There is no way I could have spent the money I did if there were no patents.

If you want examples, I could give you a great many more about people I know.

I know now, for example, of a relative who raises money. He is an investment broker. He talked to me yesterday, and he tells me he raised some tens of millions of dollars for a new energy program based on an invention.

I asked, "Have you gone to ERDA?"

He said, "No. We will not contact the government until we are fully in business because we cannot jeopardize the patent position. We have very basic patents."

They have many large and small companies interested.

The basic patent is still not issued. There are several pending, but he will not touch ERDA because he is afraid to jeopardize the patent position.

If I were in the same place, I would not touch you with a ten-foot pole.

I can tell you more about my experiences with ideas.

I worked for the government for over twenty years. I was in industry for about the same time. I have 209 patents of which about half were done for my employers and perhaps half done for myself.

I worked for the Bureau of Standards and was very happy. I don't object to their patent policy. But as far as the utility to society goes, that is quite another story.

I invented a type of clutch for which I received a couple of medals and a raise in salary -- I think $250 a year. It had many beneficial effects. It gave me the glory I needed as a young man. It enabled me to speak in public without completely going to pieces.

But the government made the patents free to everybody except for foreign rights, which they left to me.

patents patented by foreign nationals in the U. S. for commercial use.

They were valuable enough to justify patenting in foreign countries. They were the patents that were confiscated. Eventually, John Green, a friend of mine, handled them. They were licensed free to anyone in the United States for a fee of $7. If you didn't pay the $7, of course, no one would sue you for it. If you wanted to build a Leica camera, you could.

What happened to those 15,000? They "died on the vine," all of them, because nobody is going to build a Leica camera without protection. One was built here immediately, the Japanese made one and so did the Russians, and everybody went out of that business in a hurry. It lasted about a year.

You are not going to build a camera when the other fellow can build the same camera. This is hard to explain to people who haven't tried it.

I invented the first magnetic disk file, perhaps the first in the world. The government made it available to everybody free. Nothing happened. I had the rights outside the U. S. At that time, the government didn't bother with foreign rights.

I patented it in 10 or 15 countries and sold the world rights for $15,000. At that time that was a lot of money. The company that bought the foreign rights could not exploit them in the United States because here it was like anyone else.

Since it was a U. S. company, they promptly forgot about it; and 6 years later, IBM came out with their own disk file and made quite a thing out of it.

But again, the government was my employer at this time, and the experience with the disk file didn't bother me. But it lay unused for 6 years and in the form in which I invented it, which had the very large capacity, in those days, of trillions of bits, it died.

I could give other examples. The question was raised by some of you about the 26,000 patents owned by the government today. I think a few of them are mine. Nobody wants them because they are free.

But the fact is that in a good court, about half are held valid and that is good because perhaps they wouldn't get into a court if they weren't weak, or if some parties didn't know something was overlooked by the Patent Office. The Office is not infallible. It is made up of human beings.

An invention is not a cut-and-dried thing that is either yes or no. Sometimes I know when an invention is clearly an invention, but having been in the business a long time and having been Chief of the Office of Invention and Innovations of NBS for many years and having been on the National Inventors Council (an advisory group to the Secretary of Commerce) for 15 years, I can tell you honestly that I don't always know what an invention is. Very often it is a matter of opinion, and a judge can very well disagree with me. The Patent Office often disagrees with me and sometimes does not issue a patent on something that I think is an invention.

The question is what do you have to do to make people invent these record players and tape recorders and weaponry and whatever? I heard the testimony quoting Admiral Rickover.

Admiral Rickover should be admired for what he did in weaponry and atomic energy. You can't expand this philosophy to solar heating, for example. What is correct for nuclear reactors which take trillions of dollars to put together, or for atomic weapons, or submarines doesn't necessarily hold for solar energy.

People talk about the patents giving somebody a monopoly forever. The patent life is 17 years and not renewable. It is not even that long in practice. It takes years to get the invention going, commercially.

My watch regulator took 9 years to sell. My phonograph took 14 years before anybody had even the slightest interest.

When people talk about 17-year life, what they are talking about I don't know. None of my patents got into business that fast. Inventors tell me that they are happy to usefully get half the theoretical life of a patent.

For some curious reason, it is all right to give the author of a book a 25-year exclusivity and another 25 after that just because he wants it. That is true of

That doesn't mean we shouldn't do it. We should because the government should be more far-seeing than private industry. The government can afford to do this sort of thing. Industry wants to make profit now, certainly if not now, next year. It cannot figure on 20 years from now. The government should and does.

There are many interesting arguments about what is happening to our patent system. I heard today some comments about pending bills in Congress. They show the fine hand of the Department of Justice whose people believe, among other things, that patents are monopolies; monopolies are bad and patents are therefore bad. This is nonsense.

I have talked to people from the Justice Department privately. I would like to do it again. I don't say they are evil men. I just think they are misguided. If they are really serious about fighting monopolies, let them fight the patent rights or practices of the large corporations. For example, they could propose that patents to General Electric be treated differently as far as licensing rights go than they are, say, to Joe Blow.

One could make a good case that any company that contributes more than 50 percent of an industry should have mandatory license provisions thrown against it. This may require a Constitutional amendment -- I don't know. But attacking the whole patent system because somebody once perpetrated a fraud on the patent system in 1860 is nonsense.

They issue 60,000 patents a year. There are close to 4 million already issued. There are almost no cases -- There was only one case where someone in the Patent Office was dishonest. He was fired or sent to jail.

I would like to know what other agency in the government of the U. S. or anywhere else, with so much at stake, so little dishonesty has been shown. Yet the Justice Department seems to think the Patent System favors the large companies.

Look at the bills that have been introduced, the original McClellan bill, for example. Look at the fact that any time there was an attempt to clarify the antitrust laws relative to the patent laws, we hear a tremendous hue and cry from the antitrust people.

liked it. It really worked. But it cost an extra buck to make. That was enough not to sell it.

I do not question the wisdom of those companies. They know their business and safety was not a consideration in the '50s. Fees would have just made it public sooner. It is public now. Nobody is using it now, either.

Unless you get some protection to sell, you won't sell an invention. The first question an industry asks is, "Have you told about it to anybody else? Can we get a lead time? Can we get protection?" If the answer is no, they say, "Good-by, it was nice knowing you."

About mandatory licensing, I would like to say this: I talked to the Patent Commissioner of Israel. They have mandatory licensing for a very good reason. They don't like to have an English company, for example, sell patented items in Israel without setting up a factory in Israel. The stuff was imported. Israel has a great shortage of foreign exchange. So they set up a system of compulsory licensing: The English company immediately licensed an Israel company.

Germany has a mandatory licensing system -- has had it for a long time. There isn't a single case where this was ever used. It really does not make sense to introduce it into the U. S. because most large companies make cross-license deals with patents.

There is the business of large corporations holding monopoly powers due to patents. I don't know of any large corporation that ever stopped me from making anything. I infringed on IBM patents and IBM never called me on the carpet; they never bothered me. I don't know anybody who is prevented from making computers because IBM or Control Data has patents. I know of no case where a large corporation will stop you from making anything. I would like to know of such a case.

If you want to make an automobile, who is going to stop you -- General Motors or Ford or Chrysler? I doubt very much that you would have any problems at all. You will have a little problem raising the few billion dollars necessary. You will have a few other problems. But patents will not be your problem.

in the United States that we are supporting the inventor with grants.

CHAIRMAN JOHNSON: Thank you very much.

We will reconvene at 2 o'clock.

(Whereupon, at 1:10 p.m., the hearing was recessed, to reconvene at 2 p.m., this same day.)

approval, in which they are trying to acquire data and patent rights to background information for the government that would affect a company's position in the marketplace.

As we read the proposed patent policy, it's our interpretation that this acquiring of rights for the government would be very much insisted upon in the future.

Now, the fossil fuel situation is very different from the atomic and nuclear situation. In general, the government in atomic and nuclear technology, has really paid the vast majority of the bill for technical development. That may be true in fossil fuel of the future, but it certainly is not really true at present.

There are a number of large companies in the United States who have conducted large-scale R and D in fossil fuel for many years and who have a proprietary position in that field. These people are not particularly eager to do business with the government in general, we find. It is rather difficult to draw them in, or has been up to this point, rather difficult to draw them into such government contracts just because of questions such as background data rights or patent rights. In general, they are worried about government penetration into their business.

And I think implementing a policy that will make it more difficult to get these people into the field for the next few years is not in the national interest.

Now, we can go through the process of reinventing the wheel; and, to a certain extent, that is what is happening. The wheel is being reinvented by aerospace-type corporations that have come into fields like fossil fuel and are used to doing business with the government. As we look at the spectrum of contracts in fossil fuel, you find surprisingly absent those old line large industrial organizations that have been working in the field for years.

This I think has resulted in some technical difficulties in that field, because what we are doing is not taking the best advantage of existing American technology. We have made it our business to attempt to get these experienced people into Government funded R and D; and we are having some success at it.

But if you implement the new policy in the fossil fuel field, I think you are going to make it very difficult for us. Most of these companies realize now that they cannot

Do you feel that this attempt to draw the balance varies too far over the side of discouraging participation, and, if so, why?

DR. DICKS: Yes, I think I have gotten this, anyway. This is not greatly different from the present regulation that we attempt to negotiate.

I can give you the answer for that. That is that this process of the Government demanding such rights is at the discretion of the Government, actually. There doesn't seem to be any legal protection or recourse that the contractor might have in opposing this.

I realize, and I think many of us realize, that most of this never comes to light. One objection that I have is in spending a tremendous amount of time in negotiating something that is never implemented. I can't remember a case where any of this was ever implemented. If it is not going to be implemented, and I am not sure the Government has the resources to implement it, it would seem desirous to shorten the contract negotiation process by not including them.

CHAIRMAN JOHNSON: Do you not see any difference between the former policy that was utilized in the fossil energy area and this proposed clause which, as indicated, is much more narrowly drawn?

DR. DICKS: I guess as it may appear on the surface to be more narrowly drawn; that is not my personal interpretation of it, or of the people that we have had review it.

We view it as resulting in something more extensive. We would also view it, since it appears in this new document, as really a reiteration or emphasizing, or that you are emphasizing that the Government intends to proceed in this direction. (Forcibly acquire background patent rights from industry.)

As I said, I don't recall a case where the Government has done this. But now it is prominent in this document and this indicates that the Government does intend to implement that policy.

CHAIRMAN JOHNSON: Are there other members of the panel? Dr. Fumich.

DR. FUMICH: I don't know. I am kind of concerned and surprised by what you say, because, really, if anyone is

DR. DICKS: It may be. We have had indirect communications, having just finished a negotiation of this sort with this document in the background, and so, I don't know, there may be a breakdown in communications.

DR. FUMICH: We are in that gap, that gray area. I can understand your having some problems.

CHAIRMAN JOHNSON: All right, Mr. Denny.

MR. DENNY: I assume from what you are saying that you have been conducting fossil energy work under OCR.

DR. DICKS: Yes.

MR. DENNY: Can you tell me how many, or what clauses up until fairly recently have you been using, the old OCR clauses?

DR. DICKS: They are just the general provisions clauses that I think everybody uses, those things. They were OCR-Interior Department general provisions, and those were different from Atomic Energy Commission general provisions.

MR. DENNY: Which have you been using, the OCR?

DR. DICKS: We have been using the OCR because we have a contract that was written under OCR, and those provisions of the contract have not been changed.

MR. DENNY: How many contracts have you negotiated under this new provision, either patents or data provisions?

DR. DICKS: We have just finished one relatively large negotiation just a few days ago, or finished getting approval from the Government. So this is the latest thing that has happened.

We negotiated a couple of others earlier in the year.

MR. DENNY: Utilizing these new provisions?

DR. DICKS: They are not in force under our contract. It would take a contract change order to bring them into force.

MR. DENNY: In other words, you have not been negotiating using the background patent provisions that have

MR. DENNY: You offered these to the contractors?

DR. DICKS: Yes.

MR. DENNY: He said he would rather have the ones he had?

DR. DICKS: Yes.

MR. DENNY: I see.

DR. DICKS: Our opinion is the same. There is no difference of opinion between ourselves and the contractor.

Now, we have had this reviewed by our lawyers. Other people have reviewed it. I have talked to a good many people in Government that have reviewed it, and the opinion that this is less restrictive is certainly not universal.

I have heard that from perhaps one person. The majority of people think these things are possibly more restrictive than those we have been using.

MR. DENNY: Can you define the sorts of problems that they have specifically?

DR. DICKS: Yes.

The problem chiefly is in the demand for background data. That is the most serious problem, for example, because in that case, if the background data is published, then there is no protection at all for the manufacturer.

It is the kind of background data that allows one to design a particular type of hardware. It is not patentable, but it may have been obtained at great company expense, where they had to run an R and D program in order to get operating parameters that could be extrapolated to commercial equipment.

MR. DENNY: Under the OCR clauses, are these background provisions negotiable?

DR. DICKS: Yes, they were negotiable.

MR. DENNY: Who was the person at the University who had the authority of modifying them or changing them?

MR. DENNY: I would frankly question that, until at least it is given a couple tries under the new regulations.

I don't know what industries you have been talking to, but I know up here at headquarters we have been dealing with a lot of the fossil energy people. They love it in comparison to what the OCR clauses have been.

DR. DICKS: I would like to make another point, reiterate a point: The people who would now have the large fossil fuel contracts now are not old-line coal people. They in general are people that are used to doing business with the government and are skilled at it.

MR. DENNY: Could you describe somewhat the industries that feel this way?

DR. DICKS: I think I will let them speak for themselves. I have suggested that they appear here, and I am sure that they will.

But there are perhaps only four companies in the United States that are in large-scale manufacture. The coal technology of handling, transporting, processing coal is very narrowly based in the United States and we have really not succeeded in tapping that technology.

MR. DENNY: The only other thing I would suggest is that I agree, there is probably some sort of communication problem. If you can get some of your prime and subs together, we will be happy to come talk to them.

DR. DICKS: Well, I think we would like to do that.

Now, I personally have probably spent something like 40 hours in the last three months with government lawyers, with our lawyers and industry lawyers. If there is a mistake, it is a big mistake in interpretation. It has proceeded to a relatively high level and has been explored very thoroughly.

So I am talking about the actual practice of this business.

CHAIRMAN JOHNSON: I think Mr. Denny's suggestion is good. Apparently they have proceeded to high levels in the companies but I am not sure they have proceeded to a high level in the agency, other than the agency is generally aware of problems that the industry has with ERDA patent policy, generally speaking.

MR. KIMBALL: Dr. Dicks, this morning we heard favorable comments from representatives of universities relating to the use of the institutional patent agreements. Does your university have any of these agreements?

DR. DICKS: With ERDA?

MR. KIMBALL: Or with any federal agency such as HEW?

DR. DICKS: I don't believe we do. We certainly are not seeking them in the efforts that we are conducting at the present time. I am not particularly fond of patents myself. They impede progress.

In cases of my own work, I have not patented things that have gotten a rather wide distribution because if you do patent them, I recognize very well that other people will not use them. And so throughout the development process, you have some damage done. So I believe that patents do cause difficulty in rapid development. But in operation, we have to have the help of those people who understand the technology, and the patent policy that you are trying to implement is against those people that we need the most.

Somebody that doesn't have any background rights, never seen a lump of coal -- There are a lot of those delighted or very pleased to take the standard contract. So then you go to somebody who stands to lose commercially by the exposure of background data, and those are the people that you really need to work with.

I agree that patents do impede development.

CHAIRMAN JOHNSON: Taking that one line, I think it is worth following up on, has your experience been that where a patent is taken out, that it does inhibit another company from working in that field; or does it stimulate another company working in the field?

DR. DICKS: I think in general it will discourage the use of that particular device. They will spend their time trying to find some way around it. This happens in industry anyway, in cases where one industry or one group has a particular idea. Other people will tend to avoid it and go to ridiculous lengths to do so, even if there isn't a patent.

CHAIRMAN JOHNSON: Would you credit the concept that the background rights clause is really insurance against the dog in the manger, rather than an active tool?

DR. DICKS: I think that is the case. As I say, most of this stuff never comes to light. This is true of most of the general provisions as far as I can tell. There are all kinds of threats in the general provisions. It makes them appear to be very disagreeable. We spend our time negotiating things that never come up. I agree that it is perhaps a case of just an ultimate protection mechanism.

Does anybody, or has anybody, ever brought up a case in which this thing was applied?

CHAIRMAN JOHNSON: We have yet to find a case in which any of the compulsory licensing provisions in the government contracts, march-in rights, and so on, or even the Clean Air Act, which is the only current statutory mandatory licensing provision, have actually been applied.

