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North Slope of Alaska ARM Facilities
Monthly Status Update
Sandia National Labs

September 2019

Contacts:

Mark Ivey
(North Slope)
mdivey@sandia.gov
505-284-9092

Fred Helsel
(Barrow/AMF3)
fmhelse@sandia.gov
505-284-3620

Dari Dexheimer
(Tethered Balloon Systems)
ddexhei@sandia.gov
505-844-7685

1 North Slope Facilities Management Executive Summary

This monthly report is intended to communicate the status of North Slope ARM facilities managed by Sandia National Labs.

Operations Team

* Mark Ivey- ARM Alaska Sites Manager (SNL)
* Joe Hardesty – ARM Alaska Sites Assistant Manager (SNL)
* Fred Helsel- Barrow and AMF3 Site Manager (SNL)
* Darielle Dexheimer- Tethered Balloon Operations (SNL)
* Valerie Sparks- ARM Project Office (SNL)
* Martin Stuefer- Rapid Response Team (UAF)
* Randy Peppler- ARM DQ Office Manager (OU)

2 Budget

FY2019 Financials (as of September 13, 2019)

	September	YTD
Carryover funds	$4,850,599	
Funds Allocated YTD	$7,250,000	
Carryover plus YTD funds	$12,100,599	
Cost, burdened amount	$6,978,771	
Uncosted Funds	$5,121,828	
Commits, burdened total	$2,305,107	
Current fiscal year uncommitted funds	$2,816,721	
Subsequent fiscal year (SFY) commits	$801,994	
Total uncommitted funds, including SFY commits	$2,014,727	
Fully Burdened Staff Costs	$135,000	$3,882,000
Fully Burdened Contract Costs	$159,000	$3,358,000
Fully Burdened Total Costs	$294,000	$7,040,000

3 Summary of Current Management Issues

Management summary of current issues for September

1. Jennifer Comstock (PNNL) visited the AMF3/Oliktok and Barrow facilities and visited ARM-funded staff at the University of Alaska Fairbanks, including Martin Stuefer, Telayna Wong, Jen Delamere, and Matthew Sturm.
2. Joe Hardesty and Mark Ivey switch roles officially on October 1.
3. We will present an overview of activities at AMF3 and Barrow at an upcoming review at BER in Germantown on October 22. Joe will present in Germantown.
4. The visit by Chris Fall and some of his staff went well. Representatives from LANL and PNNL were able to join our department manager Carol Adkins and Atmospheric Sciences manager Lori Parrott for the tour.
5. We continue working with NOAA at Utqiagvik in consideration of their current construction for a much-needed upgrade/expansion to their Observatory. This includes consideration of construction road traffic impacts on measurements, maintaining road access during construction, and our plans for design and construction of the deck expansion (for the HSRL and shelter).
6. The TBS team has initiated campaign #3 of flights at SGP, scheduled for 30 Sep – 10 Oct.
7. During day one of the current SGP TBS flights, a cropduster flew directly over the launch site at low altitude. Members of SNL and ANL/SGP responded to identify all nearby air traffic and monitor aircraft. After communicating with all local services, TBS flights were conducted later in the day.

4 Safety

AMF3- No incident/Injury

Barrow - No Incident/Injury

5 Tethered Balloon Operations

TBS Report for September 2019

The tether from the AMF3 winch was returned to Cortland under RMA at the end of the August AMF3 TBS campaign for review of several flaws in the braiding. Cortland has warranted the tether and is providing a new 9,000’ length at no cost. The strength of the existing tether was not compromised, but a few flaws in the braiding left high spots that could be snagged when running through a pulley.

As of mid-September, EMSL has completed analysis of 32/65 samples from SGP and 33/33 samples from AMF3 from July and August 2019. At AMF3, 15 of the samples had particles collected, 12 had no particles observable from OM, and 6 had damaged grids. At SGP, 16 samples had particle numbers

<200. Currently there is no clear correlation between sample loading, sampling time, and the TBS CPC concentration. However, a general sample loading guideline/target has been devised, which is:

Average CPC particle concentration at surface * desired TBI Sampling Time (hrs) = 700

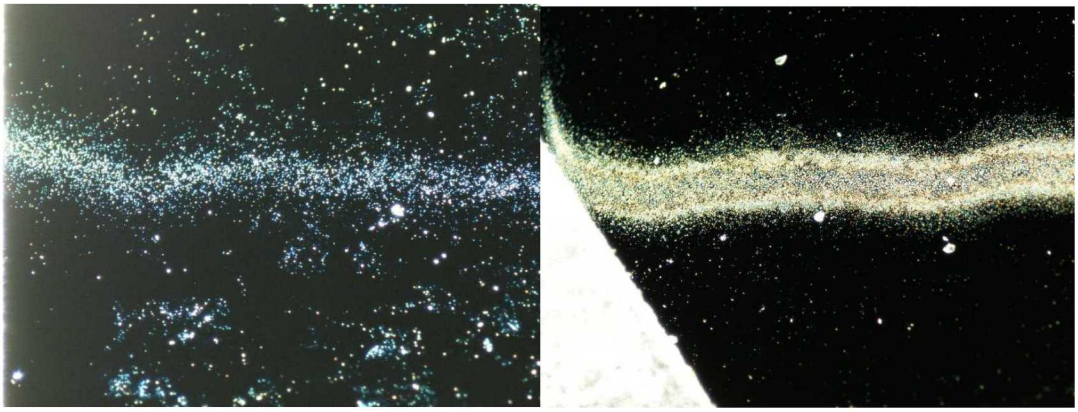


Figure 1: Examples of ideal TBI grid sample loading from July SGP and Aug AMF3 TBS campaigns

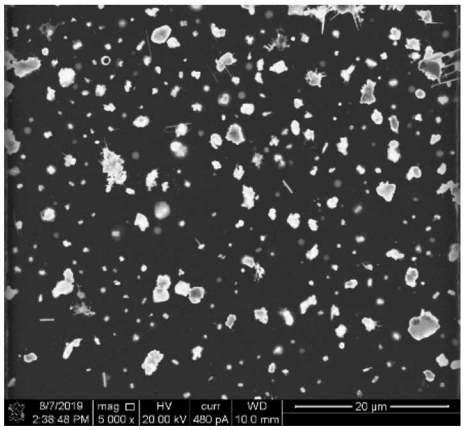


Figure 2: 5000x magnified view of TBI sample grid

TBS Datastreams

1) tbsimetxq2
    - Proceeding under INST01268 for SGP and INST01282 for OLI. Ingest 85% complete.
2) tbswind
    - Proceeding under INST01269 for SGP and INST01281 for OLI. Ingest 100% complete. Data flow enabling 80% complete.
3) tbsimet
    - Proceeding under INST01267 for SGP and INST01283 for OLI. Ingest 85% complete.
4) tbsslwc
    - Work to create a b-level SLWC datastream is proceeding under ENG0004130 which was created on 5/21/19. Last updated 6/3/19.
5) tbsdts
    - Data for April and July SGP and May AMF3 TBS campaigns have been uploaded to OME. Analysis of DTS data from August 2019 is almost complete and will be uploaded prior to the end of September 2019.
6) tbsground

- Data are being collected under INST01272. Data flow is 80% enabled.

