SESSION 7

WORKING LUNCHEON

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Chairman: D. W. Moeller

OPENING COMMENTS OF SESSION CHAIRMAN MOELLER

CHANGES TO LICENSING FOR U.S NUCLEAR POWER PLANTS
E. Gail de Planque

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It is my pleasure to welcome our luncheon speaker, The Honorable E. Gail de Planque, Commissioner, U.S. Nuclear Regulatory Commission.

From her earliest years, Dr. de Planque demonstrated her keen intellect and capacity for leadership. In high school she was a member of the National Honor Society, President of the Forensic League, a champion debater, valedictorian and voted the most outstanding member of her senior class!

Upon graduating from high school, she entered Immaculata College in Pennsylvania where she initially majored in mathematics. However, she found physics so stimulating that she took every course available. In addition to her scholastic activities, she qualified as a member of the college tennis team and served on the Intercollegiate Conference on Government.

After graduating from college, Dr. de Planque considered graduate school. Although that was attractive, she also realized the benefits of gaining some "real world" experience. At that moment, her high school debating team experiences played a major role in her future. In preparing for a debate on nuclear disarmament, she had learned about the AEC's Health and Safety Laboratory in New York and she applied there for a job, was accepted, and began work in the Radiation Physics Division.

A year or two after beginning work, she once again saw the need for graduate education and entered the Newark College of Engineering (now the New Jersey Institute of Technology) where she qualified, attending on a part-time basis, for a Masters Degree in Physics. Later, again attending on a part-time basis, she completed a Ph.D. in Environmental Health Sciences at New York University.

In the meantime, she was progressing rapidly in her work at the Health and Safety Laboratory, having assumed a leadership role in the research activities as well as in the direction of the Laboratory. Her work expanded into research on radiation shielding and thermoluminescent dosimetry (TLDs).

At the time, the prevailing wisdom was that TLDs were not applicable in the field of environmental dosimetry. In spite of this situation, she decided to explore the possibilities. Not only did this lead to success but, along the way, she was instrumental in developing an American National Standard on the Performance of TLDs for Environmental Dosimetry, and she established a program for the international intercomparison of TLDs. As a result of her efforts, TLDs became the standard environmental monitoring tool for nuclear power plants and various other types of nuclear facilities in the U.S. as well as throughout the world. In short, her work led to an internationally accepted standard method for environmental monitoring and the resulting systems that have been installed are providing global data on environmental radiation levels.

In 1982 Dr. de Planque was appointed Deputy Director, and in 1987 she was appointed Director, of the Health and Safety Laboratory (now known as the Environmental Measurements Laboratory). Because of her long time interest in natural background radiation, the Laboratory soon established a radon reference laboratory. Under her leadership, the Laboratory also expanded its environmental measurement capabilities to all types of discharges from all types of energy systems. When the Chernobyl accident occurred, the Laboratory had a team of experts ready, they were sent to Europe to monitor the resulting contamination, and data collected by the Laboratory staff were the first to be published following that event.

Throughout her career, Dr. de Planque has been active in professional society activities. This has included service with the Association of Women in Science, the American Physical Society, the American Association for the Advancement of Science, the Health Physics Society, and the American Nuclear Society (ANS). In fact, she served as President of the ANS from 1988 - 1989. In addition, she was

appointed to the Editorial Board for the Journal, Radiation Protection Dosimetry.

In conjunction with her work, Dr. de Planque has traveled throughout the world, including the presentation of lectures and the conduct of research in Western Europe, Egypt, Latin America, Australia, the Peoples' Republic of China, and the former U.S.S.R. In recognition of her contributions, Dr. de Planque was elected to membership in the National Council on Radiation Protection and Measurements, she received the National Women of Achievement in Energy Award in 1990, and in 1991 she was named by the Association for Women in Science as the Outstanding Woman Scientist of the Year.

Dr. de Planque was appointed to the NRC in December, 1991, and she has had an immediate impact in bringing to bear her research abilities, her scientific background, and her "real world" experiences. She is the first person appointed to the Commission who is knowledgeable, and has direct interests, in the health effects of ionizing radiation, radiation shielding, and environmental monitoring.

Her topic today will be "Changes to Licensing for U.S. Nuclear Power Plants." I present to you The Honorable E. Gail de Planque, Commissioner, U.S. Nuclear Regulatory Commission.

CHANGES TO NRC LICENSING PROCEDURES FOR U.S. POWER PLANTS

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Abstract

NRC has revised its regulations on the licensing processing for nuclear power plants. The revised process should reduce uncertainty by resolving issues before construction begins. Development in Congress and in the nuclear power industry will also be discussed.

I. Introduction

I'm sure you've heard about nuclear power plant licensing reform in the U.S. and also about the energy bill that Congress has now been debating for some time. I'd like to take some time today and try to unravel the mysteries of licensing reform and give you an idea of what it all means. In order to explain some of the recent developments in this area, I would like to briefly describe how we have licensed nuclear power plants in the past; and, how we have revised our regulations to modify the previous licensing process. I'll summarize some of things that are going on in the U.S. Congress that could affect how the NRC conducts power plant licensing in the future; and finally, give you an overview of what the nuclear industry is doing to prepare for the next generation of commercial nuclear power plants. First, I would like to give you a little history about the NRC to put this into perspective.

In late 1946, Congress issued the Atomic Energy Act which provided for the research and development of military applications of nuclear energy by the Atomic Energy Commission which actually began its existence January 1, 1947. Later, the Atomic Energy Act of 1954 was issued which provided for the research, development and regulation of commercial nuclear energy and expanded the focus of the AEC.

As more and more was learned about the different aspects of nuclear energy, a concern developed about the ability of a single government agency to both regulate and promote the use of nuclear power. As a result, Congress issued the Energy Reorganization Act of 1974. This law effectively separated the regulation of commercial nuclear activities from the research, development and promotional activities by creating the Nuclear Regulatory Commission and the Energy Research and Development Administration in 1975 became a part of the Department of Energy in 1977.

So the authority for the Nuclear Regulatory Commission's licensing activities still stems from the Atomic Energy Act, as amended over the years.

