

AAFEX Status Report #1 – 20 January 2009

Primary Activities: Badging; Check-In; Logistics Meeting; Initial Equipment Setup; Power and water hookup

Weather: Calm, ~40 F at 7 am with high overcast. Skies cleared around noon and a light NE wind picked up in the early afternoon. Temperatures reached a high of ~70 F around 3 pm, then dropped to 58 F at sunset.

Summary: Participants arrived at the DAOF security gate promptly at 8 am; folks with NASA credentials signed a log book and were escorted through the card-key rotary gate into the Hanger area to begin work. Non-NASA investigators stood in a slow-moving line and were finger-printed before being issued temporary “escorted” badges. More permanent, photo-badges will be issued once the paperwork is processed that will allow participants unescorted access to the experiment site. NASA LaRC and GRC employees submitted applications for security gate and hanger card-keys; these should be issued in a day or two and will guarantee the team 24/7 access to the experiment site. Most AAFEX team members were badged and onto the facility by 10 am.

The first major activity involved moving equipment trucks and trailers through the hanger area and onto the concrete run-up pad just north of the DAOF where the tests will take place. To help in the setup, Donny Bailes of the DC-8 crew had marked off the area where the DC-8 would be parked and had painted a line on the concrete indicating where vehicles could be safely parked. After considering distances to power and water hook-ups, Robert Howard directed the positioning of the trucks/trailers into the formation shown in the photo below. By about 11 am, the vehicles were in place, and the DC-8 crew (Mike, Donny, and Scott) were busily assisting participants in moving boxes from the hanger to the site, downloading heavy rack and equipment from the trailers, and determining where excess equipment should be stored. Roy and Gary (AEDC) took on the chore of hooking up the power distribution ‘skid’ which involved ringing out the fuse boxes on the run-up area and adapting the umbilical cord from the skid to the 440 VAC outlets mounted on the superstructure. Brad (AEDC) hooked up the ‘big-ass’ water pump that will provide cooling water to the 1-m sampling rakes. Scott H. (ARI) set out to round up all the equipment that will be placed in the downstream sampling trailer and Steve (MST) directed downloading the components of the sampling rakes from the MST trailer.

A logistics meeting was held in the hanger at 1 pm, wherein participants were advised of safety and security procedures and the project schedule was reviewed. Frank reported that the fuels were on site and that there were no show stoppers from their point of view. Roy brought up his concerns regarding the functionality of the 440 VAC power outlets at the test site; Frank and Ron (DAOF) promised to send down an electrician to scope out the problem. It was agreed that work hours during the set-up period (Jan 21-25) would extend from 7 am to 5:30 pm and probably from 4 am to 4 pm during the engine test runs.

After the meeting, work continued at the site with experimenters configuring instruments and sample lines. AEDC personnel began populating the 1-m sampling rakes (see Brad in photo below) and continued to troubleshoot the facility power. When the DC-8 was towed into position at 3:00 pm, the EPA team sprinted into action, marking off the 30-m probe positions, erecting the probes, and laying the sample transport tubing (see photo). After reviewing the number of instruments and floor space required for the downstream sampling effort, Scott (ARI) negotiated getting a second vehicle—the MST “Wells-Cargo”-type equipment trailer—in addition to the “Toy-Hauler” to support the activity. Facility electricians arrived around 4 pm and concurred with Roy and Gary’s assessment that the wires extending some 50 feet from the power panel to the 440 VAC outlets were in bad shape. A possible work-around that involved wiring the power distribution skid directly into the power panel was discussed, but implementation was delayed pending approval from the facility owners; the electrical team was optimistic that the problem would be resolved by Wednesday noon.

Overall, we seem to be on track for a January 26th commencement of engine runs.



Equipment vehicles lined up in positions that will place them ~10 feet off the DC-8 right wingtip, perpendicular the to the inboard engine exhaust plane.



Brad begins the task of inserting and plumbing inlet probes in the “Tinker” rake, which will be placed 1-m behind the DC-8 #3 engine.



EPA team begins installing the 30-m inlet probes and sample transport tubes.