7) tbspops
   - CPC and POPS data are now available through the ARM ingest. All the processed data, including data from the August AMF3 campaign, have been uploaded to the DMF ftp.

6 North Slope Facilities

AMF3

Current and Upcoming Site Visits

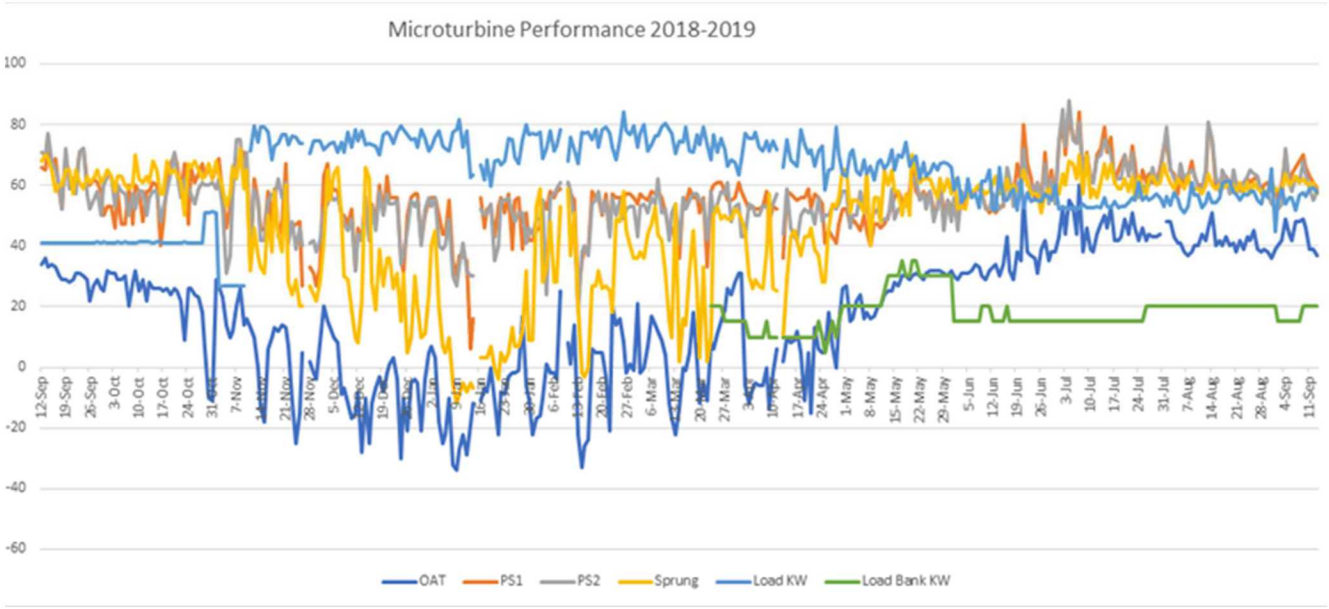
DOE Office of Science/LANL/PNNL/SNL	Sept 10-12	ARM Arctic sites tour by Office of Science Director Chris Fall and representatives of Arctic research from partner Labs.
Fred Helsel/SNL, Jennifer Comstock/PNNL	Sept 25-26	Site tour
Fred Helsel, Al Bendure/SNL	Sept 24-27	Install automatic transfer switch for power system
Valerie Sparks/SNL	Sept 25	Annual firearms exchange

Current and Upcoming Field Campaigns/FCs

AFC06968 - MACAWS Receiver Site (Pre-Campaign)

Site News

The AMF-3 microturbines were started in the multipac mode on September 12, 2018 and have been supplying all the AMF-3 power since November 10, 2018. Temperatures in the power shelters and sprung structure, the outside air temperature, the power output of the microturbines, and the load bank setting since September 12 are shown in the attached chart. We have also noted problems that have occurred with the turbines and changes. The chart below captures one year of turbine operation.



Site and Safety Issues
N/A

Unmet Needs
N/A

Site Changes/Upgrades
N/A

Site Staffing
N/A

Barrow

Current and Upcoming Site Visits

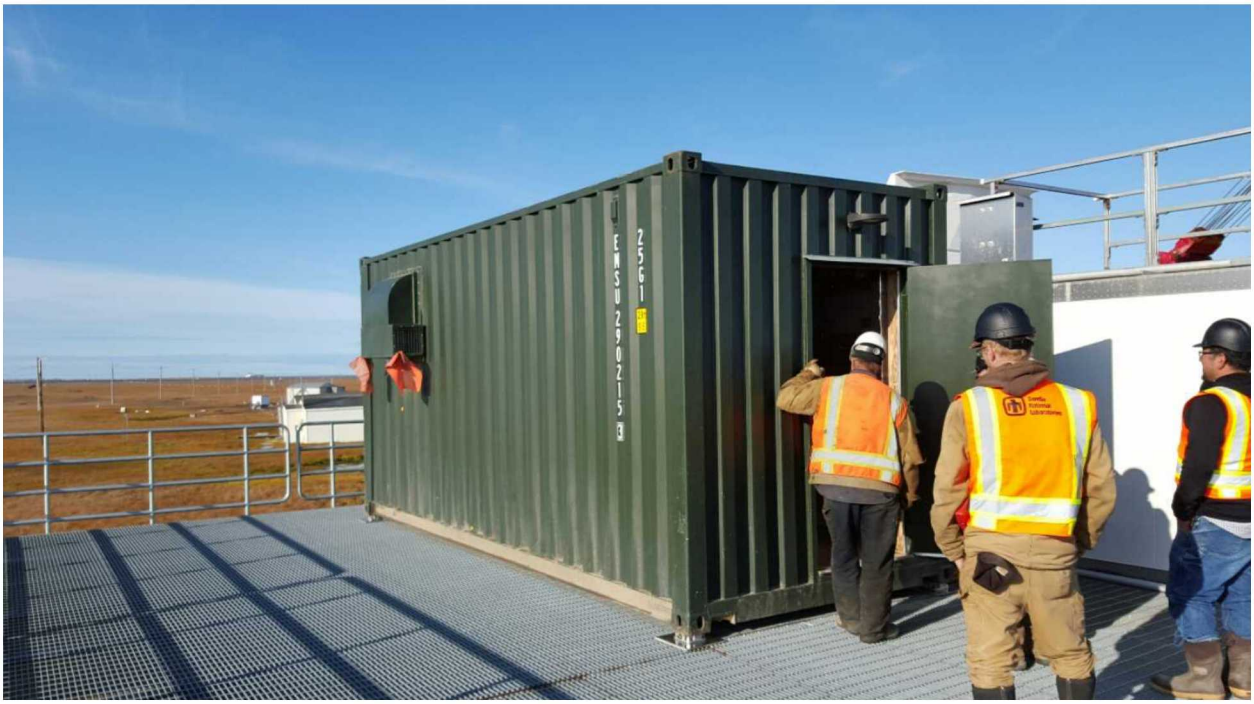
Fred Helsel/SNL	Sept 3-17	Hydrogen generator install
NWS	Sept 9-13	Hydrogen generator install
DOE Office of Science/LANL/PNNL/SNL	Sept 10-12	ARM Arctic sites tour by Office of Science Director Chris Fall and representatives of Arctic research from partner Labs.
Mark Ivey/SNL, Jennifer Comstock/PNNL	Sept 25-26	Site tour
Valerie Sparks/SNL	Sept 26-29	Annual firearms exchange, site Improvements