II. The Way It Was

The NRC placed the requirements for the licensing of nuclear power plants into the Code of Federal Regulations, specifically Part 50 of Title 10 of the Code of Federal Regulations, commonly referred to as Part 50. Part 50 has the force of U.S. Federal law and must be complied with.

Historically, the NRC licensing process for commercial nuclear power plants consisted of two steps: construction permit application and operating license application. (See Figure 1.)

First, the utility or applicant submitted an application for a construction permit. The application addressed several major points regarding the power plant such as environmental impact, anti-trust considerations, and the safety of the plant design.

1. The applicant was required to submit an environment report containing site suitability information. This report evaluated whether there was any potential adverse environmental impact of the proposed plant on the neighboring area. Review of this report was conducted with the U.S. Environmental Protection Agency and the U.S. Department of the Interior to ensure that the plant would not adversely affect the surrounding environs or wildlife near the proposed plant.

   These reviews sometimes resulted in imposition of specific conditions on the siting of the plant in order to satisfy the requirements of the National Environmental Policy Act (NEPA).

2. Information related to anti-trust considerations was submitted for review to both the NRC and the Justice Department. The Atomic Energy Act required a determination of whether or not the licensing activities created a situation inconsistent with the U.S. antitrust laws.

   The U.S. Attorney General had to confirm that no anti-trust considerations existed before construction proceeded. While members of the public could request a hearing at this stage, historically only 3 such hearings were held.

3. The third major area of consideration was the adequacy of the plant design. As most of you may know, the U.S. has not historically used a standardized power plant design. Therefore, review of the specific power plant design was considered during the review of the construction permit.

Both the Atomic Energy Act and Part 50 REQUIRED a formal hearing before issuance of a construction permit.

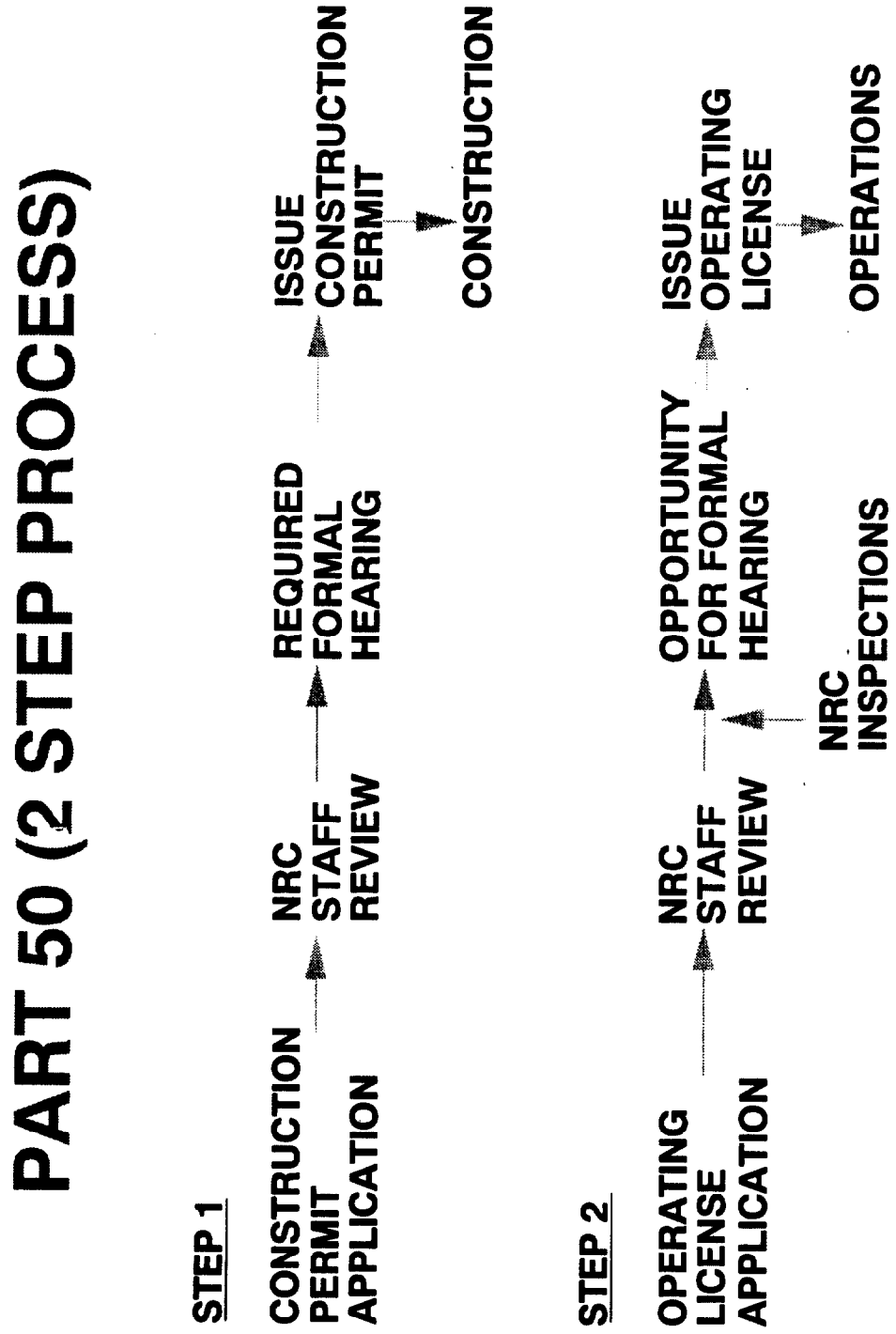

Figure 1. Part 50 Licensing Process

Now, hearings are a key issue here, so let me digress a bit about hearings since each of the different licensing processes that I'm going to talk about today treats hearings a little differently. In the U.S. a hearing is a legal process whereby all interested parties, including the public, are given an opportunity to make their case before an impartial decision maker. In the Part 50 hearing process, the public was given three opportunities to raise their concerns about the nuclear power plant to the NRC. Positions on issues were argued before, and decided by, the Atomic Safety and Licensing Board (ASLB), the Appeals Board, and the Commission.

