

levels that were anticipated, and believe me, before the announcement was made of this additional \$7 million being put into the NERVA program, it was quite obvious that the personnel levels were going to be such that it would have just completely scuttled the entire program.

Now, while I am encouraged, I am hopeful NASA will be able to do even more than it has indicated here today in this area. I view the nuclear rocket engine program as perhaps the most important project for the future of the United States in space. I believe, Dr. Paine, from your statement here that you think very, very highly of this program and that it is to be extremely important in our future activities in space.

It seems to me that we have successfully completed virtually all of the objectives of the nuclear rocket program as far as the technology is concerned, and I believe that having developed the technology at a cost well exceeding \$1 billion, it would be scandalous to abandon the program now. I must say that I previously discussed this matter with the chairman. We felt that a figure somewhere in the neighborhood of \$15 million, rather than the \$7 million you have proposed, would be more nearly in line with keeping the option open to keep this program on track. That is, if we are able to make a decision next year to go ahead, and if we have the priorities to give us some funds in this area, we would not lose our options through cutting the program back so far this year that we would really have scuttled it.

I think that if there is a more advanced or meaningful program for our entire space effort than this one, I do not know of it. But if I—as I believe—the NERVA program is the most promising prospect of the space effort, then it seems to me that we face a situation like building only one-half a ship which we then allow to sink after proclaiming that we have successfully demonstrated we can build it.

Now, my interest here is that we go ahead with this program because we have proven the theories and the technological assumptions on which it is based. I, therefore, Dr. Paine, have a few questions to ask you in connection with your statement.

First, will the \$7 million increment permit the Government to retain its objective of proceeding in the following year with the development of a flight-weight engine if that decision should be made next year?

Dr. PAINE. Well, I would like to ask Mr. James Beggs, who is in charge of our Office of Advanced Research and Technology in which the NERVA engine falls, to answer that, if I may.

Mr. BEGGS. Senator Cannon, as Dr. Paine mentioned, we did make a rather complete review of this program just about a week ago, and NRDS was, of course, on the schedule. We discussed rather fully the test operations that they will be conducting on the XE engines this year and what would be necessary to maintain the momentum and the thrust of this program should we decide to go ahead with a flight-weight engine in 1970.

The current program, as you know, is one of finishing our technology development with the test of the XE engine. That, of course, will be done more fully with the added funds. We will have those results.

If we are able to proceed with the development of the flight-weight engine in fiscal year 1970, we will still, of course, have to do a good