Current and Upcoming Field Campaigns/FCs

AFC06948 - Arctic Aerosol Sources & Mixing States 28 Oct 2018 to 20 Dec 2018 and Sep 2019 to Oct 2020 Kerri Pratt
AFC06964 - BEAR-oNS 01 Jun 2019 to 31 Aug 2020 Rebecca Sheesley
AFC06937 - How Snow Drives the Seasonal Evolution of Land and Sea Surface Albedos in the Alaskan High Arctic Spring (May-June) 2019, 2020 and perhaps 2021 Matt Sturm- 2019 field tasks completed
AFC07004 - NSA BC Loadings and Mixing State for MOSAiC - 30Sept2019 to 31Oct2020 Arthur Sedlacek
AFC06900 - GNSS RO Atmospheric Profiling at NSA C1 - 15 Apr 2017 to 14 Apr 2020 Martin Stuefer

Site News

NWS Hydrogen generation system install.



A crew of four National Weather Service (NWS) technicians worked 9/16-20 to plumb and install the hydrogen generator to the Remote Balloon Launcher (RBL). Two technicians from Vaisala were on location upgrading the RBL to handle hydrogen. A final test using hydrogen was conducted and the newly installed equipment worked well. Following the test, the automatic balloon launcher was switch back to helium. Once the final drawings and safety packages are approved, the unit will be switched back to hydrogen operations.

Jonathan Gero upgraded the ARIE August 26 -29. Hardware upgrades where done, and training on PM procedures were provided. ENG0004144

Site and Safety Issues

N/A

Unmet Needs

N/A

Site Changes/Upgrades

Hydrogen generator install scheduled early September.

