

UNITED STATES NUCLEAR REGULATORY COMMISSION

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BRIEFING WITH DOE ON NEW REACTOR ISSUES

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THURSDAY

APRIL 27, 2006

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The Commission convened at 1:30 p.m., Nils J. Diaz, Chairman,
presiding.

NUCLEAR REGULATORY COMMISSION:

NILS J. DIAZ, CHAIRMAN

EDWARD MCGAFFIGAN, JR., COMMISSIONER

JEFFREY S. MERRIFIELD, COMMISSIONER

GREGORY B. JACZKO, COMMISSIONER

PETER B. LYONS, COMMISSIONER

PROCEEDINGS

CHAIRMAN DIAZ: Good afternoon and welcome to the NRC with Assistant Secretary, Dennis Spurgeon, and Shane Johnson. Today is NRC bring your children to NRC today. So is there anybody that is a future NRC? Are we are recruiting actively, starting early?

We are pleased to welcome Dennis and Shane to meet with us today. Congratulations on your recent confirmation. We know that requires a special batch courage and achievement. It is not an easy thing to do. I also want to thank Shane for the time that he was Acting Assistant Secretary or Director. And we actually worked very well with him. We appreciate the support we had from his office.

Of course, we have been working, like you have, to implement the Energy Policy Act as well as preparing to meet the new challenges that appear to be on the horizon. Somebody call it there is a new dynamic nature. I am not sure that dynamic is the right word, but it is certainly moving quickly to get potentially new additions to the reactor fleet in this country. And of course, we both have different responsibilities. It is ours to make sure that these things are built in a manner that protects the public health and safety, the environment, economic defense and security.

I don't think your orders are too much different.

MR. SPURGEON: Exactly the same.

CHAIRMAN DIAZ: In the particular issue of new reactor licensing, we are getting ready to review these applications and there are three sets of issues, as you know, that we work with, with design certification, the early site permits or environmental assessment equivalent and then, the actually combined license application.

We have been trying to work with processes. And as you know, I been trying to beat around the country and the Commission has been very supportive making sure that people realize that standardization, standardization, standardization is a very good

thing. And that the more we do up front, the more we will reduce uncertainty at the end of the process. And in this we, of course, invite your comments.

We believe that we are getting ready. We are still not where we should be, but we are getting close to be able to say, we have got the processes, the functions. We are still hiring people, but we are feeling that we know what needs to be done, but you might have a different idea of that. You might be able to shed some light on what we need to do.

The Commission is therefore interested in hearing from you, seeing your perspective and then as we always do we will have a chance to ask you some questions. With that, and again, welcome. I wonder if my fellow Commissioners have any comments?

COMMISSIONER McGAFFIGAN: Mr. Chairman, I just join you in congratulating Mr. Spurgeon on getting through the process. He probably has discovered he is lowest paid person on his staff. You go through a long process of prenomination, confirmation and get to your job and then you discover that all perks of being the Honorable Dennis Spurgeon are not quite what some may think, but it is a huge responsibility. They probably should question the sanity of the five of us on this side of the table and you for taking any of these jobs but --

COMMISSIONER MERRIFIELD: You have done it three times.

COMMISSIONER McGAFFIGAN: So I welcome you aboard and look forward to your testimony.

MR. SPURGEON: Thank you, sir.

COMMISSIONER MERRIFIELD: Mr. Chairman, I would join Commissioner McGaffigan and your remarks Mr. Chairman congratulating you on the choice you have made in service to our country. I'm very happy to see you taking this position. Having come from a NRC regulated entity, you are well aware of our requirements and

expectations and certainly hope you can share that experience with others at DOE.

MR. SPURGEON: Thank you.

COMMISSIONER MERRIFIELD: I look forward to a good engagement in that regard.

MR. SPURGEON: Being invited to talk with you today is much different than some occasions when we were invited to go out and visit perhaps one of your regional offices.

CHAIRMAN DIAZ: Some improvements.

COMMISSIONER MERRIFIELD: Some improvements. You will find it works both ways. We will leave that for our questions.

COMMISSIONER JACZKO: I would just, again, reiterate the comments and welcome you here today. I certainly have no questions about my own sanity, but don't necessarily know about my colleagues.

But, I think this will be an interesting exchange to hear how you see a lot of these issues, in particular with new reactors moving forward and some of the challenges that we have and perhaps we can get a chance to hear your thoughts on some of these things as we move forward on this.

COMMISSIONER LYONS: I would only second the comments from my colleagues, but also note that of the five of us sitting here, three have been confirmed. You were questioning the sanity of those that have been confirmed Ed, two of us have not been.

COMMISSIONER McGAFFIGAN: Sorry.

MR. SPURGEON: On that subject, that was one of the questions -- actually sanity was one of the questions that Secretary Bodman asked me when I came in to talk with him. He says I don't understand why you would be willing to take this job. And I said, look my psychiatrist does not quite understand that either, so I understand your point.

CHAIRMAN DIAZ: Well, now that we have had the sanity checks made, I would ask Assistant Secretary Spurgeon to proceed.

MR. SPURGEON: Mr. Chairman, Commissioners, thank you very much for inviting us to come over here today to discuss these issues with you, because they are certainly timely and certainly of upmost importance as we move forward in the next several years.

As you have mentioned, I have now been in the job for about three and half weeks. So perhaps I'm now qualified as a veteran in that context. But I have to admit that coming into a Commission room like this has to bring back a little bit of nostalgia to me because it was just almost 37 years ago that I first came to Washington as a technical assistant to a Commissioner of the old Atomic Energy Commission, Tommy Thompson, back when as you know was both the regulatory and the developmental responsibilities. Most of what is now Department of Energy plus what is now the Nuclear Regulatory Commission was really the old Atomic Energy Commission.

And you know, back then, this was 1969, those were truly exciting times in the nuclear industry. We were growing. It seemed like almost every other week there would be an announcement of a new reactor project of some sort or another. Being part of the Atomic Energy Commission was viewed as really the pinnacle of Government employment. Actually, the pinnacle of industry employment at the time. You know, Atomic Energy Commission and NASA, those were the two preeminent places to work.

And you know -- well, I don't need to tell you of the intervening time between 1969 and today and the nuclear down turn, the Arab oil embargo of 1973, the cut back in use of electricity, the cancellation of many of those plants which were ordered in the earlier times and stretch outs. The high interest rates of the late 1970's which then caused really a very large negative impact on nuclear energy because of the high capital

costs and then of course, Three Mile Island and everything comes to all stop.

But you know, today is an entirely different situation, and the term nuclear renaissance is probably over used. But on the other hand, I think we truly have that opportunity within our grasp. And I say that opportunity because we have the best Presidential support I can ever remember for nuclear energy. We have the best Congressional support. That support, I think, spans both sides of the aisle for the increased use of nuclear energy.

And I think we are gaining the public support as well, obviously, that remains one of our major challenges, but many in the environmental movement who might have heretofore not favored nuclear energy are beginning to give it a second look because we are recognizing that you can't just say no. We do need increased sources of energy, not just in United States but particularly worldwide, and that's where we see much of the competition for energy.

Economies such as China, which are beginning to grow rapidly from an industrial and production standpoint, you know have not even started to begin to translate that into what their citizenry might demand in the future. They just might want air conditioners too just like we do. So we are going to need the energy. The question is how are we going to provide it?

And what I always say is we must implement every bit of conservation we can. We must use every bit of solar energy we can. We must use every bit of wind energy or geothermal. But when you get all done, you still need base load nuclear energy if we're going to supply that kind of energy.

As well as looking at nuclear energy to provide some alternatives to process heat. Whether that be for the generation of hydrogen to support fuel cells. Whether that be to provide hydrogen and just heat for -- there is a great need for non-greenhouse emitting sources of energy. So I see a whole lot of opportunities ahead of us and it is up

to us as to how we take advantage of those opportunities.

So where does the Office of Nuclear Energy fit into all of this? You know, we have several responsibilities, if you will. They range everywhere from production of isotopes for medicine, for space power, to fuel cycle development to advanced reactor development.

