to perform system modifications for reasons such as energy efficiency, hardware updates, obsolesce. etc. ISC shall coordinate with LMSSC for all system modifications including software updates / changes. All modifications to the system shall be managed and approved through ISC change management system.
 - 8.3. System Modifications and Configuration Control changes shall be coordinated with the LM Orion Facilities Manager, Tom Mott
9. IOZ Environmental Configuration
 - 9.1. The IOZ environmental configuration is established for temperature, humidity, particulate, and building pressurization per LMSSC requirements.
 - 9.2. The baseline parameters are:
 - 9.2.1. Temperature = $71^{\circ}\text{F} \pm 6^{\circ}\text{F}$
 - 9.2.2. Humidity = $35\% \leq \text{RH} \leq 60\%$
 - 9.2.3. Particulate = maximum 100,000 count at 0.5 micron size and maximum 700 count at 5 micron.
 - 9.2.4. Pressurization = 0.05 ± 0.02 inches H₂O nominal. The intent is to minimize energy usage and ensure particulate count is maintained within specification.
 - 9.3. The HVAC system environmental configuration may be changed to suit varied operational requirements as determined by LMSSC. LMSSC shall request through the ISC Duty Office for implementation of the desired changes.
 - 9.4. ISC may change system environmental configuration outside of parameters as delineated in paragraph 9.2 with prior coordination and approval from LMSSC in order to support ISC performed maintenance.
 - 9.5. ISC may change system environmental configuration within specification to prepare for impending outside environmental change affects.
10. System Operation
 - 10.1. ISC shall be responsible for the day to day system functional operation. The day to day system operation may include changing temperatures, switching between air handlers, adjusting building pressurization and system air flow rates, changing humidity levels, etc.
 - 10.2. LMSSC shall be responsible for the setup and location of the system particle counter instruments. Location of particle counter instruments shall be recorded in the System Log Book located at the Operations Desk in the IOZ to enable the periodic maintenance of the instruments. LM shall notify the IACP at 321 867-8623 or 321 867-8639 prior to particle counter relocation.
 - 10.3. ISC shall monitor the system functional operation at all times from the IACP and/or IOZ control stations.

- 10.4. Operation of the East Vertical Door, West Vertical Door, Air Lock Door, and Horizontal Receiving Door shall be coordinated with IACP at 321 867-8623 or 321 867-8639 prior to operations.
11. HVAC System Log Book
 - 11.1. The HVAC System Log Book shall be used by LMSSC and ISC to record activity, status, configuration, and any work on the HVAC system.
 - 11.2. The HVAC System Log Book is located at the IOZ Operations Desk inside of the IOZ.
12. Emergency Response
 - 12.1. In the event a system malfunction or failure will or may change the established environmental condition of the IOZ ISC shall take immediate action (30 min. response) to correct or mitigate the failure.
 - 12.2. ISC shall provide notification to LMSSC of system out of condition issues and failures as per the ISC / LMSSC Emergency notification list (Attachment II).
 - 12.3. System out of condition issues and failures detected by LMSSC shall be communicated to ISC immediately per the ISC / LMSSC Emergency notification list and/or the KSC Response Desk at (321) 861-5050
13. Natural Disaster HVAC System Preparations and Operation
 - 13.1. LMSSC and ISC shall prepare and respond as determined by their individual approved plans.
 - 13.2. The IOZ HVAC system shall be set to operate at the nominal set points or as determined by LMSSC depending upon the emerging conditions.

ATTACHMENT I IOZ Boundaries



Shaded Area Not Structurally Enclosed

Shaded Area Not Structurally Enclosed

Red envelope is IOZ boundary

ATTACHMENT II
Emergency Contact List

LM Points of Contact

Tom Mott, Facility Manager
Work 321 867-8108,
Cell 321 258-4164

Tom Long AI&P
Work 321 867-9183
After hours 321 604-0913

Buddy Smith AI&P
Work 321 867-6418
After hours 321 427-1225

John Blair AI&P
Work 321 867-5073
After hours 321 431-2209

Eric Johnson Environmental
Work 321 867-5051
After hours 321 749-6250

NASA TA Point of Contact

Gus Diaz
Work 321 867-0471
Cell 321 213-5002

NASA Orion Production Operations

Scott Wilson
Work 867-4365
Cell 713 859-0722

Glenn Chin
Work 321 867-6475
Cell 321 213-1016