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SUBJECT BOSS RADIO COMMUNICATION

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1. REPORTING PROTOCOL UTILITIZING THE RADIO NETS

PURPOSE

This procedure defines the process to be used by FSEU personnel as related to the use of base, portable, and mobile radios. This procedure will define the basic operational and portable radio communication system discipline, professional standard of conduct, and proper protocol for personnel involved with the BOSS contract at the Kennedy Space Center (KSC).

SCOPE AND APPLICABILITY

This procedure applies to all BOSS personnel required to carry a portable radio and communicate with the Complex Control Center (CCC) located in 1P9 in the LCC. This procedure applies to all engineers, supervisors, Facility Managers, Technicians in the Water, Power, HVAC, Elevator, Maintenance Mechanics, Roof crew, Paint Shop, Scaffolding shop, and Asbestos shops required to communicate with console operations personnel in the Complex Control Center (CCC). This procedure also applies to any other BOSS shops that utilize radios or the OIS-M system to communicate to the BOSS test conductors (JSTC). Lastly, this procedure applies to all Construction Site Supervision personnel that are overseeing Fixed Price Contractor work in the field that will affect any of the systems monitored or controlled by Contract Employees represented by a Collective Bargaining Agreement (CBA) should refer to their CBA for provisions that may apply to their assigned classification. Should a conflict arise between this procedure and the appropriate CBA, the CBA shall prevail.

REQUIREMENTS

2. BOSS TEAM PERSONNEL

All team members utilizing the portable radio system are responsible for maintaining a high level of discipline regarding communications with other members and they are expected to ensure formal communications are conducted for all operations that are under their control at all times. BOSS personnel shall ensure formal communications with other members when utilizing the Operational Intercommunication System / Mission Operation Voice Enhancement (OIS-M) System and/or the Radio Communication Nets.

3. RESPONSIBILITIES

BOSS personnel are responsible for communicating all information regarding facility ground systems or equipment status, outage status, planned system activities or actions, system problems or troubleshooting efforts, any unplanned system events or issues to

their appropriate console located within the Complex Control Center (CCC). Console Operators, and Mission Support Office Supervision, will be responsible for reporting to all appropriate levels of NASA-TA, BOSS management, and the appropriate Systems Engineers utilizing the BOSS Established Communication Protocol.

Other responsibilities are outlined below:

- A. Personnel are responsible for communicating activity utilizing a variety of communications equipment, including, two-Way radios, telephones and computer systems.
- B. The primary method of communication between the crews in the field and the consoles will be through the use of the Radio Nets when available. If access to Radio Nets is not available in a particular location where work is being performed, then telephones would be the next alternative path of communication.
- C. Personnel are responsible for preparing and maintaining accurate records and logs of all information being communicated.
- D. BOSS Shops and SE's (including High Voltage, Line Crew, Relay and Test, Low Voltage, Water and Waste, Plumbing, HVAC Utility Annex, HVAC IACP, HVAC, Compressed Air, Maintenance Mechanics, roofing, scaffolding, asbestos, and Heavy Equipment shops) are responsible for communicating to their appropriate consoles in the CCC.

4. CALL SIGNS

All Shops, Engineers, and Console Operations personnel shall have call signs assigned to them for use when communicating with other Team Members. For the shops, the call sign shall include a primary word from the phonetic alphabet in Appendix B and then a number, such as "FALCON 1" or "EAGLE 16", etc. The call signs assigned to specific BOSS shops are shown below:

- A. Compressed Air Shop Call Sign – Echo
- B. HVAC Shop Call Sign – Falcon
- C. Power Shops Call Sign – Eagle
- D. Propellants Shop Call Sign – Kilo
- E. Water and Waste Shop Call Sign – Whiskey
- F. Scaffolding Shop Call Sign -- Sierra
- G. Maintenance Mechanics - Mike
- H. Paint Shop – Paint
- I. Roofing Crew - Roof
- J. HE/HEOPS -- Gator

Each shop will have call signs and numbers assigned to each shop technician or supervisor that has an assigned radio. Shop supervision will provide a listing of all assigned call signs and numbers to their appropriate console in the Complex Control

Center. Shop personnel and console operators that are called on the Radio Net shall answer and respond to acknowledge they heard the person that is trying to contact them.