We have just not found concrete cases where there was requirement to utilize this authority. While we are on this topic, I would like to go back to your own philosophical bit about the utility patents and possible impediments they bring.

Would you feel that there ought to be a statutory ability in some federal agency, let's say ERDA, to require the licensing of privately owned patents under defined conditions -- we will say dog in the manger attitudes? Do you think that would have a loosening effect and cut away this blocking effect that you find sometimes?

DR. DICKS: I don't really think so. Again, in practice, it never comes up. If in this tremendous country of ours we can't find examples, and I don't know of any examples in our technology where we would like to have any patent taken away from any company anywhere, and apparently the practice in industry is if it becomes important enough they just go ahead and infringe and then take the lawsuit. And we can think of a lot of those cases.

So I don't see it is stopping an American industry.

CHAIRMAN JOHNSON: Unless there are further questions, I want to thank you very much, Dr. Dicks. It has been very interesting and helpful.

I am about to discuss some of the effects of the current regulations and revisions of the government patent policy.

The federal government in its zeal to prevent the use of the patent for undue private profit has severely restricted and denied the American citizens the benefits of new technology.

The patent policy has become synonymous with secrecy. It seemed apparent to us that the patent policy needed revamping.

Recently, with the organization of the Energy Research and Development Administration, there has been a great emphasis on government-industry participation.

The Deputy Administrator, Mr. Fri, was in Oak Ridge not too many weeks ago and in a statement stressed the fact that ERDA sought actively a meaningful participation-partnership between private industry and government.

I think most people will agree that this is going to be absolutely necessary to further the energy research and development goals of this country. And yet I don't think that you are really implementing what you say you want.

We understand that commercialization is desired and important and that creating incentives to encourage private participation is a goal. However, we do not believe that these regulations really encourage participation by private industry.

First, we feel they are overly complex. Agreed, we are laymen, private businessmen. We are not patent attorneys.

But to fully comply with these, we think that every company is forced to get outside help.

Now, this might be fine for the "Fortune 500," but for the vast majority of industries in this country, we feel that they neither can nor will go to the trouble.

Next, there is a single policy, as we understand it, for every relationship with ERDA when in fact there are many different types of relationships possible.

2. If you have a joint ERDA-private industrial research and development effort, then it gets stickier; and you have to protect the government's interests. But certainly there can be some simplification possible.

3. Here is a relationship which we think calls for a quick and easy waiver. I think if you investigate this one you will find some real horror stories.

This relationship is one where government researchers go out to private industry to use their expertise in an area where a company is particularly skilled and asks that company to develop a piece of equipment or a technology for use in a government program.

There the industry is using its own expertise, its own people and buildings and still they have trouble getting a waiver. There is absolutely no excuse for making the waiver difficult in such an instance.

The regulations do not offer any difference in the way they are applied to large and small companies. The largest companies have, perhaps, the staff and the time and the persistence to wade through these regulations -- even though some of the largest companies we have talked to have expressed their dismay at trying to comply.

Smaller companies probably have neither the resources nor the patience to cut through these regulations.

The ERDA charter includes a policy that ERDA should encourage small business. I don't think that these regulations fulfill that charter or policy.

Perhaps somebody in ERDA or SBA should be an advocate, openly an advocate, for small business, to help them get through the complexities.

Another area that should be changed is that of licensing for patents that are held by the government. We understand that the total amount of money is only a few thousand dollars for all royalties for exclusive licenses which have been granted by AEC-ERDA over the last several years.

A lot of time has been spent protecting something, and the effort is succeeding very well because nobody is using it.

is the center of technology on the gas centifuge technology.

Finally, we believe the patent policy should reflect and promote the following: It should be good for the government, good for the private sector and the public benefit from new products and processes.

This will be especially important for our balance of trade. The United States was once responsible for developing the vast majority of the new technology of the world, but here leadership is slipping.

The vast, unused technical knowledge now in government files should freely flow through the conduit of private industry and a historically restrictive ERDA patent policy must not be allowed to impede this process.

A meaningful partnership between government and industry is now absolutely necessary. Please use your influence to develop a patent policy which will help bring this partnership about.

Thank you.

(Document follows.)

"involving private use of Government facilities and the contractor is funding all or a part of such work."

While it is possible to apply this example to privately sponsored work performed for persons who are not contractors, the example does not accurately reflect the case that R-AEC is interested in; i.e., a private organization requests ERDA to conduct work for the private organization in an ERDA facility, with the private organization bearing the full cost. The ERDA operating contractor is not sponsoring the work and is not paying for it; to the contrary the operating contractor conducts the work as part of and subject to his contract with ERDA. Obviously, the ERDA operating contractor cannot agree to conduct work for others without ERDA's approval and wants the work covered by the terms of the operating contract. (Incidentally, a posture that the operating contractor took on such work in a private capacity could raise many other questions; e.g., tax obligations for the facility, licensing, responsibility for damage to the facility, etc.)

Inasmuch as the operating contractor is acting for ERDA in the postulated situation, what is needed in the regulations is a clear statement of ERDA's policy on waivers when ERDA is being paid to perform work for others. In addition, since the statutory restrictions under the Nonnuclear Energy Research and Development Act are aimed at situations where R&D work is being performed for and paid for by ERDA, there should be language recognizing that these restrictions are not applicable when ERDA is performing work for others.

I suggest it would be appropriate to include a separate section in the regulations entitled "Patent Policies Applicable to Privately Sponsored Work Performed by ERDA at the Sponsors Expense" and that such section provide for a full waiver of patent rights in such situations. Where the privately sponsored work requires or benefits from work performed by the operating contractor for ERDA it might be appropriate to reserve a nonexclusive license to the Government if the ERDA paid-for work contributes significantly to the invention or discovery. (The patent language in the Battelle-Northwest contract regarding privately sponsored work might be adapted for this purpose.)

I recognize that ERDA's primary focus in developing the proposed new patent policy was related to ERDA sponsored R&D work, both in private facilities and its own plants and laboratories.

CHAIRMAN JOHNSON: Thank you very much, Mr. Adams.

I wish to commend the Council for taking this problem and studying it in the detail that you have done.

Of course, I think the problem of patent policy is going to be a complex one; there is no real way to make it simple. Different considerations have to apply.

But I must say that I have a certain sympathy for what you are saying.

I read over the regulations the other night, and I did find them very difficult to find the parts that I wanted.

It is the way the government patent regulations generally have been organized, and I think there is merit in what you say on that point.

Are there some questions that members of the panel would like to raise with Mr. Adams at this time?

It is an interesting point of view we have not had very much of in the hearings.

MR. DENNY: I really don't know where to start. I don't think really I have any questions.

I am beginning to wonder if we are having a communication problem with the great State of Tennessee.

As a matter of fact, we have just granted a waiver, an across-the-board waiver applicable to all inventions and all the people who were operating in a certain field also in Tennessee.

You mention an area -- joint ERDA-private development area, where a waiver ought to be; and our regulations 100 percent agree with you.

What you say about large and small companies, I guess it may be true. We haven't granted them too many waivers. One of which was to a firm that had 23 people working for it. They got their waiver by, I think, talking to our own patent people without counsel.

I am not sure whether they hired somebody or not.

risk capital in projects which would serve the public needs and on the other hand the patent policy was providing too great a risk for contractors to become involved, because of the fear of dedicating their valuable background patents and data. For this reason I respectfully submit the attached proposed legislation. (Attachment 1.)

As you know, there are numerous volumes of committee reports on Government Patent Policy. I started with Senator McClellan's Bill S.1809 and the objections raised by Senators Hart, Burdick, Kennedy and Tydings. In addition I reviewed the bills submitted by Senators Hart (S.2715), Saltonstall (S.789), Long (S.1899) and Dirksen (S.2326).

The hearings on the bill submitted by Senator McClellan discussed the problems of establishing a single rule or presumption which would provide adequately for every situation which might arise. This fact leads to establishing clear guidelines for executive actions with sufficient discretion remaining in the agencies making the day-to-day decisions. To this end I am proposing not only a revised patents and data policy, but a truly integrated Technology Transfer Program. (Attachments 2-5.)

On page 95 of the record of hearings, (Attachment 6), the Department of the Interior stated "that leaving title to the patents with the contractor as an incentive will not stand scrutiny since many inventions need no further development and are complete when made and are rapidly adopted." One example given by the Department was the "hot carbonate" process for removing acid gases developed by the Bureau of the Mines. The attached (Attachment 7) correspondence from the Benfield Corporation, formed by Messrs. Benson and Field, the Bureau of Mines inventors, may be essential to the development and commercialization of inventions.

While the hearings on Government Patent Policy were mostly concerned with protecting the public from the potential monopoly power provided by patents, another committee was working on means for making the technology protected by these patents more readily available to the public. The Select Committee on Small Business, U. S. Senate, in their attempts to protect and foster small business, have concentrated their efforts in an attempt to permit the small business community to share in the Federal R and D support. To this end they have held hearings (February 10, 1970) and

(d) establish a function of auditing research results for possible use outside the primary mission;

(e) give discretionary authority to perform adaptive development work beyond mission justification in certain cases;

(f) insist that their own program directors make every effort to use existing technology in meeting their needs."

Recommendations 2 through 9 refer to other agencies and members of the public.

Mr. Chairman, I respectfully submit that the proposed section on patents fully complies with the recommendations of the Select Committee on Small Business.

Now that I have stated the proposed object of the new patent policy; i.e., Technology Transfer, I would like to discuss the means by which to attain its goals. A summary statement inserted in the record by Senator Wayne Morse during the hearings on S.1809 states most of the issues involved in patent legislation. It is submitted here for discussion:

"It is my belief that any patent legislation should be governed by the following six general principles:

(1) A clear policy statement that federal research and development property is a 'natural resource belonging to the people of the United States,' and must, therefore, be safeguarded accordingly.

(2) Plain and certain penalties for the giveaway or unauthorized disposition of Federal R and D property.

(3) Provision for preserving the many Congressional patent protections that have been ordered into law over the past three decades.

(4) Practical means for discouraging monopoly and concentration and thus protecting the interests of small business and an 'open-economic system.'

(5) Clear and unambiguous standards for separating private and public interests in the commercial development of the property.

The new patent section now also gives the Administrator the authority to acquire rights in patents, data and copyrights which are necessary to the performance of research efforts. In addition, it provides the same right of eminent domain, with respect to data, as the government presently has with respect to patents.

As you can see, the proposed section has gone beyond merely providing new incentives for contractors. It would be making a positive commitment to establish a formal Technology Transfer Program.

The Administration is already participating in the Commerce Department's program for advertising inventions available for licensing. Under this program, the Administration forwards copies of patent applications and patents to the National Technical Information Service for dissemination to the public. NTIS then publishes lists of inventions available for licensing in the Federal Register and the Official Gazette of the U. S. Patent Office. Abstracts of the inventions are also sold through subscriptions. NTIS hopes to make the program self-sustaining in the near future.

Another section which I believe to be important to the identification phase of Technology Transfer is the provision granting the Commissioner of Patents and Trademarks the authority to issue a patent to the Administrator under certain conditions. This section is based on the authority granted by the Space Act (42 U.S.C. 2457(a)-(i) and the Atomic Energy Act (42 U.S.C. 2181-2190).

This section provides the means for settling invention controversies between the government and the inventor in a forum which provides all of the protections required for due process. This section, in connection with the exclusive licensing section, would essentially eliminate the administrative burdens and the contractor's rights.

For example, in cases where the government has supported the contractor's work through indirect support under the Independent R and D program and direct support under R and D contracts and the contractor has supported the work with capital funds, the contractor may concede title to the invention in exchange for an exclusive license.

If the contractor feels that he can support his position of no rights to the government, he may so elect. Furthermore, the residual rights retained by the inventor will provide an added incentive to the inventor to (1) report

I have also compiled a list of all of the comments which I felt supported my views on each of the sections. It is not in my transcript. The first section I have already read; i.e., Senator Morse's comments on what a government patent policy should be. The second group is submitted by the National Small Business Association at p. 728. Their recommendations for the government patent policy were: (1) that the government should waive all its commercial rights to patentable inventions, because this will result in more commercial exploitation; (2) inventions have little intrinsic commercial value in the hands of the Federal Government; and (3) the Government should waive all its commercial rights to patentable inventions because this would result in more commercial exploitation of economically worthwhile inventions.

An interesting comment made by Howard I. Foreman, which I feel supports the concept of the first option, or contractor retaining title, wherein he suggests it should also apply to government employee inventors: "If maximizing utilization of inventions arising out of Government sponsored research is to be an objective of any legislation in the interest of giving the public the advantage of as many as possible of the inventions developed under the inducement of the benefits of the patent system, should this also apply to inventions of government employees?"

Dean Harvey Brooks also stated it well: "The patent itself has little commercial value without an extended effort devoted to making a producible and reliable product and testing its validity in the market...A proper national patent policy must recognize that an exclusive license of limited duration is necessary to provide the incentive for exploitation."

In rebuttal to some of Senator Long's amendments, some of which I had the privilege of interpreting while I was at the Department of Interior: at p. 724 "The classical monopoly pricing simply does not exist in the current marketplace for a number of reasons well known to economists and most Congressmen. Of course, every businessman seeks to maximize his profit, but the primary reason for businessmen desiring to acquire patent rights is to insure that there is a reasonable prospect of recovering development costs and keep exclusive rights to manufacture the patented items to meet competition from substitute products."

in fact, reap greater rewards from their contributions than U. S. Government and U. S. contractor inventors.

I had a few more examples, but I will defer them.

CHAIRMAN JOHNSON: Thank you very much, Mr. Lukasik. The time is running short.

Are there any questions members of the panel would like to present to Mr. Lukasik?

All right. We have received this material. It is quite a comprehensive compilation.

Thank you for your time, and we will consider the proposal.

Our next participant is Mr. Ray E. Snyder of the University of Missouri.

Is Mr. Snyder here?

At some point it might be desirable to have a short break. I will determine when that will be. I will make some inquiries about it, so we can have it a little later.

First we will have the pleasure of hearing from Mr. Snyder.

MR. SNYDER: Thank you, Mr. Chairman.

A short time ago, I met with the president of a company in the laboratory equipment business. He told me of his experience back during World War II when he was with the OPA here in Washington. At that time they were trying to allocate certain priorities for the production of goods to meet the war effort. Laboratory equipment, of course, was very important in many aspects, so far as meeting the needs of the war effort.

What happened was this: Somebody in the bureaucracy spelled laboratory with a "v" instead of a "b" and they classified it under plumbing supplies; and it was given the lowest priority imaginable.

I feel sometimes that that same sort thing has happened with regard to the Government's handling of patents.

One serious obstacle to such transfer, that was barely touched on by Mr. David, has to do with the handling of patent rights. This is one with which I am personally familiar. I am a patent lawyer, have been for nearly 20 years, and for the last 11 years have been involved in the licensing of inventions that have evolved from university research. Much, if not most, of this university research has been supported by the federal government.

On numerous occasions I have tried to interest a company in taking on the development and marketing of a university invention. On the rare times a company was interested, the reaction I have frequently received goes something like this:

"Look, we like your invention and we would like to do something with it; but if it is going to be tied up in a lot of damn government red tape, we are not going to waste any of our time and money on it."

Now, there are several agencies of the federal government that sponsor research at the universities. Each agency has a different patent policy and every one places some restrictions on what a university can or cannot do with an invention that evolves from such project work.

Unless a particular university has a program or policy of its own for handling patents, the government generally takes title. This is in spite of the stated policies of two Presidents, Kennedy in '63 and Nixon in '71, to ease up on this practice.

The controversy over whether the government should take title or only a license to inventions it sponsors has been waging for years. Most of the fighting has been with companies that are very protective of the proprietary rights. Universities have been caught in the middle of this controversy. For the most part, they have no vested business interest to protect, and they usually give in to the government on patent rights.

I submit this is a darned shame, too, because there are a great number of useful inventions that are not even reported because the investigator just does not want to fight the red tape.

The question of whether the government should take title to an invention at all is an interesting legal

Thirdly, what is the effect on private investment into a new venture that is freely available to all? As an example, the FHA insures home mortgages. Suppose the FHA were to write in a restriction that a person planning to build a home with an FHA-insured loan must agree to allow any hippie or derelict to move in there at his discretion. How many people would build and maintain a home with that restriction?

Who is going to spend money to develop and market an invention with that sort of restriction? Most inventions, particularly of the types generated by the universities, are a far cry from being a marketable product.

