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Procedure	UTILITIES WATER/FIRE SUPPRESSION HURRICANE PLAN			UTI-P-2019	
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FSEU	FSEU	24 MAY 2018		Effective Date: 09 Jun 2020	

SUBJECT UTILITIES WATER/FIRE SUPPRESSION HURRICANE PLAN

PURPOSE

This procedure defines the Base Operations and Spaceport Services (BOSS) contract actions required to prepare and respond to hurricane events at Kennedy Space Center (KSC) with regard to the KSC Water distribution, Wastewater Collection and certain Fire Suppression systems.

SCOPE AND APPLICABILITY

This procedure provides actions necessary to secure/prepare and restore water, wastewater and certain fire suppression systems at KSC in the event of a Hurricane event at KSC.

PROCESS

1.0 PRE-HURRICANE PREPARATIONS AND TASKS

All shops comply with actions stated in [EMP-P-0001](#), *Tropical Storm and Hurricane Preparation and Ride-out*. The following actions are specific to water based and fire suppression systems and shall be performed within the hurricane phases cited in [EMP-P-0001](#) as delineated below.

The following actions will be performed by:

- (WW) – Waste Water shop
- (PL) – Plumbing shop
- (FA) – Fire Alarm shop
- (SE) – System Engineer
- (FM) – Facility Manager

1.1 HURCON IV ACTIONS

- Begin addressing unsecured port-o-lets by storing them if possible in W-5 Pump Station or K6-1348. (WW)
- Fill Sound Suppression tank on Pad B. (WW)
- Check sewage surge tank levels at K6-0792 and M6-0895 and begin to minimize the tank levels. (WW)
- Verify all portable pumps are working and fueled. (WW)
- Verify hoses are stationed at Pump houses per Supervisor direction. This would include Pad Pump House J7-1388, OPF Pump House K6-0895 and HMF Pump House M7-1362. (WW)
- Verify Vacuum Pumper truck is fueled and holding tank is empty. (WW)

- Check diesel tank levels and call Duty Office to have them filled if not full. This would include RLV hanger, HMF Pump house, OPF Pump house, and Pad B Pump house. (WW)

1.2 HURCON III ACTIONS

- Address construction trailer wastewater holding tanks, miscellaneous locations. (WW)
- If W-5 is online, take offline, fill ground storage tank, and shut off fill valve. Verify cla-val (Automatic Level control valve for W-5 Pump Station Storage Tank) operation. If offline, fill ground storage tank and shut off fill valve. Verify cla-val operation. (WW)
- Safe NOVEC fire suppression system at Mid-course Radar Facility (E3-1133) and put in an impairment. See Appendix for safeing procedure. (PL, FA)
- Safe KDC (M6-0547) FM-200 fire system and put in an impairment. See Appendix for safeing procedure. (PL, FA)
- Safe fire suppression system at Wind Profiler (J5-0341) and put in an impairment. See Appendix for safeing procedure. (PL, FA)
- Shut off water to ice machines. (FM)
- Verify all ground storage tanks are full. (SE)
- Shut off power to Pad B tank farm pumps at disconnect switch. Close valve PV-Z, 3" potable tank fill valve. Close valve PV-1, 3" discharge valve from T-4 tank. Place "Do Not Operate" tags on pump disconnect switches and valves. (WW)

1.3 HURCON II ACTIONS

- Shut off Pad B continuous flushing on potable water line. (WW)
- Notify FDEP that KSC will be closed and no daily checks of the water system will be performed until KSC reopens. (SE)

1.4 HURCON I ACTIONS

- Ride Out Team (ROT) members shall remain sheltered at their designated locations and outside activities shall cease until "Weather Safe" is declared in accordance with [EMP-P-0001](#).

2.0 POST HURRICANE ACTIONS

Perform necessary restoration and recovery actions per [EMP-P-0003](#), *Damage Assessment and Recovery*. In addition to these requirements, the following actions shall be performed regarding restoring water and wastewater and fire suppression systems at KSC.

- If water pressure was lost during the storm event, perform the following:
 - Check reduced pressure backflow preventers within labs at the NAO&C (M7-0355) and SSPF (M7-0360) to make sure they aren't dumping. SE will provide a list of the specific backflow preventers to be checked. (WW).
 - SE to submit a Malfunction Report and initiate bacteriological testing of areas affected for two consecutive days. Post "Do not Drink" signs on buildings affected. If event involved a wide spread outage, contact the Duty office to initiate global emails and area paging. (SE).
- Restore water to ice machines after water is cleared for consumption. Facility Manager should contact the Duty Office if unsure of status of the potable water system feeding their facility. (FM)
- Restore all fire suppression systems safed above. See Appendix for restoration procedures. (PL, FA)
- Restore operation of W-5 Pump Station. (WW)
- Place port-o-lets stored for storm back to where they were needed. (WW)
- Open flushing at Pad B as needed to maintain chlorine residual. (WW)
- Drain Sound Suppression Elevated Water Tank at Pad B. (WW)
- Restore water to Pad B at the potable water tank farm. Remove tags on disconnect switches and valves PV-Z and PV-1. (WW)

