

ARM Nauru Research Station
Site Visit 0512N Report

Visit Duration: 07 December to 13 December 2005

Nauru Island, Republic of Nauru

SV-0512N

Site:	Proposed Dates on Site: 7 - 13 December
Team Members: Rex Pearson Bill Milne	Ship or hand carry prior to SV: BBSS Ground Check Station (GC25)
	Safety: Major Hazards: Caustic chemicals (KOH), Explosive gas (H2), AC electricity Hazard Controls: BOM Electrolyser Handbook, BM Electrolyzer Operations/Maintenance Training, ASNZS 4836/2001-Safe Working on LV Electrical Installations, 2-man rule
	Reminder: When replacing items (e.g., desiccant, filters, etc.), record and report the quantity of spares left on site.

Site Tasks

Priority	System	Date Completed (dd/Month)	Service Time in Hours	Tasks/Assoc Hazards-Controls <small>For each priority item insert new line(row) for each date/time entry</small>
1	H2GEN			Repair fan
		8-Dec-05	4	Repaired fan assembly, greased bearing and reassembled
2	NIES			Replace computer
		8-Dec-05	2	Collected existing data form Campbell logger and retrieved the old laptop
		9-Dec-05	1	Collected remaining data on the logger - collected from Day 288 to day 343.
		10-Dec-05	8	Worked on laptop configuration and programming
		11-Dec-05	5	Completed configuration and tested on sample download. Have placed a shortcut on the desktop that collects the data, divides the data into hourly chunks then zips up the data and saves it to both the hard drive and USB key for the observers to upload to the TWP ftp server.
3	MFRSR			Obtain configuration
4	MPL			Repair timer-shutter mechanism
		8-Dec-05	3	Checking for intermittent in timer controller, the rain water controller is putting out 28 volts ac when it is supposed to, but the shutter is intermittantly operating
		9-Dec-05	2	Found intermittant solder joint on contol PCB where 120 VAC power connects to the PCB. Resoldered and shutter operates reliably
		10-Dec-05	0.5	Checked operation at solar noon
		11-Dec-05	0.5	Checked operation at solar noon

5	CIMEL			Check system
		8-Dec-05	1	Checked system batteries and internal battery. Internal battery voltage 5.38 volts. No apparent fault on the system that will cause the constant time loss.
		11-Dec-05	2	Checked all battery connections and connectors all ok
6	DS			Upgrade SPARC processors (as per ECO-00489)
		8-Dec-05	4	Removed DS2, replaced with Sun Sparc servers. Installed software and tested system. Ron Reed assisted with a fault in the data link to the NFS.
7	DS			Install RADMIN on all instrument PCs
		12-Dec-05	2	Completed
8	BBSS			Obtain configuration and work with Barry Lesht to try again to fix bad file problem
		13-Dec-05	0.5	Trained observers how to reset time on the Digicora
9	BBSS			Install Croud Check Station (GC25) - Pending shipment Unit has not arrived
10	BBSS			Change out Velcro strap sonde retainer
		11-Dec-05	0.5	Strap changed out
11	BBSS			Change out batteries backed up by APC BP420S, fed by non-UPS 120 vac
		11-Dec-05	4	Removed BP420S from service(OMS tag 12002337) and replaced with Liebert UPS feeding the E Van. There is only one UPS in operation now in the E Van
12	COMM			Change out fan in AWS SAT phone antenna
		10-Dec-05	1	Completed
13	OTHER			Inspect cables per Cable Inspection Procedure
		12-Dec-05	1	Cables inspected for damage, found air conditioner cabling on Y van had exposed cabling. The conduit had come loose from the A/C. Power cover removed and conduit was reinstalled.
14	GENSET			Cycle diesel fuel through Racor filters
		12-Dec-05	0.5	Fuel cycled on regular basis checked fuel pump all ok
15	GENSET			Change out Racor filters in fuel transfer dolly
		12-Dec-05	0.5	Filters were changed several weeks ago when the tank was drained. Filter checked ok
16	GENSET			Change out fuel gauge cover
		12-Dec-05	1	Cover changed and measurement taken. The hole in the tank is 2inch NPT , there is a reducer in the inlet taking it down to 1.5inch for the fuel gauge

17	ES&H			Train Observers on Lockout/Tagout
		12-Dec-05	1	Completed
18	MMCR			Change out antenna heater filters
		12-Dec-05	0.5	Completed
19	SMET			Inspect head & board for possible change out
				I assume this refers to the MFRSR and has already been done
20	TRK			Apply rust & seize protection to bolts
		12-Dec-05	1	Tracker checked
21	AERI			Change out batteries for electronics backed up by APC SU2200NET, fed by non-UPS 120 vac
		11-Dec-05	0.5	Unable to locate any batteries, have they been sent
22	H2Gen			Complete electrolyser maintenance
		8-Dec-05	3	Commenced electrolyser maintenance
		9-Dec-05	9	Continued electrolyser maintenance
		10-Dec-05	5	Continued electrolyser maintenance
		11-Dec-05	3	Completed maintenance replaced non return valve and current control. Adjusted current overload and maximum current adjustments.
23	Aeri			Perform 3rd Black Body calibration
		9-Dec-05	4	Setup Aeri for a 3 body calibration. Worked with Denny Hackel from Wisc to check and collect cal files.
		10-Dec-05	3	Additional black body test on Aeri for WISC
		13-Dec-05	2	Additional black body test on Aeri for WISC
24	OBS			Change IP address of Observers computer from instrument network
		9-Dec-05	1	Observers 2 computers moved to the .241 subnet as per previous request of Dick Eagan.
		13-Dec-05	1	Fixed VPN problem with observers computer - they can now use outlook again to obtain email
25	TSI			Repair TSI
		9-Dec-05	4	Checked TSI and found the optical shaft encoder was not controlling the system. Plugged in the spare encoder and was able to control the motor. Swapped out the encoders and system now worked. Advised Vic Morris to do any final adjustments.
26	TSI			Replace TSI cooling fan
		10-Dec-05	1.5	Fan replaced and fixed faulty fan power connector
27	O2 Tester			Repair O2 tester
		10-Dec-05	1.5	Replaced batteries and tightened up meter connections where they connect to the PCB

		11-Dec-05	0.5	Checked operation of O2 sensor and confirmed new batteries are functioning ok
28	Vceil			Check ceilometer configuration for Bill Porch
		12-Dec-05		Tried to get ceilometer configuration but had problems communicating with the ceilometer. Temporary repairs made to comms circuit to get the ceilometer talking reliably. Configs taken and sent to Bill Porch. Problems with the ceilometer may be related to the intermittant comms.
		13-Dec-05	0.5	Checked ceilometer and discussed with Bill Porch. It appears the ceilometer is functioning correctly.
29	Misc			Repair remote genset monitoring system
		12-Dec-05	2	Repaired burnt out resistor on 4-20mA converter and replaced cable to Aux tank (It had been eaten out by ants). Restored network connection and tested.
30	SHIPPING			List items to be shipped following visit
				Aeri black body cal kit
31	FUTURE NEEDS			List items needed for future visits (spares, etc.)
				Spare batteries for O2 tester
				12 volt fan for TSI - (Dick Smith Australia)
				Spare current control for electrolyser
				Replacement fan for Cisco 2950 switch - the one in E Van has noisy bearings
				Replacement silence switch on RBL panel
				Compressor oil for electrolyser
				Antenna filters for MMCR antenna
				Air filters for electrolyser