Beyond these practical considerations, there also are some moral and philosophical problems in declaring everything free. Everyone knows there is no free lunch. Anything that is purported to be free is often considered to be free because it is not worth anything.

Who is going to tell a research investigator who has struggled for years to solve an important problem that his solution is not worth anything?

Another unfortunate aftermath of a government policy that is too restrictive is that it may actually encourage dishonesty. An inventor who has worked long and diligently to come up with an important solution may be placed in the dilemma of reporting it to the government for nothing, or taking it out the back door.

If he were to choose this latter course, who is to blame? I might add that this latter course appears to have government approval -- so long as you don't mention patents.

As I said above, the battle with the government over patent rights has been going on for years. The Department of Defense finally reached an accord with industry on this. The companies best equipped to provide the goods and services the DOD needed were generally the ones most protective of their patent rights. The government gave in a little, and the country did not collapse.

The AEC always has had a very restrictive patent policy. There were, presumably, and still may be, national security reasons for this. However, I believe it is also significant that, some 30 years later, less than 5 percent

I only wish that these resources might be utilized as effectively as possibly for the benefit of the public. This requires an environment in which the transfer of new knowledge to industry can take place in an orderly fashion.

In my opinion, this can be done best by returning to the principles governing inventions as set forth in the Constitution. That is, of granting patents to inventors rather than to the federal government. (End of Letter.)

I suppose, like everyone else on the program, I have had to alter my talk as I go along in light of what other people have said. However, I thought I might provide a couple of examples of the things I have encountered in the past.

When I worked for Borg-Warner, one of the divisions I worked for was Marvel-Schebler. At that time they were manufacturing control rod drive mechanisms for nuclear reactors. These were installed in nuclear subs and also, I believe in the nuclear ship, Savannah.

The original design was one made by Westinghouse. Incidentally, it was also patented, though it made no mention of nuclear energy.

Borg-Warner had been in the business of designing gears and things like that for years. So they came up with their own design. They also designed a split-phase stepping motor for driving these things. They also worked on the design of some electromechanical manipulators for handling radioactive materials. These appeared to have possibilities in certain other mechanical operations.

Well, because of the fact that these inventions somehow related to nuclear energy, the question came up of who owned them. In other words, who claimed title to these inventions.

We went around and around with the people at Argonne and eventually went to Mr. Roland Anderson in Washington to get the matter resolved.

After we had gone through all this, I recall Mr. Roy Ingersoll saying: "We are in business to make money by trying to develop products that people will buy. We are not in the business of trying to develop something the government can confiscate."

know who is going to participate in your program and jeopardize their background patents, except companies with nothing to lose.

Also, I have a little trouble with some other aspects of how this is apt to work.

I took the trouble of reading this booklet on Patents, Data and Copyrights and Proposed Policies and Procedures.

I have a question or two of my own.

The pages aren't numbered in here, but somewhere it says that contractors shall not use their ability to award subcontracts as economic leverage to acquire rights for themselves in inventions resulting from subcontracts.

Well, I can agree that it is reprehensible to do that, but on the opposite page it says the primary mission of ERDA may require that certain rights and background data be required by the government, et cetera. I have a little difficulty reconciling the seemingly double standard here.

I will be glad to answer any questions.

CHAIRMAN JOHNSON: Mr. Snyder, on the last point of double standards. As between government contracting and the contractors negotiating for rights on the subcontractor's inventions, the difference is that the government is financing the contract work, including the subcontract work.

The contractor is not himself financing subcontract work. There is a problem, as you recognize, of a reprehensible nature of trying to take advantage of your contract position dispensing, in effect, government money.

It may be different where the government is paying for things and has a responsibility to be assured that the technology is available for being practiced by more than one company.

Do you have any thoughts on that point? Namely, the responsibility to make sure that results of technology are available to more than just one?

MR. SNYDER: As I say, I am speaking mostly for the inventions that come out of the university research.

I also spoke to one of the officials of another agency, and he said that, "Look, we are basically a group of scientists here doing research; and we just don't like to be bothered with these patent matters. We figure we are here to do our scientific research, and our principal worry is that someone is going to pick up a piece of work that we sponsor and make a lot of money on it, which is going to subject us to critisism."

Well, that set me back for a moment. I wish I had had more time to think of a response. All I could think of to say was, "Well, if none of the work you sponsor is any good, then you don't have anything to worry about."

But I don't think that is what we are after. As I see it, this business of saving energy is really not a new idea. Getting the solutions is going to be a lot tougher than people think.

Increased oil exploration has certainly turned out to be easier to talk about than it has been to accomplish. I am just not so sure that the government being the sole determinant of which way the country ought to go in this area is necessarily in the best interests.

I think there is room for a lot of people with a lot of different ideas, and they ought to be free to go ahead and explore these things.

Most of them are going to fail. Bound to. That is the nature of research.

CHAIRMAN JOHNSON: Are there other comments at this time?

(No response.)

Mr. Snyder, we thank you very much. I will read the portion of your testimony that I was not actually physically here for.

Our next participant is Roger Ditzel, Assistant Manager of the Iowa State University Research Foundation.

We are glad to have you here with us today.

MR. DITZEL: Thank you, Mr. Chairman.

The reasons for the patent system in industry are quite well known. I would suggest, however, that in the university, the patent system is not to be used to make money as its primary goal. The patent system can be an excellent means of disseminating the results of research and relating the results to the utility situations where they can be of most benefit.

Thus, a patent as a publication is quite different than a technical or scientific journal article.

A second reason the university should use the patent system is to put its technology, where that technology has resulted from new knowledge, into a position to transfer it effectively to industry. As you know, university patents are very "bare," absent of any extensive know-how in probably 99 percent of the cases.

Universities do not have millions to pour into development. A university should not look, in my opinion, at patent disclosure and use potential royalty incomes as a decision factor in deciding to file or not. Rather, it should look at what is represented in the advance of technology and science in that particular disclosure.

Just as we do research in the university to gain new knowledge and obtain patentable inventions as an indirect result, so we patent to publish and put technology in a position for effective technology transfer. Royalty income is a secondary result of effective technology transfer.

Now, there are many energy goals outlined in the legislation and some of the background papers. I would point out that ERDA and universities are in the same boat. Neither of us have a capability to manufacture. We are both trying to be partners with industry. I would suggest this is a three-way partnership to get the technology developed and demonstrated, and I would suggest that the patent regulations must reflect the special nature of university research.

I think ample evidence for that special nature was borne out by the holding on November 3rd and 4th of the ERDA-university meeting here in Washington, D. C. The patent regulations and approach you adopt should meet the expressed desire of ERDA to make the most of university research. Get the universities in a position to work best

institutional patent agreement, pursuant to the report of the Patent Policy Ad Hoc Subcommittee of July, 1975.

Mr. Chairman, I thank you and the members.

I will be happy to answer any questions that I can.

CHAIRMAN JOHNSON: Thank you, Mr. Ditzel.

Are there any comments from any members of the panel?

(No response.)

Thank you, sir.

MR. DITZEL: Thank you, sir.

CHAIRMAN JOHNSON: Our next speaker is Mr. Norman A. Jacobs, President of the Licensing Executive Society, United States.

Mr. Jacobs, we are delighted to have you with us at this time.

MR. JACOBS: Thank you very much, Mr. Chairman. I appreciate this opportunity to speak to you today on behalf of the Licensing Executives Society (U.S.A.).

LES (U.S.A.) is composed of over 1100 businessmen who have significant responsibility for licensing and technology transfer both as licensors and licensees. Our members, representing licensing and patent departments of corporations, private patent counsel, and independent licensing consultants share a common interest in stimulating the widest possible commercial utilization of technology, developed at either private or government expense.

Each member, required to have a "significant responsibility for licensing" in his or her organization, is actively involved in the transfer of technology from one organization to another in order to initiate or expand its commercial use.

One of the frustrations regularly discussed by our members is the overwhelmingly high proportion of government-owned patents and technology which are never used for

for a finite time period, with the government retaining the right to practice the invention freely for all Government purposes.

The task force recognized that the contractor would be the entity most likely to commit the necessary private funds to further develop or licence the invention, providing new products for public use. For this reason, they recommended that the contractor be granted the initial period of exclusivity to provide the basis for his commitment of private risk capital.

After this initial exclusive period, the government would be authorized to acquire rights, or to require licensing to third parties, to the extent necessary to maximize competition in commercial markets and to provide the broadest utilization of the invention.

The only change which we would recommend in the Task Force policy would be to modify the proposed fixed exclusivity period of 3 years after issuance of the patent. We feel that the date of the patent, while administratively convenient, bears no relationship to the stage of development or commercialization of an invention. A three-year period of exclusivity measured from the patent date may well expire before the contractor has recovered much or any of his investment, and as such may negate the incentive for private investment which the Task Force was trying to provide.

LES recommends a period of exclusivity of five years measured from the date of first commercial utilization. This exclusivity period is more realistic and more likely to encourage the investment of risk capital in a new technology, while still providing adequate time for broader licensing where required. A copy of the Task Force recommended policy incorporating this change is appended.

Our Society does appreciate the support by ERDA officials for the principle of providing contractors with patent rights to encourage their subsequent or concurrent investment of private capital. We understand that the intent of the "Waiver Provision" in Section 9.109-6 of the proposed patent regulations is to provide the opportunity for such rights to be granted to a contractor by waiving the government's rights.

We believe, however, that the Waiver Provision is less desirable and will be less effective than the required

were a small struggling company desperately looking for contract research income.

My company has also been quite active in licensing out our research developments to other companies. We have concluded 20 or more agreements in fields where we had technology that extended beyond our capabilities.

The one conclusion that strikes us loud and clear from this experience is that despite all of our efforts, we were never once successful in interesting a company in spending its research dollars to develop technology and ideas that we provided unless we gave them exclusive rights.

We had a number of variations that we tried, but unless we could guarantee a significant period of exclusivity, we were unable to convince anyone to spend private money.

In conclusion, we applaud the recognition by the Energy Research and Development Administration that the granting of exclusive rights to the contractor will likely be required to accomplish the objectives of the Agency to bring its developments to the public, and to prevent such developments from being added to the already huge pile of unused government patents and technology.

We believe, however, that the incorporation of a formal waiver provision into the standard policy that otherwise provides for government ownership of inventions is too timid. While the waiver looks good on paper, we have serious doubts that it can or will in practice be limited to the few large companies with the know-how and willingness to fight the battle required to obtain the waiver. We, therefore, urge that ERDA go all the way and adopt the 1971 Task Force recommendations as their primary, rather than alternate, patent policy.

(The attachments follow.)

F. After a specified period of time, not less than five years after date of first commercial utilization, contractors who have retained exclusive commercial rights may, on petition of any interested party, be required by a Government Patent Review Board to grant licenses under U. S. patents with terms that are reasonable under the circumstances.

2. DISCLOSURE, ELECTION AND REPORTS

Each invention made in performance of a government-funded contract will be disclosed to the government with an indication of contractor's election to acquire exclusive commercial rights.

A. Election to Acquire Exclusive Commercial Rights

Election by the Contractor would include agreement to file a patent application covering the invention in the United States Patent Office within a specified period of time. Patent Office procedures will be established to assure proper affixation of the letter "G" or other appropriate designation on all such patent applications and patents issued thereon. Election and filing would guarantee exclusive commercial rights in the contractor for a period starting from filing until at least three years after issuance of a patent, or for a period of at least five years after the date of first commercial utilization of the invention by contractor or its surrogate, whichever is the longer period of time. Under special circumstances disclosed by the contractor, the agency head may extend the period as deemed appropriate.

B. Election Not to Acquire Exclusive Commercial Rights

Election not to acquire the exclusive commercial rights will result in such rights vesting in the government for disposition as it sees fit, as set forth in Paragraph 4.D hereafter;

D. Upon a contractor's election not to retain the exclusive commercial rights, or after an election to retain such rights and subsequent revocation by the agency for failure to meet the conditions of this proposal, the contractor shall be granted a vocable, non-exclusive, royalty-free license under the invention. Such license shall be revoked upon notice to the contractor of the intent of an agency to grant an exclusive license, subject to the right of the contractor to make application to the Government Patent Review Board for a license under terms and conditions that are reasonable under the circumstances.

5. GOVERNMENT PATENT REVIEW BOARD

A. General

(1) The Board will consist of a full-time Chairman and Executive Secretary and a panel of 20 members, any four of which may be chosen by the Chairman to sit on specified cases. The Board will meet upon the call of the Chairman to cinsider and rule upon the issues arising under the operation of this policy. The Chairman and two members will constitute a quorum.

(2) Its decisions shall be subject to judicial review by United States District Court for the District of Columbia.

(3) The Board shall have the power to review requests by agencies to substitute a patent clause which leaves to the agency the first option to exclusive commercial rights in inventions which are the primary object of the contract. The Board shall exercise this right only upon agency requests made prior to contract which are accompanied by a showing that such agency intends to develop substantially at government expense an identified product or process, for use by the general public.

(4) The Board shall have the power to review on petition of any interested party the refusal of a contractor holding exclusive commercial rights to any invention made in performance of a government contract to grant entirely or on acceptable terms a license under such invention.

(5) Such petition may be filed at any time after the contractor has elected to acquire such rights and has filed a patent application on such invention.

(d) The scope of the patent claims;

(e) The contractor's background position;

(f) The government's funding of background technology;

(g) The scope of the market and the success of the contractor in meeting it;

(h) The profit margin in relation to other similar inventions; and

(i) The feasibility and likely benefits of competition in the market served.

C. Foreign Rights

The Board's jurisdiction in requiring the granting of a non-exclusive license shall extend only to licenses under U.S. patents. Nothing herein shall be construed to extend that jurisdiction to foreign patents.

D. Background Rights

The Board's jurisdiction in requiring the grant of a non-exclusive license shall extend to only those inventions made in performance of government-funded contracts. Nothing herein shall be construed to extend that jurisdiction to data or other inventions made at private expense.

E. Agency Cooperation

The departments and agencies of the Executive shall provide to the Board whatever aid and information it deems necessary to accomplish its assigned duties.

F. Board Review of Agency Determinations

The Board, on petition of contractor, shall have the power to review an agency decision in implementing this proposal under which such contractor is aggrieved.

We believe Section 9 states we will give waivers when it is in the public interest and will not give waivers when it is not in the public interest.

And your willingness to go along with it or not may, of necessity, be something to take into consideration.

So far as waiver approach is concerned, what we are attempting to do, and it may not come clear in our regulations, we are attempting to start to talk about this waiver situation at the point of time when we start talking about negotiating our contract, as opposed to going to some board that is isolated from that process.

We hope, and it has worked at times, and it has not worked at others, that as the contract is progressing, the waiver situation would progress and it would not be a big matter of red tape.

CHAIRMAN JOHNSON: No other comments?

Thank you very much, Mr. Jacobs.

MR. JACOBS: Thank you.

CHAIRMAN JOHNSON: We appreciate it very much.

We are running ahead. If it is acceptable to you, I guess it is certainly acceptable to us.

Our next participant is Niels J. Reimers, Manager of the Office of Technology Licensing, Stanford University.

Mr. Reimers, we are glad to have you with us.

MR. REIMERS: Thank you, Mr. Johnson.

Let me first mention that I find licensing as a difficult task, but it's a lot of fun. I haven't heard that mentioned here yet today.

CHAIRMAN JOHNSON: This is the right time of day to mention it.

MR. REIMERS: I am just going to read a little of my letter, then put in some different comments.

The 26,000-plus unused patents held now by the government vividly illustrate that such negativism, while denying the patent incentive to a contractor, also denys the public availability of the patented subject matter. It is clear that the further the invention is removed from the inventor, the less likely it is to be developed, particularly in the absence of the proper incentives.

The 26,000 patents now held by the government form a patent pool available to the "large corporations," as has been said earlier today.

How many examples does the Department of Justice or Corporate Accountability Research Group have where competition has not determined the price, but a government patent with "monopolistic surcharge" has determined the price? It has been argued by opponents of positive patent clauses within the government that "the contractors will take the contract anyway, regardless of what type of patent clause." That is, of course, begging the issue insofar as a patent policy which will encourage deveopment for public use and benefit and is contemptuous of U. S. industry.

You can use the analogy of an invention as a baby. The policy of negativism considers that a baby may grow up to be a crook. Therefore, don't let it be nurtured and grow up.

The positive policy of the IPA says that a baby may grow up and be a credit to mankind. But if it does turn out to be a crook, the IPA "march-in" rights can be utilized.

With regard to the issue of background patent rights, it would be useful to have data regarding actual situations experienced by the government where a contractor has prevented utilization of foreground patents by background patents. This will be helpful in understanding the dimensions of the problem, as ERDA can then compare those results with the negative effect of not getting the best contractors to participate in ERDA research because of the possible danger of losing their patent rights.