The ASLB was made up of 3 persons, 2 technical persons and one lawyer. (At least they had more technical people than lawyers!) The ASLB reviewed the construction permit application, the findings of the NRC staff, and concerns brought forth by interested parties in order to decide whether or not the construction permit should be issued.

If **someone** disagreed with the findings of the Board, he or she could appeal the decision to the Appeals Board which was also made up of 3 persons, two technical and one lawyer (Again, a good ratio).

The Appeals Board could and sometimes did reverse findings of the ASLB. However, **someone** disagreeing with the Appeals Board, could then petition the Commission (meaning the five Commissioners) for another review, BUT once the Commission made a decision on the issue, it became the last and final decision on the matter.

As you can see, the hearing process can be quite complex and in some cases, has lasted up to 5 years for the construction permit alone. There have also been cases where the construction permit hearings lasted only for a few days as in the cases of Calvert Cliffs and St Lucie.

Once the pre-construction hearing was over, the NRC issued the construction permit and construction of the plant began.

Now, let's turn to the operating license. As plant construction proceeded, the utility submitted an application for an operating license to the NRC staff for review. An opportunity for a hearing was offered to the public prior to issuance of the operating license. Historically, this request was submitted well before planned criticality to allow for the hearing process. A hearing for the operating license was only held if it was requested, which it usually was; except in the early 70's.

The focus of this hearing, if held, was to determine whether the plant was built according to design, whether it would operate as planned, and whether the plant's emergency procedures were adequate.

The hearing process for the operating license was exactly the same as for the construction permit, but as some of you may know,

this second hearing could be rather long, in some cases the processes lasted up to 9 years. The case I am thinking of is Seabrook, where the adequacy of the emergency planning and evacuation plans were questioned at great length.

III. The Way It Is Now

In 1987, the NRC did an extensive review of the licensing process. After a lot of discussion both within and outside the agency, the NRC decided to revise its regulations to set out new review procedures and licensing requirements to provide for the licensing of "standardized" plant designs. That process was eventually published as a new part of the Code of Federal Regulations, called Part 52.

Part 52 provides for separate reviews of the plant design, known as design certification; early review of site suitability, known as the early site permit, and the review of a combined license which authorizes both the construction and operation of a nuclear power plant in one license. As you can see, Part 52 sets up a one-step versus two-step licensing process which also allows for resolution of safety issues and implementation of the hearing process in the beginning, before the plant is built, as opposed to during construction. For comparison, let me discuss the basic processes defined in Part 52. First, let's take a look at the front end of the process. (See Figure 2.)

There are two reviews that can be done before the utility begins the formal plant licensing process...they are Design Certification and the Early Site permit.

A. Design Certification

The design certification process (see Figure 3) begins when a reactor vendor submits a plant design to the NRC for review and approval. The actual technical review of the plant design essentially remains the same as it always was, in that the NRC technical staff reviews the submittal, develops questions on the submittal, and requests answers from the reactor designer. Once the technical questions regarding the design have been answered to the satisfaction of the NRC staff, an evaluation report for the design is written. This report is called the Final Design Approval. A Final Design Approval is a pre-requisite to obtaining a design certification.

Part 52 states that certification of a given design will be published in the regulations and shall conform to the rulemaking procedures. The rulemaking procedure for design certification would include a notice with an opportunity for public comment. An opportunity for an informal hearing before an NRC licensing board may be requested. The goal of the hearing would be to ensure that all concern regarding the safety of the plant design are adequately addressed. The Commission also have the discretion to grant a formal hearing if necessary.