But the major mission and the engine which is needed to drive nuclear energy in this country and around the world is the order of more nuclear reactors for basic power production as soon as we can. I'm talking about current generation nuclear power plants or as we call them generation three plus, which is one step beyond the units which that have been in place and used before.

So I guess if I were to describe our mission it's that. It is to do everything in our power to help develop both in the United States and internationally safe proliferation resistant nuclear power.

If you translate that to us, that just means we need more nuclear reactors. We need more as soon as we can. And that's what we are dedicated to try and help remove what are perceived as some of the roadblocks to that. That's why what you see us doing is supporting programs for design certification, supporting programs for early site permitting, supporting programs for getting the combined operation licenses developed and submitted and through your approval process.

Let me just kind of tell you a short story going back to Commissioner Thompson. One thing that he always used to tell me is you can tell who the pioneers are -- one way to tell who the pioneers are is that you just look for the people that are way out front leading the way with all the arrows in their back. And so if I can translate that a little bit as to what we trying to do within the Office of Nuclear Energy is we are trying to provide incentives so that our pioneers as we go through this nuclear renaissance or call it the next time around, that we reward the pioneers. We don't cause them pain and

suffering. And so what we have put in place, as you well know, through the Energy Policy Act, which has provided us with wonderful tools to assist in this nuclear renaissance are the regulatory assurance program, production tax credits, loan guarantees and those are things that we are going to be talking with you about here in just a few minutes.

And I think they can go a long way toward serving as catalysts. I mean, obviously, the decision as to what and to when -- what will be built, when it will be built is up to our civilian utility industry. They are going to make those decisions. Our job is to try and help them if there are areas that are causing them not to order then we need to address those areas and to the best of our ability working with the Administration and Congress provide ways in which we can solve that perceived or that real roadblock to their going forward.

I have asked Shane to go through the view graphs. He, obviously, was the -- well, he and the two folks right behind me here are the real authors of these and I thought Shane would go through them and then I would like to answer your questions. But I would like to indicate a couple of things relative to the numbers that Shane is going to show you.

Those are the best information and the best from a standpoint of number of plants that might be in the pipeline and the best information that we have and it's what's been published relative to schedule.

I would tell you that I'm an optimist and I like to push the envelope. And relative to the number of plants that might be in the pipeline, you know, from conversations and you probably had these too, I think they're even more than what we are going to show you.

Relative to schedule, we're going to show you numbers like 2010 for combined operating licenses, an earliest date. We are going to show you 2014 as in earliest date to actually have a plant come on line. I don't know why that has to be? I don't know why we can't make that earlier. I think we ought to try to make that earlier.

And I think we ought to work together to try to make that happen. And anything that we can do in working with you, albeit, we are totally independent, we are the promoter, if you will, you are the regulator.

I think you have done an excellent job as being the regulator. I'm not sure that the Department has been that job over all of its history of being the promoter. I see myself as a promoter. I don't shy away from that title at all. I call myself a salesman for nuclear energy. I think that is what we should be doing; that's what we need to be doing because it is so important to this nation.

So I would like to take the challenge. I would like to take the challenge to see if we can't move that back, move it earlier for both the first license and for both the first plant on line.

I would like to see this President be able to be President when we pour safety related concrete. I would like to see the next President be President when we put a plant in operation. Is that a stretch? Yes. Is it theoretically possible? I say yes. Now, can we do it? That is a big question.

But with that small challenge, let me turn it over to Shane.

MR. JOHNSON: Thank you, sir. What I would like to do briefly is to walk through the view graph presentations that we have provided to you. Hit on those parts where we are working on near term activities associated with new deployment of nuclear power and talk about some of the stuff that we are working on in the longer term, principally our generation IV activities, the nuclear hydrogen initiative. I can give you a real quick update where we are on our global nuclear energy partnership, then touch on university programs, or lack thereof.

As you know, our Nuclear Power 2010 is a program that we have had underway for a few years now working with partnership with industry to help in the identification of new sites for nuclear power plants. We are demonstrating the key

regulatory processes for developing standardized light water reactor designs for the next generation as well as working to help develop concepts in ways of mitigating the financial risks to new plant deployment.

And I believe that of the things that we have been doing in the Office of Nuclear Energy over the last few years, I believe this program stands above the rest in terms of success. This program got its initiation and start long before industry was ready to necessarily step out and actually go public and say, yes, we are truly considering new plant deployment. I would like to think that this program helped play a small role, at least, in the change of the environment, and the attitude of both government and industry with respect to the role for new nuclear plants in our country's future.

With respect to early site permit, as you well know, this cost-shared project with industry has been very successful to date. And actually is the one that's most further along. We are working closely and monitoring what the three industrial companies are doing with respect to this program and their interactions with the Nuclear Regulatory Commission.

I would like to also acknowledge from our vantage point, this has been a very good relationship not only between the Department and industry, but between -- the interactions between industry and the Commission. We are very hopeful that we will complete the projects on the schedules that have been published and that this, again, is another positive step forward in seeing new plants deployed in our country.

The next big project we have been working on through our Nuclear Power 2010 program is our new plant licensing demonstration project. This is where we are working with the Dominion and the NuStart consortium on the demonstration of the combined construction operating license activities.

We are doing some work in here in terms of changing kind of the structure that we the Department have with these industrial groups in terms of just the kind of inside

baseball, in terms of the contractual arrangements that we have, the financial assistance vehicle with them is to make sure that we have that emphasis on the standardized plant design for both the General Electric, ESBWR and the Westinghouse AP 1000.

Also, to allow the utilities to focus on those things that the utilities really, truly need to focus on, that are the site specific activities for the deployment of these new plants. These projects were initiated in the spring of 2005. As the program is currently laid out, we expect them to be completed in 2011, if not sooner.

On the next view graph, you will see some of the demonstration milestones that Dennis eluded to. These are the schedule of milestones that both the industry as well as, I believe, the NRC have been working toward. We have every indication to believe that we will be successful in meeting these. And the Department remains committed to working with both industry and the NRC in doing what we can to ensure that these schedules are met and that we do get the requisite quality applications before the Commission.

We are also working with industry beyond just those industrial consortia in order to develop what we hope are generic guidance documents to help those that come after this initial consortia applications. We have been working for the last couple of years with EPRI and NEI on the development of the generic guidance documents to assist in the preparation of subsequent combined construction/operating license applications. There are a few remaining activities, but we expect this actual cost-share project with industry to wrap up the end of this calendar year and to be successful in doing so.

As Dennis eluded to, the outlook in industry looks very good as you all know. There are companies who have come forward or who are very committed to moving forward. While we have not yet seen someone stepping forward and putting in a contract to purchase a new plant, they are all slowly inching forward or gradually inching forward up to that point. We are working closely with Dominion and NuStart groups, their combining

construction/operating license project.

And one thing that we're very much aware and very proud of is that there are companies who are involved in this consortia who are also stepping out and moving forward independent of the consortia. Again, the 12 letters of intent for up to 17 new plants, I think, again, says that there has been a change of attitude and expectation in the industry and we are there working alongside trying to support industry as they move forward with new plant deployment.

The dates that you are seeing there that Dennis is challenging us to re-evaluate, again, the issuance of the combined construction/operating license in 2010 and getting the first new plant on line in the 2014 time frame.

As I eluded to earlier, we at the Department have been reviewing our cost-share program with industry with the intent of trying to see what have we learned over the two years that it's been in place? What can we do in terms of restructuring the financial assistance vehicles in order to make sure that we do meet our goals of having exercised or proven out that the regulatory regime as well as getting standardized plant design that not only these consortia that we are working with can use, but then the subsequent applicants also can use.

We are moving forward in doing this, putting up the financial assistance vehicle to essentially contract with both the consortia, the Dominion, the NuStart as well as the actual reactor vendors themselves. This is being done -- it is not being forced on any one. In fact, all the participants and partners are all in agreement that this is the right thing to do and that we are all moving forward in unity. We are very much again intent on making sure that the standardized plant designs are there, that the open items from the design certification are addressed and closed out for the application for the license application purposes.

