UNITED STATES NUCLEAR REGULATORY COMMISSION

MEETING WITH DEPARTMENT OF ENERGY (DOE)

ON NEW REACTOR ISSUES

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MONDAY

March 5, 2007

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The Commission convened at 1:00 p.m., Dale E. Klein, Chairman presiding.

NRC CHAIRMAN AND COMMISSIONERS

DALE E. KLEIN, CHAIRMAN

EDWARD MCGAFFIGAN, JR., COMMISSIONER

JEFFREY S. MERRIFIELD, COMMISSIONER

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DEPARTMENT OF ENERGY

DENNIS SPURGEON, ASSISTANT SECRETARY FOR NUCLEAR ENERGY, DOE

R. SHANE JOHNSON, PRINCIPAL DEPUTY ASSISTANT SECRETARY

PAUL LISOWSKI, DEPUTY ASSISTANT SECRETARY, FUEL CYCLE MANAGEMENT/GNEP DEPUTY PROGRAM MANAGER

REBECCA SMITH–KEVERN, DIRECTOR LIGHT WATER REACTOR DEPLOYMENT

P-R-O-C-E-E-D-I-N-G-S

CHAIRMAN KLEIN: Well, Good afternoon. It's a pleasure to have the Department of Energy representatives here today and I'm glad to see Dennis that you're feeling better today.

MR. SPURGEON: Well, thank you. If I falter I have two good people on, three good people on either side of me that I'm sure will pick me up.

CHAIRMAN KLEIN: I think the last time we had a meeting was April of 06, prior to my arrival, so we're looking forward to hearing your programs. It's also probably exciting for us that we have a budget that we can talk about now as I have indicated. We were obviously having a challenge with our Continuing Resolution and I'm sure you all suffered the same challenges at your side.

So we look forward to hearing what you have to say today. And I think from our perspective what's important for us is to know where you're headed so we will know how to move in parallel. So it's good for us to have advance knowledge of how your various programs are going for those of which we have appropriate interaction.

Any comments from fellow Commissioners? Well, Dennis it's all yours.

MR. SPURGEON: Well, thank you Mr. Chairman, Commissioners. Thank you for the invitation. Yes, I think it was the early part of April because I reported on board April 3rd and I think it was within I don't know I think a week or

so of my arrival that I was over here for the first of these, or at least in my case, the first of these briefings.

What I'd like to do is just go through a bit of an overview presentation and then obviously along the way I'll entertain whatever questions that you might have so that we can hopefully communicate as thoroughly as possible at this stage where we are going and how we hope to get there.

We are, like you I think, still waiting for the final allocation of the Continuing Resolution funds. So while I certainly know what has gone in in terms of our request for how those funds will be finally allocated we don't quite yet have the result out the back end of our budgetary process. But having said that let me begin and I'm going to … there we go, so I know what slide we're on. This is basically the outline of the presentation that we'll be going through today. Some of this you've certainly heard before and Nuclear Part 2010, EPAct Incentives, Generation IV, the Nuclear Hydrogen Initiative, GNEP and then the University Nuclear Science and Engineering Support Program. Next please.

And I'll go through these, we understand that you have a session scheduled on Clinton for the early site permit coming up the end of this week and that's certainly going to be good news. This is a program that we have been supporting with industry on a 50/50 cost share basis to help bring three early site permits to completion. And we look forward to Clinton and then Grand Gulf in the not too distant future.

The combined construction and operating license work, this we do anticipate that there will be the first of the ESP applications made this fall. And that again has been the major focus of our effort to bring, actually we're funding two in totality; one for a boiling water reactor, one for a pressurized water reactor. But then there is a third boiling water reactor that we are supporting, but not the site specific parts of that third COL application, that being the Grand Gulf application in Mississippi. Next slide.

What we do plan to do with the COL project is to restructure it to split out the engineering from the licensing activities, basically splitting out what is being done by the two reactor vendors from what is being done by the utility applicants.

We hope to accelerate completion of the COL engineering items and we're focusing on preparation as I mentioned of a reference, ESBWR and an AP1000 COL application. We think what we're doing is totally consistent with the NRC's design centered new plant design approach.

Along the way we have supported reactor technology training for DOE and NRC staff and we're pleased that NRC has provided training to DOE relative to 10 CFR Part 52 licensing. Next slide.

I know we've gone through the EPAct incentives with you before, but perhaps just in summary fashion there are three major pieces to the Energy Policy Act of 2005 as they apply to reactor programs. First is the standby support which we do have the final rule which was issued last summer, which is basically the

regulatory and litigation insurance policy for nuclear power plants. It provides up to $500 million for the first two plants in support and $250 million for the next four facilities.

Production tax credits can amount to a maximum $18 a kilowatt and that applies to the first 6,000 megawatts and if there's more than 6,000 megawatts it would be prorated across those plants.