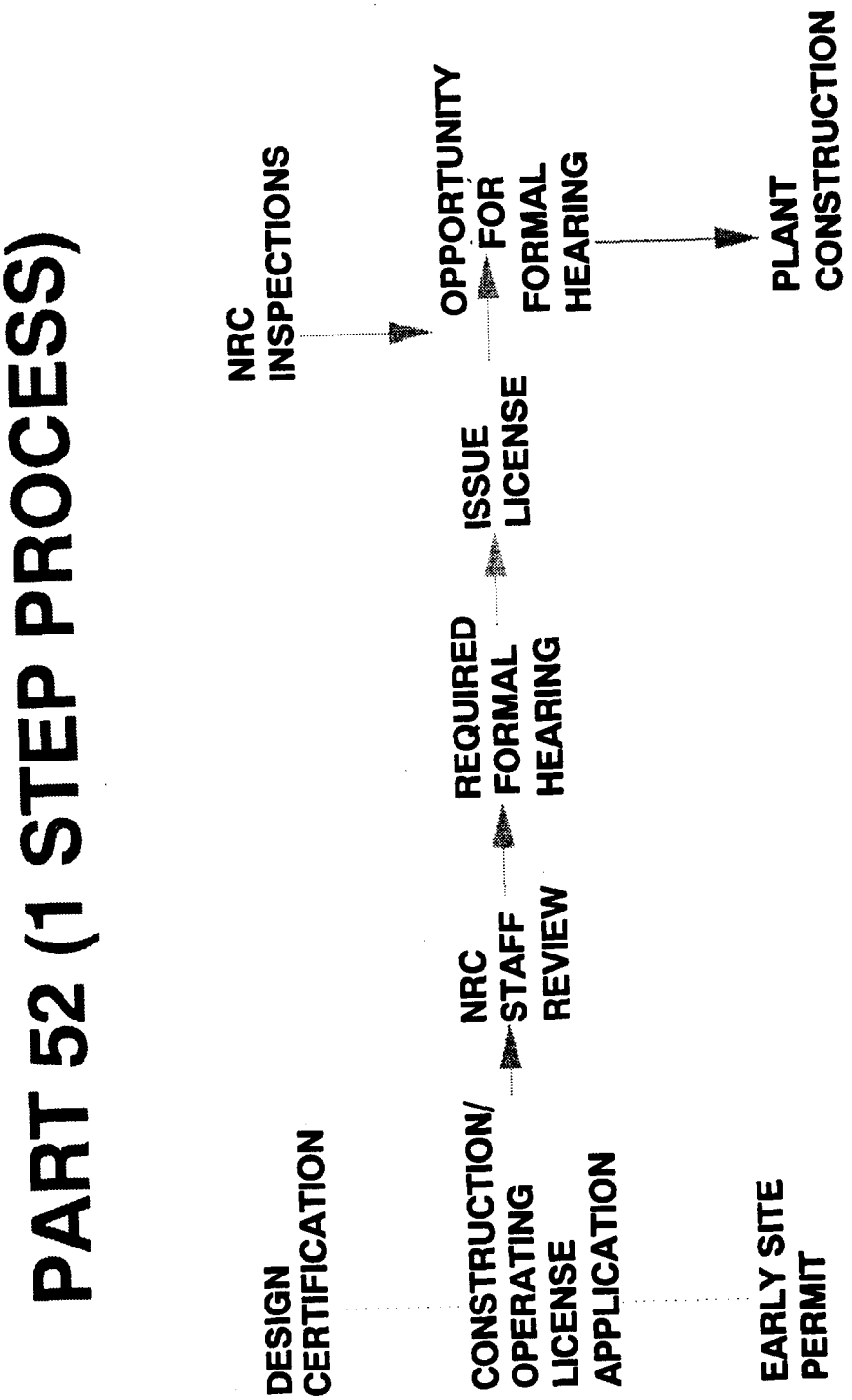

Figure 2. Part 52 Licensing Process

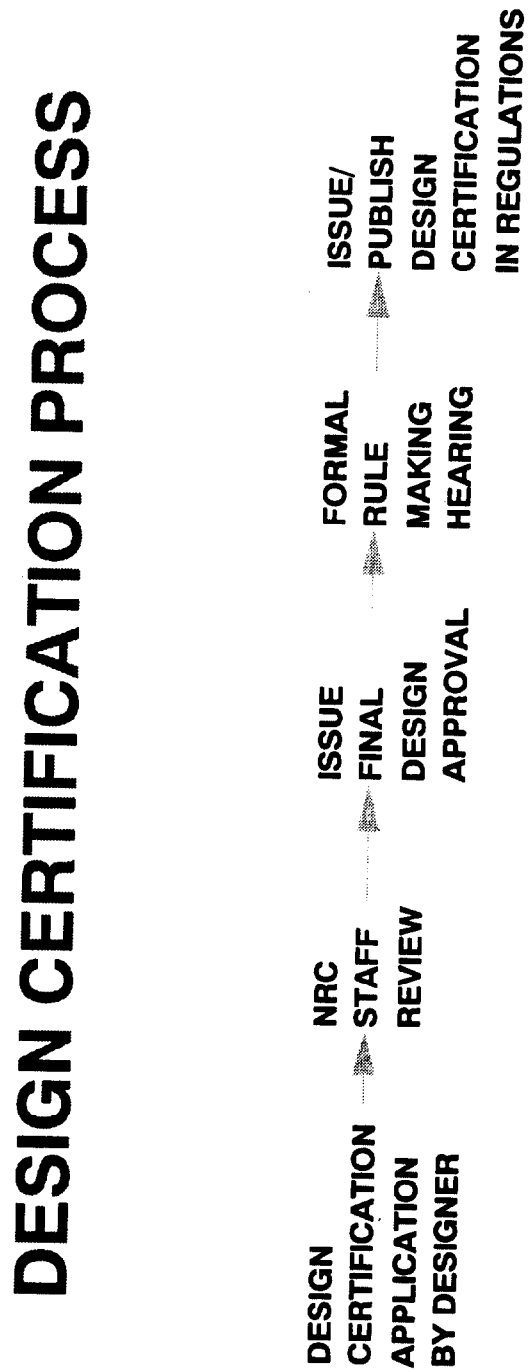

Figure 3. Design Certification

Once a design is certified, it cannot be changed except to comply with NRC regulations or to protect the public health and safety or common defense and security. The design is then considered a "safe" design and requires no further review. This essentially will "standardize" plant designs. But, if any changes are necessary, the same rulemaking and hearing procedure must be complied with.

This feature of Part 52 - making it more difficult to "amend designs" - means that all the safety issues must be resolved up front by both the designer, the reviewer and the commenters. The certification is expected to remain valid for 15 years, and may be renewed under certain circumstances. Note that if a public hearing regarding the design is held, the reactor designer, not the electric utility, is involved. This is a real change from the old method, in that the plant designer rather than the utility is responsible for proving that the reactor design is safe. Once the design is certified, it may be used without further review because the design is set.

B. Early Site Permit

Regarding the early site permit, the utility is permitted to obtain approval for use of an identified site separate from and before the request for a construction permit. (See Figure 4.) In this case, a mandatory hearing is held prior to NRC approval to use a given site for a nuclear power plant. At the hearing, interested persons would have the opportunity to raise their concerns on the potential impact of the plant on its surroundings.

In this case, the utility purchasing the plant would be responsible for demonstrating that the plant would not have a significant adverse impact on the surrounding environment. This is also the case in the old process; however, the new process allows completion of the environmental review before the application for a construction permit.

C. Combined License Review

Once the design certification and early site permit reviews are completed, the utility will apply for a combined construction permit/ operating license. (See Figure 2.)

The goal of this portion of the licensing process is to resolve licensing issues before plant construction. Part 52 requires a mandatory formal public hearing prior to issuance of the construction permit/operating license. I will use the term combined license from now on with combined license meaning both a construction permit AND an operating license in one license. Ideally, at this point, both the design certification and early site permit have been obtained from the NRC by the reactor design vendor and the utility, respectively. This means that the plant design has been found safe, and the proposed plant site is suitable for use.