The Energy Policy Act of 2005 has brought many new things to the

Department and to the Office of Nuclear Energy. Three key things with respect to new plant deployment are the financial assistance sections of the Act regarding stand-by support, the production tax credits, loan guarantees. We are working on all three of these.

As you see indicated on the slide the Department of Energy has the lead for the administration on the standby support provision and the loan guarantees. And those loan guarantees are -- while they include nuclear are not limited to nuclear, but go to other production sources as well.

The production tax credits is actually the provision of the Act that is the responsibility -- lead responsibility of the Department of Treasury, but we are working with them and their activities in terms of getting out the rulings on the production tax credits.

Standby support, there is not a lot I am actually at liberty to tell you right now. We are on track to roll out the interim final rule the end of next week. If we had the meeting two weeks out, we could have talked a little bit more about it. But what is provided here on the view graph is pretty much actually lifted straight from the provision in the Energy Policy Act called "Standby Support" or the risk insurance to cover delays for the first six reactors that are under construction.

The provisions for that. The 100 percent of delay cost for the first two plants, up to \$500 million, each. And 50% up to \$250 million for the plants three through six are spelled out in the provision. And as we put together the interim final rulemaking we have very closely followed the letter of the statute in doing so.

As we can see here, we did have -- we issued a notice of inquiry back in November, held a public workshop. Very good comments in from industry as well as from NRC in December, 2005. We are on track to get the interim final rule out next week with the intent of publishing a final rule by the one year anniversary of the President's signing the Energy Policy Act into law.

With respect to the production tax credit, as I said, this is actually a Treasury

Department lead. We are working with them and developing the process for the allocation and the approval of the production credits. It covers the same nuclear facilities that are eligible for the standby support.

Risk insurance coverage, as you can see, again, following the statute is limited to a maximum of \$125 million per 1000 megawatts of electricity generation for eight years.

The Treasury is -- again, if we had this meeting in another week or two, I could talk a little bit about detail, but Treasury is planning to publish the IRS bulletin next week on the production tax credit.

With respect to the loan provisions of the Energy Policy Act, this is actually an activity that is being taken on corporately within the Department. There is a loan guarantee office that is being stood up to handle this particular provision of the Energy Policy Act.

As I said, this was a provision that cuts across the different energy production technologies, including nuclear and others. We are possibly not as far as along in the loan guarantee area as some would like us to be, but the intent is we will have put out the requirements and the procedures for implementation of the loan guarantees in time to support decisions by industry and moving forward with new plant orders.

Moving on to the things we are doing in the near term and briefly talking about the things that we are doing longer term. Our longer term efforts are really characterized by our generation IV initiative, which is a project that was actually started back in the 2000 time frame, looking at what were the next generation nuclear power plants. What did they need to look like? What kind of capabilities did they need in terms of advancing the very safe designs that we have today, but also looking at physical plant protection, nuclear non-proliferation, sustainability and then various energy products that these reactors could develop.

This is kind of -- this particular chart is pretty much a history. It talks about our technology road map development. This was done on an international basis over the course of about two years.

The U.S., while we have been working and doing research in many of the six generation IV concepts, as we move into the fiscal year 2007 and consistent with our budget request for '07, we have made a conscious decision to really narrow our activities and really focus on the research and development and support for the very high temperature reactor and the sodium cooled fast reactor technologies. Those two technologies were really selected because of the way they interface and integrate with our other key activities with respect to hydrogen production and our global nuclear energy partnership.

On the international front, our generation IV activities here in the U.S. are consistent with the work that we are doing on an international basis through the Generation IV International Forum. The Forum was established in order to pool the various countries' research activities. We have tried to help each country in term also of eliminating duplication of effort, getting some synergies from the research programs of the individual nations and doing cost share on those things. We had a very good success so far.

We do have work that's going on between many of the countries. Our principle work to date has been with France, Japan, Korea and we are looking forward to expanding that work as we really start in earnest in the research arena for the very high temperature reactor and the sodium cooled fast reactor.

We have put in place our overall international framework agreement. We have put in place one system arrangement and we are still hammering out the details of the project arrangements. And those arrangements, as I say, are being hammered out, because they cover some very interesting and complex items associated with intellectual

property rights and liabilities.

With respect to the very high temperature reactor, what's shown here is a cartoon in concept. Lays out some of the areas of our research program in developing this concept. This facility is, actually, the basis for the next generation nuclear plant that's called out. It's been under research in the Department for a couple of years now and is actually called out in the Energy Policy Act in terms of the development of a high temperature reactor for the generation of electricity, hydrogen or both.

We do have an active program going on. The principal areas of investigation in terms of the very high temperature reactor are in the fuel development and the high temperature materials that are needed to support the operation of such a facility.

We will be coming back to the NRC and working in partnership with all the licensing strategy for the next generation nuclear plant. As called out in the subtitle C of the Energy Policy Act for the next generation nuclear plant, we have been given a direction to develop a licensing strategy for bringing such a facility online in the U.S. And we have been given a deadline to provide the strategy to the Congress by August 8 of 2005, which is the third year anniversary of the President signing the Act into law.

I understand that your staff have developed a draft Memorandum of Understanding. I can't say that I have seen it yet, but we do know that it has been drafted and we are waiting receipt of it. We are budgeting for this work, and this is an activity that we fully expect that we will be the funding source for the development of this joint strategy for licensing of the next generation nuclear plant.

Our nuclear hydrogen initiative, just briefly, this is developing of the hydrogen production technologies to be married up to the very high temperature reactor. Our principle -- two principle development activities are in the high-temperature electrolysis and thermochemical process.

We have laboratory scale work that's going on. We have had very good

success to date. As you can see at the bottom of the slide, earlier this year we completed a thousand hour production run on our hydrogen -- in the hydrogen apparatus at the Idaho National Laboratory. We are planning and have planned for a reasoned scale up of the technology, taking it from the laboratory to a prototype test scale up to an engineering scale that would ultimately be married to a demonstration reactor back middle part of next decade.

Global nuclear energy partnership, give you a quick up-date. Last month was a very busy month in terms of this new initiative. We issued requests for expressions of interest. Looking for the communities, organizations interested in hosting the siting of engineering scale demonstration facilities on separation plants. Demonstration fast reactor and associated laboratory facility that is needed to support the operation of the separations plant and the fast reactor.

We also issued an advance notice of intent for the preparation of the environmental impact statement. And we also brought the technology demonstration activities of the global nuclear energy partnership under the Department's project management system with the approval of the justification of mission need for these three projects. And so now those are formally established projects within the Department under our project management system.

We will be issuing a solicitation in the not too distant future looking for proposals for the siting of these demonstration facilities. We have been provided in our fiscal year 2006 appropriation up to \$20 million to award for the development of the proposals or siting these facilities.

Last but not least, a quick run down of where we are on our university infrastructure, research and education assistance program. As you know, we do provide funding for both research reactor infrastructure at our nation's universities, as well as grants for fellowships, scholarships and faculty research.

It's been a very successful program to date. I would like to think that the Department had a very prominent role in seeing that the enrollments in the undergraduate quadruple over the last few years. Their undergraduate enrollments were above 1900 student. Graduate level student enrollments are a little over a thousand and these are U.S. students, I might add. And so these numbers are U.S. students coming out of our high schools going into the nuclear engineering field of study.

We have made a decision in fiscal year 2007 to step back from this program with respect to the funding, we remain committed to supporting the funding for the research reactor fuel and the conversion of the remaining research reactors that are fueled with high enriched uranium to low enriched uranium fuels. We do have two fuel conversions that will occur this year at Florida and Texas A&M. And we have future conversions at Purdue and Washington State, Oregon State, and Wisconsin over the next few years.

