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| ARCS PROCEDURE | DARWIN CYCLONE RESPONSE PLAN | PRO(ARCS)-047.003 |
| Author: L. Jones | | 02 March 2004 Page 1 of 3 |

Darwin Cyclone Response Plan

I. Purpose:

The purpose of this procedure is to provide the necessary guidelines on how to prepare the Darwin ARCS site for a predicted cyclone.

II. Cautions and Hazards:

- The potential threats from cyclones come from very strong winds, flooding caused by heavy rains, hazardous surf conditions, and washouts of coastal areas caused by extreme wave actions.
- Strong winds can cause structural damages to buildings, picking up loose objects and propel them with deadly force, and damage utility power poles and power lines.
- Wind-driven rain in a super cyclone can act like a water blaster forcing water through windows, door seals and other openings in buildings.
- After high water, snakes, insects and animals are driven to higher ground by floodwaters.

III. Requirements:

Verify that there are battery-powered equipment and other emergency supplies at the site. At minimum, the supply should include flashlights, battery powered radio, drinking water, first-aid kit, and extra batteries.

IV. Procedure:

A. Preparing for Possible Cyclone

1. If weather reports indicate that a possible cyclone may be developing in the area, verify that the site has adequate emergency equipment and supplies. At minimum, the supply should include the following:
 - a) Flashlights
 - b) Radio (battery powered)
 - c) Drinking water
 - d) First-aid kit
 - e) Extra batteries

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| <p>ARCS PROCEDURE</p> <p>Author: L. Jones</p> | <p>DARWIN CYCLONE RESPONSE PLAN</p> | <p>PRO(ARCS)-047.003</p> <p>02 March 2004</p> <p>Page 2 of 3</p> |
|---|-------------------------------------|--|

2. Forty-eight hours before a cyclone is predicted to hit, or if it is within 100km of the site, contact TWPO for a decision to shut down the site and provide emergency contact phone numbers.
3. If the decision is made to shut down the site, proceed with the following:
 - a) Lower the SMET tower, remove the radiometer cross arm with the radiometers cables, disconnect the cables and take inside a transportainer. Then raise the SMET the main tower back up and its instruments.
 - b) Shut off the power to the solar tracker. Cover all skyrad radiometers to protect them from blowing debris.
 - c) Shut off power to the WSI, lower the occulor arm and cover the dome to protect it from blowing debris.
 - d) Shut off power to the TSI, remove the instrument from its stand and place it inside a transportainer.
 - e) Shut off power to the Ceilometer and tape cover the top opening.
 - f) Shut off power to the MWR.
 - g) Shut off power to the MPL, MMCR, and other instrument support equipment in all transportainers.
 - h) Shut down the data collection system by pulling the plug and allowing the soft shut down mode to work automatically or simply unplug the black chord to the Data system to allow the APC UPS.
 - i) Leave the air-conditioning units running. Do not close dampers.
 - j) Turn off diesel generator at the last minute (will not run with extreme pressure difference due to storm).
 - k) Inspect the transportainer hold-downs.
 - l) Lock all transportainers.
 - m) Turn off grid power.

B. Re-establishing Site after Cyclone Threat

1. Inspect the ARCS shelters for water intrusion prior to applying power.
2. If grid power available, turn it on.
3. Engage the diesel generator.
4. If grid power available, turn it on.
5. Turn Vans on one at a time to isolate problems.
6. Remove all equipment protective covers and inspect for damage.

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| ARCS PROCEDURE | DARWIN CYCLONE RESPONSE PLAN | PRO(ARCS)-047.003 |
| Author: L. Jones | | 02 March 2004 Page 3 of 3 |

7. Bring the site up in the opposite sequence of the shutdown.
8. File a report on the effects of the cyclone and related shutdown procedures.

V. References:

1. Lowering and Raising SMET Tower – PRO(SMET)-005.
2. Shutting Down WSI – PRO(WSI)-009.
3. Starting Up WSI – PRO(WSI)-008.
4. ARCS Emergency Power Shutdown Procedure – PRO(ARCS)-005.
5. ARCS Systematic Power Shutdown Procedure – PRO(ARCS)-006.
6. MPLHR Shutdown and Restart – PRO(MPLHR)-011.
7. MWR Restart/Shutdown Procedures – PRO(MWR)-004.
8. Initialization Procedure for the Solar Tracker – PRO(TRK)-001.
9. MMCR Manual Shutdown Procedure – PRO(MMCR)-003.
10. ISS Emergency Shutdown Procedure – PRO(ISS)-003.
11. GENSET Shutdown Procedure – PRO(GEN)-003.
12. ARCS Site Shutdown Sequence – PRO(PWR)-006.
13. ARCS Site Startup Sequence – PRO(PWR)-007.
14. Ceilometer Shutdown/Restart Procedure: PRO(CEI)-005.

VI. Attachments:

None.