Site Staffing Issues

N/A

Appendices: Instrument Status – Provided by Martin Stuefer and Telayna Gordon

- Appendix A: AMF3

INFORMAL AMF3 INSTRUMENT STATUS REPORT FOR September 20 - September 27, 2019
BRIEF STATUS OF INSTRUMENTS AND SITE IN OLIKTOK AS OF 2019/09/27:
Facilities Operational
Data Systems Operational
Vehicles Operational
Desktop Computers Operational
SKYRAD - SKY Radiometer on Stand for Downwelling Operational
MFRSR - Multifilter Rotating Shadowband Radiometer Operational
GNDRAD - Ground Radiometer on Stand for Upwelling Operational
MFR2.5m - Multifilter Radiometer at 2.5m height Operational
MAWS - Automatic Weather Station Operational
MET - Surface & Tower Meteorological Instruments Operational
CMH - Chilled Mirror Hygrometer Not Operational
AMC - Soil, up/downwelling radiation measurements Operational
ECOR - Eddy Correlation Flux System Operational
MWR3C - Three Channel Microwave Radiometer Operational
MPL - Micropulse Lidar Operational
DL - Doppler Lidar Operational
RL - Raman Lidar Operational
CEIL - Vaisala Ceilometer Operational
KAZR - Ka ARM Zenith Radar Operational as per warno.arm.gov
BBSS - Balloon Borne Sounding System Operational
TSI - Total Sky Imager Operational
AOS - Aerosol Observing System Partly Operational
AOSMET - AOS Meteorological Measurements Operational
CO - AOS Carbon Monoxide Analyzer Operational
CPC - Condensation Particle Counter Operational
CAPS - Cavity Attenuated Phase Shift Extinction Monitor Not Operational
ACSM - Aerosol Chemical Speciation Monitor Not Operational
HTD-MA - Humidified Tandem Differential Mobility Analyzer Not Operational
GHG - PICARRO Operational
NEPH - Nephelometer Operational
PSAP - Particle Soot Absorption Photometer Operational
UHSAS - Ultra-High Sensitivity Aerosol Spectrometer Operational
IMPACTOR - AOS Impactor Operational
OZONE - AOS Ozone Operational
CCN - Cloud Condensation Nuclei Particle Counter Not Operational
LPM - Laser Precipitation Monitor Operational
GEONOR - Geonor Weighing Gauge Operational
SRS - Snow Depth Sensor Operational
AERI - Atmospheric Emitted Radiance Interferometer Operational
CIMEL - Cimel Sunphotometer Operational
IRT - Infrared Thermometer Operational
MET-AIR - DataHawk Unmanned Aerial System Operational
TBS - Tethered Balloon System Operational
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* Oliktok Instruments in Detail: *
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INFRASTRUCTURE --- Facilities --- Operational.
2019/09/26, CM-2019-AMF3-VSN-3042: Turbine #3 had shutdown due to a fuel error. Ops took turbine #3 out of multipack mode, reset the error, put it back into multipack mode, and restarted the turbine. A few seconds later, it was up and running.
INFRASTRUCTURE --- Data Systems --- Operational.
2019/09/26, CM-2019-AMF3-VSN-3044: HDD S/N NA7Q2DNG was filled, so it was replaced with empty data disk HDD S/N NA75FF7V. Ops will ship HDD S/N NA7Q2DNG via USPS tracking # 9114 9023 0722 4423 3232 83.
2019/09/25, CM-2019-AMF3-VSN-3040: A landslide damaged a fiber line that provides connectivity to NSA and OLI, so no instruments were accessible between 08:00 UTC and 20:25 UTC.
2019/09/23, CM-2019-AMF3-VSN-3039: HDD S/N NA7Q2CP5 was filled, so it was replaced with empty data disk HDD S/N NA7Q2DNG. Ops will ship HDD S/N NA7Q2CP5 via USPS tracking # 9114 9023 0722 4423 3231 39.
2019/09/20, CM-2019-AMF3-VSN-3037: HDD S/N NA7Q2CH3 was filled, so it was replaced with empty data disk HDD S/N NA7Q2CH3. Ops will ship HDD S/N NA7Q2CH3 via USPS tracking # 9114 9023 0722 4423 3231 39.
INFRASTRUCTURE --- Vehicles --- Operational.
INFRASTRUCTURE --- Desktop Computers --- Operational.
SKYRAD --- SKYRAD general --- Operational. Ingest Off Due to Development.
2019/09/22, CM-2019-AMF3-VSN-3038: The mentor requested tests be run on the PIR 1 & PIR 2 using the RSU. After the RSU tester was connected to the radiometers, ops took screenshots to show the mentor. Rubber bands sent by the mentor were also installed under the sunshields of the PIR 1, PIR 2, and B&W. This work took place between 22:15 and 23:00 UTC.
2019/09/08, DQPR-7946: OLI and NSA CR3000 programs with the modifications for tachometer fan RPM outputs were loaded onto the SKYRAD and GNDRAD loggers, but the ingest has been off since 8/24 at 18:54 UTC due to developers adding tachometer variables to the ingest. This is still a work in progress (see INST01416). The most recent DQPR status is "open - requires action."
2018/12/07, DQPR-7342: Visual checks of the global horizontal PSP should be made starting at about September 15, 2019, when skies are clear enough, to see if there is any shadowing from about 1 to 2 UTC. The most recent DQPR status is "waiting - for site visit."
SKYRAD --- PIR 1 shaded --- Operational.
SKYRAD --- PIR 2 shaded --- Operational.
SKYRAD --- SOLAR Tracker --- Operational.
SKYRAD --- B&W diffuse --- Operational.
SKYRAD --- NIP --- Operational.
SKYRAD --- PSPg --- Operational.
SKYRAD --- MFRSR --- Operational.
TIPTWR --- GNDRAD general --- Operational. Ingest Off Due to Development.
2019/09/08, DQPR-7945: Metrics were unavailable since 2019/08/26 at 01:27 UTC and are still missing. The ingest has been off due to developers adding tachometer variables to the ingest, and this still seems to be a work in progress. See INST01415. The most recent DQPR status is "open - requires action."
TIPTWR --- MFR2.5m --- Operational.
TIPTWR --- PIRgnd --- Operational.
TIPTWR --- PSPgnd --- Operational.
MAWS --- Automatic Weather Station --- Operational.
MET --- METTOWER general --- Operational.
MET --- CMH --- Not Operational. Transmitter Failed and Removed from Field.
2019/09/13, DQPR-7924/CM-2019-AMF3-VSN-3032: The CMH was found not reporting on the morning of 9/12 at 15:00 UTC, so it was removed from the field. The aspirator fan had failed, the transmitter was found still on with fault LEDs illuminated, and the transmitter PCB was making audible clicking sounds. It was determined that the transmitter had failed. There are no spares and the CMH is still going through the decommissioning process. OSS was updated to reflect the following components, S/N 3026, S/N 15-001, and S/N 1621 as "out - needs repair". The most recent DQPR status is "in progress - assignments."
2019/09/06, DQPR-7924: Decommissioning of this instrument is going through the approval process (see ENG0004163). An open-ended DQR (D190906.1) was assigned to Jenni Kyrouac.
MET --- Barometer --- Operational.

MET --- TEMPERATURE / HUMIDITY --- Operational.
MET --- WIND INSTRUMENTS (SONIC) --- Operational.
MET --- PWD --- Operational.
MET --- AMC --- Operational. Average Incident and Reflection PAR Values Out of Range.
2019/09/18, DQPR-7966: Since 9/18 at 12:00 UTC, values of average incident and reflection PAR are exceeding the expected range of values. The most recent DQPR status is "open - requires action."
ECOR --- ECOR --- Operational.
2019/09/26, DQPR-7967: Data plots were not being produced for multiple sites (NSA,OLI,ENA,SGP) since 9/10 due to a data processing issue on the DQ Office's end. Data since 9/10 will be reprocessed and the DQPR will be open until then. The most recent DQPR status is "open - requires action."
ECOR --- SEBS --- Operational.
MW RADIOMETERS --- MWR3C --- Operational.
LIDAR --- Micropulse LIDAR --- Operational.
LIDAR --- Doppler LIDAR --- Operational.
2019/07/11, DQPR-7860: The Doppler Lidar was not reporting data starting on 07/01. An instrument power cycle resolved the issue at around 23:00 UTC on 07/04. Rob Newsom was assigned DQR D190711.6. The most recent DQPR status is "in progress - assignments."
LIDAR --- Raman LIDAR --- Operational.
LIDAR --- CEIL --- Operational.
RADAR --- KAZR --- Operational as per warno.arm.gov.
2019/09/25, CM-2019-AMF3-VSN-3041: During afternoon rounds, ops found the radiate light to be off. In response, site ops logged into the KAZR MCC and executed the PASCI start file. The radiate light came back on at 21:20 UTC.
Sonde --- BBSS --- Operational.
IMG --- TSI --- Operational.
AOS --- General --- Partly Operational, Some Instruments Are Shut Down.
AOS --- AOSMET --- Operational.
AOS --- CO - Analyzer --- Operational.
AOS --- CPC (CPCU and CPCF) --- Operational.
AOS --- CAPS --- Not Operational. Instrument at Vendor.
2019/09/15, DQPR-5816: The 3-W CAPS is currently at the vendor undergoing tests. It appears that the blue channel (~ 450 nm) mirror is degrading and the vendor is trying to ascertain why and take corrective actions. The other 2 channels (red (630 nm) and green (550 nm) are good. Once the issue with the blue channel is understood and corrected, we should be able to undertake the swapping of the single channel ENA CAPS (1W-CAPS) with this unit and place the 1W-CAPS at OLI. The most recent DQPR status is "in progress - assignments."
2019/02/05, DQPR-5816: The 3W-CAPS (originally staged at OLI) is at the vendor due to hardware issues. As of 2019/02/04, the vendor has identified a long-running problem that has plagued this instrument. The problem is now solved and they will be doing in-house testing this week. The unit will be shipped out to BNL during the following week. Once received, BNL will confirm operation and performance before starting the physical swapping of the 1W-CAPS currently at ENA with this 3W-CAPS (along with the concomitant shipment of the 1W-CAPS to OLI).
AOS --- ACSM --- Not Operational. Removed from Service for Redeployment to AMF2.
AOS --- HT-DMA --- Not Operational. Instrument Under Maintenance.
2019/07/24, DQPR-7304: The instrument is still under maintenance. Some internal parts needed to be replaced before the cause for the RH issues we are seeing can be found. The most recent DQPR status is "in progress - assignments."
2019/05/31, DQPR-7304: The OLI HT-DMA unit was swapped with the AMF2 HT-DMA, and the AMF2 HT-DMA needs maintenance. Installation will be delayed until the proper operation of this unit has been verified.
AOS --- GHG-Picarro --- Operational.
AOS --- UHSAS --- Operational.
AOS --- NEPH --- Operational.
2019/09/26, CM-2019-AMF3-VSN-3043: Both Wet and Dry Nephelometers were showing values below tolerance, so ops contacted mentors who suggested cleaning the Impactor 3 Way Valve. The procedure took place between 17:25 and 21:00 UTC. Please see the CM report for an outline of the procedure.