And then finally loan guarantees and that's the one that has not been implemented as of this time. Through the Continuing Resolution the Department does now have authority to establish a Loan Guarantee Office. That office will be stood up very shortly. And we would anticipate putting out a Notice of Proposed Rulemaking for loan guarantees in the very near future.

I think that's probably enough for that. Let's go onto the Next Generation IV Nuclear Energy Systems. Generation IV is a program that was designed to evaluate and do internationally sponsored and cooperative research on a number of different advanced reactor systems. Through the United States we have pretty well focused on two, which is the high temperature gas reactor and the sodium fast reactor.

We have agreements in place. We are doing work. Principal partners. And I should say one addition to Generation IV is that since the last time we met both Russia and China have been invited to participate in the Generation IV program, which brings into play two of the more active advanced reactor program nations.

So this work is proceeding well. The major activity associated with Generation IV in the United States at this time is the Next Generation Nuclear Plant, the gas cooled reactor high temperature reactor that would have primary application in the arena of process seed hydrogen production and other applications that can make use of a high temperature reactor environment. And obviously by doing process seed and/or hydrogen production with nuclear energy we proceed in a way that allows production of these materials without associated production of any green house gases and their formation.

I think we have a good interchange program going with NRC now in developing the criteria that will be used to license the Next Generation Nuclear Plant. We're learning how to do business back and forth and how to transfer funds or how we can get work done with NRC. It's not a matter of transferring money, it's a matter of saying okay, we're ready for you to do this and now you can bill us and we'll pay you. So I think we've worked those kinks out if that's a fair statement on the part of our staff here.

I'm hopefully almost over this, but obviously not quite. Next slide, please.

Nuclear Hydrogen Initiative. The basic hydrogen initiative that we support and fund for using nuclear energy to produce hydrogen is part of the overall DOE hydrogen program that's managed by the Office of Energy Efficiency and Renewable Energy. Our focus is on the production of hydrogen from water.

As you probably know most hydrogen today is produced by steam reforming of natural gas. But obviously that's using one valuable commodity to produce another. And so the idea that if we could efficiently separate water to produce hydrogen we could advance, I think, substantially the ultimate introduction of hydrogen in a major way into our economy.

And so we're focused on high temperature means of doing that. The sulfur iodide process is the one that we have focused on from a chemical standpoint as well as the high temperature electrolysis. And by high temperature electrolysis what we do as well is increase the efficiency of the separation process.

I think we have seen some significant progress along the way. We have demonstrated both high temperature electrolysis and we've demonstrated the sulfur iodide process. This work is also being done, or similar work is also being done overseas. The Japanese have a substantial program along these lines. And we certainly are going to achieve as much cooperation as we can internationally in order to leverage the work that we're doing here with our own program in the United States. Next slide.

Next I'd like to talk about the Global Nuclear Energy Partnership and go through basically the outline as the outline shows you here, the status, the strategic plan, safety and security and what we are doing for next steps. Things that we've accomplished to date. Next slide.

We've achieved CD-0 which is basically just mission need, was approved by the Deputy Secretary on April 28 of last year. DOE has released a

request for Expressions of Interest with regard to siting integrated spent fuel recycling facilities for GNEP technology demonstrations. And we have issued an Advanced Notice of Intent for those firms that might be interested in participating in one or more of the three demonstration projects associated with GNEP.

Results of these have been very strong. We received 18 responses from industry. And those responses included most of the major suppliers involved in the nuclear fuel and fuel cycle business. And they weren't just responses from people who were saying okay, we'd like to participate, you know, tell us when you're going to fund this and we'll be there, they also included some I would call it good preliminary business plan information and good preliminary indication, I would stress preliminary indication that there's a desire to invest private funds to be able to help in the construction and/or operation of these facilities.

Relative to the … trying to see what I got here forward because I want to talk more about what we've gotten back here from industry. Let me back up a little bit and just talk about the responses we got when we went out to solicit to see what localities might be interested in hosting GNEP facilities. We initially went out and received a number of responses. We went back out and said well, okay, now specifically we'd like you to prepare environmental data for the sites that you would like to propose, send us your proposal to do that.

We received 11 proposals that we ended up funding, we received a couple that we didn't, but 11 that we ended up funding, representing eight different states in every region of the country. And we are now in the process of funding

those proposals. And they're at work and they're developing the site specific environmental data.

We also have gone out with the beginning, with a Notice of Intent to prepare a Generic Environmental Impact Statement for GNEP. And we're in the process of conducting public scooping meetings for that environmental impact statement. We're going to be conducting, I think it's 13 different sessions around the country. And those have begun. We've done probably, well, more than half of them at this point. And I think we've had probably in excess of 1,000 people attend these. So it's for public scoping meetings, they have achieved quite a following, if you will. Let's go on to the next slide.