Complex Control Center Console Operators and the BOSS Test Conductors shall use the assigned call signs shown below:

- A BOSS Test Conductors – JSTC
- B. HVAC Console – JBAC
- C Water Console – JBFX/JBWC
- D Propellants -- JBPN
- D Low Voltage Console – JBEP & Eagle Control
- E Med/High Voltage Console – JSEP & Eagle control

5. COMMUNICATIONS PROTOCOL

All BOSS personnel are expected to set a professional standard for the entire Team and adhere to the enforcement of rules, policies and procedures.

- A. BOSS Shops, Shop Supervision and/or SE shall communicate directly up to their appropriate console in the CCC.
- B. The CCC Console Operators, including JSTC, JBAC, JBFX, JBEP,& JSEP will communicate directly with field personnel issues radio communication equipment. Console operators will document necessary information using the SETI, and JSTC will utilize the ELOG systems as well as identify issues required for the daily highlight report. JSTC will in-turn use the call tree system to relay all issues or concerns with NASA and BOSS management.
- C. BOSS Construction Management shall communicate through the appropriate consoles in the Complex Control Center and/or through the BOSS Test Conductors regarding any outages, planned activities or unplanned events regarding the Fixed Price Contractor work they are supervising.

6. INFORMATION TO BE COMMUNICATED TO THE BOSS TEST TEAM

The following list includes the types of things that shall be communicated through the appropriate console.

- A. Reporting ON duty/Going OFF duty when working off-shifts, weekends, and holidays.
- B. Entering any KSC Facility or NASA facilities located on CCAFS.
- C. Working Emergency Responses, Trouble Calls, and PM's
- D. Opening/closing outages
- E. Starting/stopping field equipment, System configuration changes (Opening a valve, Closing a breaker, etc.), Water line flushing, Equipment rotations, Testing of field equipment, Tank fills, Performing system equipment troubleshooting, Testing of field equipment that may shut down other systems or equipment, and anything else that will cause an alarm to come into one of the CCC consoles.

- F. Requests for remote operation of systems or equipment from the CCC consoles (Turn on an air handler, Rotate a chiller, Turn off a pump, etc.)
- G. Software Integration Tests, System Validations, Preventive Maintenance Activities, System or Equipment Repairs.
- H. Unexpected System or Equipment Failures or Outages
- I. Requests For Access To Controlled Areas
- J. Issues requiring Event Reports, Emergency Trouble Calls, Responses from Fire or Security, etc.
- K. Requests for System or Field Equipment console readings, console trends, or console data.
- L. Performance of Electrical Switching Switch Order Steps
- M. Initiation of and Completion of work being performed on field systems or equipment.
- N. Supporting activities that require multiple shops to complete specific actions in a specific order, such as an ML move, a large electrical outage, etc.

7. OIS-M CHANNELS/RADIO NETS TO BE USED

The following OIS-M channels (or conferences) and Two-way Radio nets are to be utilized for communications by each group listed below:

Radio Net/OIS-M Channel	Assigned to
101	Power System Shop personnel, shop supervision, and Power SE's
104	Utility Systems (HVAC), Water & Wastewater, propellants, shop personnel, utilities shop supervision, and utility System engineers.
114	BOSS Test Conductor, Facility Management
122	Propellants shop personnel, propellants shop supervision, and propellants System engineers
123	Water & Wastewater shop personnel, W&WW shop supervision, W&WW system engineering
124	HVAC and Compressed air shop personnel, HVAC & Compressed Air shop supervision, HVAC and Compressed Air System Engineering
232	NASA Test Directors (NTD)'s
301	Power System shop personnel, power shop supervision, and Power System engineering

Note: Protective systems report for fire Alarm Techs.

8. USE OF RADIO NETS

BOSS Team personnel shall adhere to the following protocol when using the Radio Nets to communicate to all other Test Team members:

- A. Speak in a loud, clear voice and enunciate.
- B. When initiating contacts, identify the addressee and channel being used.
- C. Do not blow into a Radio microphone for a communication check. A simple count (i.e. – “1, 2, 3 Check”) shall be used for communication checks.
- D. Do not start the message until the addressee acknowledges with his or her identification and channel. Once contact has been established, it is not necessary to repeat the identification for each step in a series of continuous communications.
- E. Respond to action commands as follows: If the command is "Main Bus A power switch OFF," the response is to be "Main Bus A power switch OFF - Now" with the accent on "Now" as the switch is moved. If, for the same command, the operator finds the switch already off, response is to be "Verified OFF."
- F. Give prompt response of a brief descriptive nature to test commands.
- G. Where the length of the action necessitates a delay between initiation and completion, acknowledge the command, state "In work," and verify work action completion.
- H. Use OIS-M or Radio Nets only for communications pertinent to the operation.
- I. Never use vulgar or abusive language.
- J. Avoid use of words or phrases that can be misunderstood easily. It is imperative that commands and responses be worded to avoid any possible misunderstanding.
- K. If a number is contained within the nomenclature, it is imperative to clarify the specific action required.
- L. Use applicable OIS-M and Radio Net call signs or call words; minimize the use of personal names. Reference Appendix A for “Standard OIS/Radio Net Words”.
- M. Use the phonetic alphabet to clarify letters with similar sounds. Reference Appendix B for the “Phonetic Alphabet”.
- N. Always refer to the sequence and step number being worked during operations performed.