2019/06/23, DQPR-7803: At 12:00 UTC on June 20th, both nephelometers began reporting missing data. Starting on June 21st, metrics were unavailable. However, data are available in FTPhome, so it is likely a data transfer or processing issue. The most recent DQPR status is "open - requires action."
AOS --- IMPACTOR --- Operational.
AOS --- Ozone --- Operational.
AOS --- PSAP --- Operational.
AOS --- IMPACTOR --- Operational.
AOS --- CCN --- Not Operational. Instrument Shut Down for the winter.
2019/09/19, CM-2019-AMF3-VSN-3036/DQPR-7952: During morning rounds, ops found CCN 200 flow ratio B and flow rate below specs, so they restarted the CCN 200 in dry mode and notified the mentor. The mentor checked the instrument and found a gross leak in side B. The counts on side B are 3 or 4 orders of magnitude off from channel A. The counts on the B OPC show a sizing corresponding more like ambient aerosol. Since it is now very close to the time ops generally ships the CCN200 back to BNL for the winter, ops just shut down the CCN and took pictures of all of the connectors (both electrical and air lines) so that it will be easier to start up the CCN again in the spring. The sample lines were capped, and the CCN power supply, bottles and sampling lines will remain at AMF3. Ops followed the shutdown procedure for the CCN200 to dry it out. Ops then shipped the instrument using the special CCN200 crate and pallet via FedEx 8149 4768 1354. The most recent DQPR status is "open - requires action."
Precip --- LPM --- Operational. Ingest Work in Progress.
2019/08/22, DQPR-7265: The instrument mentor team needs to work with the ingest team on this datastream. There were some changes in data logger files that need to be accommodated. Erol contacted Jen Delamere and she will get him instructions on changes to make to the ingest. The most recent DQPR status is "in progress - assignments."
Precip --- GEONOR --- Operational. Ingest Work in Progress.
2019/08/22, DQPR-7267: The instrument mentor team finished this effort on instrument operations but the ingest is currently not working. Data are being collected. A more detailed data report does need to be filed. The most recent DQPR status is "in progress - assignments."
Precip --- SRS --- Operational. Ingest Work in Progress.
2019/08/22, DQPR-7266: Instruments are operational, but the ingest is currently not working (work is being tracked in INST01114). Data are being collected. A more detailed data report does need to be filed. The most recent DQPR status is "in progress - assignments."
Other --- AERI --- Operational.
Other --- CIMEL --- Operational.
2019/09/20, DQPR-7914: Lynn Ma submitted DQRs D190920.1 and D190911.3. The most recent DQPR status is "in progress - assignments."
2019/09/11, DQPR-7914: The PhotoGetData software was able to connect to Cimel #1032 after GMT 16:00 on 09/11/2019. All backlog of data from 09/03 - 09/10 were transferred to Aeronet. After checking the data plots at Aeronet, it looks like the problems associated with the wet sensor and moisture inside the tubes were fixed. Lynn Ma was assigned DQR D190911.3 to close the DQPR.
2019/09/03, DQPR-7914: Ops verified proper instrument alignment at 23:58 UTC on 08/31/19. Richard and Lynn were emailed pictures as verification. Ops rinsed and dried the wet sensor at 15:22 UTC with distilled water per Richard's request. There was blowing mist (extended to about 5m AGL) onsite the last two days, and you could see water accumulation on all the instruments, so there might be a chance the sensor is reporting correctly. Instrument operation is normal according to site ops (the instrument was observed as taking measurements). However, there looks to be a PhotoGetData issue preventing data transfer.
2019/08/30, DQPR-7914: The instrument was doing zenith radiance measurements in the rain due to the instrument being plugged into the incorrect port on the TS box, so ops were asked to check the collimator for any wetness. The collimator tubes were observed to be unobstructed again, and with no water intrusion. Ops also cleaned the instrument lens in order to ensure that potential dried water spots were cleared from the lenses. In their experience, using just compressed air in the high salinity, high dust environment doesn't work to clean the lenses. However, the mentor asks that the lenses not be cleaned with solvent or wiping until requested as it could affect the calibration. The 4-quadrant detector (the little window OUTSIDE the collimators) can and should be cleaned if it's dirty. The weather continues to be cloudy and rainy for now. The 3 sun observations recorded just

before and after 18:00 on Aug. 30 do not make sense, so when it is sunny and dry once more, site ops are asked to check that the collimator is seated squarely. Ops are also asked to check the alignment with GOSUN.
2019/08/22, DQPR-7914: Ops removed the CIMEL from auto mode and parked it. After inspecting the collimator tubes for any obstructions, none were found. Ops even removed the tubes and again checked them with a flashlight, but no obstructions were found. The tubes were reconnected and the CIMEL was returned to auto mode and normal operations. Lynn wants to leave the DQPR open until next week when an AOD plot may become available.
2019/08/14, DQPR-7914: Lynn Ma (IM) asks that site ops please check the wet sensor when weather permits. She noticed that the instrument was not shut down right away when the rain started. In order to test the wet sensor if it is not raining, wet it with water and wait around 20 seconds and the value of wetting should go from “dry” to “wet”. Please also check the collimator tubes for any water or moisture inside and dry them out as needed. There is also an error of "InGaAs/Silicon DiscrepancyAvg Difference: -0.499096" reported at OLI on 8/15. The mentor asks that ops check collimator tubes and make sure that nothing is obstructing the channels (such as moisture or insects,etc).
Other --- DataHawk Unmanned Aerial System --- Operational. Not a Full Time Instrument.
Other --- IRT --- Operational.
Other --- TBS --- Operational.