The Strategic Plan that we've prepared and released for GNEP, and you have to remind me, even though I wrote it, I can't remember when we actually put it out. It was in January. A couple of months, you know, time flies when you're having fun. But basically it calls for specific actions to obtain input from U.S. and international industries and governments and what technology and policy issues must be resolved and what business obstacles must be overcome in order for GNEP facilities to put into being.

It requires development of a detailed GNEP technology roadmap for demonstrating solutions to the remaining technical issues in order to support commercial scale GNEP facilities.

And it's designed to pursue industry participation in the development of conceptual design and other engineering studies that support both a nuclear fuel recycling center and an advanced recycling reactor.

The bottom line is that our work is designed to support a Secretarial Record of Decision in June of 2008. And that decision to proceed with a government industry partnership, to build a nuclear fuel recycling center and a prototype advanced recycling reactor assumes that by that time a credible technology pathway has been developed and satisfactory progress has been made in its implementation; a credible business plan exists, and that's a significant and important requirement; there is reason to believe that a government-private partnership can be formed to build the GNEP facilities that are in the best interest of the Nation and all of the parties; that the relevant NEPA requirements are satisfied; that nonproliferation criteria are both defined and met; and that international agreements are in place to demonstrate support and participate in the GNEP mission.

Safety and security are from the beginning key elements that are built into GNEP. The National Security Policy Directive that will apply says that the United States will continue to discourage the world-wide accumulation of separated plutonium and to minimize the use of highly-enriched uranium. As outlined in the National Energy Policy, the United States will work in collaboration with international partners to develop recycle and fuel treatment technologies that are cleaner, more efficient, less waste-intensive and more proliferation-resistant.

The key non-proliferation security GNEP objectives are simply no separated plutonium; nuclear waste forms that cannot be readily made into a nuclear device; advanced nuclear safeguards; and reliable fuel services. Next slide.

In near term work for GNEP includes technical, business and regulatory actions. A technology roadmap needs to be developed that identifies key technology development activities for advanced separations and transmutation fuel fabrication. Industry needs to be engaged and to provide input on conceptual design approaches and business plan options.

As I mentioned scoping meetings for the GNEP Programmatic Environmental Impact Statement are under way and are to be completed in this coming, actually it's this month now. And we need to work with you all to develop a Memorandum of Understanding as to how these facilities are going to be licensed as we move forward.

Next topic, and perhaps this is one that you might have even been more interested in your previous assignments or two previous assignments ago I should say.

There is a change in our approach to working with our universities, but this is not a change to decrease the role of universities in the work that we do. But we think to the opposite effect it will increase the importance of universities to the overall nuclear energy research and development programs and provide

additional opportunities and actually financial growth for universities to be able to work specifically on research associated directly with programmatic needs.

So we have revised the program and what this will we hope do is result in not only a redirected, but a reinvigorated cooperation effort between the Department and our universities around the country.

As I mentioned, it is research based under our broader Nuclear Energy Research Initiative program, NERI program, and we do believe should develop an improved educational network amongst our universities, laboratories, nuclear industry and government. And while I don't think I say this specifically on any of these charts we are looking to the fiscal year 2008 budget if passed by Congress as proposed, we'll see a significant increase in funding for universities as part of that. Our 2007 funding for universities is roughly the same. We anticipate roughly the same as 2006, but that's obviously, we're operating on a 2007 budget, which is flat with 2006 because of the Continuing Resolution. Let's go onto the next slide, thanks.

I think I've already stated this in my initial discussion, but it does provide research to universities to support NE program applied R&D goals. And the program funds are what will support this. The line item that has been in our budget associated with fellowships is still there, I should be quick to say, there is no cutoff of any fellowships that were provided in the prior years' budgets. We have provided in the transition budget money to fully fund all mortgages associated with any fellowship that was begun in prior years.

A modified NERI solicitation is being developed to include capability support. We recognize that there is infrastructure that has to be supported, as well as research. And we recognize that and know that that is going to have to be accommodated in the proposals that we receive and in the grants that we do fund. Next slide.

Basically the steps through the transition, we are going to continue to fund many of the original university and NERI activities for much of 2007. There's a workshop being held this month, I think it's maybe even next week, next Tuesday, to introduce universities to NERI during which the current NE program areas of research will be presented. A new solicitation and peer review process will be developed or be discussed and they will issue a new solicitation. And during 2007 we're very mindful of wanting to make a smooth transition.

So there's going to be, we'll probably in some cases do programs that are, well, sort of joint activities where we have several universities involved sharing a particular program activity. What we don't want to have happen in this early stage is have one or two or three universities basically dominant the research grants to the exclusion of any one else. So we're going to try to manage this to be a smooth process in the transition. Last slide, please.

The total support for university activities in 2006 is approximately $50 million. And that's, as I mentioned that's going to be about the same in 2007. And we certainly look to see 2008, that going perhaps into the $60 million range.

With that Mr. Chairman I would be pleased to answer your questions.