9. EXPECTED BEHAVIOR WHEN ON CONSOLE

Console operations personnel are expected to comply with CCC-I-0001 and maintain a formal, professional atmosphere in the Complex Control Center.

10. REPORTING PROTOCOL UTILITIZING THE RADIO NETS

Propellants (JBPN) Nets 104, 122 867-0463	Water (JBPN) Nets 104,123 867-2676	HVAC (JBAC) Nets 104,124 867-2723	Power (JSEP/JBEP) Nets 101,301 867-2777 or 867- 7300	Maintenance (JSTC) Nets 104,114 861-5464
P & PVS Shop	Water & Wastewater	HVAC Shop	High Voltage shop	Facility Mechanical
SE's	Plumbing Shop	Utility Annex/IACP	Low Voltage shop	Bridges
Construction Services	Water SE's	Fire Alarm Shop	Relay & Test	Roofing
	Construction Services	Comp. Air Shop	Line Crew	Asbestos
		HVAC/CA SE's	Power SE's	Paint shop/Scaffolding
		Construction Services	Construction Services	Heavy Equipment
				Facility Management
				Elevator Shop

**APPENDIX A:
STANDARD OIS/RADIO NET WORDS**

TERMINOLOGY	MEANING
Affirmative	Yes.
Break	Used to break continuity in a transmission so that listeners will know that the speaker has changed subjects. Also used to break into a conversation by a station wishing to use the net, join the conversation, or report an emergency.
Correction	You have made a mistake or you should have said (or performed); or, I have made a mistake or I should have said (or performed).
Disregard	Disregard what I have just said. It is not applicable or is in error.
Execute	Carry out the instruction.
Go ahead	Proceed with your transmission.
I copy	I received your last message satisfactorily and understand.
I copy. Wilco	I have received your message, understand it, and will comply.
In work	The task is in work.
I say again	I am repeating the message for clarity and do not expect a reply.
Negative	No.
Out-clear	I have completed
Proceed	Go ahead with your task.
Say again	Repeat your last communication.
Speak slower	You are talking too fast.
Stand by	I must pause for time, or wait a few moments.
Verify	Check status or correctness

**APPENDIX B:
PHONETIC ALPHABET**

PHONETIC ALPHABET		
A - ALPHA	J - JULIET	S - SIERRA
B - BRAVO	K - KILO	T - TANGO
C - CHARLIE	L - LIMA	U - UNIFORM
D - DELTA	M - MIKE	V - VICTOR
E - ECHO	N - NOVEMBER	W - WHISKEY
F - FOXTROT	O - OSCAR	X - XRAY
G - GOLF	P - PAPA	Y - YANKEE
H - HOTEL	Q - QUEBEC	Z - ZULU
I - INDIA	R - ROMEO	

RECORDS

The following records are retained by the organizations listed below:

Record	Responsible Organization
N/A	

AFFECTED DIVISIONS/OFFICES

FSEU and O & M Management Division
Propellant and Life Support Division
Engineering Services Division

MANAGEMENT ROLES AND RESPONSIBILITIES

BOSS Program Manager: Ensures BOSS compliance to the requirements stated in this procedure. Reviews and approves or disapproves waiver requests written against this standard.

Division Manager: Ensures compliance within the Division to the requirements stated in this procedure.

Branch Manager: Ensures compliance at the branch level to the requirements stated in this procedure.

FUNCTIONAL ROLES AND RESPONSIBILITIES

BOSS Test Conductors - Report up all facility ground systems or equipment status, outage status, planned system activities or actions, system problems or troubleshooting efforts, and unplanned system events or issues to the NTD and initiate any applicable call trees to notify all other personnel of pertinent information.