We are through our Nuclear Energy Research Initiative funding research at the universities in nuclear engineering programs at the universities. As of today, we have about 36 universities involved in over 70 research projects. We recently awarded 24 new awards to 17 universities. Those awards were about \$10 million. So we remain committed. We will be going out in the very near future with next round of solicitations for research proposals from the university research community. And again, contingent on appropriated funds in fiscal year 2007 making those awards in the 2007 time frame.

We have taken the Nuclear Energy Research Initiative and really focused it on integrating in the university research community into our main line R & D programs, whether it is our advanced fuel cycle program, the generation IV, the nuclear hydrogen program.

So we think this is a good way of bringing the university community into our mainline R & D programs. It also allows us an opportunity to integrate the university

research community in with the researchers at our national laboratories as well.

With that, sir, I am finished with my overview of our nuclear R & D programs.

MR. SPURGEON: Ready for your questions, sir.

CHAIRMAN DIAZ: Thank you very much for the presentation.

Mr. Assistant Secretary, you mentioned Tommy Thompson and I happen to remember that I met him once. Probably one of those days that little children was visiting the agency just to not let you realize what my age is.

MR. SPURGEON: You are making me feel old now, Mr. Chairman.

CHAIRMAN DIAZ: I hope so.

COMMISSIONER JACZKO: The Chairman's only 39, in case you didn't know.

CHAIRMAN DIAZ: With that, Commissioner Lyons, please.

COMMISSIONER LYONS: Thank you, Mr. Chairman.

I guess I would like to start by noting that I really appreciate the opportunity to meet together today. I think it's just very important to be able to show the -- from the NRC's perspective the importance that we attach to careful coordination between the NRC and the DOE as together we are working toward facing some very substantial energy challenges that the country is facing.

I also appreciate that both our Chairman and Assistant Secretary Spurgeon started out very carefully recognizing the different roles of the two organizations. And certainly that difference in roles needs to be carefully respected as we work toward coordinating wherever possible.

I thought I might start with the challenge that you gave us, Mr. Spurgeon, to advance the COLs. At least as far as I know, we're not expecting to see a COL application for a year and a half. I was curious, since that is a substantial fraction of the time between now and 2010, I'm curious if you have some other information that perhaps

we're going to see COLs much sooner?

MR. SPURGEON: Obviously, I cannot give you any specific information that that will happen. I know that there have been -- and I would just describe it in no other way than coffee table kind of conversation about the possibility of one or more utilities accelerating their prior plans. Whether that happens or not, I can't tell you. Obviously, we are not the driving forces in that. That is the customer who is going to decide whether and when they will decide to step forward.

All we can do is and what I'm trying to do, I'm jaw boning, it's plain and simple. I would like to see for the best interest in my view of this country, us move sooner rather than later to get that first plant or those first plants through the licensing process. Because once that happens, I think the subsequent plants and therefore, my little story about the pioneer. I mean, there is no question that the first one through the hoop is going to have a significant challenge to do it in a timely way.

But, there in, there is the challenge and what can we do to help? That's really what my message is. What do you need? Can we help you? What's stopping you? Can we help you with that? I didn't say it was going to be easy. I didn't say it wasn't a tremendous stretch. But how else do we know unless we give it the best chance or the best shot we can.

COMMISSIONER LYONS: And as you know from the NRC's perspective, we are waiting for that application and there is little that we can do other than getting ready until that application shows up.

MR. SPURGEON: No question. I realize that completely.

COMMISSIONER LYONS: One of the areas where, I think, we do share a very direct interest is in production of new scientists, new engineers to move into these technologies. From the NRC's perspective, we have been trying to use whatever capabilities we have from the Energy Policy Act to provide as much funding as possible in

these related areas.

Shane, you referenced that the DOE and their budget has drastically changed funding to the point of zeroing the funding in the '07 budget for some of the university assistance. I just wanted to at least share with you from my perspective that to the extent decisions like that could be re-evaluated as the process progresses, I think it would serve the country very well.

From our experience in trying to hire new staff and from what I'm hearing from any number of the utilities, we have by no means met the challenge to provide staff to replace people who are, perhaps, even exceeding the Chairman's 39 or my slightly older age. But in any case, in my view, we have a tremendous challenge and we have not scratched the surface yet. It is certainly very good that the enrollments are up, but we need to sustain that.

MR. SPURGEON: Many of your colleagues up on the Hill -- or former colleagues I should say, I will tell you, raised similar points with us and we recognize that.

The one thing, though, that I think will be the biggest draw of all toward getting those college enrollments will be that which we just talked about, getting those first reactor orders underway. Because you know, people go into a curriculum because they feel that it is going to have good career opportunities for them in the long term. To provide that kind of promise that this industry truly is back, that this industry truly does have a dynamic and growing future, I think will be the best draw of all to get those people back into the classroom.

COMMISSIONER LYONS: Perhaps, a question on GNEP. From the NRC's perspective we are very interested in the technologies that you will be addressing and in the time scales on which you will be asking the NRC to participate in licensing discussions, and of course, we need to be building up the relevant expertise in any of these areas.

We heard dates like a demonstration or reprocessing facility in 2011, a fast

burner reactor in 2014. At least to the extent of my knowledge, I don't even know what technology would be used, for example, for the fuels in a fast reactor at this point in time, which makes it difficult for us to know exactly what technologies we should be building up.

I'm wondering if you could, perhaps, shed a little bit of light on both the extent of involvement that you anticipate for NRC in licensing or whatever role for these first facilities and the uncertainties that you see in some of these technologies that are suggested to have very aggressive dates?

MR. SPURGEON: I think you have hit on a very valid point and it is one that we are going to have to maintain. In this case, a very close coordination with you, albeit with our respective roles, because we are in a stage now where we can't answer that question without doing some very extensive R & D work to get to that point. The fuels area in particular.

You know, one of the biggest challenges, obviously, in looking at the GNEP program is in the fuel's area because we are talking about recycling, we are talking about fabricating fuel that have contained within it, some -- at least, some of the transuranic fission products -- I said fission, erase that word, obviously transuranic is not a fission product.

But there is a lot we don't know about that and so there is the development work that will have to happen before we can give you a decent answer. It's the same thing with the next generation nuclear plant. The fuels area for something that's going to operate in that temperature regime is a major unknown as are some of the material areas, especially the heat exchangers.

Your comment is very fair. We are not in the position right now to provide you those answers, but I think what we would like do is as we move along try to keep you realtime in the loop so that you can structure your own support program for that.

And obviously, for us to do anything in this arena we're looking to the day

where it can be a commercial entity building those facilities, not the government building them as test facilities, and therefore, we want to make sure that everything we do is directed along the line so that it can be licensable when it gets to the commercial stage. Therefore, we have got to have you involved all the way along the process so that we don't go build a very nice demonstration facility and think we have a very nice commercial product and some day have you all say, sorry, but what about this?

CHAIRMAN DIAZ: Thank you, Commissioner Lyons. Let me go back to some of my favorite words in here, standardization, design center approach, high quality applications. You use all of those words. And we certainly appreciate that you have restructured your programs to fit what we believe is a potential success path to review this application.

Just a question, as you work with industry, do you have a way to make sure that we are following that success path because we need to really put our resources, our efforts in making sure everybody is aligned with this. And certainly, you have a tremendous value of being out there with our potential applicants and making sure that things are oriented the right way. Is that the feeling you're getting?

MR. SPURGEON: Yes, sir. I think Shane tried to address that as part of the presentation. That, obviously, our product is a joint product and is one that you have to be comfortable with. And -- well, that's certainly the objective. Now, if we are falling short on that, I'm sure you will let us know. We would like to know that earlier rather than later.

CHAIRMAN DIAZ: I would like you to be ahead of us.

MR. SPURGEON: Hopefully, we are.

CHAIRMAN DIAZ: You know, the Commission is concerned as we look at all of these issues that, you know, there are three things happening at the same time. And you, of course, are very conscious of it, making sure that the design certification eventually as soon as possible and offering a complete design so we don't have to go back and forth

and certain efforts are going on that. We want to make sure that the applications are complete and we don't want the word high quality misused.