CHAIRMAN KLEIN: Well, thank you very much Dennis for that background and a good overview of the program. As you might expect the NRC is process driven that includes the order in which we ask questions, and so today we will start with Commissioner Jaczko.

COMMISSIONER JACZKO: Thank you, Mr. Chairman. I'm wondering if we could go back to slide 13. This is the slide that references the Secretary's decision on the GNEP program. You indicated there there's a whole bunch of things that need to, or I guess there are assumptions that are required for the decision. So are those things, are you saying that needs to get done by June of 08 in order to support a decision?

MR. SPURGEON: Yes, they are.

COMMISSIONER JACZKO: Maybe you could walk me through some of those in a little bit more detail. If you can give me a sense of how you are in completion of some of these, for instance, things that have to do with a credible technology pathway, to what extent you plan to have interactions with our staff about making sure we have a technology pathway that's licensable or that at least we can get at least a framework developed in time. So if you could just walk me through those in a little bit more detail.

MR. SPURGEON: I'd be glad to.

COMMISSIONER JACZKO: Or whoever.

MR. SPURGEON: And I certainly would ask Paul to chime in because, you know, in terms of how things actually work and within the GNEP

program, the man who generally gets tasked to do all of the hard work is sitting next to me, and so his job is really to put together the technology pathway. So Paul you want to just comment?

MR. LISOWSKI: Sure, I'll be happy to. You know we've developed over the past five years an approach using the Advanced Fuel Cycle Initiative, which is a technology demonstration plan developed by the National laboratories, looking towards demonstration facilities. We'll be bringing, engaging industry this year, and industry is going to come to this with a different world view, clearly than the National laboratories. And they're going to come to it with the world view of how NRC can license these facilities.

One of the things that we're going to expect from them is to tell us exactly what their technology pathway is and to give us an approach for how this should go forward with licensing. We'll take that pathway, which is going to be different; there will be a lot of overlap, but it will be different, and we'll take this very detailed pathway that's been developed and over the course of the time between now and the decision put together what we're calling the Technology Pathway that identifies exactly what technologies we're going to approach and how we're going to license those things.

Now in the interim we are trying to develop a Memorandum of Understanding with the NRC so that we can work with you in a non-regulatory framework in order to bring your staff up to speed, so that when we do come

forward with this technology pathway, it's not going to be a surprise to NRC. We really want to communicate every step of the way as we go forward with this.

COMMISSIONER JACZKO: I appreciate that. I think that certainly will be helpful I think, as we discussed a little bit earlier that a lot of these technologies will be new to us from a licensing standpoint or at least not recently familiar.

You mentioned the MOU. From your perspective is the intention to have an MOU finalized again before the June decision or is that something that …

MR. LISOWSKI: No, we'd like to have that finalized earlier than that, you know staff are working on that now. In fact, I have a copy of it with me, just with me. But we do want to have that in place as soon as we can.

COMMISSIONER JACZKO: I appreciate that. The question, this is something I think Dennis we'd talked about last time I think when you were here, and this has to do, well, last time we talked about Part 52 and I won't ask you about that again, but we talked a little bit about transmission infrastructure. I think again this may be a little bit beyond your office's responsibility, but I'm wondering if you have perhaps a little bit of a sense of how DOE intends to use some of the new authority that you have under the Energy Policy Act to try and get transmission lines sited where necessary and those kinds of things.

MR. SPURGEON: Well, that's not something that I'm really prepared to discuss today, other than to tell you that this is something very keen on my mind and on Kevin Kolevar's mind, in particular, because we fully recognize that the

challenges with respect to getting the transmission lines sited and approved can be equal to the challenge of getting the new power plant sited and approved. And we have to work both of those in conjunction with one another.

Obviously most of the new plants that you're seeing, potential applications for to-date are on existing sites, just additional reactors for existing sites. But even that can strain the grid capacity in some of those locations. So the answer to your question is yes, it clearly is, in my new acting capacity I'm going to have to become even more familiar with that, but I would want to tell you that I'm just not prepared to be able to go into that in detail.

COMMISSIONER JACZKO: That's fine. And I appreciate your comments though. We had a good meeting with FERC a couple of weeks ago and this issue came up as well, and the comment was made there that transmission is, to some extent, is as complicated and as lengthy a process, transmission siting in construction as nuclear power plant siting, licensing and construction. So my sense is that I don't, I certainly don't see the comparable effort on the transmission side as I'm seeing on the generation side. And that could just be a function of where I sit, I suppose. But I think it is certainly an issue that the Nation's going to need to tackle if we're one way or the other going to be building a lot more generation sources.

The last question I would just ask is a little bit of a general question on the university research programs. This is obviously a very popular program. One of the things that I certainly hate to see though is that we focus it so

exclusively on nuclear engineering and perhaps without recognizing that certainly at the NRC we rely on a lot of other types of engineering, electrical engineers, mechanical engineers, a whole variety of people, health physicists, all kinds of disciplines that may not necessarily be captured under that.

