The First Nations Launch Teams' Preliminary Design Reports (PDR) were well done. As you might have guessed NASA has procedures and reporting requirements that are similar to what we are asking the FNL teams. The Critical Design Report (CDR) is the next required report and is due before midnight on February 26th, 2010. Please review the launch calendar at www.uwgb.edu/wsgc/fnl for an up to date schedule. There are only 7 weeks before launch and the CDR is going to help you get closer to completion before launch day. The CDR will consist of another 2-3 pages that act as an update to your PDR. The CDR is designed to narrow the preliminary report ideas into your critical design. In other words, we need to know (with the exception of minor design changes just before launch) what rocket, motor, and payload(s) you will be launching. Turn in a description of what you think you will fly at this time. I have provided some information below to help guide you as you create your CDR. Good luck teams and, as always, let me know how I can help your team be successful!

1. List the **science experiment**(s) you will be flying on launch day. What is your experiment and what it is designed to do? What kind of data do you expect? Have you done any "bench" testing of your payload? Does it work? How can you make the experiment better? Do you need any help from us? Are you documenting a scientific procedure? Will you need to do anything special with your experiment before launch, while it is on the launch pad, or activate it remotely while in flight? How will you integrate your payload into your rocket? What kind of battery supply will your payload need? Have you calculated a power budget? Is your team planning on making science presentations at the American Indian Science and Engineering Society (AISES) conference or any other conference?

2. Tell us all about your **rocket**. What are your rocket's diameter, length, weight with the motor, and weight without the motor? What size drogue and main parachutes will you be using? Will it land your rocket safely? Are you using pistons or wadding? Are you planning on using small or large rail buttons? Are you planning on using rail guides? What kind of nose cone are you using? (ogive, conical, round, etc.) How many fins does your rocket have? What are the fin shapes? (triangular, elliptical, trapezoidal, etc.) What kinds of materials are you going to use for the airframe, nosecone, and fins?

3. What size **motor** will your rocket need? (This is an important question because we want to order your motor ahead of time to make sure you have it for launch day!) Have you done any RockSim9 simulations with the motor? If so, what is your predicted apogee? (We know that your apogee projection may change from what is submitted in this report. Your expected apogee for scoring the competition will be collected from you on launch day with a different form. The closest team to their launch day reported apogee will win the flight portion of the competition.)

4. Tell us about your **parachutes**. What size is your drogue parachute? What size is your main parachute? When will they deploy? How many gores are used for each? What is the parachute's material? Are you taking extra precautions to keep them from being singed and burned upon deployment? (This is important if you are using silk parachutes.)

5. Are you planning on using an **audible alarm** or other rocket **tracking device**? If you are using these devices, how will they be armed? Who is the person on your recovery team that will be responsible for operating the tracking device to ensure the rocket is recovered? Has your team practiced recovery and used the device to ensure it works?

6. What will your **pre-launch checklist** look like? Who is responsible for the following items?

   a) science payload
   b) drogue parachute system
   c) main parachute system
   d) arming and programming the altimeters
   e) launch team members
   f) recovery team members

   If your team creates a pre-launch checklist, please attach it to the CDR.

Please let us know how we can help your team. Good luck.

Dan Hawk