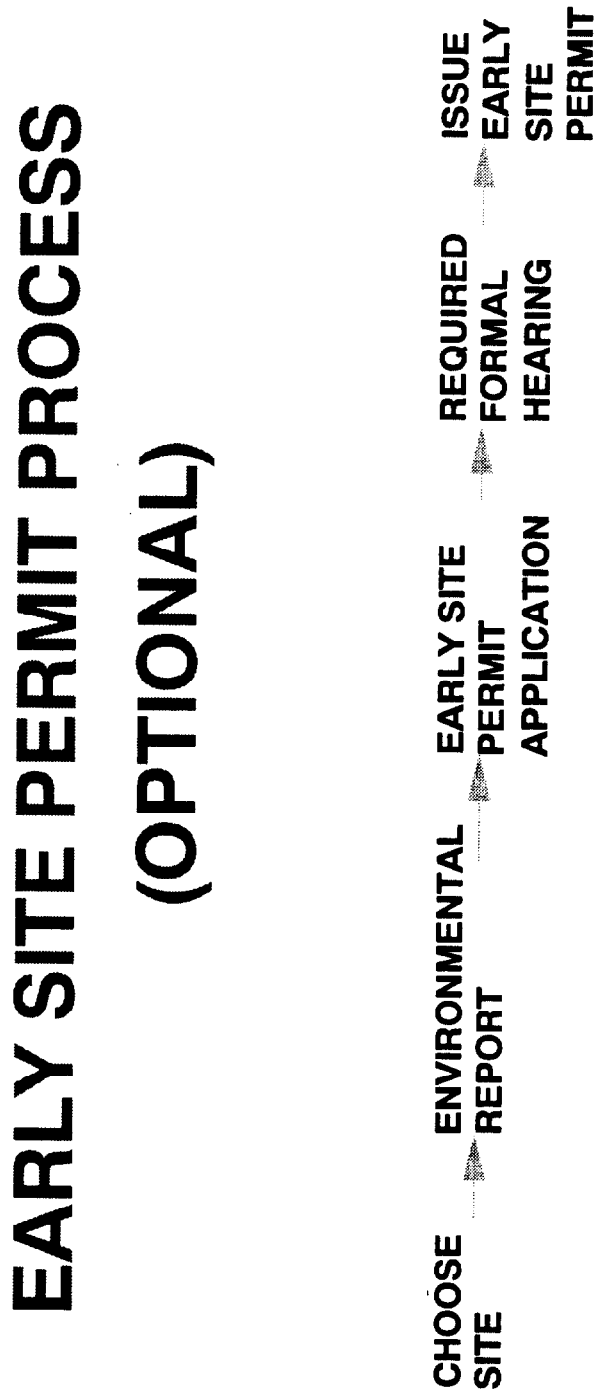

Figure 4. Early Site Permit

The review would result in the establishment of the inspection, test and analysis acceptance criteria (ITAAC) to be used for determining the adequacy of construction. ITAAC will include things such as system and component test requirements, inspection criteria and test acceptance criteria to be validated during inspections performed by the NRC staff throughout the construction process and during the pre-operational test phase. Both the NRC AND the utility must agree to the inspection, test, and analysis acceptance criteria before the construction begins. Once agreed upon, these acceptance criteria remain the same throughout plant construction and serve as the standard against which the adequacy and capability of the plant design will be judged before the plant is operated. What this means is that the rules of the game are known from the very beginning of construction and can't be changed in mid-stream unless there is a VERY good safety-related reason. Any needed change would require that a formal hearing be held prior to plant operation. This should encourage "Getting the ITAACs right the first time!" This should eliminate construction delays caused by changes to construction or design standards while the plant is being built.

When the utility applies for a combined license, Part 52 requires a formal hearing to allow interested parties to present their concerns on safety issues affecting the plant.

But, since the design has been certified and the site has already been approved, the issues brought up in the hearing may only address site specific design requirements (e.g., cooling towers) and whether the acceptance criteria, or ITAAC, will be met. This really limits the range of issues that can be brought up and should simplify this hearing process.

Once the ability of the utility to build and operate the plant has been reviewed and approved, the NRC has determined that there is reasonable assurance that the plant can be constructed and operated safely, and the hearing has been completed, the Combined License will be issued and plant construction may begin. This effectively concludes the review of the plant; however, a stringent inspection and verification program will be applied to insure that the plant is, in fact, constructed according to the certified design, and that installed systems and components will perform as designed.

The major differences between the two licensing processes are that the new process provides for 1) completion of plant design reviews before construction thereby resolving the safety issues at the beginning, 2) a one step versus two step review process which combines the construction permit and operating license applications, and 3) definition of the inspection, test and analysis acceptance criteria before construction.

This process is all in place now.

IV. Congressional Developments

The United States Congress is currently working on a piece of legislation to support the National Energy Strategy originally proposed by the Department of Energy.

This proposed legislation touches on many different aspects of energy production, ranging from renewable energy sources such as wind, solar, and geothermal, to the reduction and limitations of automobile emissions into the atmosphere, to waste disposal. Also included in the proposed legislation is nuclear power plant licensing. I will try to summarize the status of that part of the National Energy legislation currently before Congress.

For those of you not so familiar with how we make laws in the U.S., you should know that it has been said that there are two things that one should never see being made: sausages and laws.

For those of you from overseas, let me give you the quick version of how laws are made in the U.S.

The U.S. Congress is made of two entities: the Senate and the House of Representatives. To begin the legislative process, a proposal is usually brought before the subcommittees for consideration by some of the members of each body. Both the Senate and the House of Representatives present their final proposals to the other chamber in a conference. Once the Senate and the House have agreed on the context of the proposed law, they send it to the President for signature.

Sometimes the Senate version is very different from the House version, and this can take a long time to resolve. For the proposed energy legislation as a whole, that's where we are today.

The Senate's proposed energy legislation is titled, "the National Energy Security Act of 1992," and was approved by the Senate in February of this year.

The corresponding House of Representative's proposed legislation is called, "The Comprehensive National Energy Policy Act," and was just passed in May of this year. As I indicated earlier, the two versions of the proposed legislation cover a lot more than just the licensing process for nuclear power plants. Any differences in the two versions will be negotiated between the Senate and the House in conference next month. Fortunately, in the area of nuclear plant licensing, both the Senate and the House versions were essentially identical, and better yet, they basically codify the licensing process outlined in Part 52. That is, they provide for design certification, early site permits and issuance of a combined operating license.