So again this may be a little bit beyond your office now, but I was wondering if maybe you could comment, if those other disciplines are getting the same kind of focus and attention that the nuclear engineering disciplines are.

MR. SPURGEON: Well, you know what you're doing and what a lot of us are doing now I think is the first part of solving the problem and that's really starting to shine the light on the issue. The whole question of rebuilding not just our physical infrastructure in the nuclear arena, but rebuilding our human infrastructure is extraordinarily important.

There is some very good work though going on, not just I'm talking in the engineering arena, but in the trades. The unions are now starting to really step up and begin training programs. We're starting to recognize the problem and recognize the opportunity that comes with it here, you know.

When you look at these 30 or whatever plants that may be built and you really drill down to what that means when you roll that through not just the primary jobs but the secondaries and so forth, you know, you come up with numbers. One study, Idaho National Laboratory did is around 600,000 new high paying jobs, both professional and trade, that are going to be required.

So with opportunity though like that then comes the challenge. But the biggest stimulus here is that people truly believe that nuclear energy is going to be successful and that it is a career that they should want to invest their professional life in.

And as that change begins to occur then I think we're going to see the growth and the people interested in getting into this field that we just haven't had. You know, it's been a long time, probably since close to since when I was in school, when there was a real solid enthusiasm for nuclear engineering. And I take with that all of the allied fields, electrical engineering, mechanical engineering, civil engineering that are needed to build a nuclear power plant.

You know, it just hasn't been a field people were wanting to enter because of the uncertainty associated with well, what kind of career opportunities really are there. Now I think they're seeing that there are. And we're seeing that in our undergraduate enrollment starting to go up.

COMMISSIONER JACZKO: Thank you.

CHAIRMAN KLEIN: Commissioner Lyons.

COMMISSIONER LYONS: Yes, Dennis, I hope you're feeling better.

MR. SPURGEON: I'm trying.

COMMISSIONER LYONS: And thank you all for being here. I think Paul just mentioned that it's certainly the intent of your office to work in such a way with the NRC that as you get further down the path for GNEP that it will not be a surprise to us.

But I'm curious if you can, either one of you, perhaps shed some more light on where in the process of GNEP facilities you anticipate an NRC role in licensing or as opposed to perhaps a more general consulting. Or does that await the definition of this roadmap?

MR. SPURGEON: No, I don't think so. And let me be very open about it. I mean, obviously until such time as we've completed our NEPA review process and recommendations are made to the Secretary relative to the size and scope of facilities, we tend to be a little bit circumspect relative to saying okay, what would need to be licensed and what would not be. But, however, the way I see it going, and this is nothing but a projection that could turn out to be incorrect with the passage of time, is that any fast reactor that's built, any recycling facility that's built for commercial use, and the intention is that these would be built for commercial use, are going to be licensed by the NRC.

A research facility, the advanced fuel cycle facility that would be built perhaps on a National laboratory site would perhaps not be, but nonetheless would have a great deal of NRC involvement because we certainly want anything that's done there to be usable in the commercial endeavors.

COMMISSIONER LYONS: I appreciate that and I think that will be very, very important that we work together as much as possible to assure that whatever is done perhaps at the National labs is licensable, and as you said, once it moves to a commercial facility then that will be the proof of the exercise.

Commissioner Jaczko talked a little bit about the NERI program and the university assistance and I was very interested to hear your comments that there is a plan to continue to involve the universities because as I looked at some of the language that accompanied the zeroing of that account last year, at least the way I read it it was a declaration of success, 1,500 students and don't need any more support, which frankly certainly worried me immensely.

But Commissioner Jaczko raised a point that I don't think, might deserve a little bit more discussion, Greg made the point that within NERI there was a focus on the allied skills, such as health physics that are critically important in the overall plan for nuclear engineering and nuclear power, but not specific to nuclear engineering. And I worry that some of those allied skills may be lost in the way you're focusing now on the specific areas of GNEP for the university funding. Am I worrying about something that …

MR. SPURGEON: Let me let Paul answer, but all of the funding for universities is just not out of GNEP. GNEP will carry a substantial portion of the funds for our university research, but it's intended that it will be supported by all of our various program offices.

MR. LISOWSKI: Yeah, and I would say that within GNEP I think there's going to be an intent to involve related disciplines as well. One can imagine that we are pushing forward on a computation simulation issue within GNEP and there will be university funding for university programs in that, you know, that will include things like civil engineering related to seismic analysis and

other things that you might think, ooh, that's not strictly nuclear engineering. But it will have a part in it and could be very definitely related to programmatic activities within GNEP even though it's a bit removed from what you might immediately think about.

COMMISSIONER LYONS: If I'm remembering correctly some of the language on NERI even specifically called out health physics for some of the attention. And I was a little bit concerned that in the path that you're laying out that might be lost.