I think Commission is very clear that we are not asking for perfection or close to perfection, but we want to minimize the number of interactions that take place. But this is a long introduction to the bottom line issue, we still are concerned with the front end, the environmental reviews and what we call early site permit or the equivalent to an early site permit and emergency preparedness and potential security.

Those things that really are site specific that require significant amount of work and we already seen that on one occasion, lack of communication with the States and authorities cause, you know missteps in the process.

Are your processes actually, you know, in a certain way whenever you're putting any resources on and making sure that people are making all of the connection with the States and are actually putting the proper emphasis in getting this issues resolved at the front end rather than the back end?

MR. SPURGEON: Well, it is obvious we missed on one. And I presume you are referring to North Anna and the cooling towers.

CHAIRMAN DIAZ: Yes.

MR. SPURGEON: But I can't say I was there, but it's our program. We probably -- we could have done better in that respect and we're in the process, as is the contractor, recovering from that at this point. But, the answer is that is the objective. And we need to do better at accomplishing the objective all the time, not just most of the time.

CHAIRMAN DIAZ: I believe we need to raise the awareness of everybody that these things are complex and requires just more than these things.

On the issue of the COLs, you know, we are going to have, you know, more special issue with the ESBWR and going to the design certification at the same time that we are practically beginning to process those applications. Could you comment on the

coordination that is taking place between those two aspects that might give us a better review process for the NRC?

MR. SPURGEON: I might ask Shane or the folks behind us to make a comment on that. Obviously, I think they are two different situations when you talk about the EPR verses the ESBWR because of one having experience and being able to actually participate in your international certification program, if you will. So they, perhaps, are similar in a way, but different in terms of the detail that you might expect -- and implementation that you might expect to get.

But, Shane, is there anything you want to say about that?

MR. JOHNSON: I would just add to that that industry is very much aware of the opportunity here to swamp the NRC with a lot of applications coming in simultaneously. And I believe, you know, based on the conversations that we have had, meetings, communications that the industry is very much aware of this. They very much want to avoid that and they are working cooperatively across the board whether it's design certification, whether it's COL, ESP of making sure that there are phased applications coming in to the Commission. That they are not all coming in on the same day or the same week for that matter, but they are very sensitive to it. They understand it. They have a responsibility in this as well of not overwhelming the system, so-to-speak.

CHAIRMAN DIAZ: This is my last comment. I would urge your support as you talk to potential applicants to let us know as soon as they can, because the earlier we know the better we can be prepared to do our job. Commissioner McGaffigan.

COMMISSIONER MCGAFFIGAN: Thank you, Mr. Chairman.

I'm going to run through a bunch of things fairly quickly. I associate myself with Commissioner Lyons comments about the nuclear education programs that were zeroed. I hope that our former bosses will rectify that error by the Department of Energy in the budget process this year. And I think there is every indication, as Mr. Spurgeon

indicated, that probably will happen.

The second item I'll talk about is the timing issue, which you're going to hear from all of us on. I don't think anything better than 2010 is feasible. And I'm not sure that 2010 will prove feasible for somebody receiving a COL. There is a lot of things that have to go right.

Anybody who would think about coming in early when Part 52 is currently out for comment; we have three security rulemakings that we have to complete in order to stabilize the security side, some of which are not going to be complete until next year; when we have no Standard Review Plan that's agreed to; no guidance on COL content; numerous other Reg Guides that have not been applied for. I would question the sanity of an industry applicant who is going to move schedules forward and take chances on all that.

So I think that realistically the timing is what the timing is. And we are going to work toward the timing. We are going to do everything we can to cope with the tidal wave, but we have to sort of fight -- you're the promoter; I'm the regulator -- I think we have to fight raising expectations to impossible levels. So I have done my contribution. You have done your contribution.

But on timing if you want to do one thing during the remainder of the Bush Administration to make sure that these COLs have a chance to get out in 2010, I would respectfully suggest that you talk to your colleagues at the Department of Energy about a new standard contract for the taking of spent fuel, which is required before somebody gets a COL in their hot little hand.

So if you could get that solved by January 20th, 2009, you would get a lot of brownie points from me. A lot more than for anything else you have mentioned today. So I don't know whether you want to comment on that, but just so you know, that's on the -- I'm the one who keeps having to bring that up.

I mentioned it to Paul Goland at our Regulatory Information Conference. I mentioned it to your counsel. Presumably, it does not take spent fuel in 1998, there won't be five year cooled fuel under the best of circumstances, you know, that's been through three cycles until, 2023, 2024, but you need something.

MR. SPURGEON: It is hard for me to comment on that one, but I very definitely heard what you just said.

COMMISSIONER McGAFFIGAN: Okay. Of all the stuff that DOE does, that is necessary, just so you understand.

The burner reactor, I would again, following up on Commissioner Lyons, that is regulated today under Section 202 of the Energy Reorganization Act of 1974. Even if DOE does it, if it is of any scale --

MR. SPURGEON: I was referring to the recycle facility when I made that comment.

COMMISSIONER McGAFFIGAN: And I respectfully would suggest that it would be a mistake for the recycling facility or for the fuel fab facility if they are of the scale that some times is talked about for GNEP and maybe they will be scaled back for those not to be licensed by NRC either.

I mean, I think that was a lack of imagination on the part of the 1974 Congress to think -- they put Clinch River and similar reactors, burner reactors, into our regulatory space. They probably didn't think DOE was going to be back in the demonstration fuel fab and reprocessing business, because by that time as you well know it had transferred to the private sector.

Three decades later we are talking about it and when this came up in the MOX facility for weapons grade plutonium in the late '90's in the 1999 Defense Authorization Act Congress clarified Section 202 and gave us that authority. So there are some issues there just so you understand.

The last item -- and I'm using my time efficiently here. The next generation nuclear plant. All I would say is if it goes to 2021 and the burner reactors go to 2013, then we need to be oriented more toward the one that is coming in sooner. And maybe -- you know, thus far the talk between our staffs has been you might have \$100,000 or so to offer us, consistent with the law, to help in the licensing strategy in the current fiscal year.

We may not meet that August 2008 deadline, and that may be just what the facts are, but based on your budget submittal and our discussions with you all that's a pretty optimistic date.

MR. SPURGEON: I would agree with you.

CHAIRMAN DIAZ: Thank you very much. Commissioner Merrifield.

COMMISSIONER MERRIFIELD: I would also associate myself with Commissioner Lyon's comments about the university programs. I think they are critically important. I agree with Commissioner McGaffigan. Hopefully, there can be some additional movement on that.

I would also say I think there has been a real change in the universities. I visit them quite frequently. I think in part, we can all sort of take credit in a lot of ways. Certainly, the programs you have initiated have helped.

I think the fact that you have had a very successful license renewal program has demonstrated to the university students that even were no new reactors to be built, there is a possibility for a long stable career in this energy environment going forward.

The mere fact that nuclear engineers are the highest paid discipline among graduating engineers today is probably the most important factor why this has taken off with all the things we have done to assist. I want to talk a little bit about -- you talk about accelerating our plans relative to the 2010 date. Commissioner McGaffigan gave us an outline of a variety of complications to that. I might be slightly more optimistic about our ability to achieve that.

Nonetheless, I think he has pointed out areas that we will have some challenges. At the end, I agree with the Chairman. It is the need for a good, solid application that ultimately will allow us to get the dates that we need.

Again, our license renewal program really has demonstrated that. It's a function of having good material for our staff to review that has allowed to us take a program that originally envisioned a 36 month turn around for a license renewal down to a point today where it's 23 months, and we have a lot more predictability in that process. And it's because of the work of licensees to have good applications for our folks to review.

I guess the question that I want to get into, our agencies, besides having different roles, promotional verses regulatory, have a different outlook. That outlook, as a science agency, I think DOE sometimes has the authority and the opportunity to look forward into a lot of areas.

As a regulatory agency, particularly a fee-based agency, we have a more passive role. We have to sort of take what comes over the transom. So planning for us is somewhat more difficult. And also as a fee-based agency with 90% of our fees going to our licensees that complicates matters as you will remember having had to pay some of those bills.