Both versions also call for the establishment of construction acceptance criteria before construction and require that the

Commission find, prior to operation, that the acceptance criteria are met.

One of the differences between the proposed legislation and Part 52 is that the proposed legislation permits Commission discretion regarding the type and format of any post-construction hearing. Only two types of credible and significant safety issues may be brought up for a possible hearing. These are 1) the plant as built does not meet the established acceptance criteria, or 2) new information is identified that significantly affects the safety of plant operations.

If one or both of these types of issues are identified, and a hearing is warranted, Part 52 requires a formal hearing whereas the proposed legislation allows NRC discretion to permit an informal hearing. In the Part 52 process, If a post-construction hearing is conducted, it is assumed that plant operations will be suspended during the course of the hearing; however, the proposed legislation REQUIRES that the Commission allow interim operation during the conduct of a post-construction hearing if it determines that there is reasonable assurance that the public health and safety is still adequately protected.

Since the two versions of proposed legislation are so complex in the areas other than nuclear, it is hard to predict how long the conference process will last before a bill is sent to the President, so we'll all have to wait and see how it turns out in the end.

But, in the meantime, lets turn to what is going on in the nuclear industry.

V. The Next Generation of Plants

Currently, the NRC is in the process of reviewing several plant designs in preparation for conducting the design certification process on three different categories of plants. These are 1) evolutionary light water reactors, 2) passive light water reactors, and 3) advanced reactors.

Very briefly, the evolutionary designs are based on existing plant designs but incorporate recent technological advancements.

Examples of the evolutionary light water reactors are the General Electric Advanced Boiling Water Reactor and the Combustion Engineering System 80+. Both of these designs are actively being reviewed by the NRC staff. The staff is scheduled to issue the Final Safety Evaluation Report (FSER) for ABWR and the Draft Safety Evaluation Report (DSER) for CE this week! The Final Design Approval Reviews are scheduled to be completed by 12/92 and 11/93, respectively.

The passive light water reactors are very different from the current type of reactor in that they tend to rely on pressure

differentials and other "natural principles" to shut down the plant in off-normal conditions. That is, safe shutdown is not dependent on an emergency core cooling system as we know it but rather pressure differentials, gravity and/or natural convection. Examples of the passive light water reactors are the Westinghouse Advanced Plant 600, and the General Electric Simplified Boiling Water Reactor.

The NRC has received a submittal for the AP600 and expects the SBWR submittal shortly. The NRC staff projects completion of the review of these designs by 11/94 and 1/95, respectively.

The advanced reactors are designs that haven't been used before for commercial power production. Examples of these designs are the PIUS, the CANDU-3, the Modular High Temperature Gas Cooled Reactor, and the Advanced Liquid Metal Reactor. NRC has some pre-application efforts underway to prepare to reviewing these designs if submitted.

Even as we speak, the NRC staff is working on identifying and assessing the issues related to conducting design certification reviews and the rulemaking. There has been a lot of discussion among the NRC staff, the Electric Power Research Institute (EPRI), the Nuclear Management and Resources Council (NUMARC) and others as to how the design certification process should be conducted.

There are a number of issues, including determining what level of design detail is required to evaluate the adequacy of specific portions of a new type of plant design. In the case of the passive reactor designs, there is less design detail available than that for the evolutionary designs. Another significant issue is how much testing is needed in order to prove that certain new plant systems or unique features will function as planned under abnormal conditions. Also, since the reactor designers consider their new designs to be proprietary, how the proprietary information can be addressed in the NRC's publicly available evaluation of the plant design without compromising the proprietary nature of the submittal is a key issue.

Further, since the design certification will be published as part of 10 CFR, there is a lot of discussion as to how to incorporate such a certification into the Code of Federal Regulations. NRC held a workshop in July to discuss issues such as the roles of the staff, the ASLB and the Commission in this rulemaking. The point is that we are preparing the way for the licensing of new plants.

Much has been accomplished with the NRC Part 52 licensing process, and the next several months will be a crucial time as the first designs move toward FDA, and the process for the design certification rulemaking takes shape.

It is clear that all interested parties, including Congress, recognize that the nuclear plant licensing process needed some revisions and it will be interesting to see how the proposed legislation turns out.

It is also encouraging that the nuclear industry is continuing to improve plant designs. The goal of both the reactor designers as well as the NRC is to improve plant safety and I view the development of these new plant designs and the NRC's revision of the licensing process as a positive affirmation of safety as a priority.

My friends and colleagues, as we all well know, the world is a very small place, and radiation knows no national borders. Let me close by saying that whether you are a nuclear power plant regulator, a designer, a builder or an operator, or involved in other areas associated with nuclear energy -- as many of you are -- we must all do our part to ensure that the wonders of the atom are used safely and for the benefit of all who inhabit the earth.

It has been a pleasure to be here with you today. I hope that I've helped to make a somewhat complicated procedure a little more understandable. I wish you all the best for a rewarding and successful conference.

DISCUSSION

LAGUS: I am from California and as you know a number of years ago they passed an initiative that basically said they wouldn't even consider a nuclear power option unless there was a technically demonstrated, technically defensible method for the disposal of nuclear waste. Now, that is a little bit off your topic, but since it is seldom that I get a chance to ask a Commissioner this question, what is the NRC doing, or what is the NRC's position on the disposal of nuclear waste. Every time I read something in the popular or semi-popular press, it seems like the NRC is trying to foist that problem off on DOE saying, "That's not our problem; we regulate." It's DOE's problem and they have got to solve it. It seems like we have a massive standoff between two agencies and the nuclear industry is certainly not being helped by this standoff.