APPENDIX: FIRE SYSTEMS SAFE AND ACTIVATION PROCEDURES**E3-1133****SAFE:**

1. Notify PSCC and Facility Manager in accordance with [PPS-P-0020](#), *Alarm System Coordination Requirements*, KSC.
2. At primary cylinder, remove the electric actuator and install cover over open orifice. If no safeing cap, use cardboard and tape into position with duct tape.
3. Install Do Not Use or Operate tag, KSC Form 4-622 at the electric actuator and Out of Service tag, KSC Form 28-580 at the Releasing Control Panel (RCP).
4. Notify PSCC that the fire system is SAFED for incoming hurricane and shall be restored afterwards.
5. In accordance with [PPS-P-0001](#), *Protective Systems Impairment Notification Process*, initiate an "unscheduled" impairment on this system (Asset: HCFSCCA001).

RESTORE:

1. Verify RCP is NORMAL for all other issues.
2. Restore releasing functionality and verify NORMAL RCP.
3. Remove tags.
4. Notify PSCC and Facility Manager.
5. Close the impairment.

M6-0547**SAFE:**

1. Notify PSCC and Facility Manager in accordance with [PPS-P-0020](#).
2. At Cylinder C1, remove solenoid coil and install bolt through coil.
3. Install Do Not Use or Operate tag, KSC Form 4-622 at the coil and Out of Service tag, KSC Form 28-580 at the Releasing Control Panel (RCP).
4. Notify PSCC that the fire system is SAFED for incoming hurricane and shall be restored afterwards.
5. In accordance with [PPS-P-0001](#), initiate an "unscheduled" impairment on this system (Asset: BOFSCCA001).

RESTORE:

1. Verify RCP is NORMAL for all other issues.
2. Restore releasing functionality and verify NORMAL RCP.
3. Remove tags.
4. Notify PSCC and Facility Manager.
5. Close the impairment.

J5-0341**SAFE:**

1. Notify PSCC and Facility Manager in accordance with [PPS-P-0020](#).
2. Operate releasing disconnect to open the conductors to the Stat-X. Observe open-circuit Trouble.
3. Install Do Not Use or Operate tag, KSC Form 4-622 at the Releasing Control Panel (RCP).

4. Notify PSCC that the fire system is SAFED for incoming hurricane and shall be restored afterwards.
5. In accordance with [PPS-P-0001](#), initiate an “unscheduled” impairment on this system (Asset: DZFSCCA001).

RESTORE:

1. Verify RCP is NORMAL for all other issues.
2. Restore releasing functionality and verify NORMAL RCP.
3. Remove tags.
4. Notify PSCC and Facility Manager.
5. Close the impairment.

RECORDS

Records are identified in the referenced procedures.

AFFECTED DIVISIONS/ OFFICES

Engineering Service
FSEU (Utilities, Protective Services)
Facility Managers

ROLES AND RESPONSIBILITIES

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

FSEU Department Managers: Ensures compliance within the department level to the requirements stated in this procedure.

FSEU Supervisors: Ensures compliance at the shop level to the requirements stated in this procedure.

FSEU Water & Wastewater Utilities Supervisor: Responsible for assigning personnel and support services as needed to assure necessary actions are performed.

FSEU Protective Services Supervisor: Responsible for assigning personnel and support services as needed to assure necessary actions are performed.

FSEU Shop personnel: Responsible for performing necessary actions as defined in this procedure.

System Engineer (SE): SE is responsible for notification of regulators and customers in the event of an anomaly/malfunction regarding the KSC Water Distribution System.

Facility Manager (FM): FM is responsible for performing necessary actions as defined in this procedure for assigned facilities.

REFERENCE DOCUMENTS

The following documents are referenced in this procedure:

Document Number	Title
EMP-P-0001	Hurricane Preparation and Ride-out
EMP-P-0003	Damage Assessment and Recovery
KSC Form 4-622	Tag, Caution – Do Not Use or Operate
KSC Form 28-580	Tag, Out of Service, In Case of Fire Dial 911
PPS-P-0001	Protective Systems Impairment Notification Process
PPS-P-0020	Alarm System Coordination Requirements, KSC

ACRONYMS

BOSS	Base Operations and Spaceport Services
Cla-val	Automatic Level control valve for W-5 Pump Station Storage Tank
FA	Fire Alarm shop
FDEP	Florida Department of Environmental Protection
FM	Facility Manager
FSEU	Facilities, Systems, Equipment, Utilities Operation Maintenance and Engineering
KDC	Kennedy Data Center
KSC	Kennedy Space Center
PL	Plumbing shop
RCP	Releasing Control Panel
ROT	Ride Out Team
SE	System Engineer
WW	Water/Wastewater shop

DEFINITIONS

None

REVISION RECORD

The following revisions have been applied to this document:

Revision Number	Change Description	Date
0	Initial Release	5-24-2018
1	Administrative change only. Document updated to remove branding of previous contract.	04-01-19
2	Updated to BOSS formatting	06-09-2020

DOCUMENT APPROVALS

 Expired certificate

X

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X

Mike Lopez
FSEU Technical Operation Manager