The challenge it seems to me, the most important thing that we do is regulating the current fleet of plants. The second most important thing that we do lately has been the license renewal program. The third most important thing in the reactor area, is obviously things that may come with the potential for new plants to be ordered.

Coming down the line when it gets to GNEP, when it gets to the notion of the NGNP, those systems get more complicated, because there are a lot of different visions that you all have out there of things that could happen and particularly as it relates to the next generation nuclear plant, having a greater degree of bounding on what you want to do there is going to simplify our life if we have to get to the point of actually trying to design

a regulatory program to bound that.

So I was heartened by your comments of doing better on communication. I think that is an area we can all work harder on. But can you talk a little bit more, again, about some of the prioritization you see in terms of getting this information relative to NGNP or GNEP in terms of helping us plan down the road what we need to do from a budgetary standpoint.

MR. SPURGEON: I can a little bit, but by its nature GNEP is really, just as the name implies, it is a global nuclear energy partnership. And with emphasis on the "P" at the end, this is something that we have to move in concert with our other cooperative countries that will be working with us in that partnership in its implementation.

So it is not a unilateral decision on our part as to precisely which direction we move. We want to do this in a collaborative way so that the end result truly is one that will achieve international acceptance as it's implemented.

So that, by its nature, defines some really big questions relative to okay when we talking about disposing of the transuranic isotopes, what method are we going to use? How is that going to be done? When we talk about recycling them, what kind of a reactor, and specific, obviously, we have laid out the liquid metal burner reactor as a reference if you will. Precisely, how is that to be proposed? What kind of a core will it have?

These are things that not only do we need to come up with the answer as to what we think is best, but it's one that we need to cooperate with others in the context of GNEP, the other supplier nations to do.

And GNEP is not just -- I want to focus, just kind of put out that GNEP is not just a nuclear energy program. I happen to be designated as the program manager for GNEP, but it is not as NE. NE is the lead, obviously, because we have most of the work, if you will, from a technology standpoint. But there is a very big NNSA role in GNEP from a

safeguard standpoint. There is a RW, radioactive waste component because, obviously, of the waste management component.

There is a very big science component because of some of the things that we are looking to develop and do, especially some of the advance computing and the modeling areas that we want to pursue, which in its implementation may be very helpful to you in terms of using some of that if we are able to develop it well in the licensing process.

If we could really in detail model the entire core and, in fact, the entire plant, that might prove a very useful tool to you all. I mean, I'm amazed at what we are doing now in our super computing capacity. It is allowing to us do things that we did not even dream of doing just a few years ago. So it is a long answer.

But we are not to the point where we can give you good input, but we will commit that we are going to tell you as much as we know when we know it as to what direction we're going.

COMMISSIONER MERRIFIELD: Mr. Chairman, there will be other issues I want to explore, I think, when we have a second round, but on this issue I hear what you said. I agree with Commissioner McGaffigan, I think, going down the road toward GNEP, although, only certain elements appear to be focused on having an up front NRC regulatory footprint on that, I would fully expect that there are a number of folks in Congress that think that we ought to be there on each element of that program, particularly given the size of the program that Commissioner McGaffigan talked about.

But as it relates to NGNP – and this will have to be conversations we follow-up on -- some of them, perhaps, not in a public setting; but we need to be able to plan -- I'm talking budget dollars. We really need to understand what is it that you realistically think you may do, so that we can realistically put dollars there.

Because we have got, with all these challenges in front of us without greater specifics about something that is actually going to mature into an application or a real

program, I think we are hard pressed given all the pressure we have from Congress and else wise to keep our costs down, to put money into some of these programs if you don't think realistic it is going to come true.

We have got to have a dialogue to make sure that we understand what you think your needs are and so that we can appropriately put that money where it needs to go and not spend money on issues that are not going to mature.

MR. SPURGEON: Fair comment. As you know, we are just going into the NEPA process and part of that is evaluation of alternatives. So until that process has run its course, it would be very difficult for us to give you the answer, because we are going to evaluate the answer as part of that process. But we can certainly continue to have conversations that give you the benefit of our current unofficial thinking, if you will.

CHAIRMAN DIAZ: Commissioner Jaczko.

COMMISSIONER JACZKO: I wanted to talk a little bit about some of the new reactor issues. Some of these things have been touched on as Commissioner McGaffigan indicated, I think he said 2010 is not necessarily feasible. I would tend to fall in that line of thinking. I think, in particular, 2014 for final construction is certainly extremely optimistic.

One of the areas of concern I think I have is that we continue to talk about this process in terms of schedules rather than in terms of safety, and ultimately that is what we have a responsibility from our side to focus on is an adequate and appropriate safety review.

One of the things, and I'll say a few things, and perhaps I'll ask you just a general question. One of the areas that concerns me a little bit, as I said on this, is that we seem to be working backward from 2015. It is almost the analogies in some sense comparable to the movie "Field of Dreams" where I think Kevin Costner kept seeing everywhere the statement build it and they will come. And it seems to me what we have

here is something along the lines of submit it and they will approve. And we're not focusing on the fact that we're going to have to do serious reviews that will take serious time.

There is a lot of legal issues that will be involved from the hearings. There is a large number of uncertain issues. I think if I just look at some of the schedules and some of the plans, one of the things that I see is a lot of overlapping processes. Early site permits going on concurrently with COL reviews. In some cases there are on top of that a third concurrent process of design certification.

If you look in our Part 52 rules, it's fairly clear that the Commission never envisioned that kind of overlapping processes. I think if you -- the best indication of that is in Part 52 where we talk about the fact that applicants may submit a COL when they are referencing a draft design certification and the Commission put in the rules the phrase, "at your risk". I think it is a very telling phrase that that wasn't the direction that the Commission intended for applicants to go.

I think all of these things are being done, as I said, to fit this lengthy review process into a window that gets us to 2015 or 2014, the numbers that have been thrown around without really looking at what do we need to do in order to get a good, solid review process.

And the final thing I would say on this is that, ultimately, I think this has a tremendous important impact on an issue that you raised, which is public confidence and public agreement and acceptance of how we move forward with energy decisions.

I think we run a real risk here of really damaging public confidence if we don't have a good, fair and appropriate process. I think that process has to be fair to the applicants and it also have to be fair to the people who are potentially going to be intervenors in this process. I think we need to keep all of these things in mind as we do this.

So the question I would have for you then is basically to what extent are you looking at some of the -- when you work with applicants and you work with them to work this process, to what to what extent is your staff familiar with Part 52 with some of the processes, to what extent are you talking to the applicants about kind of the processes that ultimately was laid down by the Commission several decades ago or a decade or so, a decade and a half ago in terms of moving forward with that?

MR. SPURGEON: I would just like to make one comment about your very first point and I think it is a good one about the focus on safety. And one thing that I would like to say is that I am a promoter. I believe in nuclear energy. I believe we need more nuclear energy. But when you find somebody like myself who is a promoter, you will also find -- or believes in promoting nuclear industry, you will also find that we're the most adamant people relative to ensuring the safety of nuclear power plants, because we can not have nuclear power plants unless they are absolutely safe.

So that was my early education. I have never forgotten it. That was why Commissioner Thompson wanted me to come with him. I mean, we wrote the book -- he wrote the book; I just maybe helped a little bit called "The Technology of Nuclear Reactor Safety." I have been involved in nuclear safety since I been in graduate school. And it is, if you would say -- well I won't say I'm an expert in anything, but that's where I cut my teeth.

So believe me, I am totally with you relative to ensuring that whatever is built in this country is absolutely as safe as we have the ability to make it.

Part 52, I have to admit, I have never gone through Part 52. No one else has either. So obviously, we are going through it together right now with some of --

COMMISSIONER JACZKO: One of the things that concerns me is to some extent we're not even going through part 52 right now. What we are going through is kind of some kind hybrid of Part 52. I mean, the Commission has Part 52 rulemaking before

us. The Commission has now approved potentially new rulemaking to do limited work authorizations, which would add potentially another layer of hearings on top of this entire process.

