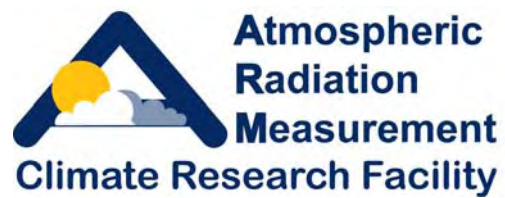


**Atmospheric Radiation Measurement Program
Climate Research Facility Operations
Quarterly Report**

January 1 – March 31, 2006



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1. Data Availability

Description. Individual raw data streams from instrumentation at the Atmospheric Radiation Measurement (ARM) Program Climate Research Facility (ACRF) fixed and mobile sites are collected and sent to the Data Management Facility (DMF) at Pacific Northwest National Laboratory (PNNL) for processing in near real time. Raw and processed data are then sent daily to the ACRF Archive, where they are made available to users. For each instrument, we calculate the ratio of the actual number of data records received daily at the Archive to the expected number of data records. The results are tabulated by (1) individual data stream, site, and month for the current year; and (2) site and fiscal year dating back to 1998.

The U.S. Department of Energy requires national user facilities to report time-based operating data. The requirements concern the actual hours of operation (ACTUAL); the estimated maximum operation or uptime goal (OPSMAX), which accounts for planned downtime; and the VARIANCE [$1 - (\text{ACTUAL}/\text{OPSMAX})$], which accounts for unplanned downtime. The OPSMAX time for the second quarter for the Southern Great Plains (SGP) site is 2,052 hours ($0.95 \times 2,160$ hours this quarter). The OPSMAX for the North Slope Alaska (NSA) locale is 1,944 hours ($0.90 \times 2,160$), and that for the Tropical Western Pacific (TWP) locale is 1,836 hours ($0.85 \times 2,160$). The OPSMAX time for the ARM Mobile Facility (AMF) is 2,052 hours ($0.95 \times 2,160$). The differences in OPSMAX performance reflect the complexity of local logistics and the frequency of extreme weather events. It is impractical to measure OPSMAX for each instrument or data stream. Data availability reported here refers to the average of the individual, continuous data streams that have been received by the Archive. Data not at the Archive are caused by downtime (scheduled or unplanned) of the individual instruments. Therefore, data availability is directly related to individual instrument uptime. Thus, the average percent of data in the Archive represents the average percent of the time (24 hours per day, 90 days for this quarter) the instruments were operating this quarter.

Summary. Table 1 shows the accumulated maximum operation time (planned uptime), the actual hours of operation, and the variance (unplanned downtime) for the period January 1 through March 31, 2006, for the fixed and mobile sites. Although the AMF is currently up and running in Niamey, Niger, Africa, the AMF statistics are reported separately and not included in the aggregate average with the fixed sites. The second quarter comprises a total of 2,160 hours. For all fixed sites (especially the TWP locale) and the AMF, the actual data availability (and therefore actual hours of operation) exceeded the individual (and well as aggregate average of the fixed sites) operational goal for the second quarter of fiscal year (FY) 2006.

Table 1. Operational Statistics for the Fixed ACRF and AMF Sites for the Period January 1 – March 31, 2006.

Site	Hours Of Operation			Data Availability	
	Opsmax	Actual	Variance	Goal	Actual
NSA	1,944.00	2,073.60	-0.067	0.90	0.96
SGP	2,052.00	2,095.20	-0.021	0.95	0.97
TWP	1,836.00	2,095.20	-0.141	0.85	0.97
Site Average	1,944.00	2,088.00	-0.076	0.90	0.97
AMF Niamey	2,052.00	2,116.80	-0.032	0.95	0.98

2. Site Visit Requests, Archive Accounts, and Research Computer Accounts

Description. The Site Access Request System is a web-based database used to track visitors to the fixed sites, all of which have facilities that can be visited. The NSA locale has the Barrow and Atqasuk sites. The SGP site has a Central Facility, 23 extended facilities, 4 boundary facilities, and 3 intermediate facilities. The TWP locale has the Manus, Nauru, and Darwin sites. NIM represents the AMF statistics for the current Niamey, Niger, Africa, deployment. PYE represents the AMF statistics for the Point Reyes, California, past deployment in 2005. In addition, users who do not want to wait for data to be provided through the ACRF Archive can request an account on the local site data system. The eight research computers are located at the Barrow and Atqasuk sites; the SGP Central Facility; the TWP Manus, Nauru, and Darwin sites; the DMF at PNNL; and the AMF in Niger. This report provides the cumulative numbers of visitors and user accounts by site for the period April 1, 2005 – March 31, 2006.