- **Appendix B- Barrow**

INFORMAL NSA INSTRUMENT STATUS REPORT FOR September 20 - September 27, 2019
BRIEF STATUS OF INSTRUMENTS AND SITE IN Utqiaġvik (C1) AS OF 2019/09/27:
Facilities Operational
Data Systems Operational
Vehicles Operational
Desktop Computers Operational
SKYRAD - SKY Radiometer on Stand for Downwelling Operational
MFRSR - Multifilter Rotating Shadowband Radiometer Operational
NIMFR - Normal Incidence Multifilter Radiometer Operational
GNDRAD - Ground Radiometer on Stand for Upwelling Operational
MFR10m - Multifilter Radiometer at 10m height Operational
MET - Surface & Tower Meteorological Instruments Operational
AMC - Soil, Up/Downwelling Radiation Measurements Operational
ECOR-twr - Eddy Correlation Flux System Operational
SEBS - Surface Energy Balance System Operational
MWR - Microwave Radiometer Operational
MWRP - Microwave Radiometer Profiler Operational
MWRHF - Microwave Radiometer High Frequency Operational
GVR - G-band Vapor Radiometer Operational
GVRP - G-band Vapor Radiometer Profiler Operational
HSRL - High Spectral Resolution Lidar Not Operational
MPL - Micropulse Lidar Operational
CEIL - Vaisala Ceilometer Operational
DL - Doppler LIDAR Operational
KAZR - Ka ARM Zenith Radar Operational
KaWSACR - Ka-Band Scanning ARM Cloud Radar Not Operational
XSAPR - X-Band Scanning ARM Precipitation Radar Operational
BBSS (Autosonde) - Balloon Borne Sounding System Operational
AOS - Aerosol Observing System Operational
CLAP - Continuous Light Absorption Photometer Operational
CPC - Condensation Particle Counter Operational
NEPH - Nephelometer Operational

IMPACTOR - AOS Impactor Operational
TSI - Total Sky Imager Operational
TOWERCAM - 40m tower camera Operational
Great White Camera Operational
MASC - Multi-angle Snowflake Camera Operational
LPM/LDIS - Laser Precipitation Monitor Operational
SRS - Snow Depth Sensor Operational
PIP - Precipitation Imaging Package Operational
AERI - Atmospheric Emitted Radiance Interferometer Operational
CIMEL - Cimel Sunphotometer Operational
IRT - Infrared Thermometer Operational
IOP - OYESNSA Operational
IOP - RIVAL Operational
IOP - GNSS Operational
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* Barrow Instruments in Detail: *
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INFRASTRUCTURE --- Facilities --- Operational.
INFRASTRUCTURE --- Data Systems --- Operational.
2019/09/25, CM-2019-NSA-VSN-5069: A landslide damaged a fiber line that provides connectivity to NSA and OLI, so no instruments were accessible between 08:00 UTC and 20:25 UTC.
2019/09/23, CM-2019-NSA-VSN-5067: HDD S/N NA75FCZE was filled, so it was removed and replaced with empty data disk S/N NA7Q2BYJ at 17:20 UTC. The filled data disk will be mailed via USPS to ORNL for archiving.
2019/09/20, CM-2019-NSA-VSN-5066: Tim Grove pushed monthly software patches to the rblpc0-nsac1 site computer (the Autolauncher computer, 192.148.94.32), so the computer was restarted between 21:30 and 21:45 UTC.
2019/09/20, CM-2019-NSA-VSN-5065: Tim Grove pushed monthly software patches to the following site computers: dupconpc-nsac1, duprespc-nsac1, jimmypc-nsac1, walterpc-nsac1,
techpc2-nsac1, and techpc3-nsac1. All the computers were rebooted after the patches between 18:00 and 18:50 UTC.
INFRASTRUCTURE --- Vehicles --- Operational.
INFRASTRUCTURE --- Desktop Computers --- Operational.
SKYRAD --- SKYRAD General --- Operational. Ingest Off Due to Development.
2019/08/31, DQPR-7930: The ingest has been off since 2019/08/27 at 21:49 UTC. Ben Bishop added new Sunon fans with tachometer RPM outputs, updated the CR3000 program to provide ventilator (four each) RPM data, and updated the radiometer serial numbers and calibration coefficients in the logger program. Information for these activities will need to be entered into the CMDB by the site operator. The ingest upgrade for RPM data outputs needs to be performed. The GNDRAD (DQPR-7931) was also affected by the same activities. The most recent DQPR status is "open - requires action."
2019/08/06, DQPR-7655: The PIR1 noise occurred in 2 periods: 2/24/19 at 21:00 to 3/7/19 at 15:00 UTC, and 3/24 at 23:00 UTC to 3/31/19 at 24:00 UTC. A suspect DQR should be opened for these 2 periods. Mark Kutchenreiter was assigned DQR D190806.1. The most recent DQPR status is "in progress - assignments."
2019/04/02, DQPR-7655: Intermittent PIR1 and PIR2 noise (downwelling longwave) data occasionally appears noisy starting on 2/24/2019. The magnitude of the swings in PIR data varies throughout the time period up to 3/30/19. Now PIR1 and PIR2 plots appear normal. During the periods when PIR2 noise was seen, SKYRAD voltage plot noise was also seen on 2/25, 2/28, and 3/1. See the attached weekly plots on the DQPR page for examples.
SKYRAD --- PIR 1 Shaded --- Operational.
SKYRAD --- PIR 2 Shaded --- Operational.
SKYRAD --- SOLAR Tracker --- Operational.
SKYRAD --- B&W diffuse --- Operational.
SKYRAD --- NIP --- Operational.
SKYRAD --- PSPg --- Operational.
SKYRAD --- MFRSR --- Operational.