So we focus a lot on standardization. We talk about standardization and design, but I think one of the things that would be helpful is, certainly, this is to some extent an issue for the Commission, is that we kind of stick to Part 52 as it was laid out. We have not gone through Part 52 yet. Let's actually try that first before we try all these permutations of Part 52. That's one of the concerns that I have.

MR. SPURGEON: I will let Shane fill in where I'm not filling in.

Listen, you know, I like this position. Whenever I get that question that there was some chance back here.

COMMISSIONER JACZKO: Isn't staff great?

MR. SPURGEON: Wonderful.

Maybe I have a disadvantage is that I remember the regulatory process of 35 years ago, and it was certainly much -- although difficult, I would say, but it was much simpler then. I mean, I remember the initial PSARs being big enough that you can put in a binder about yay big, and you know, the ability to -- if you didn't get a license in a year and a half or two years, you were up in arms and complaining. So times have changed a little bit.

But --

COMMISSIONER JACZKO: And I am not trying to put you on the spot. I don't expect you to know Part 52. That is not my intention.

MR. SPURGEON: I do have a copy.

COMMISSIONER JACZKO: My point is ultimately I certainly would encourage you to think about these issues as well. I think they are important parts of the entire process as we go forward.

MR. SPURGEON: I sometimes try to be a little light, but it is deadly serious, and I appreciate that.

CHAIRMAN DIAZ: All right. We will have one more round of quick questions.

COMMISSIONER LYONS: Let me start with a suggestion, which I think I've sort of implicitly made to Shane by providing him a copy of a trip report of mine from some months ago. I had an occasion to visit an international R&D conference, it was the Halden Conference supported by 18 countries, doing absolutely outstanding work in any number of areas addressing both the safety and the operational capabilities of current reactors, whether they be 3 or 3 plus generation, any fabulous work that would be applicable to the advanced reactors.

I was very concerned at the limited NRC participation and it was zero DOE participation. It truly raised a question in my mind, sir, that I would at least ask you to re-evaluate, is whether the Department of Energy is adequately represented in international fora on advanced reactor issues? I do not believe the NRC was adequately represented there. But I am even more confident the DOE was not, and perhaps you can just consider that as you begin your new challenges.

Another question and this may be -- actually, I think you gave me too much time on the clock. I just noticed how much time I had.

MS. VIETTI-COOK: We scheduled the meeting until 3:30 so I gave you 4 minutes.

COMMISSIONER MERRIFIELD: You can always give it up.

COMMISSIONER LYONS: Commissioner McGaffigan partially addressed this question and that was -- that's the priority of NGNP relative to other projects within NE. And I wonder if, perhaps, I could ask quite directly how you see the priority of NGNP as it is currently established relative to GNEP, because that will have a fair bit of bearing as to

how we begin to staff to meet challenges in those two areas. And maybe even a question is could you anticipate in the future that NGNP would become part of GNEP? Just in general the relationship between those two programs.

MR. SPURGEON: There certainly can be an overlap. Just as the Generation IV International Forum has a direct overlap potential with GNEP because of the fast reactor. It is certainly one of prime candidates in Gen IV and also looked to be a burner reactor in GNEP.

So one thing that we are in the process of doing -- I'm in the process of doing is really putting together an integrated plan that takes into account the somewhat different programs, but they have many common elements and as can NGNP potentially have a common element.

NGNP spans a couple of programs in the Department as you know. It is in the hydrogen initiative and then -- the nuclear hydrogen initiative part of that, as well as it could be one of the candidates for the small reactor that could be part of the reactor that could be used as, call it the export reactor, to some of the smaller countries.

So it is a fair question. In terms of priority I look at what the keys are to get done early on. And part of that, I look in the fast reactor area. We are going to put a great deal of emphasis on fuels early on, because that is the key area to address.

So, I'm answering it more from the standpoint of the individual parts of the whole piece, but we are going to put a lot of emphasis on fuels. In the recycle area we are going to put a lot of emphasis on refabrication, because it is -- again, it is the fuel. How do we deal with that piece? So that is where the priority is.

If are you talking NGNP, the second piece is materials for the heat exchanger. So we are picking out those areas of technology that we know are the long poles in the tent and going to emphasize the long poles in the tent until we can get to the point of integrating them into the overall system.

COMMISSIONER LYONS: I think my only point would be to the extent that you could share with us as it's developed the relative prioritization among these different programs, or perhaps the way in which the programs will eventually be combined together, it will help us in trying to understand what staff capabilities we need to build a regulatory framework at a time when you need it.

MR. SPURGEON: Fair question. We need to do that for you and we will.

COMMISSIONER LYONS: My four seconds to the Chairman.

CHAIRMAN DIAZ: Gone.

Let's see. The issue of support for university reactors. Since I am supposed to be unbiased, I didn't want to jump into that because I might show my true colors, which I normally try to disguise. But I strongly support taking an additional look at what is it that can be done, because I been there. I know them. It is amazing what a little bit of support can do for many of these places.

So, we are all going to be working to try to convince the right people in Congress to replenish some of the support.

MR. SPURGEON: I was asked that questions in -- one of the written questions when I was going through the confirmation process. And obviously, I was not quite sure how to answer that, so I just put in there an answer that says that my own thesis was supported by the predecessor of the Department of Energy, the Atomic Energy Commission.

CHAIRMAN DIAZ: So was mine.

Now, let's see, how do I say this. You know, I learned a couple of things from Commissioner Merrifield, well every month, practically speaking, one of the things he does is he looks at what we have said, makes sure that if somebody that is not an expert and listens to what we say, that actually he gets the right impression. So I will show that I can learn. I wrote a phrase in here that says -- which I am going to negate -- it says, you

cannot show a young dog old tricks. Is that the way the phrase goes? But I can learn.

You know, Commissioner Jaczko was talking about one of the things we talk about, because that's what you brought, which is a schedule, but not apparent to this issues of schedules, which makes the press and so forth, is the fact that this agency has a very solid framework to review the safety case, and that's what we are going to do. Okay, we're going to do that regardless. And we are going to try to do the best schedule, but we are going to go step-by-step and make sure that there are no gaps.

And I think that is the job that the American people have demanded of us and we are going to fulfill that to the -- some times to a painstaking degree. Unfortunately, those are not the things that make headlines or -- but if you look at that group back there. That's what they do. That group out there is now looking at making sure that every step whatever way we do it, with design center approach or somebody comes with a different -- that the safety case will be well constructed. That we will be able to answer the questions that the American people put.

That we will be able to go to the Congress of the United States and say, sir, if we actually approve this application, it will actually be conforming to the requirements of protection of public health and safety, the environment and the common defense and security. I just wanted to add that, because it's behind the scenes, but it is always there.

MR. SPURGEON: I would have it no other way.

CHAIRMAN DIAZ: I think I'm going to give Commissioner McGaffigan one minute.

COMMISSIONER MCGAFFIGAN: Mr. Spurgeon, I want associate myself with Commissioner Jaczko's point to you that we were preparing all these years, you know, before the tidal wave was set free by the Energy Policy Act of 2005, for a process where we were going to have somebody who had a certified design and early site permit in their hot little hands and then they came in for a COL.

If you can persuade John Rowe to build an AP 1000 at Clinton, I think he would go to the front of the cue and might actually -- because he would have a certified design and he would have an early site permit and no one else -- it's a null set of other possibilities of people who might have that combination of things.

But that's the process that we envision and now we are doing perturbations, very significant perturbations off that process. And that's why there is great uncertainty in my mind and in all of our minds and your mind it should be as well, is to how well we are going to do on the perturbations.

We are going to do the best we can, but it wasn't the process that we envisioned and it would have been, as I say, you may want to pay a visit to Chicago and see what you can do with Mr. Rowe and -- you are the promoter, I'm not -- to see if you can sell him an AP 1000 at Clinton; but that would then have -- and he has not announced -- and I don't think there is a germ of an idea that he is going to announce, but if you want one, that one would be fair for you to say, by God, why can't you get it done by 2010, early in 2010. That's your homework assignment for the weekend.