DE PLANQUE: This is a wonderful opportunity to talk about a very general problem that we have at NRC. When you look at NRC's mission statement and the Atomic Energy Act that sets up the authority for the NRC, one thing that is extremely clear in all the legislation is that NRC does not have a promotional role. DOE has the promotional role, the development role, and the research role. What happens in this case, is that it is DOE's responsibility to provide the research and development for waste disposal and for developing a site. Our role is to process the application for that site when it comes from DOE, to determine the criteria for safe disposal, to set up the licensing process, and to actually grant a license. For our part, we have a significant amount of resources currently devoted to preparing for processing such a site. We have essentially guaranteed that we would go through the licensing process in three years. Guarantee may be too strong, but that is the schedule that has been agreed to. The problem is bigger than DOE or NRC. It is a highly political problem. There are several schools of thought on all of these things, not just high-level but low-level waste also is a significant problem right now. There are folks who feel all this should be controlled at the Federal level, highly controlled. Others,

feel that the states should be controlling all of it. It is difficult to say, at this point, how well the process is going at Yucca Mountain. Maybe some of the DOE folks would like to comment here. Right now, they are looking at that site for site suitability. We don't even know yet if that is going to be an acceptable site. There is an in-between process going on. I don't know if you are aware of a search for an MRS, a monitored retrievable storage site. A couple of years ago, the President established a new position called, Nuclear Waste Negotiator. He appointed a gentleman named David Leroy to that post. I had the privilege to meet him a couple of months ago. I think he could sell anybody the Brooklyn Bridge, he is terrific. His job has been to go around to various states, counties, and Indian tribes to see if there is any interest in hosting a monitored retrievable storage site. To everybody's amazement, something like 20 groups applied to get some seed money to look at the possibility of hosting such a site. As I understand it, about 5 of the 20 dropped out but some have moved to stage 2 of the process, which means further investigation. What, if anything, will come out of this is unclear at this point. But they are at the part of the process where the application stage is over and each of the groups is looking at whether or not they would be interested in hosting a site. Stay tuned, we'll see what happens. Then, of course, in the low-level waste area, if you have been following the press, we have had some interesting action recently at the Supreme Court. As you know, the low-level situation now is governed by the Low-Level Waste Policy Act which set up a process of waste compacts where various states could combine together and agree to set up a waste disposal site for those same states. There are nine compacts that have received approval by Congress and several states that have chosen to go it alone, or do nothing. There was a section in the Low-Level Waste Policy Act, called the 'take title provision.' The 'take title provision' represents the teeth of the Act. It said to states, if you don't have a disposal site by 1996, you have to take title to the waste. New York State challenged the take title clause and it went all the way up to the Supreme Court. NYS challenged on the bases that it was unconstitutional. The Supreme Court agreed and the take title part of it has been struck down. It not clear yet whether it applies to the states that are already a part of compacts. The Court was silent on that. Clearly, it applies to those that are not part of compacts. When you talk to lawyers, there are two schools of thought. One says, the compact states are different, if they bought into the compact voluntarily and Congress approved them, the compact has got to hold for them. The other school of thought says, No, you can't declare something unconstitutional for one set of states and not for another. So, my guess is that there is going to be a court challenge on it to see how it turns out. One way or the other, I don't think anyone is clear yet on what impact it will have on the waste compacts. A lot of the state legislators tend to be out for the summer and now there is a lot of political activity for the upcoming election so it is probably an issue that is not going to be looked at until at least after the election. Whether or not this decision is going to have a negative impact on the progress of compacts already made, I don't know. But it certainly is a difficult issue. Well, that probably answered a lot more than your question.

JACOX: The process for licensing that you outlined certainly appears to go a long way to avoid the endless procedural delays where the antis are simply trying to stop the process, rather than having valid concerns. What is your feeling as to the new legislation's ability to stop our lawyer friends from simply doing an end run and taking their endless procedural delays directly to court rather than through the NRC procedures?

DE PLANQUE: I don't know if I can really give you an answer to that. Any time you set up a new procedure or new legislation, you don't always foresee all the land mines and all the problems that you have created. I think you have got to get through the process once to find those possibilities. Certainly, this developed with the intent to improve the process and get rid of problems that cause unnecessary delays, as when the issues were not at all related to safety. I hope that it works that way, but only time will tell. I think going through the first process will be very enlightening. We are going through a design certification process now as you go through

it step-by-step, you say, "Oh my goodness, look at this part of it. What did we mean and how do we implement it?" That happens. It's natural. Sometimes, things need to be adjusted, when you have done something inadvertently. But, anyway, we do have to go through that process to see how it works. But, certainly, the intent was to get rid of unnecessary delays, delays on topics that really don't effect safety.

FIRST: The question I have, Commissioner, concerns site approval. Will sites that are now approved, and being used, be automatically exempted or will they have to go through another approval system when they want to put an additional reactor on that same site?

DE PLANQUE: My expert here is telling me there is a proposed rule out for comment right now and that approval may not be automatic. So take a look at it and if you have any comments on it, please get back to us.

GREENE: There has been a longstanding feeling in the closed community represented by people who make their living by the construction, operation, or safety assessment of nuclear installations that the impasse in the non-receipt of orders for new nuclear plants has been a complicated and burdensome application for licensing and an intervention system that needs modification and streamlining. But, there is an unpleasant aspect to this, and it is where negotiation comes in. I have debated this with John Collier at great length. In fact, there is a massive failure on the part of the nuclear industry to effect adequate and effective public relations with the American people who are, quite frankly, the real advocacies. It is not the NRC and the nuclear industry. It is the American people. Quite frankly, the American people have lost their confidence and their trust in the nuclear industry. I come from Long Island, an area where this has been epitomized. The issue of the Shoreham Nuclear Power Plant disheartened me and almost made me look for another career. I saw intelligent people frightened for their lives. I blamed it, quite frankly, on a failure of the industry to put resources into effective public relations. With a streamlined Part 52, a lot of people that I know have asked me, "Is this an effort on the part of the nuclear industry to receive design certification and avoid having to deal with the public?" Do you have any comments on that and would you please comment on the NRC's perception of the adequacy of the nuclear industry's public relations.