Insofar as the desirability of mandatory licensing provisions in ERDA patent legislation, it would appear on its surface a dangerous precedent to the integrity of the U. S. patent system. Consider a small emerging energy company with a novel patented energy conversion method desiring to compete

CHAIRMAN JOHNSON: Do you think, from your knowledge, that there is enough existing law on the subject that would prevent the dog in the manger situation, that the background licensing laws tend to deal with?

In other words, it has been said that no court would enforce a patent which would be, or which would prevent, beneficial use in the public interest.

Can we rely on that, or are we not required to have some such clauses, as we propose in our regulations, for dealing with the possible dog in the manger attitude in developing energy technology?

MR. REIMERS: Let me first mention, I am not a patent attorney nor general attorney. But my response would be yes.

CHAIRMAN JOHNSON: Mr. Hill, Department of Justice.

MR. JEFFERSON HILL: The question essentially is the same as I have asked before of various universities. I would like to combine them. How many licenses does Stanford have? Are they licensed? How many patents do you have; are they licensed exclusively? What kind of money is involved? How is it managed -- Who oversees it?

MR. REIMERS: Our program started in 1970. We had no program before that. It's been a one-man band until earlier this year when we got another person. We had about 400 disclosures over that period which averages about five or six a month, or about 60- to 70-odd a year. Before that, it was about 20 a year.

So we had a decided increase in the number of disclosures because of the licensing program. We did a study this summer to find out where we were to see if we could learn from our past experience, and we found that we took on -- Our program is optional, by the way, for inventors at Stanford.

We took on 23 percent of the disclosures for licensing of the 23 percent; we licensed one-third. Our income increased from zero to $55,000 the first year; and for the university fiscal year that ended August 31, we took in $285,000.

MR. HILL: Thank you.

CHAIRMAN JOHNSON: Mr. Hill, it is a pleasure to have you with us.

MR. HILL: Mr. Johnson, gentlemen. I am before you today on behalf of the Standard Oil Company of Indiana.

As has been mentioned, I am a director of a portion of our patent and licensing department having responsibility for patents and licensing efforts relating to petroleum and corporate matters.

Under date of November 11, Dr. McHenry, who is Vice President for Research with one of our affiliate companies, sent a letter to Mr. Cage stating that, and I will paraphrase, "We are in accord with policies set forth in paragraph 9-9.100 of the proposed patent regulations for the Energy Research and Development Administration." He goes on to point out that "We feel that the cooperation between ERDA and industry will proceed to the fullest extent if it can be fostered by granting industry title to patents which are conceived in the course of contractual work. We also take note of the various waiver provisions."

Like others that have spoken before, we trust these will not constitute a roadblock in any way. I would like to say a few things additionally, trying to set in perspective our company and how we feel we could relate to ERDA and the type of policy you are proposing.

Standard is a holding company. It is a parent of the Amoco family of operating companies. We have extensive facilities for R and D located at Naperville, Illinois, and Tulsa, Oklahoma. At the former site our R and D efforts specialize in studies of petroleum refining, petrochemicals and various hardware projects. At the Oklahoma site the work is devoted primarily to studies of petroleum production.

The Standard Oil Company of Indiana, together with its affiliates, has an obvious interest in the development of new engineering sources. Our companies have given much attention to synthetic fuels. This has included the first major development, now under way, for producing oil from shale, a strong R and D effort in producing oil from tar sand and close surveillance of coal gasification and liquification. Additionally, our companies have been very active in maximizing the production of crude petroleum through the development of secondary and tertiary recovery techniques.

MR. HILL: Extraordinary circumstances, that is correct.

CHAIRMAN JOHNSON: May I ask you a general question about the policies of Standard Oil of Indiana with regard to licensing inventions that it owns?

MR. HILL: Of our own?

CHAIRMAN JOHNSON: Yes.

MR. HILL: We have an ongoing licensing policy which we consider a successful one. We do not conduct research and development primarily for licensing revenue, but where the licensing can be accomplished in harmony with other corporate objectives we certainly will attempt to do so.

CHAIRMAN JOHNSON: Can you give us any general estimate of the number of licenses that you have?

MR. HILL: I don't have an exact number in mind.

CHAIRMAN JOHNSON: A ballpark figure.

MR. HILL: Somewhere probably around 100.

CHAIRMAN JOHNSON: Are these in current technology? Would you describe it as technology that is five years old as far as the company is concerned?

MR. HILL: Some of it goes back, say, 15 years or so. Other parts of it are quite new.

CHAIRMAN JOHNSON: Are there other questions?

Mr. Hill.

MR. JEFFERSON HILL: Yes, just one question, Mr. Hill. These licenses you have granted, could you characterize them as being for American companies or foreign sources, just a ballpark?

MR. PHILIP HILL: They are both. You are asking for a rough estimate between foreign and domestic?

MR. JEFFERSON HILL: Yes.

We also face terrific risks in some of these projects, both in the likelihood of success and also with the very real question of how many techniques may be commercially operable in the near future.

More than likely, they are longer range, and it isn't possible to put all of your research effort into extremely long range items. We feel there is a real need for contributions from both sectors.

DR. WHITE: Thank you.

CHAIRMAN JOHNSON: Mr. Ritzmann.

MR. RITZMANN: I have several questions.

One, three of the university participants today spoke in favor of Institutional Patent Agreements. Would changing ERDA's patent policy to accomodate Institutional Patent Agreements, as the universities discussed them today, in any way affect your favorable reaction to ERDA's patent policy?

MR. HILL: No, it does not.

MR. RITZMANN: So you are speaking primarily from Standard Oil of Indiana's viewpoint?

MR. HILL: This is correct.

MR. RITZMANN: And its ability to participate?

MR. HILL: That is correct.

MR. RITZMANN: Does Standard Oil have an active licensing-patent policy? Does it actively go out to license patents to seek royalty income, or does it take a passive approach? That is, do you wait for people to seek you or do you actually market patents?

MR. HILL: We actively seek business.

MR. RITZMANN: One of the witnesses today said that industry does a great deal of defensive research because of the patent system. Can you comment whether Standard Oil of Indiana engages in defensive research to protect its abilities?

MR. RITZMANN: There could be background rights, couldn't there, if they have prior expertise in a field which you ask them to perform research and development?

MR. HILL: No. Background rights do not enter the picture, no.

CHAIRMAN JOHNSON: Mr. Goodwin.

MR. GOODWIN: I take it you don't regard the administrative burden of seeking a waiver as disproportionate to the goal of trying to balance industry, Government and public interests in this situation?

MR. HILL: Not yet, anyway.

CHAIRMAN JOHNSON: Dr. White.

DR. WHITE: Phil, we are looking at cost sharing in many of these contracts with private industry, 50/50 for large pilot plants. I believe it is covered in the legislation this way, that if we share the risk we share the reward.

Even were there a waiver, or whereby the Government license arrangement might provide for inviting any royalty income for third parties, basically the amount of money that is put in is it.

From the standpoint of your company, has this been seen as an acceptable type of approach, that there is a cost sharing contract?

MR. HILL: Yes, it has.

CHAIRMAN JOHNSON: Mr. Denny.

MR. DENNY: I would like to state I am glad that at least part of industry is interpreting this complicated regulation in the manner in which it was intended to be interpreted.

MR. HILL: Thank you.

CHAIRMAN JOHNSON: Well, there is a lot of language right in the very beginning, the first paragraph, the general approach one would take to this policy.

As far as they are concerned, ERDA's grant of money is a windfall. It is just priming the pump for them.

Anything you care to impose upon them they will accept as a reasonable businessman because as long as the administrative burden is not greater than the amount of dollars they obtain from you, they are ahead of the game.

Indeed, they are way ahead of the game with ERDA patent policy in terms of proposed mandatory licensing because any other small institution not in their position that develops a significant breakthrough based on their work who obtains a patent position will be impotent to preclude them from taking those developments and using them to their own commercial advantage.

If I were general counsel of such a corporation, the last thing that I would want to see is incentive to invent on the part of the small- or medium-sized corporation, because that would result in patents for those corporations which could block me and my corporation from utilizing that new development.

However, there are other institutions, organizations which the objective functions stated here are designed to bring out; namely, those small- and medium-sized corporations who will not invent as a matter of course in this area and technology, who will not sell oil no matter what.

What incentive are we going to provide for them?

Or do we really genuinely believe that invention comes about only in big buildings with a lot of equipment and a lot of money backing it up?

If that is the case, then we don't have to worry about it at all. But the fact that we don't have a cure for cancer today demonstrates that money alone is not enough.

We need the people at the right time, at the right place with the right emotional and intellectual background to provide the breakthrough.

Now, there is not the slightest question that for the small- and medium-sized corporation, the mere

percentage operator, you are not going to bring out the research and development people and capabilities that are necessary.

Well, what will bring them out?

The same thing that has brought out people since the beginning and inception of this country -- an opportunity to make it big, an opportunity to become like Standard Oil of Indiana someday.

But you cannot make it big when you are small without property rights because, without property rights, which is what compulsory licensing eliminates, property rights -- Without property rights anybody can take it.

The larger ones take it and the small one cannot compete with the larger one in marketing, distribution, merchandising and any of the other competitive factors.

It would be pathetic indeed, however, if I were to urge upon you the elimination of mandatory licensing, not the elimination -- the preclusion of mandatory licensing and the preclusion of acquiring background patent rights if indeed some little research institution that came through with the breakthrough that we need, that eliminated the threat of OPEC's embargoing oil, that eliminated the need for Secretary of State Kissinger to spend so much of his State Department time placating OPEC countries.

It would be pathetic if that small institution became the replacement tyrant for the OPEC countries.

But in this country it is categorically impossible for such a breakthrough institution to do it.

To begin with, the patent statute provides for injunctive relief.

It is not mandatory.

There have been cases where courts have refused to grant an injunction against an infringer who was in fact infringing a valid patent, where public interest was paramount, such as Activated Sludge versus the City of Milwaukee.

The alternative to no mandatory licensing, the alternative to no piracy of background rights, is some incentive to invent with an occasional litigation in the rare instance where you have succeeded in pulling these inventors out of the wall and coming up with the breakthrough.

After all, what we are looking for is not this incredible pile of paper. We are looking for inventions.

Not one person in this room is going to make a single contribution to the solution of the energy problem. It is the inventors and the high technology corporations.

We are largely dead wood, as are the legislators.

The only thing that they can contribute are the dollars that may provide some start-up help. But dollars without incentive to make it big is indeed not the way to bring out the most productive and the most effective in our inventing society.

Keep in mind that there is a provision with respect to mandatory licensing that says, well, you don't have to have mandatory licensing. If it can be demonstrated that "commercial alternatives are available," then the whole issue of mandatory licensing is nonsense. Moreover there would be no mandatory licensing if "the contractor by itself or with its licensees, is supplying the market in sufficient quantities and at a reasonable price.

Who in the hell is supposed to determine what a reasonable price is?

I will tell you what I consider a reasonable price for this institution to denominate as its policy. Any price less than a barrel of OPEC oil. Anything less than that is not a reasonable price.

But here we have the term "a reasonable price." What is that going to mean in future interpretation?

If you really mean what you have said, why don't you say any price less than a barrel of OPEC oil, by any amount, is a reasonable price?

Then I will have no objection to that part.

DR. KAYTON: I am so happy that you asked that question. I am really so grateful that you did, because you realize that a big part of what we are doing here today is a charade imposed upon us by the legislature.

There is not one thing that you have heard today or you will hear tomorrow that anybody in his right mind who has been in this field for five or ten years does not know. We know what the corporate objectives of the different corporations are. We know all of those things. One of the things that is laid out under the statute for you to do is to collect empirical data. What empirical data? What kind of fraud does that mean?

The only empirical data that exists are the kinds of testimony that you hear today. We can't go inside the minds of every human being and say: As of this date, what will produce invention? But we are not total ignoramuses. We know the way the world functions. We know what motivates people.

It is true, Jack Rabinow was here this morning I understand, and testified. And Jack Rabinow will invent if he is put in a tiger's cage. One person said he will invent even if he is standing on his head in a telephone booth.

But the fact of the matter is, most invention is done by human beings, not the machines, not the corporations, but by human beings. And we know what motivates human beings.

To talk about data is absolutely a fraud here, to ask for empirical data. What we do know is what Professor Jewkes demonstrated in his magnificant work. That is that more than 50 percent of the significant inventions in this century up until the mid-50s came from individuals and very, very small corporate entities. That we do know.

Then the question should be addressed: How do you get individuals to invent and small corporations? Of course, if you want to discount them completely, and function with the other 50 percent, fine. But we do know, I know from hundreds of phonecalls a year, hundreds of letters a year from these individual inventors what motivates them. They want to make it big, and that is their motivation.

I can give you that as empirical data.

Appendix C.2
Transcript of Public Hearings
Wednesday, 19 November 1975

UNITED STATES OF AMERICA

ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION

PUBLIC HEARING ON

ERDA PATENT POLICY

Germantown Auditorium
Germantown, Maryland

Wednesday, 19 November 1975

Hearing in the above-entitled matter was reconvened, pursuant to adjournment, at 9:20 a.m., R. Tenney Johnson, ERDA General Counsel, presiding.

Present:

(As heretofore noted.)

C O N T E N T S (continued)

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Philip Sperber, Patent Attorney	454
Edward McKie, American Patent Law Association	489

prepared statements for your consideration, and together with Mr. Green, we will then be glad to try to answer any questions that we can.

As a developer and manufacturer of electrical generation and transmission equipment, General Electric Company has a considerable interest in the patent and data policies of the Energy Research and Development Administration. The views of the company were presented to Congress through its staff members at the time the Federal Nonnuclear Energy Research and Development Act of 1974 was enacted. We welcome this opportunity to comment on ERDA policies as they have developed over this past year.

A number of our components are already serving as contractors to ERDA both in the nuclear and the non-nuclear areas and, hopefully, we will be able to make significant contributions in the coming years to the solutions of our nation's energy problems. However, if we and other members of American industry are to be enabled to do this, it is important that ERDA patent and data policies stimulate rather than retard the introduction of new technology into commercial products. It is on this basic point that our comments today are taken, Mr. Finger's presentation being directed to data affairs, while mine will be directed to patent matters.

Mr. Finger will lead.

MR. RAWICZ: All right.

MR. FINGER: Thank you, Mr. Chairman.

My name is Harold B. Finger. I am the General Manager of General Electric's Center for Energy Systems located in Washington, D. C. Prior to my joining General Electric three years ago, I spent almost 29 years in government assignments including NASA, AEC, and HUD. As a result of my days in government service, I believe that I am aware of the problems and headaches of running a program from the government's side of things, but also recognize the importance of clear data and, I might add, patent policy.

In my present capacity with General Electric, I am involved in attempting to bring together the diverse resources of the General Electric Company, to focus on meeting our national energy needs. In this role, I have frequently felt like a marriage broker in attempting to

My organization has been involved in a number of situations within the past year in which we have asked GE business departments and divisions who have never done R and D for the government if they would consider participating in R and D programs under a contract from ERDA. I can assure you that technical data considerations have loomed very large in these situations.

In considering whether or not to participate, the two major questions that are asked concerning technical data are:

(1) Would we be free to use the results of our efforts in our own business? And;

(2) Is there any risk that any of our proprietary background data could become available to a competitor as a result of our participation?

In my view, the answers to these two questions are crucial to meaningful and enthusiastic participation by industry in ERDA's programs. Unfortunately, we do not see ERDA's proposed practices and policies treating these issues in a manner which will encourage widespread industry support.

Let me take the first of these two issues.

We believe the contractor should have the right to use the data it develops under ERDA contracts.

We believe this point is necessary to fulfill ERDA's primary objectives, which include:

(1) making the benefits of its energy research, development, and demonstration programs widely available to the public in the shortest practical time; and

(2) promoting the commercial utilization of the technology developed under ERDA programs.

It seems clear to us that these objectives clearly point towards rapid and widespread dissemination of the technical data developed under ERDA programs and that anyone who can apply the data to achieve useful results ought to be encouraged to do so as rapidly as possible. Yet, in our experience, ERDA RFPs and proposed contract terms have generally included provisions that would limit the contractor's right either to disclose or use the technical data produced under the contract.

set out in the proposed policy. Pursuant to these provisions, the contractor may be required to furnish its proprietary data to the government and to third parties. We are particularly concerned about two aspects of these optional clauses:

(1) the lack of clear instruction and guidance concerning when and where they are to be used; and even more importantly,

(2) the possible dissemination of the proprietary data so acquired by the Government.