MR. SPURGEON: I copied that down.

COMMISSIONER McGAFFIGAN: The other point about being schedule driven in GNEP and some of these other activities, I think historically, as you probably well know watching DOE over the last three decades, schedule driven activities have probably been unblemished by success, and so I think you have to have schedules because that's what we do, but to be driven by a schedule -- I mean, you can look at your friends in the Yucca Mountain office or you can look at the folks out at Hanford cleaning up tanks or whatever. And you can see that when you do things on a schedule driven basis, the schedule tends to never actually be met. So, I would urge you to take that thought with you as you go on with this stuff.

One of the issues that we face, and Commissioner Merrifield explored it, and

maybe he will explore it in a moment as well in more detail, is we ultimately, in choosing to invest in trying to get ready for a new reactor and we don't have a lot of experience with licensing sodium cooled fast reactors or get ready for a high temperature reactor. We don't have a lot of -- Fort St. Vrain is a couple decades in the past with experiencing with licensing high temperature reactors. And Part 50 is a light water reactor thing.

If we are going to get ready for those things, it is going to take resources. On the other hand, I heard you say your highest priority was Gen III plus deployment. So I guess the part of the question -- I am finally going to ask you a question here -- is if we face a trade off during the next several years between meeting a DOE need for GNEP or NGNP or whatever, or having resources for Gen III deployment, which in our case is licensing and making sure the safety and environmental cases are good, should we choose seven day a week to say no to you on the longer term activities or at least, say we are only part way there, because we have to keep our focus on Gen III plus deployment?

MR. SPURGEON: I think you just asked me a question to which there is a no win answer.

COMMISSIONER McGAFFIGAN: I'm good at that.

COMMISSIONER JACZKO: That's why you have your staff.

MR. SPURGEON: Look, I would give you my personal opinion, but, obviously, we want to try and do everything, meet schedules for all programs, but I don't back away from the number one priority, I believe, in the best interest of this country are getting more nuclear reactors on line as soon as we possibly can. That, to me, is the number one priority and we then want to look strongly to the future and create a nuclear system that does have legs that will transition into the next century. That's what we are all about.

CHAIRMAN DIAZ: Thank you. Commissioner Merrifield.

COMMISSIONER MERRIFIELD: Well, Mr. Chairman, On January 1st of

2016 when Commissioner McGaffigan is serving his 5th term, I would be willing to buy a round of drinks for the current Commission to see what actually happened relative to where the plants were under construction and operating in the period of 2015.

One of the wonderful things about our Commission is the diversity of opinions that we have, and respectfully I do look at this a little bit different than my two fellow members at the end of the table. I agree with them, I think we have a lot of challenges, and it's going to be a stretch. We are entering into this effort at a pace far quicker than, I think, any of us would have imagined even a year ago.

That having been said, I think our staff has demonstrated through our license renewal program over the last seven years, through the efforts that we have underway to license some of the enrichment facilities in which you are aware of. I think we have demonstrated that we can meet our Strategic Plan, the focus on the effective, efficient and timely at the same time we are meeting our most important requirement, which is protecting public health and safety.

So you can put me down as more optimistic that while we have a great challenge in front of us, I'm not so pessimistic that we won't be able to achieve it.

Turning to a substantive question, Mr. Johnson, in the slides when you were going through them, you talked a little bit on slide 11 regarding the Section 638 of EPA Act relative to stand-by support. There was a public workshop and comments and NRC provided a series of comments to DOE regarding our concerns about some of the provisions as was originally put out in that. I think you commented you are going to have an interim final rulemaking out next week, is that what you are talking about?

MR. JOHNSON: Yes.

COMMISSIONER MERRIFIELD: It may be too late at this point. I certainly hope you took the NRC's comments to heart. Ultimately, we are the regulator. Ultimately, our licensees have to meet schedules that we establish, it is not the other way around.

We don't meet schedules set by our licensees. And I hope the proof will be -- the proof of the pudding will be in the eating when we see what you actually come up with next week, but I certainly hope you have reflected strongly on the comments made by our agency appropriately, reflective of those.

MR. JOHNSON: I believe we have. The first round of comments that were received back after the workshop as well as the comments that we have received recently, because as you know this rulemaking has been vetted within the Administration. We have gotten recent comments from NRC. I believe we have -- and it is interim, so there will be another comment period in case we have failed to miss the mark as you have -- may desire.

MR. SPURGEON: I am going to sign it so you can blame me.

COMMISSIONER MERRIFIELD: I'm going to presume that one you will read. You know, we're not shy as has been demonstrated today. So if you don't quite hit the mark, you will certainly hear from us.

With that, Mr. Chairman, in the spirit of your timing, I will yield the remainder of my time.

CHAIRMAN DIAZ: Thank you. Commissioner Jaczko.

COMMISSIONER JACZKO: I want to ask a question. This came out of a meeting we had recently, we had actually a very good meeting with FERC just a week -- very recently. That one of the things that came out was a discussion of the transmission infrastructure in this country. And there was a comment made there about -- certainly from our staff about potentially adding 20 -- everything goes as all the applicants would build and their applications were approved, we were getting 20, 25 gigawatts potentially of new nuclear capacity, in addition to, I think, what sometimes we don't focus on, which is other new coal or other types of generating capacity.

And I know this is, perhaps, beyond your office, but, to what extent is there

some discussion or are you engaged in discussions about the ability of the transmission infrastructure right now to handle that new generation, that new load?

MR. SPURGEON: Well, the Department is looking at that very definitely. And there are some areas of the country, and our home state of Florida is one, where the Governor has just taken some action to assist that, because recognizing that if you provide a mechanism by which you can get new plants cited, you also need to provide a mechanism by which you can get the power from those plants sent to where it is needed. So it's obviously something that is recognized. It is another big challenge. But it's one that goes hand in glove with the idea that we are going to expand the energy production capacity of this country.

And there are other issues with the transmission grid as you well know that do need to be addressed irrespective of whether we have new capacity online from the standpoint of reliability. I don't know if that answers you.

COMMISSIONER JACZKO: No, I appreciate that. I guess I would be remiss if I didn't mention we don't always have disagreements, but sometimes we all agree on something, and I too would be remiss if I did not mention that I also have been very supportive of the efforts in funding the work at colleges and universities. I think that is important work.

I had a chance to actually go up to RPI about a month ago now to give a talk at the ANS conference -- actually, the student ANS conference that they put on every year. And it was a nice opportunity for me to see some students there, and obviously, one of the things that they were very interested in, a DOE speaker at that conference received quite a few questions on the status of that funding. But it certainly was something that, I think, is important and it is just important I think in general to continue to help educate the new generation in nuclear engineering. And I think something that has come up in other hearings that we have had with our oversight committee is how important other

engineering disciplines are to the NRC, not just nuclear engineering, like electrical and all those other areas are crucial.

MR. SPURGEON: That is a fair comment, electrical and mechanical it is all part of the requirement.

CHAIRMAN DIAZ: Thank you very much, my fellow Commissioners. Thank you, Mr. Assistant Secretary, and Deputy Principal Assistant Secretary. It is a pleasure having you today. Since I have the distinct pleasure of having occasionally the last words, I would like to say that personally I remain optimistic about the capabilities of this great country of ours to solve the problems that need be solved.

Amongst them we need to do the work that this Agency has been assigned to and that is to systematically in a very disciplined fashion assure that if an application comes in here, it will be reviewed. We remain committed to try do that in the best schedule that we possibly can, making always the best safety case. And we wish you well in your job. I'm sure that this Commission will see you again. And with that, we are adjourned.

MR. SPURGEON: Mr. Chairman, I know that you have the last word, but if I could just say one thing. And it's that I personally, and I know all of my colleagues in the industry want to wish you the very best and thank you for your service to our nation.

CHAIRMAN DIAZ: Thank you, sir. And now, we are adjourned.

(Meeting adjourned.)