MR. SPURGEON: I think you've got a good point that we need to ensure that it doesn't fall in the cracks here, because we take seriously that we're probably the only, and certainly the major, I don't want to say the only, but the major supporter of nuclear engineering and health physics activities in the government. Other disciplines get support from the National Academy, but when it comes to the nuclear engineering arena we're sort of the only show in town.

CHAIRMAN KLEIN: Thank you Commissioner Lyons. One of the things obviously Shane will probably recognize my interest as you indicated from my two past lives having served on the Nuclear Energy Research Advisory Committee for a while, but you really made a good point about you being the only show in town for some of these fields because as a faculty member when you go to the National Science Foundation you know they typically will say if it involves nuclear engineering or health physics go see DOE. So you are the only show in town.

And compared to other programs like electrical engineering, chemical engineering, mechanical engineering, those funding programs are covered by others. And having been in a dean's office and looking at the enrollment in those programs, typically there are a lot of dynamic forces for a lot of other industries that are not there for health physics and for nuclear engineering. So that's why I think you're funding is such a key role.

On your slide 17 that showed the arrows, I assume those arrows probably reflect the fact that the funding went down and now are going up. One of the questions, I happened to be at the same meeting that Paul was yesterday in which he talked about some of the funding requests that you have for GNEP for 07 and project for 08. If you don't get all of your funding requests for 08, do these arrows still reflect that as opposed to funding all of those at the National labs where Pete used to work?

MR. SPURGEON: Well, look, one, I think the universities can be quite competitive, even against some of the National labs where Pete used to work, because I think there's …

COMMISSIONER LYONS: Let's not leave Paul out of this.

COMMISSIONER JACZKO: It's because Pete doesn't work there anymore.

MR. SPURGEON: Well, neither does Paul. So they just happen to be from the same place that … whatever. It's hard to predict. I don't want to predict where we're going to be relative to the ultimate funding decision on the part

of Congress. I certainly hope that they will recognize the worth of our nuclear energy programs in general and all of those that are programmatically going to be supporting work at universities in particular.

Now if you say if our budget is cut does some of this suffer as well, I'm sure it will. But I do think that we have a tremendous capability within our universities that's hopefully growing. And as it grows and as we integrate the universities directly into our real time work that we're doing I think that we'll find universities can be very competitive in doing the work that we need to have done as a part of not only the GNEP program, but NGNP and others.

CHAIRMAN KLEIN: On your last slide you talked about 50 million being provided to universities over the last, I guess 06 and 07, and I was just curious does that include the Fuel Assistance Program? So what's the breakout between the Fuel Assistance Program and the research part?

MR. SPURGEON: Fuel Assistance is what, three million dollars roughly.

CHAIRMAN KLEIN: So most of it's research.

MR. SPURGEON: Most of it's research. And the Fuel Assistance Program continues on into the future, that's not affected.

CHAIRMAN KLEIN: Okay, thanks. Obviously the Commission has been familiar with the Next Generation Reactors and the talk that you had about potential gas reactor at Idaho. What I don't believe the Commission was expecting necessarily was an application from another university dealing with gas

reactors. And so that was not part of our, necessarily our budget planning because …

MR. SPURGEON: They kept you in the dark too.

COMMISSIONER MERRIFIELD: It's those independent Texans, you know, you never quite know.

CHAIRMAN KLEIN: I was going to ask whether the UT Permian Basin Program is an integrated program or were you surprised like we were?

MR. SPURGEON: We have not been. I can't say we haven't been aware, I mean, we've been aware of the activity with UT Permian Basin, but this is not a program that we have been directly involved with, so their schedule and intentions are not one that are cleared with us prior to their going out and making their own announcements.

CHAIRMAN KLEIN: And have they integrated their programs to-date? Or is that still not clear?

MR. SPURGEON: It's not integrated with us from any kind of a significant basis. We've talked with them, but that's it. There hasn't been, they have not asked us for money. We've not provided any. So there's not a connection at this point.

CHAIRMAN KLEIN: Thanks. Commissioner McGaffigan.

COMMISSIONER McGAFFIGAN: Thank you, Mr. Chairman. Last year when you were here I suggested that we might need to have some contracts for taking spent fuel from the new reactors. Section 302 of the Energy Policy Act

requires that there be contracts or good faith negotiations on a contract. It also seems to require a January 1998 date, which DOE lawyers may have decided is impossible, therefore moot.

But Ward Sproat announced last week that he was going to be open for business sometime this week to negotiate contracts with the new plants. But it's a contract without a date, so it's sort of we'll take your fuel maybe some day, 21st, 22nd, 23rd, 24th Century. Could you explain whether we should be reviewing our Waste Confidence findings in light of DOE's not wanting to commit to any date to take spent fuel from the new reactors?

MR. SPURGEON: Well, I think you've read the announcement that Ward made relative to beginning negotiations. I think Ward has also stated, as has the Secretary, our determination to submit a license application to you by next June. And we are proceeding to do that.

