

deal of development work before we are ready to test in Nevada. This means that the test load at the center will probably not be so great, initially, as it is right now.

However, we do feel that at this time it is imperative that we maintain our base of operations and maintain the key people so as to have a good capability to build up for testing the flight-weight engine when it is ready for development testing at the site. Thus, we are not maintaining an operation that could carry a flight-weight engine test program, but we do feel we will have all the key personnel available to us and that we will be able to add to them sufficient personnel to support the flight-weight engine when it comes into being.

Senator CANNON. What stage in time is the last of your present testing program now?

Mr. BEGGS. The present testing program on the XE engines will proceed to about the middle of next year.

Senator CANNON. Well, now, how soon may we expect that new hardware would be brought into the program so that it might be tested?

Mr. BEGGS. Well, our intent with the program as it is configured now is to do experimental engine testing work so that we will have testing going on at NRDS throughout the coming year, that is, throughout fiscal year 1969.

Senator CANNON. In other words, from April on.

Mr. BEGGS. Yes, sir, from April through the end of the year. We would hope to have flight engine component work underway within the next year so that the testing of the flight-weight engines at NRDS could begin early in 1972.

Senator CANNON. And at what stage in time or what point in time would it be necessary for us to make a decision as to the development of a flight engine, flight test engine, to keep that level going?

Mr. BEGGS. Well, clearly this will have to be a part of the budget cycle for fiscal year 1970, and the schedule on this runs from September to September, so that we would have to have clear indication of a decision to go ahead by September of calendar year 1969.

NATION'S FUTURE IN SPACE BEYOND APOLLO

Senator CANNON. Dr. Paine, as the new Administrator, what do you understand to be the Nation's future in space beyond the Apollo program now?

Dr. PAINE. That is a subject to which we have been giving a great deal of planning attention in the agency within the last month, Senator Cannon. In particular the types of missions that we see in the future of a large size that would be suitable for the NERVA engine are also receiving increased attention at this time. We see in the manned space flight area the manned space station earth orbital type activities and we look forward to the possibility of exploiting the capability we have developed in the Apollo program for the exploration of the lunar surface.

In the unmanned area, we see this great opportunity opening before us now of the earth resources satellite area, the entire area of applications in advanced meteorological, navigation, and communications satellites. In the planetary area, we see an opportunity opening before us to extend greatly our knowledge of the near planets and then