CCC Console Operations Personnel – Continually monitor all KCCS power and utility system consoles. Respond to and report all unexplained alarms and/or anomalies to the appropriate engineering, shop and Test Team personnel. Report up all facility ground systems or equipment status, outage status, planned system activities or actions, system problems or troubleshooting efforts, and unplanned system events or issues to JSTC and the appropriate SE and Shop Supervisor.

BOSS Facility Management – Responsible for coordinating all work within their assigned facilities. Responsible for coordinating integrated work requirements between BOSS personal and facility owners. Responsible for reporting facility ground systems or equipment status, outage status, planned system activities or actions, system problems or troubleshooting efforts, and unplanned system events or issues to JSTC as necessary.

Construction Services– Ensure all pertinent information regarding planned work, outages, anomalies, unplanned events or issues, etc. regarding FPC work involving any system monitored by a console in the CCC is reported to the appropriate console and JSTC.

Facilities Maintenance Shop Supervision and Technicians - Ensure all pertinent information regarding facilities maintenance planned work, outages, anomalies, unplanned events or issues, etc. is reported to the appropriate console and JSTC. **Facility Maintenance shops include Asbestos, bridges, elevators, carpenters, Maintenance Mechanics, Metal, move, roof, and Paint & Scaffolding shops.**

HVAC / Compressed Air Shop Supervision and Technicians - Ensure all pertinent information regarding HVAC planned work, outages, anomalies, unplanned events or issues, etc. is reported to the HVAC console.

Power Systems Shop Supervision and Technicians - Ensure all pertinent information regarding Power Systems planned work, outages, anomalies, unplanned events or issues, etc. is reported to the Power console.

Propellant Systems Shop Supervision and Technicians - Ensure all pertinent information regarding Propellants planned work, outages, anomalies, unplanned events or issues, etc. is reported to Propellants console.

System Engineers - Ensure all pertinent information regarding planned work, outages, anomalies, unplanned events or issues, etc. regarding work involving any system monitored by a console in the CCC is reported to the appropriate console and JSTC.

Water and Waste Systems Shop Supervision and Technicians - Ensure all pertinent information regarding Water Systems planned work, outages, anomalies, unplanned events or issues, etc. is reported to the Water console.

Heavy Equipment Ops/Roads Supervision and Technicians - Ensure all pertinent information regarding facilities maintenance planned work, outages, anomalies, unplanned events or issues, etc. is reported to JSTC.

ACRONYMS

CBA Collective Bargaining Agreement
CCC Complex Control Center
FPC Fixed Price Contractor
HVAC Heating, Ventilation and Air Conditioning
IACP Industrial Area Chiller Plant
BOSS Base Operations and Spaceport Services
JBAC HVAC Console
JBEP Low Voltage Console
JBFX Water Console
JBPN Propellants Console
JSEP Med/High Voltage Console
JSTC BOSS Test Conductor
KSC Kennedy Space Center
NASA National Aeronautics and Space Administration
NTD Call Sign for NASA Test Director
OIS-MOperational Intercommunication System/MOVE Voice System
SE Systems Engineer

REFERENCE DOCUMENTS

The following documents are referenced in this procedure:

Document Number	Title
N/A	

DEFINITIONS

BOSS Shops – This includes Maintenance Mechanic Shop, Corrosion Control Shop, Paint Shop, Roofing Shop, Sheet Metal Shop, Machine Shop, Welding Shop, Asbestos Shop, Bridges Shop, Cranes Shop, elevator Shop, Move Crew, High Voltage Shop, Relay and Test Shop, Generator Shop, Protective Systems Shop, Plumbing Shop, Water and Waste Shop, HVAC Shop, Boiler/Heat Plant Shop, Compressed Air Shop, Heavy Equipment Shop, Road Maintenance Shop, Road Maintenance Shop, Propellants North and Propellants South Shops.

Power Consoles – The consoles in the CCC that are operated by JBEP and JSEP certified console operators. These consoles utilize the KCCS network to provide remote command and control, as well as remote monitoring for numerous segments of the Kennedy Space Center and portions of the CCAFS 60 Hz power system.

Utility Consoles – The consoles in the CCC that are operated by JBAC, JBFX, and JBPN certified console operators. These consoles utilize the KCCS network to provide remote command and control, as well as remote monitoring of numerous water, HVAC, Compressed air and Pneumatic systems at KSC.

REVISION RECORD

The following revisions have been applied to this document:

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0	Initial Release	5/21/2015
1	Administrative change only. Document updated to remove branding of previous contract	04/01/19

DOCUMENT APPROVALS

X

Manager, FSEU OM&E

Signature on file