To explain our concerns about the optional clauses as they pertain to the treatment of contractor's proprietary data, I should relate to you some of the experience we have had concerning a number of potential contracts that generally are called R and D contracts, but which more accurately should be called "what could be developed" contracts. They are "study" contracts. Obviously, in seeking out promising avenues for future development effort, it makes good sense for ERDA to contract with experienced manufacturers to see whether or not systems utilizing equipment similar to, but more advanced than, current equipment could be developed for a new application. Typically, a study contract of this nature would include laying out conceptual designs for the system involved. No product design or manufacturing technology is actually developed under the contract and no hardware is produced.

The ERDA position with which we have been confronted in the case of these study contracts is that the contractor must commit to furnish, at the request of the government, any of its proprietary data that may be necessary for the production of any item included in the conceptual design. This approach to the treatment of contractor proprietary data has had a decidedly chilling effect on the willingness of some of our manufacturing components to lend support to such contracts. I think you understand why.

Frankly, we had hoped that ERDA's proposed data policies, when published, would deliver us from this dilemma, but when we review the text of the proposed regulations, we are unable to discover what ERDA's position would be in respect to the situation I have just described. The optional clauses such as 4(g) and (h) cannot logically or fairly be applied to study contracts, and the regulations should make this clear.

that ERDA can develop a uniform approach to contractors' inventions in both nuclear and nonnuclear programs, and, in fact, it has already taken a major step in that direction in its proposed regulations. Thus, no statutory changes appear to be essential at this time to allow effective ERDA contracting.

A specific point for consideration is, of course, whether mandatory licensing of energy-related patents is needed to carry out the purposes of the Nonnuclear Act. As a general proposition, we believe mandatory licensing is not in the best interests of the nation. It is not helpful to the progress of science since it encourages companies to be followers rather than doing independent research.

The obvious question is: Why risk money on research and development if you are assured that you can pick up your competitor's innovative work for a modest royalty?

In our judgment, the country needs a strong technical effort stimulated by competitive research, and mandatory licensing works in exactly the opposite direction. It would detract from, rather than add to, our country's technological leadership. History tells us that mandatory licensing is not necessary; the outstanding technical advances of this country have been made without it, and equitable relief in the courts as well as other rights of the sovereign exist in the event that we actually ever do encounter the bogeyman of a blocking patent used against the public interest in the energy field.

There may be a fear on the part of some that without mandatory licensing, presently existing patents of ERDA contractors can interfere with ongoing ERDA developments and the commercial use of such developments. This apprehension is fully met by proper use of the background patent provision -- paragraph k -- of the proposed patents clause, the long-form clause, 9-9.107.5(a). Any company accepting ERDA contracts agrees to make its background patents available to others in appropriate circumstances in the area covered by the contract, so that background patents cannot be used to stake out an unjustified, exclusive position on ERDA-financed developments. To go beyond this and require mandatory licensing of privately funded developments is to cast a pall on the desirability of such work, that is, privately funded work.

are not prepared to ask for an amendment of the Nonnuclear Act or the Atomic Energy Act.

In respect to the current regulations and contract clauses pertaining to foreground rights, we feel two specific changes should be made, both pertaining to the minimum rights retained by the contractors. The first of these deals with the non-exclusive license retained by the contractor. The license under the present regulations will almost always be a revocable rather than an irrevocable license. This, it seems to us, can act as a disincentive to the contractor's making long-range plans to use the contract inventions. I really believe this is so.

Businessmen necessarily prefer an atmosphere of certainty as to patent matters when deciding whether to risk funds on new product design and development. We grant that the present contract clauses will in many instances provide sufficient assurance. Nonetheless, to avoid any problems in that regard, we believe that it would be better standard procedure for the retained license to be irrevocable, barring some egregious, after-the-fact conduct by the contractor.

The second change we suggest is in the contract provision dealing with foreign patent rights. As this clause now stands, there is still uncertainty as to whether the contractor may file foreign patent applications on its inventions when the government has not elected to secure such rights. Instead of the contractor having an assured right to proceed when the government doesn't, it must now seek administrative approval in each instance.

This is time consuming, adds additional expense for both the contractor and the government, and runs the risk of important foreign patent coverage being lost. In no circumstances of which we are aware could there be a detriment to the public if the contractor held an immediate right to file abroad when the government doesn't.

Without foreign patents corresponding to U. S. patents on contract inventions, the contract developments can be freely copied by foreign manufacturers for use in their home countries without any monetary payment or trade of rights under their developments. This is our understanding.

Since the files of ERDA, just like those of any other entity of the U. S. government, must be made generally available, and since access will be thereby afforded to much, if not all, of the technical information generated under its

MR. FINGER: Mr. Denny, I think we agree with you that clearly the patent area has progressed more rapidly than the data area, and the data area will probably catch up.

Our comments are offered in that constructive vein. The situation we have run into in the data area we cited really covered both situations.

We have yielded in accepting some terms that we felt were totally inadequate. For example, in the issue related to the right to use the data during development, we have a broad range of variations in contracts that we have negotiated. They go all the way from a limitation that the contractor can not use the data in any activities other than the performance of the specific contract to limitations which are delays in time, that he cannot use the data without it first having been published or issued by the Government, or he cannot use it until it has been reported to the Government.

I would say we have not walked away from a contract because of that problem, but the situation is not a satisfactory one. I think what we are pointing out is also a very wide variety of interpretations put on these terms. Unless there is an explicit statement that as a matter of principle the contractor has the right to use the data developed under the contract, then there are going to be interpretations in the field that are inconsistent, and there will be contract negotiation problems.

In certain cases, you will clearly not be able to get participation of the commercial entities of the various companies to respond because of a concern that they are not getting sufficient benefit from the contract and jeopardizing, potentially jeopardizing, background data in addition.

We are trying to overcome both of those issues.

MR. MANBECK: May I add that this does introduce very, very significant delays in contracting, particularly where you are drawing in elements from a multi-line company.

You know, the commercial businesses are used to living in different worlds and have difficulty understanding the clauses sometimes. Not that there is anything wrong with the way the clauses are drafted; they are clear enough.

MR. EDEN: Mr. Manbeck, I am somewhat surprised by your proposal that G. E. be afforded an irrevocable non-exclusive license on the inventions which occur in the course of an ERDA contract.

Are you aware of the reason why the legislation was designed to prevent the grant of an irrevocable license?

MR. MANBECK: I believe so. That is, I believe I am aware.

The problem is, if you look at the contract, and I don't wish to place this point in a magnitude which is out of relation to its true importance, the data question that we are talking about and the treatment of background patents, I think are probably more important. When I look at the ERDA clauses it seems to me they say that if you are using the technology, the license can't be revoked, or if it is getting close to use, as I read it, it can't be revoked.

What troubles me, somewhat, is what about the one where it takes ten years to get to the commercial application, and this happens. This happens; it's coming along slowly or else there is other technology that has to be brought to bear before you can move forward with the invention. I think it is just undesirable for the contractor not to be able to know he can go ahead with what he invented albeit under the Government contract.

I don't know whether that answers your question, but I hope it explains our feeling.

MR. KIMBALL: Mr. Manbeck, the task force heard comments yesterday with respect to the proposed ERDA waiver policy statement which indicated much stronger objections than your apparent "wait and see" attitude with respect to its length.

I would like to inquire, you say you have a suspicion that this policy will lead to a situation where few waivers will be requested and few will be granted. Do you have a basis for this? Is this based on discussions with your compatriots in industry, or what is the reason for it?

MR. MANBECK: No, not with our compatriots in industry. It is an internal feeling.

There is still a second administrative step there. What we are urging is a practice where, once the Government says, "No, we are not going to," that then we or any other contractor may immediately step in without further administrative permission.

MR. RITZMANN: Thank you.

MR. RAWICZ: We appreciate the time and effort you took to come down here and present the statement. Thank you.

MR. MANBECK: Thank you.

MR. RAWICZ: Since it is 10 o'clock, I would prefer that we continue on. If anybody wants the coffee, it will probably be up in the lobby area. Feel free to go up there, so long as our next speaker won't mind too much the noise and shuffling of paper.

Next, we have Mr. Tormey and Mr. Lee Humphrie from Rockwell International Corporation.

MR. TORMEY: I am John F. Tormey, Director of Research and Engineering of the North American Space Operations of Rockwell International Corporation. The viewpoint regarding the ERDA patent statutory enactments that I wish to present for consideration by this Interagency Task Force is our company position, as well as my own.

Together with all informed Americans, we are acutely aware of the critical nature of ERDA's mission and strongly support its activity directed towards the development and ultimate commercial utilization of all efficient sources of energy. It is indeed a time of crisis requiring compromise, sacrifice, and hard work.

My company is keenly interested both in participating in the ERDA mission and in entering into its commercial phases. Rockwell is currently active in both the nuclear and nonnuclear energy fields. I believe we have the technical skills and background to make a significant contribution.

We, therefore, along with you gentlemen, consider it critical that ERDA's patent policy be such as to foster optimum industrial participation and thus insure the most rapid and efficient accomplishment of the mission.

1. Retaining title at the source provides added incentive;

2. Retaining title at the source is consistent with present U. S. patent concept;

3. Retaining title at the source promotes overall efficiency;

4. Retaining title at the source is in the public interest; and

5. Retaining title at the source encourages the best contractors to work for ERDA.

Let me put it even more succinctly. We base our case on: Incentivization, constitutionality, efficiency, public interest, and industry participation.

We need spend a little time here establishing the desirability of a commercial incentive to accomplish the aims of ERDA. The question is not whether, but how.

All are agreed that, with positive, significant incentive, the technology to provide adequate energy will be developed by the participants more rapidly and effectively.

Our U. S. patent system is based on the incentive principle of source ownership, expressed in Article I., Section 8, of the Constitution. It is also an empirical fact that ownership of a patent at the source has proven of greater benefit to the public than government ownership.

Granting to the source of technology or the inventor, a period of exclusivity in return for making the invention and disclosing it, is provided for under the Constitution and patent laws specifically for the purpose of benefiting the "public interest."

A patent system in which patent ownership goes to the government does not generally serve these purposes, nor conform to these basic tenants. Patents whose title reside with the government become a government franchise, government license, or government property to be distributed on the basis of utilization and subject to all the natural vicissitudes of that process.

When the rights are transferred to the government, there are long and expensive negotiations as to what rights the contractor may retain. Time is lost both on the side of the government and on the side of the contractor in attempting to define what rights the contractor is entitled to under the laws and regulations, and whether or not his particular facts and circumstances entitle him to more or less of these rights.

Effort must also be expended in the way of petitioning for additional rights. Determinations must be made by the government personnel. These lengthy negotiations, difficult administration, and associated effort can be avoided by simply leaving the title in the contractor where utilization will be effected by normal business forces.

It has been observed, by virtue of the Public Citizens litigation, that there is a substantial question as to whether or not patent rights have been constitutionally granted by the government.

It is also pointed out that, under the current regulations, even when rights are granted back to the contractor by the government, there are limitations as to time, "march-in" rights, and limited sublicense rights.

Thus, patent rights do not come back from the government in as clean a form as when they were released.

In practically all cases, a potential licensee interested in a new technology developed by another contractor ought to be able to obtain more, better, and fresher information including know-how, from the contractor than the government.

The patent license and patent data from the government will in most cases be quite sterile and dated, because the government cannot in every case be assured that it has the latest, most up-to-date development on the particular technology.

The contractor, in a real-time situation, so to speak, is ordinarily in a better position to make such assessment and to make known the full scope of the technology and the limitations on the use of it. It seems to be a pretty good maxim, "If you want to find out about a subject, go to the source." This is another reason for leaving patent rights at the source.

The "public interest" is also served by there being provided incentives at the source. Such incentives are provided by our patent laws. The "public interest" is not served by complex administration or rules and regulations which result in title to blocks of inventions and patents residing more or less dormant in the government.

It is in the "public interest," also, that the private industries of the country be encouraged to take contracts with the government in the fields of their expertise. This encouragement is in the "government's best interest" and the "public's best interest." This is the way in which the best answers can be obtained to problems, that is, by having the experts undertake the work.

However, such encouragement does not exist if the government, under the banner of "public interest," takes title and leaves, for example, only a revocable, nonexclusive license with the contractor.

It appears to be strongly in the "public interest" to be able to say the following to the public:

> "Mr. Public, the government has sponsored development of ERDA technology and it has been brought into being for you under a government contract. The patent inventions coming from that government-sponsored contract have either been brought into practical application by the contractor, or you can go to the contractor and get a license. If public health, safety, or welfare was an express, principal purpose of the contract, you, Mr. Public, may obtain a royalty-free license; or, if the contractor made a contribution at private expense toward the making of the invention, you can obtain a license at a reasonable royalty."

It is not in the "public interest" that the government own title to 50,000 or 60,000 inventions, of which it will only license approximately 1,000.

This situation occurred during the period of 1963 to 1972. It is noted from the Annual Report on Government Patent Policy that, while contractors reported 66,619 inventions, only 7,503 patents were obtained by the government from those inventions in the same ten-year period. Government filing on contractor inventions averaged about 10 percent.

In closing, it is our recommendation that ERDA seriously reconsider the matter of ownership of patent rights under government contracting. We believe there is a much simpler, more effective, more efficient way than is presently in use.

Contractors should be allowed to retain title with provisions which meet the government interest and the "public interest" as spelled out in the AIA proposed Act.

Such philosophy can serve to maintain a strong industrial base having a vital interest in fulfilling the requirements and goals of government procurement, particularly those of ERDA.

(AIA Proposed Act follows.)

INTRODUCTION

Current Federal policies governing the allocation of rights to inventions made in the performance of research and development work in a Government contract ("Subject Inventions") or patents that issue thereon ("Subject Patents") negate rather than effectively utilize incentives inherent in the United States Patent System; often restrain competent firms from competing for Government contracts; unnecessarily complicate the procurement process; and discourage the expenditure of private funds in research and development efforts in areas of concern to the Government. That present Federal patent policies have these adverse impacts is not only the conclusion of a concerned industry, but the findings of the Government funded Harbridge House study as well as the Commission on Government Procurement.

Accordingly, the Aerospace Industries Association of America, Inc., (AIA) believes it to be in the public interest that the Congress promulgate a Federal policy on the allocation of rights to Subject Inventions and Subject Patents; that such policy be uniformly administered but sufficiently flexible to accommodate the different missions and objectives of the various Federal agencies and to recognize the equities of the parties involved, namely the Public, Government and Contractor, and that such policy effectively utilize the incentives of the Patent System provided for in the Constitution.

To these purposes the AIA has developed and proposes the annexed draft statute.

BACKGROUND

The concept of a patent system and the incentives inherent in such a system to induce invention, is not new. The earliest presently known record of a patent system in the "Old World" is about 600 B.C. or 2500 years ago. In the "New World", the General Court of Massachusetts issued its first patent in 1641. The farsighted men who drafted our Constitution provided for a U.S. patent system. (ART. I).

An important point to bear in mind is that the stated

> patent system stimulates the investment of additional capital needed for the further development and marketing of the invention. In return, the patent owner is given the right, for a limited period, to exclude others from making, using or selling the invented patent or process.
>
> "Third, by affording protection, a patent system encourages early public disclosure of technological information, some of which might otherwise be kept secret. Early disclosure reduces the likelihood of duplication of effort by others and provides a basis for further advances in the technology involved.
>
> "Fourth, a patent system promotes the beneficial exchange of products, services, and technological information across national boundaries by providing protection for industrial property of foreign nations."

These incentives for inventing and for private investment and the encouragement of private competition in research and development provided by our Patent System result in advancing technology and bringing the fruits of such efforts to the public. A patent is a commercial, competitive tool which serves the public and achieves the goal envisioned in the Constitution of advancing technology for the public good. Therefore, industry and private persons should own patents - the Government should not !

A patent in the hands of the Government, as distinguished from one in the hands of an individual or company competing in the market place, removes the incentive and encouragement of competition to invent offered by our Patent System. The Government does not and should not compete for a share of the market, and therefore cannot use the patent as a competitive tool. It would be an anomaly indeed if the Government were to sue to enjoin the use of a patent which the Government holds for the benefit of the public, thereby precluding an alleged infringer from bringing the patented invention to the public.