The U.S. Department of Energy requires national user facilities to report facility use by total visitor days—broken down by institution type, gender, race, citizenship, visitor role, visit purpose, and facility—for actual visitors and for active user research computer accounts. During this reporting period, the ACRF Archive did not collect data on user characteristics in this way. Work is under way to collect and report these data.

Research computer accounts are counted in the same manner as for the ACRF Archive accounts: an individual is counted as only one unique user per site, even though he or she opens and closes an account several times to obtain different data at one or more sites. However, site visitors are counted each time they visit, because many visitors participate in multiple, unrelated experiments or events.

Also, users that visit sites can connect their computer or instrument to an ACRF network, which requires an on-site device account. Remote (off-site) users can also have remote access to any ACRF instrument or computer system at any ACRF site, which requires an off-site device account. These accounts are also tracked.

All user accounts are established for period of up to one year and must be renewed annually. To report users, we counted the number of active users for the previous 12 months during the last month of the quarterly reporting period.

Summary. Table 2 shows the summary of cumulative users for the period April 1, 2005 – March 31, 2006. For the second quarter of FY 2006, the overall number of users increased from the last reporting period, primarily due to the Tropical Warm Pool—International Cloud Experiment (TWP-ICE) and the setup and tour of the AMF in Niamey, Niger. Although intensive operational periods (IOPs) were conducted during this quarter at all the sites, they were small and did not involve many on-site researchers. The number of data users, however, was invariant from the last reporting period.

Table 2. Summary of ACRF User Site Visits, Archive Accounts, and Research Computer Accounts for the April 1, 2005 – March 31, 2006.

Site	Visitors	Visitor Days	On-Site Device Accounts	Off-Site Device Accounts	Research Accounts	Archive Accounts	Total Users
NSA	87	683	15	27	24	219	372
SGP	213	1,268	17	38	21	467	756
TWP	74	745	8	23	25	156	286
NIA	103	1,269	6	21	15	17	162
PYE						39	39
DMF					33		33
Total	477	3,965	46	109	118	898	1,648

3. Safety

For reporting purposes, the three ACRF sites and the AMF operate 24 hours per day, 7 days per week, and 52 weeks per year. Although the AMF is not officially collecting data this quarter, personnel are regularly involved with teardown, packing, shipping, unpacking, setup, and maintenance activities, so they are included in the safety statistics. Time is reported in days instead of hours. If any lost work time is incurred by any employee, it is counted as a workday loss. Table 3 reports the consecutive days since the last recordable or reportable injury or incident causing damage to property, equipment, or vehicle for the

Table 3. Consecutive Days of Injury-Free Operation, * January 1 – March 31, 2006.

ES&H Category	NSA	SGP	TWP	AMF
Days Worked without a Lost Time Incident	90	90	90	90
Days Worked without a Recordable Accident	90	90	90	90
Days Worked without a Property-Damage Incident	90	90	90	90
Days Worked without a Reportable Loss to Vehicles	90	90	90	90
**“Injury-free” is defined as days without a recordable lost time incident or property damage incident.				

period January 1 – March 31, 2006. There were no lost workdays for the second quarter of FY 2006. However, there was a recordable medical treatment case (low back strain with no restricted or lost time) not reported last quarter because the case was under review. The case was determined to be reportable and is reflected in Table 4.

This quarterly report also includes historical safety performance data, which are provided in Table 4 as a summary of safety statistics for the period October 1, 1998 – March 31, 2006.

Table 4. Consecutive Days Since the Last Recordable Lost Time Incident or Property Damage Incident, October 1, 1998 – March 31, 2006.

ES&H Category	NSA	SGP	TWP	AMF
Days Worked without Lost Time Incident	2,737	1,575*	2,737	821
Days Worked without a Recordable Accident	2,737	133+ 1028*	2,737	821
Days Worked without a Property-Damage Incident	2,737	2,737 21902190	2,737	821
Days Worked without a Reportable Loss to Vehicles	2,737	2,737	2,737	821

*SGP has had three lost work day cases:

FY 1998: 2 lost days restricted work for lower back sprain;

FY 1999: 14 lost days for fracture of wrist (slipped and fell on ice after hail storm);

and

FY 2000: 162 lost days and 130 restricted days to alleged injury of congenital defect to back.

+SGP FY 2006: Recordable medical treatment case; low back strain with no restricted or lost time.