

You will recall they have a paragraph in their report to the President on the future programs and I believe that their conclusion was that we were doing all that one could do and they were relatively optimistic about the results of what we were doing.

Mr. RUMSFELD. I am advised that in the development of the nuclear submarines and the Polaris submarines there were independent review boards that were apart from the AEC and apart from the Navy. They were not connected with the Government or Navy and they participated in an independent review.

I am further advised that the concept of an independent review is credited with some of the successes achieved.

I quite agree with you the way you learn is by trying things, but to the extent that they can be talked through prior to some unfortunate situation, this is what we are all seeking.

Has that possibility of an independent review board within NASA been considered and rejected or does one exist?

Dr. MUELLER. Several actually exist at varying degrees of independence. The Science and Technology Committee has participated in the PSAC Committee review and also conducted its own independent reviews of the work we are doing. That Committee is composed of some of our outstanding engineers and scientists in the country who have had great previous experience in this kind of activity.

We also, of course, use a system of design reviews internal to both contractor and our own organization. Generally the design reviews are conducted by people who are independent of the people that did the design in the first instance.

In other words, we take expertise from elsewhere in our organization, apply it to the problems associated with our anticipated problems.

We have also established a design certification review board which is composed of myself and the center directors where we rather carefully go through the design itself and the procedures that have been developed for using the equipment.

Mr. RUMSFELD. Are these essentially safety review boards?

Dr. MUELLER. In the case of design certification review board, it is devoted almost entirely to whether this system is safe for man to fly. That is the one aim it has and if you will notice the proceedings of this board, you will find that at the end of each engineers systems presentation, he certifies that his system is ready for manned flight. We have tried very carefully to get a meaningful set of checks and balances in both the design, the implementation, and the operations areas.

Mr. RUMSFELD. Are you personally familiar with the independent review boards that I was referring to with respect to the nuclear submarines?

Dr. MUELLER. Yes, I am.

Mr. RUMSFELD. Do you compare what NASA has with that and say they are similar?

Dr. MUELLER. I think they are both similar and independent. We actually penetrate rather deeper in the design than they did. We had a similar setup too in the ballistic missile program. What we tried to do was to add to that rather than subtract from it.