

interest in your agency and our lack of background knowledge, we would appreciate further expansion in some of the matters referred to in this supporting brief. Particularly, I note at page 38 there is a reference to patents, new industries, technologies and processes developed by or under the aegis of NRC. Again, further on, there is a list of some significant projects, amongst which is included the device which I referred to as being mentioned in the paper this morning. These are very cursory in their content, and I feel it would be of great value to this committee if someone in your establishment, Dr. Schneider, would be prepared to set out, for the information of our committee, say, all projects completed within the last five years, in order to give us some sort of empirical test with respect to the operation of NRC during that time. I would not expect this from any witness today, because this would involve a considerable amount of research, and I appreciate the time that would have to go into it. We are also, I think, Dr. Schneider, interested in learning not only of the specific projects that have evolved because of NRC, but we are also interested in learning how they came about, where they were conceived, how they were developed—in house, out house—who were the people involved, through what chain of command did they come about; and, incidentally, to try to show to the committee perhaps what may lie behind a reference to some chemical here which was developed by the NRC and which, through one reason or another, either competitive interests outside or some other reason, failed to gain commercial application. These are very specific, non-esoterical matters that I think could be of great interest to us, if you would be prepared to spend the time and trouble with your staff to develop this for us. I think that in this way we could get a more exact evaluation of your performance.

**Dr. Schneider:** We would certainly try to provide the committee with this information. I should point out that if you say a project is "completed", research is not something that is turned off and on over a short time interval. This is usually fairly long-range exploratory research, and very often some new idea comes out, such as this very new potentiometer, and the people in this area suddenly seize on this and then develop it. Many of these projects are not going to be "completed", let us say, if you only consider the last five

years. Some may still be going on, although there has been some progress which has been very beneficial, and many of these studies will continue to go on. I think we could attempt to document these, although we cannot provide this information this afternoon.

**The Chairman:** I think what the senator wants is a case history of your projects, and I am sure you have that somewhere in your files, because you have to monitor all these projects. So, it might be a problem of compiling these things, but as far as we are concerned, I think it would be of great interest.

**Dr. Schneider:** I might just add that very often it is very difficult to assess many of these in the short term. Research needs a lot of lead-time it is a long-term affair; and we have wrestled with problems of cost-benefit analysis, and so on. In retrospect, for something done many years ago, you can now see the economic benefits. One has to trace these through the various sub-channels, but I believe this can be done in retrospect and we have people working on it, to try and assess things we did some years ago; but with regard to things completed in the last five years, the economic benefits are just beginning to be apparent, and it is very difficult to project this into the future.

So, I think the whole question of the economic benefits is a very difficult one to assess, but we are attempting to document this for some of the things we did, say, 10 or 20 years ago, and which are now in use—and some of which are paying off very well.

[*Translation*]

**Professor Bonneau:** I could add two examples which come to mind—one rather recent, the other much older, in line with the Senator's question.

The first concerns a submarine television set.

At the time—this was at the beginning of the 50's—submarine television was completely new, and there were enormous technological problems.

For a specific reason, the Council had developed a set; it was available and was offered, in a general manner, to the Canadian market. It was manufactured afterwards in England. The Canadian market, at that time, was not interested in it.

Much more recently, a photogrammetry instrument, developed in the Council's laboratories and nearly perfected, was finally