COMMISSIONER McGAFFIGAN: But you also proposed legislation in the last Congress, so called Save Yucca legislation that would give you the land that would give you water rights that would take care of a bunch of things. And I don't know whether you're going to submit that to this Congress or not. But it seems like there are five or six items that you sort of had to get done or else an NRC construction authorization would be worthless. If you could submit the license on time and if we could grant the construction authorization it would be with, conditioned on these various things that you don't have at the moment.

MR. SPURGEON: Well, there's no question that these activities need to proceed forward in parallel. We do need the things that Ward mentioned last year and that were included in the Waste Management legislation.

COMMISSIONER McGAFFIGAN: The reason I asked about Waste Confidence is that the Waste Management legislation had in it that Congress should make the finding. And given at the rate at which legislation in this area passes we are going to be dealing with the new generation of reactors at least in COL space, and it would strike me that it might be nice for us to have worked out Waste Confidence or else it's going to come up everywhere.

So if the prospects for the legislation are small, I think the burden may be coming back on us and we might have to change the 2025 date.

MR. SPURGEON: Obviously there are things that I can't comment on nor do we have total control over other than to say that the Department's commitment to take spent fuel from utilities in accordance with our obligation has not changed one bit and we're moving forward as quickly as we can in order to get to the position where we can carry out that obligation.

COMMISSIONER McGAFFIGAN: Okay, GNEP, you clearly have very mixed support on Capitol Hill. There's a Bingaman/Domenici letter that went to the budget committee last week that said the committee couldn't agree on it, some supported it, some didn't. I'm not sure I found the Democratic supporter yet, you know, Ernie Moniz testified last week in the appropriations hearing saying that

this is not an area to go fast in, you need to think a lot more before you commit to something like what you're trying to commit to in June 2008.

I've said on other issues that nuclear issues have to be bi-partisan or else they get to be, you know, you toss something over the transom, you turn it into a presidential political issue and you set nuclear back about a decade. How are you going to deal with the apparent partisanship with which GNEP was received last year when it was brought to Congress?

MR. SPURGEON: Well, we're going to deal with it by continuing to talk to both sides of the aisle. This, you're absolutely right has got to be a bi-partisan issue. You're also correct in that not everyone perhaps understands GNEP for what it is. And it's incumbent upon us to be able to carry that story, to be able to explain why first off energy security is key to our national security, take that down a level, that nuclear energy is key to our energy security, take that down a level, and that we need to be able to resolve the entire nuclear fuel cycle if nuclear energy is going to have its long term future and for it to make the contribution to our Nation's energy future that we all believe it can and should have. And so we have, I don't think carried that massage well enough or it has not been heard well enough.

COMMISSIONER McGAFFIGAN: Well, somebody like Ernie Moniz would probably agree with your first two points and then say, respectfully disagree with the third as a natural corollary. So I think that's where the break comes. I mean, Ernie is not anti-nuclear; he's, smile noted, but if you don't get Ernie Moniz,

who was Undersecretary under President Clinton, name some Democratic intellectuals that you are going to pick up.

MR. SPURGEON: Look, it's up to us to be able to make the case. We do need to make the case. And it's obvious that that case has not been made to this day.

COMMISSIONER McGAFFIGAN: The last issue I'll just mention to you is you think about these facilities, I think a date after June 2008 is probably more appropriate personally, but as you think about it, you need to think about security and the security requirements post 9/11 that we've imposed on our fuel cycle facilities and on our reactors. You know, a reprocessing facility strikes me as something that is going to be a real challenge to design against the design basis threat is just … the design basis threat as annunciated in the United States,. It's going to be a challenge.

MR. SPURGEON: Well, no question. But we do have reprocessing facilities in operation around the world and the Japanese are no slouches relative to security, but they do it in different ways.

COMMISSIONER McGAFFIGAN: Okay.

CHAIRMAN KLEIN: Commissioner Merrifield.

COMMISSIONER MERRIFIELD: Mr. Chairman, again, Dennis I want to thank you for coming on up here, for reprise of our meeting last year. A couple of things, I do this perhaps because I'm a lawyer on the Commission, to clear the record, in terms of you all being the only show in town, actually, and my staff will

point this out, we have about a $50, $60 million research budget, about $8 to $10 million of which is directed toward university-based research.

So while we are a smaller player than you all, our dollars are important too in helping to keep these programs alive, and are meaningful, we don't have a National lab of our own, and so many times universities can play a very key role in helping us get this information and benefit them at the same time.

I agree with some of the comments of both Commissioner Jaczko and Lyons in the importance of these programs, in a variety of different areas, whether it's capability, support or providing us the information that we need to do what we do.

On your slides, slide 18, at the top it stated that R&D related university-based research will be beneficial to DOE and the university community. I think we've had a program in the past where the NRC has also benefitted from the work that you all have funded. It strikes me, and this is really the heart of where my question on this is coming from, a lot of this, obviously you're trying to align, and you're trying to say okay, we have certain initiatives like GNEP and we want to make sure that the universities are in line with that.

