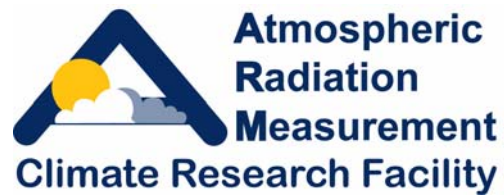


**Atmospheric Radiation Measurement Program
Climate Research Facility Operations
Quarterly Report**

October 1 – December 31, 2004



Work supported by the U.S. Department of Energy,
Office of Science, Office of Biological and Environmental Research

Contents

1	Data Availability	1
2	Safety	3

Tables

1	Operational Statistics for the ACRF Sites for the Period October 1, 2003– December 31, 2004 Site Visit Requests, Archive Accounts, and Research Computer Accounts.....	2
2	Summary of ACRF User Site Visits, Archive Accounts, and Research Computer Accounts for the Period January 1, 2004–December 31, 2004	3
3	Consecutive Days Since Last Recordable Lost Time Incident or Property Damage Incident, October 1–December 31, 2004.....	3

Atmospheric Radiation Measurement Program Climate Research Facility Operations Quarterly Report October 1 – December 31, 2006

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 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 United States 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 annual OPSMAX time for the Southern Great Plains (SGP) site is 8,322 hours per year ($0.95 \times 8,760$, the number hours in a year, not including leap year). The annual OPSMAX for the North Slope Alaska (NSA) site is 7,884 hours per year ($0.90 \times 8,760$), and that for the Tropical Western Pacific (TWP) site is 7,446 hours per year ($0.85 \times 8,760$). 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 ACRF 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, 365 days per year) the instruments were operating.

Summary. Table 1 shows the accumulated maximum operation time (planned uptime), the actual hours of operation, and the variance (unplanned downtime) for the period October 1 through December 31, 2004. The first quarter comprises a total of 2,208 hours. At all three sites, the actual data availability (and therefore actual hours of operation) met or slightly exceeded the operational goal for the first quarter of fiscal year (FY) 2005 (0.90 for NSA, 0.97 for SGP, and 0.90 for TWP).

Table 1. Operational Statistics for the ACRF Sites for the Period October 1, 2003–December 31, 2004 Site Visit Requests, Archive Accounts, and Research Computer Accounts.

Site	Hours Of Operation			Data Availability	
	Opsmax	Actual	Variance	Goal	Actual
NSA	1,987.20	1,994.49	-0.004	0.90	0.90
SGP	2,097.60	2,134.47	-0.018	0.95	0.97
TWP	1,876.80	1,994.49	-0.063	0.85	0.90
Site Average	1,987.20	2,041.15	-0.028	0.90	0.92

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 site has the Barrow and Atqasuk facilities. The SGP site has 1 central facility, 23 extended facilities, 4 boundary facilities, and 3 intermediate facilities. The TWP site has the Manus, Nauru, and Darwin facilities. In addition, users who require data more timely than that provided by the ACRF Archive can request an account on the local site data system. The 7 research computers are located at the Barrow and Atqasuk facilities; the SGP central facility; the TWP Manus, Nauru, and Darwin facilities; and the DMF at Pacific Northwest National Laboratory. This report provides the cumulative numbers of visitors and user accounts by site since the beginning of the 2004 fiscal year on October 1, 2003.

The United States 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 also 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 through the first quarter of FY 2005. For the period January 1–December 31, 2004, the NSA site had a large number of visitors before and during the Mixed-Phase Arctic Cloud Experiment intensive operational period (IOP). This was expected, since the ARM Program has put a high priority on NSA activities.

Table 2. Summary of ACRF User Site Visits, Archive Accounts, and Research Computer Accounts for the Period January 1, 2004–December 31, 2004.

Site	On-Site			Off-Site Device Accounts	Research Accounts	Archive Accounts	Total Users
	Visitors	Visitor Days	Device Accounts				
NSA	176	1,686	23	10	37	165	411
SGP	143	639	17	12	34	510	716
TWP	118	451	4	10	22	153	307
DMF					21		21
Total	437	2,776	44	32	114	828	1,455

2. Safety

For reporting purposes, the three ACRF Sites and ARM Mobile Facility operate 24 hours per day, 7 days per week, 52 weeks per year. Time is reported in days instead of hours. Although the ARM Mobile Facility has not been deployed, safety statistics are included during the assembly and testing period of the facility. If any lost work time is incurred by any employee, it is counted as a workday loss. Consecutive days since the last recordable or reportable injury or by damage to property, equipment, or vehicle are provided in Table 3 for the period October 1–December 31, 2004. There were no lost days for the first quarter of FY 2005.

Table 3. Consecutive Days Since Last Recordable Lost Time Incident or Property Damage Incident, October 1–December 31, 2004.

ES&H Category	NSA	SGP*	TWP	ARM Mobile Facility
Days Worked without a Lost Time Incident	92	92	92	92
Days Worked without a Recordable Accident (Doctor Case)	92	92	92	92
Days Worked without a Property-Damage Incident (Property-Equipment Damage/Loss)	92	92	92	92
Days Worked without a Reportable Loss to Vehicles	92	92	92	92