DE PLANQUE: One of the things I did in the late 1950s was to set up a ring of TLDs around Shoreham because we wanted to get some good background information before plant startup. We thought we would have a 2 or 3 year program. Well, 2 or 3 years went by, then 5 years went by, and finally we decided we had enough background information from TLDs and went home. You all known the rest of that story. I have been going around to several meetings and have learned some interesting things. Yes, you see a lot in the press about NRC's licensing process and their inspections of operational processes that are tieing up the nuclear industry. But, as I go around and talk to utilities, they are not saying that. That is not the message we are getting from them. The picture is really very complicated and has a lot of other aspects, but before I go into some of them, let me address your final question, which was, "Is this process somehow a collusion by everybody on the inside to cut the public out?" No, it is not. The reason I say that is because I see 'one step' as a bit of a misnomer. If you really followed the process as I went through it, there were really a lot of steps. You had hearings on the design, and you had hearings on the site. That is all before you had hearings on the combined license. So there are, indeed, as many places in that process for hearings as there were before. I think in one case there is even one more. The key is that you set the ground rules before you break ground. That you can know, by the time you dig a hole in the ground, that you have the combined operating and construction permit. That is the big difference. I don't see a big difference between one step vs. two steps, but that has been the familiar terminology that has been in the press, so I used it. But, I think all the protections are still there. The key thing is that you get decision making done early. Let

me go off a minute on to some of the complications of this process. I was in San Diego yesterday and we had an interesting panel discussion on communicating good plant performance. We had a fellow there from a California utility, we had Bill Harris from CEA, myself, and Paul Sands who is a journalist in California. Everybody but Bill Harris said, "We are not responsible for communicating good performance." In my case, again going back to the NRC mission, I can never be in a mode of being promotional, even if I wanted to. That is certainly not NRC's role. We can provide educational materials, but not promotional materials. One by one, everybody was saying, "Who is out there advocating the benefits of nuclear power?" It is hard to find out who that is. CEA (Council for Energy Awareness) clearly has that role. But they are known to be supported by the industry so they are not necessarily objective. The Conference was sponsored by ASME and ANS and, of course, the professional societies have a role to play there. The professional societies that are not lobbying groups, but are clearly educational and professional groups, could have a very effective role if they so chose. But what are the real problems? When you listen to a group like this, it is very interesting to learn that the real problems perceived today, and the decisions made today, seem to be being made largely on economic grounds. That is the bottom line. The problem with an economic decision is that you don't have a level playing field, it is not even uniform from state to state. The utility representative on the panel said, "Everybody who wants to see nuclear power progress is putting the eggs in the wrong basket. They really need to deal with state legislators and the state public utility commissions. That is where the decision making is occurring. These are the people who are setting up the financial rules and regulations for what type of power plant you construct, and what kind of rates you can charge, and what items can and can't be in your rate base, and how you recover your capital investment." As I go around, I hear that economics is really the decision maker today. You have seen that in three plants, recently, that decided not to make necessary modifications, not to put in a new steam generator, because the economics didn't work out. Where are some of the pitfalls in the economic picture? Well, if you do a long period assessment, as every utility has to do, you have to make assumptions today, about the price of natural gas. The price of natural gas is good these days. How valid are the assumptions you make today 15 or 20 years down the road? We are importing a lot of natural gas from Canada at this time. Can we make valid assumptions about what the future price will be? That is just one example of what goes into these equations. What I see, in general, and what worries me (and I am not sure that the energy bill really takes care of it) is the need to have an economic assessment from cradle to grave of each form of energy or electrical generation. You need to look at it from the stage of obtaining the source (mining or whatever it happens to be) through transport of materials, through construction, through licensing, through compliance with Federal regulations (be it air emissions, be it water emissions, be it whatever) all the way through to disposal. You need to look at what is involved in the entire process. I am not sure we are doing that very well in this country today. If you are really going to look at the true economics, I don't see how you can avoid that. That is the dilemma that the utilities are in. Put yourself in the place of the utility, the utility's business is to generate electricity. They are not necessarily going to care whether they use gas, oil, coal, nuclear, their business is generating electricity. So, economic analyses are what they are doing. There is also a school of thought now that will say, "Well, we ought to have a way to preserve the nuclear option because if decisions are being made today on the wrong type of financial analysis, the wrong type of assumptions, the wrong type of projections, we can't afford to lose that technology." Then, the next step is to figure out some economic way or some financial way, to make that possible and you hear some discussion about that. But the bottom line, as I hear it, is that most of these decisions are being made on an economic basis and that a lot of decisions, a lot of influence, comes from the state legislature and the public utility commission. This is where a lot of utilities see that they have to put their emphasis. The folks that feel, no matter what, even if it isn't truly economical, the best choice right now is that we still need to preserve the nuclear option, believe the emphasis should be placed at the Federal level because a decision like that might require some subsidization and it

has to be done at that level. It is a complex problem, and I am sure I haven't even hit on all of the idiosyncracies involved in it. One nice thing for me is that not too many people are beating on NRC anymore. They don't see NRC as the major problem. I think everyone is delighted to see the new licensing process. As some of you from overseas know, some of these evolutionary design plants and even the passive plants are getting a lot of interest in other countries. Many other countries will say, "We don't want to build that plant until it is certified in the United States by NRC," which puts us in a bit of a chicken and egg problem because the taxpayer can rightly say, "Why are we spending resources certifying those designs when there are no orders in the United States?" Who goes first? It is a very interesting issue, and we now have what is called '100% fee recovery' at NRC. We have to provide for the entire budget of the Nuclear Regulatory Commission through our licensing fees. So who pays for it, an interesting dilemma.

VANPELT: I want to know how the new licensing process addresses plant modifications. You mentioned NRC mandated health and safety changes. We are concerned about owner initiated changes, will there be any differences?

DE PLANQUE: The way the process is supposed to work is that you get a standardized design. If you get a standardized design, the idea is you are not supposed to have to make any modifications. Any modifications that would be made would be made only if there was a safety consideration. But again, we have to see how this works out in practice.

CLOSING COMMENTS OF SESSION CHAIRMAN MOELLER

Thank you so much. I think the response of the audience clearly shows how appreciative we are of Dr. de Planque sharing her thoughts with us. Now only did she tell us about changes in the licensing process, but she told us where we are and where we are hoping to go. She also was very candid and effective in answering our questions.