IMPACT OF FEDERAL POLICIES ON PROCUREMENT PROCESS

Some factual data is available as to the impact of Federal invention policies on the procurement process. In a study conducted by Harbridge House, Inc., for the Committee on Government Patent Policy of the Federal Council for Science and Technology, the final report dated May 1962 sets forth the following two findings:

1) With respect to effect of Government patent policy on industry participation in Government research and development programs:

> "The major adverse effects of (Government) patent policy on participation are program delay, loss of participants, diversion of private funds from Government lines of research, and refusal to use Government inventions and research when questions regarding a company's proprietary position are raised. These adverse effects occur selectively, but they have occurred at important points in Government programs observed in the study." (p. 1-42)

2) With respect to the effects of Government patent policy on a major Government program (National Institutes of Health):

> "In summary, many extremely important contracts among academic, industrial, and Government researchers in areas outside of cancer and malaria have been either eliminated or seriously decreased because of the current patent policy and the consequent threat of 'contamination' of industrial research." (p. 1-47)

Thus, this study conducted for the Government indicates that, as to research and development, Government patent policy, particularly a "title policy," has had a significantly adverse impact at important points in Government programs.

Most Government contract activities require a very

that such a policy should utilize the incentives of our Patent System to the fullest extent possible. To these ends the AIA in the attached draft "Government Procurement Inventions Act of 197-" proposes a Federal patent policy which, in essence, is a "license policy." Thus, the contractor would retain rights in Subject Inventions and Subject Patents, and the Government would receive a royalty-free nonexclusive license therein together with a right to grant sublicenses under certain conditions. Also the Government and Public would obtain "march in rights" under which licenses would be granted in certain specified circumstances, such licenses being royalty-free or royalty-bearing depending upon the equities of the situation. This policy in its essentials is similar to the alternative recommendation of the Commission on Government Procurement.

In the proposed statute:

Section 2 references an Appendix "A" which contains definitions, the more important ones comprising:

"Contract" - It is important that the allocation of invention rights be applicable only to a "Contract" having as a specified purpose the conduct of development or research work. This eliminates the unnecessary administrative burdens of applying the policy to the many thousands of contracts issued for standard commercial items and the like.

"Subject Invention" - The term "Subject Invention" means any invention, discovery, innovation, or improvement which, without regard to the patentability thereof, falls within the classes of patentable subject matter defined in Title 35, United States Code, Section 101, and is made by the Contractor in the performance of experimental, developmental or research work called for by the Contract.

"Made" - This term is defined as the conception or reduction to an operable physical embodiment for the first time or the first practice of a process, in order to overcome certain inequities now being experienced under current Federal policies and practices. The contractor retains undiluted rights in his inventions which were "made" prior to entering the Government contract. Accordingly, the term "made" determines whether the Government acquires any rights to an invention. Thus, if a contractor has built an operable physical embodiment or practiced a process prior to contract then he should retain full rights therein and the Government should not acquire any rights therein.

Section 5(c)

This section requires a Contractor to notify the Government if it elects not to file a patent application on a "Subject Invention", or has filed but elects not to continue prosecution of a patent application. Notice must be given to the Government within a reasonable time, and as to any such non-elected invention, a Contractor is obligated to assign title therein to the Government, reserving to the Contractor a license of the same scope as that granted to the Government where the contractor retains title. This Section permits the Government to file "defensive patent applications" where it is deemed appropriate to do so.

Section 5(d)

Under this section, Government-owned inventions acquired under 5(c) may be licensed on a nonexclusive basis to any responsible member of the public, either on a royalty bearing or royalty free basis, as the Government may determine reasonable under the circumstances.

Section 6(a)

Contains assurances that the public will benefit from, and have available for use, inventions made under a Government contract where special circumstances surround the invention or its particular field of technology.

Specifically, this Section provides that, in certain circumstances, any person may obtain a license to a patent issuing for a "Subject Invention". The circumstances are:

(1) when a Government regulation requires the use of the invention by such person, or at least
(2) such commercial use was an express, principal purpose of the contract; or
(3) where exploration into technical fields which primarily concern public health, safety, or welfare was an express, principal purpose of the contract; or
(4) the invention is within a field where the Government has been the principal developer.

In the situations enumerated, the public shall have a right to a royalty-free license unless the Contractor has made a contribution at private expense toward the making of the invention, and in that event, the Contractor would be entitled to a reasonable return, or royalty, based on

fields of expertise without compromising entirely his technical advantage.

Section 8

Several decisions by the Courts have jeopardized privately developed, or acquired, patent rights. For example, in the Mine Safety Appliance Case the Court found at least an implied license in the Government in a patent resulting from research developed at a Contractor's expense, but which research was held suspect because it had some similarity to a line of research being conducted by the Contractor with public funds. In the AMP Case, the Court raised an estoppel against a Contractor who acquired a patent from a third party after duly completing a Government contract, which patent covered an item developed under the contract. The purpose of Section 8 is to clarify the extent of rights acquired by the Government from its contractors and to avoid controversies of the type exemplified by these cases. It will secure to the Contractor patent rights in his privately developed property, and privately acquired property.

Section 9

Because "reasonable men may differ", Section 9 provides for resort to the Federal Courts by either the Contractor or members of the public, to establish reasonable terms and conditions in a patent license to be granted under the Act, where the parties are unable to arrive at a mutually satisfactory license agreement..

Section 10

The absence of a single Federal policy uniformly administered on the allocation of rights to inventions made in the performance of Government contracts has given rise to many problems and inequities. Thus, where existing policies are reasonably administered inequities are not encountered; however, in other instances, well-meaning, but over-zealous Government procurement personnel frequently have used the economic leverage of Government contracts to seek to obtain rights to inventions or patents where in good conscience the Government would not be entitled to such rights. This has discouraged many competent companies from competing for Government contracts, or has led to protracted and expensive contract negotiations. Uniform application of the policy set forth in Section 10 by all Government agencies, should solve the problems and correct possible inequities.

CONTRACTOR RIGHTS

Sec. 4. The Contractor under a Government contract shall retain title to Subject Inventions (including the right to license or assign all or part of its interest therein), subject to the rights granted to the Government and the public herein.

Any patent on a Subject Invention shall become unenforceable (or at the option of the Government assigned to the Government) in the event the Contractor in fact willfully and with deceptive intent fails to disclose the Subject Invention to the Government prior to the granting of such patent.

GOVERNMENT RIGHTS

Sec. 5(a). Each Government agency shall acquire on behalf of the United States, at the time of entering into a contract, a nonexclusive, nontransferable, irrevocable, royalty-free license to practice or have practiced for the Government any Subject Invention throughout the world by or on behalf of the Government of the United States (including any Government Agency) and may acquire the additional right to sublicense any state or other domestic local government, or to sublicense any foreign government pursuant to any existing or future treaty or agreement, if the agency head determines it would be in the national interest to acquire

and subject to the provisions of, Subsection (c) above, the Government shall have the right to grant a nonexclusive license to responsible persons upon terms that are reasonable under the circumstances.

PUBLIC RIGHTS

Sec. 6(a). Any person who is financially responsible and capable of entering into binding obligations and of suing or being sued in a court of law in the United States shall have the right, subject to the prior consent of the Government, to obtain a license under a United States patent issuing for a Subject Invention to practice the same or have the same practiced for such person if:

(1) the use of the Subject Invention is required by governmental regulation, or

(2) commercial use is an express, principal purpose of the Contract under which the Subject Invention was made, or

(3) an express, principal purpose of the Contract under which the Subject Invention was made is for exploration into fields which primarily concern the public health, public safety, or public welfare, or

(4) the Subject Invention is within a field of science or technology where the Government

(3) includes a field not primarily concerned with the public health, public safety or public welfare which is an express principal purpose of the Contract.

OTHER RIGHTS

Sec. 7. Should a licensee under a Subject Invention license granted in accordance with Sec. 5 and 6 hereof be unable to make, use, or sell such Subject Invention for use in the product or products, or in practicing the process or processes developed for the Government under the Contract by the Contractor, without infringing another patent or patents of the Contractor, the Contractor may be required to grant, to the extent it has the right to do so, a nonexclusive license under such other patent or patents to said licensee, on reasonable terms and conditions including a reasonable royalty, to make, use, and sell such product or products or practice such process or processes.

OTHER INVENTIONS

Sec. 8. Nothing contained in Sections 5 and 6 of this Act, including the grant of a license to practice or have practiced a Subject Invention made under a Contract, shall be deemed to grant, either expressly or by implication, any license or right to

APPENDIX "A"

As used in this Act -

(a) The term "Government Agency" means an "Executive Agency" as defined by section 105 of Title 5, United States Code, and the military departments as defined by section 102 of Title 5, United States Code.

(b) The term "Agency Head" means the head of any Government Agency, except that (1) the Secretary of Defense shall be considered to be head of the Department of Defense and of each of the military departments, and (2) in the case of any independent establishment, control over which is exercised by more than one individual, such term means the body exercising such control.

(c) The term "Contract" means any contract, grant, agreement, commitment, understanding, or other arrangement entered into between any Government agency and any person where and to the extent that the specified purpose of the Contract is the conduct of experimental, developmental, or research work. Such term includes any assignment, substitution of parties, or subcontract of any tier entered into or executed for the conduct of experimental, developmental, or research work in connection with the performance of that Contract.

the case of a machine or system, and, in each case, under such conditions as to establish that the benefits of the invention are available to the public either on reasonable terms or through reasonable licensing arrangements.

(i) The term "Person" includes an individual or entity, including a corporation, company, association, firm, partnership, joint stock company, foundation, institution, and any domestic, state or municipal government or government agency. The term does not include the United States Government or any agency thereof.

MR. TORMEY: Yes, sir.

MR. DENNY: Would you apply that equally if the invention came from a university contractor?

MR. TORMEY: Yes, I think I would.

My reasoning would apply equally there, although it arises more from the background of a large technology multi-line corporation than a university. I would certainly support that, though.

MR. DENNY: How about the government employee?

MR. TORMEY: That is a little too tricky.

Maybe Lee can answer that one. I have not dwelt personally, myself, on the roles and missions of a government employee, so I wouldn't be able to handle that question.

Lee?

MR. HUMPHRIE: I believe that is a very complicated problem, also, Jim. I feel at least from our standpoint, it is somewhat outside our concern at this time.

MR. DENNY: Yes, I agree it is probably an unfair question.

You were mentioning earlier concern about giving up background patent rights.

MR. TORMEY: Yes.

MR. DENNY: There was some discussion yesterday about the concern might be whether we have a title or a license policy. If a contractor refuses to license his background position to the system we are trying to develop, the result may be that only that single contractor would be in a position to market whatever comes out.

I am sure you can see this concern on both sides of the issue.

MR. TORMEY: Indeed, I can.

MR. DENNY: I was wondering two things:

and if you have had that opportunity, would you comment on the approach taken there?

MR. HUMPHRIE: As I recall it, it requires, or the government would get a license in the background to do research and development work. But I believe it goes farther and requires a license to third parties without any such restriction.

I believe that that is inequitable and goes too far.

MR. WITT: You state you favor modification of the existing ERDA nuclear/nonnuclear statutory enactments.

If they were not modified, would you consider doing less business with ERDA?

MR. TORMEY: I think that we would continue but would find the evaluation of business opportunities with ERDA to cause more debate, more anguish, more discussion, more compromising within the corporation.

I would not come out and flatly say we would not do more or less business with ERDA as a result of the existing statutory laws, but I can assure you that it would be more difficult.

And that is sort of the sum and substance of it. Why make it more difficult? Why should we push the whole nation through these problems, when by changing it, it could go much more rapidly, more smoothly and more enthusiastically.

MR. BLASEY: Mr. Tormey, when you said that the title to the inventions should rest with the source of the invention, you followed that with the statement, "with the appropriate protection provided to the government."

Then, later when you discussed this, the only point there that I heard was that the government should have irrevocable right to inventions for its own use.

Were there other protections you had in mind that you didn't mention?

MR. TORMEY: I believe there should be some protection in the Act against a disinterested contractor, a potentially fraudulent contractor, a contractor who makes

It is like a horse race. If you have got to put your money, where should you be putting it?

And I think most everybody will agree that the contractor is in the best position to see that any use is made of it. He has the background, he is the source, he is the one that is incentivized, he is the one that would stand to gain.

I think we find that in government licensing, for example, not too much interest needs to be paid to royalty or return. As a matter of fact, I think the whole focus then gets away from anything that looks like a bookkeeping operation, but is turned rather toward utilization.

It seems for some reason or another then the whole patent system turns around to one of utilization, more or less akin to, you might say, in the Soviet Union where the inventors complain that the government agencies are not making use of their inventions. The government agencies in most cases being the agencies that are producing or supposed to be producing.

There is no question in my mind but what the contractor is in a far better position to license or to make use of those inventions that do have commercial usage. It is true that there are a small number of overall inventions that are useful in the business enterprise aspect. But, it seems clear to us, and I believe most everybody will agree that the best likelihood of use being made is in the contractor.

Now, there is also the deterrent factor of taking a license from the government with whatever constraints have to be inserted as to march-in, as to government retaining title and reports to the government, getting the waiver of the license in the first place.

These are additional restraints that must be considered in determining why the government has some difficulty in licensing.

MR. RAWICZ: I guess I would add that at least in my experience with DOD, a lot of times the decision of the contractor was made by the patent attorney, based on the novelty of the invention and not based on the corporate decision that they were interested in pursuing that as a commercial activity.

My name is Serge Gratch. I am Director of the Chemical Sciences Laboratory of Ford Motor Company. With me are Mr. John Spielman and Mr. Roger May of our legal staff. Ford Motor Company welcomes the opportunity to address this Task Force.

In accordance with the request expressed in the notice of these hearings, our comments will be directed to the Federal Nonnuclear Energy Research and Development Act of 1974 (which I will hereafter refer to as the 1974 Act), as well as to mandatory licensing of background patents and mandatory licensing in general.

In some instances we will find it desirable to refer to the proposed ERDA patent regulations, even though we recognize that it is not the purpose of these hearings to consider the details of those regulations.

Paragraph (b) (1) of Section 3 of the 1974 Act specifies that the purpose of the Act is:

> "...to establish and vigorously conduct a comprehensive national program of basic and applied research and development including, but not limited to, demonstrations of practical applications of all potentially beneficial energy sources and utilization technologies."

The Congress recognized that participation by the private sector is critical to the attainment of this purpose when it made the finding of Section 2, paragraph (d) that:

> "In undertaking such programs, full advantage must be taken of the existing technical and managerial expertise in the various fields within federal agencies and particularly in the private sector."

It is our understanding that Congress intended ERDA to build on established technology and to use established expertise in order to get an urgent job done in the shortest possible time. Certainly the private sector has tremendous technological background in the energy area which it has developed largely at its own expense. That body of knowledge continues to grow rapidly through private funding. Much of it might be useful in furthering ERDA projects.

capriciously, but differences of opinion have been known to occur.

Such differences are quite likely if there must be a determination of what constitutes substantial utilization of an invention, especially if timeliness is involved. No industry will invest substantial amounts in placing an invention in production if that production is dependent on a revocable right.

In direct contrast to the statutory title policy of the 1974 Act is the flexibility permitted in the patent policy of the Federal Procurement Regulations. The FPR patent provisions specify that in certain cases the government shall acquire title or reserve the right to acquire title and that in certain other cases the contractor may retain rights greater than a non-exclusive license. It is clear that under the FPR invention title policy the contractor is treated as a party with rights, including title, which he may or may not retain and which the government may or may not acquire in whole or in part.

In keeping with this title policy, the government's march-in rights under the FPRs are much more palatable than those of the 1974 Act.

The FPR march-in rights provision specifies that where the principal or exclusive rights in an invention remain in the contractor, the government shall have the right to require the granting of a non-exclusive or exclusive license on terms reasonable in the circumstances unless the contractor, his licensee, or his assignee (1) has taken effective steps within three years after a patent issues on the invention to bring the invention to the point of practical application, (2) has made the invention available for licensing royalty-free, or (3) can show cause why he should retain principal or exclusive rights for a further period of time.

Thus, there are three basic differences between the FPR patent title policy and that of the 1974 Act. First, the FPRs recognize the contractor as the initial owner of all patent rights in an invention, while the 1974 Act declares the government to be the owner.

Second, under the FPRs even when the government marches in on a contractor who has retained title, the contractor is still left with title in all cases as opposed to losing it as he may under the 1974 Act.

Ford Motor Company, like many other companies in the private sector, has a broad technical base with many areas of expertise. It is not uncommon for an individual to conceive an invention and constructively reduce it to practice by filing a patent application instead of actually reducing it to practice, particularly if the latter act is merely ministerial in nature compared to the act of conception.

Many of these inventions are of value to the company in various areas of its business. It has been suggested that our problem could be solved by either reducing these inventions to practice with our own funds outside any government contract or by simply not using the particular invention under the government contract so that it will not be actually reduced to practice with government money. Neither of these is a satisfactory solution from the standpoint either of the government or the contractor.