2019/09/13, DQPR-7947: There was a problem with shading in the late afternoon from 9/8 - 9/10. There doesn't seem to have been shading in the couple of days following 9/10, but ops will monitor the MFRSR with a site camera around 3-5pm local time through next week to see if any visible shadow can be identified. The most recent DQPR status is "open - requires action."
2019/08/30, DQPR-7632: The mentors have not been able to remotely connect with the MFRSR. Requests to have outside access have not been responded to. The most recent DQPR status is "open - requires action."
2019/07/10, DQPR-7632: The mentor still sees shading in the evening between 04:00 and 06:00 UTC. This is probably due to the shadow being centered at 16:45 UTC instead of Solar Noon. He asks that ops hold off on doing anymore adjustments as he will try remote fixes first.
2019/06/14, CM-2019-NSA-VSN-4998/DQPR-7632: The weather was clear, so ops adjusted the MFRSR shadow band to bring it back to center between 16:45 and 16:55 UTC.
2019/04/03, DQPR-7632: Ben used a theodolite to align the base while he was on site. Walter used the gauge, aligned the head position, and confirmed the band shape. The head was leveled and checked at Solar Noon. It is difficult to set the 2nd stop banding.
2019/03/28, DQPR-7632: Christian Herrera is waiting for a somewhat clear day to verify band alignment. According to the FFT tests, there is also a slight shading problem in the mornings from ~17:00 - 19:00 UTC.
SKYRAD --- NIMFR --- Operational.
2019/09/06, DQPR-7672: A spare NIMFR cable was received at UAF from the mentors. Data has been consistently ok and the current cable still looks to be in acceptable shape, so the new cable will likely be brought to the site on my or Ross' next trip up (end of September/October). If measurements start to drop in the meantime, the cable will be mailed to the site. The most recent DQPR status is "in progress - assignments."
2019/08/23, DQPR-7672: The NIMFR has not had the issue of normal broadband measurements dropping below 0 w/m2 since 05/22, so maybe it is time to close this DQPR out. It would still be helpful to get a spare cable shipped to the site for any future issues.2019/05/30, DQPR-7672: Ops was requested to check the connections and take pictures. These pictures were posted on the DQPR page. NIMFR power was removed between 23:30 and 23:40 so that ops could take pictures of the end connections. No corrosion was found on either ends of the connector. The cable had a minor weather crack just in the outer sheathing.
2019/05/21, DQPR-7672: The connector is currently secure in place. Jimmy has provided some photos of the instrument connector and the YESDAS data acquisition system.
2019/05/16, DQPR-7672: Detector temperatures seems to be consistently back to normal levels; however, there are still issues with the direct normal broadband measurements.
2019/05/08, DQPR-7672: Walter found the connector off of the instrument last Thursday morning and reattached it. This seems to have made the detector temperature rise back to normal values just past 19:00 UTC on 05/09.
2019/04/08, DQPR-7672: NIMFR direct normal broadband measurements are dipping well below 0 w/m2 on many days since 3/11/19. See the daily and weekly data plots posted on the DQPR page for more information. The problem is ongoing.
TIPTWR --- GNDRAD general --- Operational. Ingest Off Due to Development.
2019/08/31, DQPR-7931: The ingest has been off since 2019/08/28 at 16:00 UTC. While on the site, Ben Bishop added new Sunon fans with tachometer RPM outputs, updated the CR3000 program to provide ventilator (four each) RPM data, and updated the radiometer serial numbers and calibration coefficients in the logger program. Information for these activities will need to be entered into the CMDB by the site operator. The ingest upgrade for RPM data outputs needs to be performed. The most recent DQPR status is "open - requires action."
TIPTWR --- MFR10m --- Operational.
TIPTWR --- PIRgnd --- Operational.
TIPTWR --- PSPgnd --- Operational.
MET --- METTOWER general --- Operational.
MET --- CMH --- Operational.
2019/09/06, DQPR-7571: Decommissioning of this instrument is going through the approval process (see ENG0004163). An open-ended DQR (D190809.1) was assigned to Jenni Kyrouac. The most recent DQPR status is "in progress - assignments."
2019/08/09, DQPR-7571: Due to a lack of spares and frequent failure of these units, Jenni recommended an open-ended DQR to cover the continued bad data in the interim while the value of these instruments are carefully considered. Jenni was assigned DQR D190809.1.

2019/06/12, CM-2019-NSA-VSN-4993/DQPR-7571: The CMH fan was found not working, and temp and dew point readings were still incorrect. The fan was replaced with a working spare and the connections were resoldered. S/N 1618 head was swapped in, as well as spare board S/N 1422 was swapped in and calibrated. This maintenance took place between 10:00 UTC and 19:05 UTC. Data looked good until the self-check on 6/13 at 05:44 UTC. Dew point data are flatlining. The most recent DQPR status is "waiting - for spares."
2019/05/13, DQPR-7571: No errors were reported from diagnostics. With the problem persisting after both the board and head were replaced, it is difficult to identify a possible source of the higher temperature. Jenni doesn't expect that the MET T/RH is low because the other tower levels report similar values. Jenni will contact the manufacturer to see if this might be a temperature circuit problem.
2019/05/09, DQPR-7571/CM-2019-NSA-VSN-4969: Board S/N 1459 was removed and board S/N 1424 installed in its place. The instrument was removed for calibration at this time. Following the calibration, the instrument was reinstalled. The dew point measurement seems to be ok, but the ambient temperature value is warmer than expected. There could be an error with the temperature circuit, or the CMH could just need further adjustment. Ops was asked to plug the CMH into the maintenance port so that diagnostics and settings could be checked.
2019/01/28, DQPR-7571: The CMH dew point/relative humidity/vapor pressure data began reading low after a self-check on 1/23 at 18:00 UTC (Telayna alerted via email). Site ops cleaned the mirror on 1/24. The instrument may need recalibrating, or a thermistor may have failed. The data are still trending well with HMT, but are much lower.
MET --- Barometer --- Operational.
MET --- TEMPERATURE / HUMIDITY --- Operational.
MET --- WIND INSTRUMENTS (SONIC) --- Operational.
MET --- PWD --- Operational.
MET --- AMC --- Operational.
ECOR --- ECOR-twr --- Operational.
ECOR --- SEBS --- Operational.
MW RADIOMETERS --- MWR --- Operational.
MW RADIOMETERS --- MWRP --- Operational.
MW RADIOMETERS --- MWRHF --- Operational.
2019/09/24, CM-2019-NSA-VSN-5068: The MWRHF software was flashing a 'communication problem with the radiometer detected' window, so Telayna first restarted the software to see if that would fix the issue. However, another error appeared once the software opened: 'connection failure: master radiometer does not respond.' The PC (mwrhf-nsac1.nsa.arm.gov) was restarted to see if that would make a difference. Finally, site ops was contacted to power cycle the radiometer. Once they did so, the software was still not connecting, but no error message appeared. The measurement definition file (.MDF file) was resent to the radiometer by clicking the respective toolbar button and locating the 'NSA_MEASUREMENTS.MDF' file at C:\MWRHF\RPG-150-90\MDF_MBF. Ops will keep an eye on the software to ensure proper operation. Instructions for site ops to restart the software by resending the .MDF file were posted on the MWHRF desktop. The software was offline from 12:00 UTC to 18:35 UTC.
MW RADIOMETERS --- GVR --- Operational.
MW RADIOMETERS --- GVRP --- Operational.
LIDAR --- HSRL --- Not Operational.
2019/07/16, DQPR-7872: The HSRL was removed on 07/12 (CM-2019-NSA-VSN-5023) and shipped off-site for upgrades to be performed. Redeployment would not be until next year. Ingest and collections have been requested to be turned off. Alyssa Sockol created open-ended DQR D190722.1 to track the time until reinstallation. The most recent DQPR status is "waiting - for spares."
LIDAR --- MPL --- Operational.
LIDAR --- CEIL --- Operational.

