



Payload Operations Integration Working
Group (POIWG)
July 2016

Emergency Preparedness

Debbie Babic/HRP

Emergency Preparedness





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AGENDA

- Primary Goal of Emergency Preparedness
- Types of Emergencies
- Factors to Consider for Emergency Preparedness Plan
- HRP-Specific Hurricane Plan Features
- Testing the HRP Hurricane Plan



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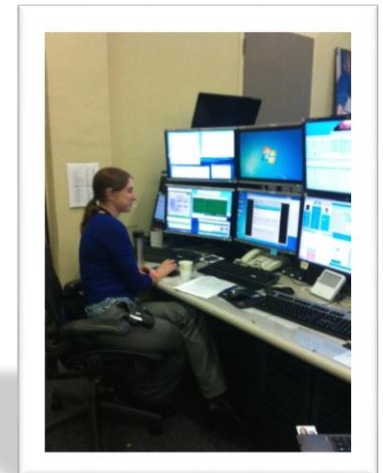
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Primary Goal of Emergency Preparedness

**Preserve crew-time and
protect against loss of science or subject**



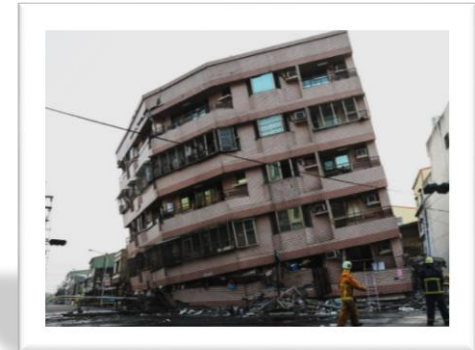
Crew time is precious and the successful completion of many activities depends on real-time support from PDs





Emergency Planning

- We all routinely have contingency plans for short-term issues – this is what we do as operations teams
- However, natural disasters, terrorism, or other major events beyond our control could impact real-time ops for an extended time of unknown duration by causing:
 - Loss of electrical service
 - Loss of phone & internet communication
 - Major physical damage to facility or community
 - Scarcity of personnel
- A documented and tested Emergency Preparedness Plan can help ensure the success of ISS science operations





Some Factors to Consider For Plan

General:

- What emergencies are most likely in our area
- What would the impacts be
- How much warning would we have
- What crew activities could POIC support alone
- What crew activities require PD support
- How might crew activities be changed to reduce risk
- What would primary comm method with POIC be





Some Factors to Consider For Plan (cont'd)

Facility:

- What services such as voice loops, S/G enablement, video downlink, commanding, telemetry displays, etc. would we need
- What critical real-time ops services & tools can personnel access remotely (from home, hotel, etc.)
- What new hardware or software might be required to provide capabilities we need to support remotely
- How would remote capabilities be tested





Some Factors to Consider For Plan (cont'd)

Personnel:

- How do we ensure the safety of our team
- What would individual evacuation plans be
- What would the call tree be and what information would be critical to communicate to ops team and management
- Who on our team is most likely to be able to provide emergency support considering proximity, family responsibilities, etc.
- How will labor charging for prep be affected





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HRP Emergency Preparedness

- HRP (and JSC) have identified hurricanes as our most likely threat
- This is one of the easier threats to prepare for, since hurricanes come with several days warning, unlike tornados, earthquakes, and terrorist attacks
- HRP has had a documented hurricane plan in place for over 10 years and we continue to review and refine our plan annually
- The primary component of our plan relies on the ability to connect to our backup hardware and software located at MSFC (designated as cTSC)



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Some Features of HRP Hurricane Plan

- Consistent with JSC Hurricane Preparedness Plan
- Identifies Remote Support Team (RST) roles, responsibilities, and locations
- Action to assess timeline and remote ops feasibility & notify POIC
- Action to confirm staffing plan rotation and any necessary logistics
- Verifies RST is trained on “hurricane” laptop usage
- Action to issue special “hurricane” laptops which allow connection to backup hardware at MSFC (cTSC) for commanding services, telemetry monitoring, etc.
- Action to coordinate with HOSC facility on any special requirements
(for example, specific IP addresses for hurricane laptops in remote locations)
- Action to verify functionality of backup systems and voice loops (IVoDS) from remote location



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Features of HRP Hurricane Plan (cont'd)

- HRP's contingency TSC (cTSC) capabilities include:
 - Rack activation/deactivation commanding
 - Telemetry monitoring
 - Voice loop comm via IVoDS
 - Private S/G via phone patch
- HRP cannot currently support activities that require real-time privatized downlink video (ultrasounds, Fluid Shifts, etc.)
- Plan could be modified for use during other emergencies, though with less warning than a hurricane provides, risk to real-time ops is increased



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Testing the HRP-Specific Plan

- HRP assessed timeline to select a day with operations similar to what we could support during emergency

GMT 144 Rack 2 activation, crew blood draw, Rack 2 deactivation

- Remote Support Team was identified and issued hurricane laptops
- Coordinated with POIC on the plan to support real-time ops with the cTSC facility and Remote Support Team
- RST deployed to remote locations with backup team ready in TSC in case of issues



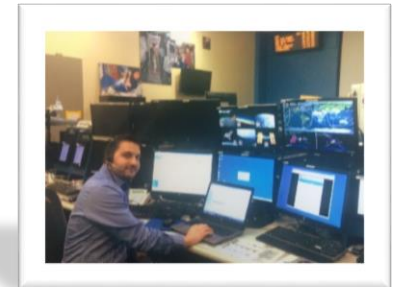
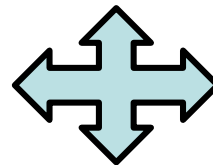
Testing the HRP-Specific Plan



3 people at home



1 person in hotel



Backup team in TSC





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Results

Test of HRP Hurricane Plan using remote capabilities to perform real-time ops was completely successful and transparent to POIC



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Summary

- Brainstorm “what-ifs” early
- Assess
- Communicate
- Document
- Test
- Revise if needed



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Questions?



HRF Ops Team in the Telescience Support Center within MCC-Houston