We urge amendment of the 1974 Act at least to the extent necessary to give some relief in this area of concern. An amendment exempting this one class of inventions from the onerous march-in rights provisions of the Act would certainly give some of the needed flexibility to the Administrator and serve as an incentive for industry to participate in ERDA programs.

Section 9, paragraph (f), of the 1974 Act clearly specifies that whenever title to an invention is vested in the United States, there may be reserved to the contractor an irrevocable non-exclusive paid-up license for the practice of the invention throughout the world.

Section 9, paragraph (h), as part of the march-in rights retained by the government, provides that the government may require the granting of a non-exclusive, exclusive, or partially exclusive license.

Paragraph (h) (5) provides that the:

> "Administrator shall have the right to require the granting of a non-exclusive, exclusive or partially exclusive license to a responsible applicant or applicants, upon terms reasonable under the circumstances, (a) to the extent that the invention is required for public use by governmental regulation, or (b) as may be necessary to

Although we have stated previously that we recognize that the purpose of these hearings is to discuss and suggest changes in statutory policy and not to review the specific language of the proposed regulations, we must stress our view that the statute must not be limited further by regulatory policy. To do so could destroy what flexibility there is built into the statute.

An example of the cause for our concern relates to paragraph (f) of Section 9. In that paragraph, the Administrator is given the right to grant a contractor an irrevocable license. It is our interpretation of the language of that paragraph -- and based on our experiences during negotiations, ERDA apparently agrees -- that the Administrator is also given the right to grant a contractor the right to grant irrevocable sublicenses.

However, we note that Section 9-9.107-5(f) of the proposed regulations provides only for an irrevocable, non-exclusive paid-up license with a right to grant sublicenses of the same scope to the extent the contractor was legally obligated to do so at the time the contract was awarded.

This language is extremely restrictive and would severely limit the contractor's ability to promote the invention. It would be unacceptable to a contractor seeking to promote an invention. It is important for a contractor to have the opportunity to grant irrevocable sublicenses of the scope dictated by business considerations involved if he is to promote inventions successfully.

Of course, the contractor must have the right to grant sublicenses that are irrevocable. A sublicensee would not be willing to make the substantial investments which may be necessary for production if the license which it has obtained could be revoked at any time.

To be restricted to the grant of only sublicenses of the same scope is unreasonable. A prospective sublicensee may want a sublicense of different scope, and there is no reason he should not have it.

Further, to limit the contractor's right to grant sublicenses to only those he is obligated to grant at the time of contracting severely limits his incentive and ability to promote the invention.

arts, by securing, for a limited time, to authors and inventors the exclusive right to their respective writings and discoveries."

Mandatory licensing, by depriving the inventor of this exclusive right to his invention, would remove one of the incentives to invent and would discourage disclosure of the inventions in the patent system in favor of trade secrecy.

In our opinion, mandatory licensing is strong medicine for a sickness that does not exist. Presumably, it is being considered because of an irrational fear that otherwise some significant, crucial invention may not be promoted.

I know of no case where a truly significant invention for which there is a market demand has not been promoted. Economic factors have always assured that each and every invention that is worthwhile is made available to the public in the shortest practical time.

Another incentive which would be removed by mandatory licensing is that of developing new technology by "inventing around."

Presently, a potential infringer has the incentive to carry out independent research and development in order to avoid the patents of another. The patent system promotes the progress of technology by such leap-frogging, as one competitor endeavors to invent around another competitor's patent. Mandatory licensing would destroy the incentive to "invent around," since it would be far easier and undoubtedly cheaper to merely copy and take a license than to risk capital in research and development projects of uncertain outcome.

Such a policy, by encouraging copying, would in essence accept the status quo. Progress comes from innovating, not from imitating.

Finally, mandatory licensing legislation would seriously weaken the bargaining position of the inventor in negotiating licenses. No matter how reasonable a negotiated license may appear to the patent owner, his judgment can still be overruled in administrative or judicial review. In such circumstances, the patent owner would enter into negotiations on an arms-length basis only to find that one arm is tied behind his back.

major deterrent to participation in ERDA programs by the most qualified potential contractors.

All the protection required for the public is adequately provided by the patent provisions of the Federal Procurement Regulations. We recommend that provisions similar to those be adopted.

We look forward to a continuing relationship with ERDA in solving national problems. Our views and recommendations have been made in a spirit of cooperation looking toward that end. We trust that you will receive them in that spirit and that your recommendations will reflect them, at least in part.

Thank you.

I will be glad to answer your questions.

MR. RAWICZ: Thank you. That was a fine statement.

Any questions?

MR. DENNY: Mr. Gratch, you, too, are an excellent negotiator. As we have discussed, sometimes we are in a dilemma of two extremes on policy and have concerns of what might happen, real or unreal.

I would like to comment on two areas or ask you to comment. First, you spoke quite a bit about the invention that has been conceived but not reduced to practice. You make a statement here about the possibility of an invention being completely developed and engineered. That gets pretty close to the definition of reduced to practice. So, assuming we are talking about something less than that, it can range from a company putting in substantial money to simply the filing of the patent application.

The Government's contribution to the reduction of practice can range from the least little bit to maybe a hundredfold what industry has put into it. For this reason, to consider across the board the granting of exclusive rights in this kind of a situation doesn't seem to me to be equitable, either.

Do you have any further comments on that?

MR. DENNY: I agree that there are inventions in which a company may have put in substantial money like you are talking about which, across the board, if taken by the government would be inequitable.

I might direct you to our section of the regulations which specifically call for the application of an advance waiver to identify the invention. That was what we had in mind. Still, on the other hand, I think there are other situations in which the equities are reversed; and you are right, we need flexibility.

The other concern I have and dilemma I think we are in is the revocable or irrevocable nature of the license. If we provide a company with an irrevocable license, that company does nothing towards the development of that invention, and we have another company who wants to invest the money, substantial money, into marketing it, but he is afraid to because now he's got a competitor sitting back with a license who has done nothing and is waiting for somebody else to do the work so he can climb aboard.

That may not happen often. It is a possibility. How do we handle that?

MR. GRATCH: Well, that is a possibility. It is a rare possibility. The situation is actually the reverse of what I discussed before of removing exclusivity.

What you say is that you would like to give somebody else exclusivity if the inventor does not take advantage of it. But, as I said in my statement, I think that the case in which an inventor who has a valid patent simply sits on a patent which would be useful is extremely unlikely.

I think it would be a terrible mistake, it would be a terrible loss to the country, to discourage development at large just to protect against an exceptional situation which is not likely to occur.

It is somewhat analogous to the case of a medieval king who might have ordered all his male subjects to be castrated to be sure that none of them would rape his queen.

I think it is much better to use other means of protection. And the courts have shown the ability to use

not the subject of these hearings, we think it would be more efficient if we submit those in writing.

DR. FUMICH: Thank you.

MR. RAWICZ: Mr. Kimball.

MR. KIMBALL: Mr. Gratch, you have emphasized in your statement the necessity to maintain flexibility in dealing with industry.

Within the statute and within the regulations, the proposed regulations, there is the waiver procedure for the Administrator to waive any or all rights in a given instance and under certain circumstances. The task force has had various differing comments as to the efficacy and effectiveness of this waiver procedure in providing or assuring an incentive to the contractors. I wonder if you would care to add your comments on the waiver procedure as to whether you think it does offer an avenue of maintaining this flexibility with which you are concerned.

MR. GRATCH: The waiver procedure itself is certainly okay. I will expand on that in a moment. Our concern is with the march-in rights that are connected with that procedure.

If the march-in rights were the same as in the Federal Procurement Regulations, then we would be quite satisfied with the waiver procedure.

The difficulty with the present waiver procedure is that even after you obtain a waiver, you are subject to the threat of the sort I described, that if it is revoked, essentially you lose everything that is useful. You are left with a couple of minor privileges but certainly not very significant.

As far as the waiver itself, I know others have commented that the requirements for the waiver are too strict. We did obtain the waiver that we applied for. It took some good negotiating. We enjoyed the opportunity to negotiate with a competent opponent, and we welcomed it. We feel it is absolutely right that there should be some tough standards imposed, and in our judgment the standards for a waiver are not unreasonable.

(Turning to Messrs. Spielman and May):

One of the earlier speakers this morning talked a great deal about data and what would be transferred to know-how, or something like that. You focused almost exclusively on patents.

Would I be wrong in assuming, in the automotive industry and for Ford, that patents are a much more critical concern and know-how is of a less concern, or where is the balance in this?

MR. GRATCH: No, that isn't correct.

Generally speaking, we would be satisfied with the same provisions for both. In other words, the Federal Procurement Regulations as applied to data would be satisfactory. The present regulations are much more onerous as they apply to data. And mandatory licensing would be an absolute disaster as applied to data.

Now, let me try to illustrate that. For instance, we may be working on a government contract on a device, let's say an electronic control, which is applicable to engines. In the testing of this device it may be desirable to test it on a novel engine which we have not yet disclosed to anybody and for which we have not yet filed patent application. Mandatory licensing of data would mean that any data that we have on the subject device, or device which is the subject of the contract, would have to be disclosed. It may be impossible to disclose it without making it known to the world what we applied it to. So that we may be disclosing a much bigger area than the patents.

The patents have the advantage that they are clearly defined. Data may have almost infinite, unlimited -- infinite is the wrong word -- may have unlimited range. So that mandatory licensing for data would not just be onerous; it would be an absolute disaster and would certainly drive us out of any contract.

MR. WEINHOLD: Thank you.

MR. RAWICZ: Could I go back to the discussion you had a few minutes ago with Mr. Denny?

The situation proposed is a working model, perhaps engineer drawings, no reduction to practice, perhaps no testing or actual building of the invention. The problem I see is that, while you reference in your

Again, it goes back to flexibility. Every case has its own merits. We are concerned by the fact that, for instance, we are unable to even consider submitting to ERDA proposals on some of the products that are very close to our present activity. For instance, it would be inconceivable for Ford with the present statutory requirements to go to ERDA for a contract to develop further a proco engine. We have done that with contracts with the Army, but we could not under ERDA because our investment in the engine is such we could not possibly accept the risk.

Our feeling is that each case has to be treated on its own merits. We can certainly conceive of some situations, and I think that both in the aerospace and the atomic energy field those have occurred, in which really the government had all the know-how, all the facilities, all the contractor did was do the work. Under those circumstances, the government should get the rights, since 90 percent of the job is done and there is only a small additional effort to be done.

MR. RAWICZ: I thank you for your statement and for coming here.

I have one administrative announcement. Mr. Clark, call your office.

Then I think we are just about on schedule, but I will call a five-minute break. We will come back at 11:30.

(Recess.)

CHAIRMAN JOHNSON: Our next presentation is from Mr. Allen V. Hazeltine, representing the Philadelphia Patent Law Association.

MR. HAZELTINE: I would like to confine myself primarily to the matter of mandatory licensing. But to introduce the matter, I think there is little doubt that the government should acquire at least licensing rights and any necessary sub-licensing rights in patents on inventions first conceived or reduced to practice in its development contracts.

It is reasonable to obtain, in addition, licensing rights with respect to those background patents of a contractor which otherwise would block the government's

activated sludge case which was referred to previously, I believe, by the gentleman from Ford Motor Company.

In addition, where serious abuses of patent rights arise, remedies are available under the appropriate provisions of U. S. Code Title 15.

We believe these are adequate to take care of the situation.

That briefly is my comment.

MR. RAWICZ: Questions from anybody on the panel?

I would like to ask a question.

Mandatory licensing is available in most foreign countries to some extent or another. And in some industries, based on consent decrees.

Have you any information on how that impacts the desire of companies to research around patents, how it impacts the amount of R and D performed when a patent scheme of a particular country or patent scheme of a particular industry does require compulsory licensing?

MR. HAZELTINE: Are you talking about the foreign provisions?

MR. RAWICZ: Yes. Many countries have that.

Has that in fact impacted the desire for people to invent around? Has it impacted the amount of R and D they do?

MR. HAZELTINE: I frankly don't feel qualified to comment on the foreign situation. I feel, however, insofar as the domestic situation is concerned, that under appropriate circumstances, why, the court should exercise its discretion.

But I feel it should be done case by case.

When I say "I," I am speaking of the Philadelphia Association.

And that there is no real need for a broad regulatory provision covering every situation.

MR. MC CARTNEY: Thank you for introducing my university, Mr. Chairman.

Actually, I'm here as Chairman of the Subcommittee on Patents, Copyrights, and Rights in Data, the Committee on Governmental Relations, the National Association of College and University Business Officers.

Good morning. We represent 98 universities on this committee, most of which have had long-term experience in the transfer of technology to the private sector.

During these hearings you will have heard testimony from many of these institutions regarding their experience in the transfer of technology covering diverse fields. On behalf of these institutions through the Committee on Governmental Relations, as well as my own institution, the University of Southern California, I would like to present our views on your proposed patents, policies, and procedures under Subpart A, paragraph 9-9.100 et seq.

The introductory paragraph to Subpart A states that:

> "...an important incentive in commercializing technology is that provided by the patent system. As set forth in these regulations, patent incentives, including ERDA's authority to waive the government's patent rights to the extent provided for by the statute, will be utilized in appropriate situations at the time of contracting to encourage industrial participation..."

In reference to the term "to the extent provided for by the statute," we cite ERDA's authority to waive government patent rights that is contained in Section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974.

This section provides that:

> "(a) Whenever any invention is made of conceived in the course of or under any contract of the Administration, other than Nuclear Energy research, development, and demonstration pursuant to the Atomic Energy

Register are the same requirements that are intended to be imposed on for profit companies. These requirements that universities not only have an approved program for technology transfer but, as well, twelve other criteria, are inconsistent, we feel, with the intent of Congress to provide special treatment to non-profit educational institutions. We as universities surely cannot meet or even demonstrate such criteria as set forth in the Register.

The proposed advance waiver provision on a case-by-case basis ignores the fact that university policies invariably apply across the board and do not distinguish between fields of technology. This approach on a case-by-case, contract-by-contract waiver basis is wasteful of the time of the Administration and the universities in contract negotiations because of the documentation requirements of the proposed regulations.

Recognizing that a university either has or does not have an effective policy, case-by-case waiver determinations involve continual duplication of work.

As previously quoted, the proposed rules regarding the Administrator's authority to waive the government's patent rights in appropriate situations are not sufficiently definitive for Contracting Officers to arrive at a standard decision. Some will define narrowly an appropriate situation; others, broadly. Such determinations will be critical to a university at the time of contracting since the university's track record in license technology will be a primary criterion in the determination by the Contracting Officer of whether to include a license or deferred contract clause.

The proposed rules do not recognize and are inconsistent with the proposals set forth in the July 1975 report, and I'm sure you have heard this referenced in prior testimony, of the University Patent Policy Ad Hoc Subcommittee of the Executive Subcommittee of the Committee on Government Patent Policy of the Federal Council for Science and Technology.

This report recommends that executive agencies adopt policies and rules, recognizing that the public interest will generally be best served by permitting universities with technology transfer programs meeting the

The Subcommittee specifically recommended adoption by all government agencies of a policy permitting qualified universities to retain title in inventions under institutional patent agreements. And I quote that recommendation:

> "It is recommended that the various executive agencies be advised to adopt policies and regulations recognizing that the public interest will normally best be served by allowing educational institutions with a technology transfer program meeting the general criteria set forth below to retain title to inventions made in the course of or under any government grant or contract."

Furthermore, it is our opinion that rules and procedures should not be issued that require mandatory licensing of energy-related patents. The provisions of the Federal Nonnuclear Energy Research and Development Act of 1974 do not require, we feel, mandatory licensing.

As a matter of fact, we consider that mandatory licensing is at cross-purposes with the Energy Reorganization Act of 1974 which states that the objective of ERDA patent policy is to provide an incentive to stimulate commercial industrial development in energy fields as well as to protect the public's interest.

As we interpret mandatory licensing, it would require the patent owner to grant a license to any party desiring one. Mandatory licensing can be interpreted that a patent owner will be required to forego his injunctive relief provided by the patent statutes.

If such rules and procedures for mandatory licensing are promulgated, the incentives of the limited monopoly granted by a patent would be destroyed.

The patent monopoly provides the owner with ability to license exclusively his invention to a licensee who is willing to invest time and money necessary to commercialize his invention. If mandatory licensing were required, the incentive provided to exclusive licensees would be lost and no commercial organization would be then willing to invest its capital funds in the commercial development of a non-exclusive license to an invention.