LIDAR --- Doppler LIDAR --- Operational. Blower Needs to Be Replaced.
RADAR --- KAZR --- Operational.
RADAR --- KaWSACR --- Not Operational. RF Noise Sources Need to Be Calibrated and Installed.
RADAR --- XSAPR --- Operational.
2019/08/29, NSA Telecon: The XSAPR is reported as working.

2019/08/20, Email from mentor: A component failed on the pedestal, in the radome. A part and install instructions will be sent to the site. Data collections are currently off.
2019/04/19, Warno.arm.gov: The transmitter is faulting. A baseline scan strategy is being discussed. The radar team will work on the radar during the summer.
Sonde --- BBSS (Autosonde or Great White Manual Launches) --- Operational.
2019/09/20, DQPR-7944: The Autosonde upgrade (both Vaisala and NWS portions) was completed on 9-16-2019. Regular Autosonde launches resumed starting on 9-16-2019 17:30GMT using Hydrogen gas. The NWS techs switched the Autosonde back to helium gas on 9-17-2019 at 21:30GMT. We will continue to launch using helium until Sandia (Fred Helsel) gets appropriate approvals from their safety and fire personnel. While the Autosonde was out of service, site ops manually launched 05:30 and 17:30 GMT launches using the S01 MW41 system. The most recent DQPR status is "waiting - for spares."
2019/09/10, DQPR-7944: There was a logic board controller failure on the Autosonde when the techs were working on the system. A spare part has been sent to Anchorage and the techs flew down to retrieve it. The Autosonde will be out of service for the remainder of the week. As of 9/10/2019, we began using a manual system for ARM launches at 05:30 and 17:30 GMT.
2019/09/06, DQPR-7944: The Autosonde is scheduled to be upgraded to use hydrogen gas. This will require the Autosonde to be offline during an undetermined time period between Sept 7-9, 2019, during which time no launches will take place. Times will be updated when determined. Donna was assigned DQR D190906.4 to be filled out after the upgrade.
2019/09/05, DQPR-7941/DQPR-7787: Due to a Vaisala software problem, the Autosonde fails on the 3rd of each month 11:01GMT launch. This produces a corrupted file which kills the ingest. The ADC has been asked to please remove the files associated with this date and time for NSA C1 and restart the ingest. The most recent DQPR status is "open - requires action."
2019/08/06, DQPR-7787: There is a mysterious issue with the Autosonde which Vaisala is investigating. Every month on the 3rd, the Autosonde fails at the 11:01GMT launch, and the system then has to be rebooted. Unfortunately, some bogus files must be created which end up clogging the ingest. Next month Donna will try to remember to grab and delete the bogus files so they don't make it to the collector/ACD. Telayna Wong caught the issue yesterday and notified dmfops@arm.gov via email. The most recent DQPR status is "open - requires action."
2019/06/10, DQPR-7787: No data has been collected/processed from the NSA C1 sonde (Autosonde) since the 6/3/2019 05:30 GMT launch. Launches are taking place as scheduled and data are available in the pickup location.
AOS --- General --- Operational.
AOS --- AETH --- Operational. Possible Collection/Ingest Error.
2019/07/03, DQPR-7837: Metrics become unavailable at 02:00 UTC on 06/28, and are still currently unavailable for aosaeth2spot. The most recent DQPR status is "open - requires action."
AOS --- CLAP --- Operational.
2019/09/13, DQPR-7927: Data has caught up and is now available. The most recent DQPR status is "open - requires action."
2019/08/31, DQPR-7927: DS View indicates an ingest error.
AOS --- CPC --- Operational.
2019/09/13, DQPR-7928: Data has caught up and is now available. The most recent DQPR status is "open - requires action."
2019/08/31, DQPR-7928: DS View indicates an ingest and bundle error since 08/22 at 14:00 UTC.
AOS --- NEPH --- Operational. Possible Collection/Ingest Error.
2019/09/13, DQPR-7929: Data has caught up and is now available. The most recent DQPR status is "open - requires action."
2019/08/31, DQPR-7929: Data becomes unavailable since 08/24 at 14:00 UTC.
AOS --- IMPACTOR --- Operational.
IMG --- TSI --- Operational.
IMG --- TOWERCAM --- Operational.
IMG --- Great White Camera --- Operational.
Precip --- MASC --- Operational.
Precip --- LPM/LDIS --- Operational.

2019/08/22, DQPR-7265: The instrument mentor team needs to work with the ingest team on this datastream. There was some change in data logger files that need to be accommodated in the ingest. Erol contacted Jen Delamere and she will send him instructions on changes to make to the ingest. The most recent DQPR status is "in progress - assignments."
Precip --- SRS --- Operational. Ingest Work in Progress.
2019/08/22, DQPR-7416: Erol is awaiting updates from the mentors. The instruments are operating and data are being collected, but the ingest needs updating. This case applies to both NSA and OLI. The most recent DQPR status is "waiting - for spares."
2018/11/10, DQPR-7416: Data are unavailable starting at 19:00 UTC on 10/19 because the raw data file format for the SRS at NSA (and OLI) has changed (see ENG0003770 for more detail). As such the ingest is not processing the new raw data files. The ingest will be updated to accommodate the new file format (INST01114). The most recent DQPR status is "waiting - for spares."
Precip --- PIP --- Operational.
Other --- AERI --- Operational.
Other --- CIMEL --- Operational.
Other --- IRT --- Operational.
IOP --- OYESNSA --- Operational.
IOP --- RIVAL --- Operational.
IOP --- GNSS --- Operational.

Distribution

ARM	
Sally McFarlane ARM Climate Research Facility Program Manager Climate and Environmental Sciences Division Office of Biological and Environmental Research Sally.McFarlane@science.doe.gov	Jim Mather ARM Technical Director Pacific Northwest National Laboratory P.O. Box 999, MS K9-38 Richland, WA 99352 jim.mather@pnnl.gov
Nicki Hickmon ARM Associate Director of Operations Argonne National Laboratory 9700 S Cass Ave 240-5132 Lemont, IL 60439 nhickmon@anl.gov	

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