At the time of entering into that institutional patent agreement with the Department of Health, Education, and Welfare, our institution's patent policies are examined in great detail. Our institutional policy at my university, in Los Angeles, is stated in a forthright manner in our faculty handbook and there is also an individual agreement with each employer of the university, faculty and staff.

This agreement provides that there will be ownership by the university of inventions that are developed and reduced to practice by the employer-inventor during his or her use of facilities and support of the university. There is a Faculty Board constituted in the university for the purpose of determining those facts. The Board is comprised of eight faculty and one administration member.

The Board does not determine division of royalty income. That is decided by an ad hoc committee appointed each time there is an invention disclosure and anticipated royalties to be divided between the inventors and the university. Normally, the split is 40-60, 50; it varies between the extent of university support and facts of the case.

However, it is the practice of my university that when a specific agreement is reached at the time by an ad hoc committee for division of royalty income, that there is a written agreement drawn up, and the university generally agrees to return a significant portion of its part of the royalty income to the inventor's Department for further research.

This has been our experience and has developed great interest on the part of our inventors and reporting of inventions.

One of the more difficult areas in a university is obtaining invention disclosures. Reading final reports does not always indicate whether there is an invention or not. By having an affirmative patent policy, faculty members are willing and do cooperate with the university in reporting their inventions.

So far as experience at my university, we have not been in business as long as other large institutions in the technology transfer. We have been operating under our current policy for the past four years. In these past four years, we have of course started from initial reporting

experience with that agency in cooperating with us on developing our inventions.

There are other agencies we deal with that we are not enthusiastic about their patent policies. We have to weigh accepting their unilateral position on the matter versus the need for funds to continue research in the field of development that we are in.

Or many times, to be very candid with you, if we have an invention in the back room percolating, we will try to speed it up, before we submit a proposal and before signing a contract we can get the patent application filed.

MR. KIMBALL: Thank you.

MR. EDEN: How many patents are presently in your portfolio?

MR. MC CARTNEY: I'd say that in our portfolio now that we have had 154 patents issued.

MR. EDEN: Of that number, how many are licensed?

MR. MC CARTNEY: This is the total experience of the university.

MR. EDEN: How many are licensed?

MR. MC CARTNEY: Of the licensed patents we have, or pending licenses?

MR. EDEN: Yes.

MR. MC CARTNEY: And in negotiation, there are several; I would say we have about 50 licensed.

MR. EDEN: Of the 50, how many would be exclusive?

MR. MC CARTNEY: I would say all of them, sir.

MR. EDEN: All of them?

MR. MC CARTNEY: All of them are exclusive, with the three-year maximum required by the IPA HEW and a two-year extension.

MR. RAWICZ: Any other questions?

I am sure you have seen. Also, we endorse the views and conclusions which were ably expressed yesterday by the various university representatives and by Mr. McCartney today, with the statements made by Dr. Dicks of the University of Tennessee being excepted. We would not endorse his views.

Historically, the Wisconsin Alumni Research Foundation has been functioning on behalf of the University of Wisconsin in patent and licensing management since 1925. Over the course of the years, it has handled inventions in almost all fields of technology. The success of the efforts can be measured in several ways, some of which are tangible and some of which are intangible. In a number of situations, though, it can be reasonably documented that because of the functioning of the patent system, we have been able to transfer technology to the public sector which would otherwise have lain dormant and have been of little use to the public.

These situations include a number of what can be termed life-saving inventions. Incentives offered by exclusive licensing in these situations supplied, for the most part, the paramount motivation for development of the particular inventions to the point where they could be transferred into the public sector. The experience with these efforts has been primarily related to the medicinal field broadly where the burden of transforming a material from a laboratory curiosity with promise to a salable item in the marketplace is currently tremendously difficult. It should be understood that there is a substantial risk involved when a company undertakes the development of a university invention. The risk capital is invested with no certainty that the process or product will, in fact, scale up or be made sufficiently safe, simple to operate and reliable, or be free of undesirable side effects or be ahead of other products prepared by competitors, or, finally, not be made obsolete by subsequent innovations by others prior to paying back the risk investment.

Other and more recent efforts to transfer technology to the public sector where the basic information was developed, at least in part with federal agency funds, have likewise required incentive motivation before the technology could be placed in a form acceptable to such transfer. Some of these occurred as a result of operations with the University of Wisconsin and others on the basis of case-by-case determinations. The Institutional Patent

I submit this is highly characteristic of the type of effort required to translate an invention from the imperfect state encountered in most university laboratories to the state in which it will find acceptance in the marketplace and where ease of operation, that is, making the invention in an idiot-proof mode, and reliability are key factors.

I think you should also bear in mind that the primary obligation at the University is to publish the results of the investigations and that patenting and invention managing is a secondary effect only.

In our experience with both Institutional Patent Agreements and with case-by-case determinations, it has become clear that the Institutional Patent Agreement route offers the most efficient method of handling inventions, since decisions can be made within the terms and provisions of such an agreement by a single entity. Inventions can be handled much more expeditiously with a consequent lessening of the potential loss of position resulting from too early publication or from delays where several parties have decision-making requirements, as in the case where case-by-case determinations are made.

A further concern along these same lines is that in the university sector, invention administration is normally handled by a relatively small staff or even a single individual within, or associated with, the university structure. Consequently, the additional effort required by case-by-case determinations with its attendant requests and showings in each individual situation prior to a determination place an extremely heavy burden upon the invention-management group, and, therefore, promote inefficiencies which readily lead to delays in prompt transfer of the technology.

In relation to a specific question which was posed in the announcement of the hearings in the Federal Register, we firmly believe that mandatory licensing is anathema to the transfer of technology. In the presence of mandatory licensing provisions, little incentive could be offered to encourage development of inventions for the public benefit. Who will, in fact, risk the capital necessary for such development, knowing full well that once the development has been completed and the next and perhaps even more costly stage, namely, market development, has been at least commenced, his competitor can move into the market because of his ability to force a mandatory license.

I should also point out that an accumulation of this kind of data takes a long time because of the incidental nature of the patenting operations to the research function at the universities. I think the best way to start is on a bit of a historic note. When I first came to the Wisconsin Alumni Research Foundation in the late 1960s, there was no such thing as an Institutional Patent Agreement. I was thrown into the midst of a negotiation with the Department of Health, Education, and Welfare. When HEW had a "title with waiver" policy, it was so difficult to obtain a decision at that time that on several occasions the question of patenting became moot because, since the university published its results, the statutory bar had run before any action could be taken.

As a matter of fact, on the first decision we got on a case-by-case determination, the only reason that HEW issued it was because the GAO provoked its issue. They did not feel that at that time HEW was living up to its expectations in the expeditious expenditure of public funds.

We believe the disenchantment with that policy by scientific investigators at our University was reflected in the fact that invention disclosures in the early 1960s dropped to about 15 to 16 per year, and these were primarily trivial kinds of inventions. As a matter of fact, at the time my then boss, who has since retired, suggested I might look for another job because the future looked so bleak. Once agreement on an IPA was reached, however, there has been an increasing flow of invention disclosures. Out of the University of Wisconsin, WARF now considers some 60 to 70 per year.

On a case-by-case determination basis from the late 1960s until December 1, 1968, when the HEW Institutional Patent Agreement became effective, we had applied for and had received three case-by-case determinations from HEW. Since December 1, 1968, to date, we have received 36 disclosures, filed 26 patent applications, and have 16 patents issued. The number of total inventions (understand that a number of patents may be included in an invention area) is 17 and the number of licenses is 12, all of which are on a non-exclusive basis. With NSF, our experience is not the same, since NSF adopted its Institutional Patent Agreement in December of 1973. We have received only six disclosures to date under that Agreement. However, on the case-by-case basis, we did have some 15 disclosures, nine of which were licensed, seven on a non-exclusive basis and two on an exclusive basis.

That concludes what you might consider a formal presentation. If you have any questions, I would be pleased to answer them, if in relation to how WARF and the University of Wisconsin are associated or to supply you with other figures relative to our operations.

MR. RAWICZ: Thank you.

Mr. Denny?

MR. DENNY: Mr. Bremer, you gave us your experience with NSF and with HEW. Have you had any experience with the requesting of waivers from NASA?

MR. BREMER: We have requested waivers from NASA on occasion and we have been successful in those also.

I think with NASA, as with the old AEC situation, you are dealing, if you want to use the vernacular, with outhouse and inhouse inventions. In other words, if the inventions are within the scope of the basic AEC purpose, title may be retained in AEC. If they are peripheral to that basic purpose, title may be waived. The same situation applies to NASA.

NASA is always looking for civilian fallout to justify expenditures in its program. And I think that is legitimate.

MR. DENNY: I didn't ask for AEC experience. I assumed I knew what that might have been. But I was looking at NASA, where they do have the case-by-case approach. They have a qualified institutional agreement, at least it cuts down some time, each time you come to ask.

Our regulations, I might mention, do not provide for that, but will.

The other thing I would like to ask about that concerns me somewhat: I think I keep hearing from you and other speakers that when the government takes title, we don't get disclosures. And when the government doesn't take title, we do get disclosures.

Can you expand on that some?

MR. BREMER: Yes. As a matter of fact, I know some current situations where investigators in the energy

In many situations, and particularly where health-related products are involved, particularly pharmaceuticals, it is almost impossible to license on a totally non-exclusive basis. In talking to some representatives of pharmaceutical companies, they tell us now that if they are looking at a new compound for potential pharmaceutical application, they are looking at the expenditure of a minimum of $10 million before from when they begin screening, and then move the product into the marketplace. That is a very substantial investment.

We can take that another step. What we have done is to design what can basically be termed a non-exclusive license, but which also has provisions which give it some exclusive characteristics. As I mentioned, we do impose a development requirement by the licensee. We have scaled that development requirement to a consideration in the royalty to the effect that if the licensee brings a product under development into the marketplace by a certain time, he gets the benefit of a lower royalty than another licensee who either comes along later or does not expeditiously develop the invention and gets into the marketplace at a later date. That second licensee into the market will pay a slightly higher royalty rate. So we do have an incentive in that program, even though basically we have a non-exclusive license agreement.

MR. EDEN: With that one caveat, all your outstanding licenses are non-exclusive?

MR. BREMER: They are basically but with those kinds of provisions.

MR. EDEN: If I heard the University of Southern California correctly, all theirs were exclusive.

MR. BREMER: I think it depends upon the area of technology you are involved with, what the requirements are, and who will accept what provisions. It turns out in each case to be a separate negotiation.

MR. EDEN: That university, I assume, is about the same size as yours and has the same technology capabilities?

MR. BREMER: We have been fortunate, or perhaps the design of some of the approaches we have in each situation are good. We will not, for example, public that non-exclusive licenses are available under such-and-such patents

hardware or things that could be closely related to the energy area?

MR. BREMER: In balance now, I think it would be difficult for me to pin that down in terms of actual dollar values. But since the University of Wisconsin is oriented toward the life sciences, the primary funding does come through the Department of Health, Education, and Welfare and through the National Science Foundation. To a much lesser extent has it come from the Department of Defense or some of the other agencies, including the Atomic Energy Commission. I just don't know where that proportion would lie. We would actually have to get some figures out of the University to look at that, but it is relatively minor compared to the HEW support.

That doesn't mean to say that all the HEW money is in a limited area. It is spread throughout the University, and there are many kinds of hardware types of inventions that do come out of the expenditure of those funds, as well as NSF funds. So there is overlap in all fields of technology. As you know, disciplines at the university are myriad.

MR. WEINHOLD: Thank you.

MR. RAWICZ: The only two agencies so far that have adopted Institutional Patent Agreements are those that seem to have basic research as their major mission. NSF and HEW, I believe, even restrict their Institutional Patent Agreements only to grants.

When you enter into an agreement, is it for development versus research that they don't apply Institutional Patent Agreements?

MR. BREMER: It is my understanding HEW is changing its policy to include contracts. I should point out, too, with the NSF, that their mandate over the past several years has been toward the applied area, not the basic research area. So there is much greater emphasis in that area, let's say, in the past five years than there ever was before.

MR. RAWICZ: One of the problems I can foresee in the energy area is that a lot of universities seem to be working in development close to the commercialization end of it, at least in this stage of development. In the solar field, they are building houses. It is more of a

impact on our continued funding of demonstrations which we normally think of as one-quarter commercial size.

So in other words, when we look at our mission which goes on a broader spectrum than NSF and apparently even HEW, and goes to an agency that has a mission of getting the technology utilized, would that impact on what we ought to do with universities?

MR. BREMER: I think what you are really drawing is pretty much an analogy with the thrust of the HEW proposal. HEW supports basic research to a greater extent than, let's say, applied. But what they are also looking for is private funding, once that basic research has been accomplished, or is near its end, to translate that basic research into practical applications. That dual expenditure of funds is the thing that really carries the ball all the way.

If the agency itself wants to do it and carry it to the prototype stage, I think there probably is no other alternative, unless it wants to use the university as a licensing agent, but to license the technology itself.

Let's say you have carried development to that stage. I think in that situation, what you also have to consider is that the commercial company, if it is going to spend its own money, is not going to scrap what it has to put in a new installation unless that installation is much more efficient. We have run into that situation many times. The company says it is interested, that it is a very good invention, but that it doesn't have the capital monies and is not going to scrap what it has because the improvement is only marginal. The question of what is marginal in one case and in another is indeterminative.

So I think you have a parallel situation with HEW. With the safeguards built into the IPAs via the march-in rights, the public is always protected. The reports that are furnished the Agencies on a yearly basis detail the activities we engage in. On our own volition we have also put into these reports the nature of the expenditures we are making, just in the patent end of the business, to help promote these inventions and transfer them to the public sector, which I should say is not insubstantial.

MR. RAWICZ: All right, we thank you, Mr. Bremer, for your statement.

AFTERNOON SESSION

(2:00 p.m.)

MR. DENNY: Gentlemen, can we reconvene?

Notwithstanding perhaps an inherent conflict of interest, I have been asked to continue the chairing of the hearing.

Our first speaker this afternoon is Julius Tabin, the attorney representing the General Atomic Company.

We are glad to have you.

MR. TABIN: Gentlemen, yesterday and this morning we have all been listening to various views on the ERDA patent policy. These views come from different segments of the public, from universities, from small businesses as well as large corporations.

Each of these groups expressed different viewpoints. I think that these are not necessarily divergent, but each represents certain interests, and I'm sure from what I have heard and from the regulations that an attempt is being made to take into consideration all of these viewpoints.

Personally, I certainly agree with much of what has been said. I think that the universities have certain interests. I think the policy relative to universities need not necessarily be the same as that for large corporations, for example. I understand this is being taken into account.

There was a remark by Mr. Denny that certain simplified procedures might be applicable to that segment. I think that the interests of small business, which has to be protected to a certain extent to foster the purpose of our patent system, is also quite important.

I think not only is it the type of organization or individual that comes before ERDA that is important, but also the type of contract, purpose of the contract involved which may be important in dealing with specific problems. As has been reiterated earlier, some flexibility is necessary in the program policy.

At the moment I'm appearing at the hearing on behalf of General Atomic Company. This is a company which,

the fuel in an existing reactor over an extended period of time in order to determine its stability and usefulness.

In connection with the construction of a nuclear reactor, the time from sale to commissioning of a large advanced power reactor is in the order of seven to ten years. This long lead time is of considerable importance in that the regulatory requirements and the economics of a system may change radically during this time period.

Another problem which confronts nuclear companies is the difficulty in marketing large nuclear reactors in industrial countries. For national reasons, all large industrial countries feel that it is important to be involved in the nuclear field and in the development and construction of large nuclear power reactors.

Accordingly, American industry has found that to exploit its technology abroad, it must either license its technology or take minority positions in foreign-based and foreign-controlled companies.

While we have been particularly looking at ERDA's patent policy to see whether it considers the needs of a company such as General Atomic, we are also mindful of the fact that there are many smaller companies involved either as contractors or as subcontractors in helping in the task of developing new ways of harnessing our energy sources, in applying nuclear energy for the betterment of health, or in providing new and improved processes and products. Obviously, to accommodate the various needs and equities of all companies requires some flexibility in the adopted patent policy.

While General Atomic is also involved in peripheral areas of the nuclear industry and does put in proposals and takes contracts from the government in various other areas, and that situation is not unlike a smaller company or an individual, its involvement in these peripheral areas is relatively miner.

Therefore we have not directed the main thrust of that discussion to that area. Obviously to accommodate the various needs and equities of all the companies requires some flexibility in the adopted patent policy.

In the notice with respect to this hearing, the public was asked to comment on what patent policy ERDA should