Much of the work in the past years has been on issues associated with providing greater efficiencies in the current fleet of nuclear reactors. We've been involved on the safety side. With your new arrow in terms of alignment where, I understand where a lot of that money is going to go to the Next

Generation Reactor where it's going to go to GNEP, where does the current fleet stand in all this in terms of your research and your thinking?

MR. SPURGEON: You might to comment relative to advanced burn-up, high burn-up fuels.

MR. JOHNSON: Actually it doesn't. And it doesn't from the point of view that the funding sources for the university R&D that we'll be pursuing 07, 08 and beyond come from appropriated accounts such as the Generation IV account, Nuclear Hydrogen, and the Advanced Fuel Cycle program.

The program that the Department had previously funded that worked on the current generation reactors principally was our Nuclear Energy Plant Optimization Program, which was zeroed out of the budget I want to say about three years ago. So the NERI program itself, as it was originally established, did have a much broader kind of a blue sky approach to the R&D that we would fund.

But what we've done, in narrowing it down we've basically, we've narrowed down the scope to be those programs that we are pursuing through our research in order to get the university community researchers aligned with our laboratory researchers and the industry moving forward not in blue sky, but really in these directed R&D programs. So you really will not find, other than if there is, you know, kind of an ancillary benefit to the research that's going on on Next Generation Reactors that may have applicability to the existing fleet. But flat out in terms of a research project that is principally for the benefit of the existing fleet, there is none.

COMMISSIONER MERRIFIELD: Well, I appreciate that. I know obviously everybody's going to prioritize what they do. We don't know what's going to happen with GNEP, and we don't know what's going to happen with future nuclear plants. We do know we've got an existing fleet. And we do know that we've re-licensed those reactors to operate, half of those reactors to operate for an additional 20 years. We're going to have absent some issue operating reactors in 2030 out of what we currently have.

So those dollars play an important part in making sure that we have the staff that we need, that we have the capabilities that we need for the existing fleet. And while I understand what you're doing, I do wonder. I mean, I wonder how that's going to effect our capabilities as an agency and I wonder how that's going to affect the abilities of universities to continue to provide the people we need to do what we do.

MS. SMITH-KEVERN: Commissioner Merrifield we have begun coordinating with your staff on issues pertaining to life after 60. We've begun looking at materials degradation issues. We're coordinating with your staff to have a workshop with the Office of Science later in the spring. And it's certainly something that we're looking at for future budget years.

MR. SPURGEON: And we're all interested in life after 60.

CHAIRMAN KLEIN: In more ways than one, right?

COMMISSIONER LYONS: I'll second that.

CHAIRMAN KLEIN: Commissioner Jaczko.

COMMISSIONER JACZKO: I don't have any additional questions.

CHAIRMAN KLEIN: Commissioner Lyons?

COMMISSIONER LYONS: I'd like to go a little bit further on some of the questions that have already come up on university reactors. I certainly haven't been as closely involved as our Chairman with the university reactors, but as I have visited the university reactors around this country, at least the ones I visited are not paragons of modern instrumentation, are not exactly what I would view as serving as a draw to the next generation. I'd contrast that, and it's just very isolated personal experiences, but I did have occasion to visit the OPAL Reactor in Australia, which is by any measure I think an absolutely spectacular facility and exactly the kind of magnet that I would hope we would have many of in this country to draw new students in.

I think we've already said and probably agree that DOE I think really is the only game in town when it comes to really funding the infrastructure of the university reactors. And I realize that this is a major challenge for your programs, but I wonder if you had any thoughts along these lines or share any of the concerns that I'm suggesting.

MR. SPURGEON: Well, I share your concern not just with university reactors, but if you look at what our own test reactor, the ATR, for example, looks like in Idaho.

COMMISSIONER LYONS: That's a good example.

MR. SPURGEON: It falls in the same category. We have let our nuclear infrastructure in this country atrophy. And that's obvious; it's not just in one area, it's in all other areas. You know, the Idaho National Laboratory is our laboratory, if you will, from an NE standpoint, it's our lead laboratory. And there are times when I'm embarrassed to show people around, especially people from other countries who do have first class facilities at some of their home location.

So we have a long big job to do. The first step in that is to re-establish nuclear energy's position within government. First off was within the Department of Energy, and the Department of Energy within the government as a whole. You know it's only been what less than ten years sine the R&D budget of the Department of Energy was zero.

So we have a long road back, we're not going to solve it in one or two years. The first step is to begin to get a recognition that nuclear energy deserves a bigger budget or bigger piece of the budget pie, if you will. The President's request for 2008 was $875 million for nuclear energy. That compares to $532 million in 2006. It was $632 in 2007, but there is no 2007 appropriation.

So is that enough? Do we have enough to do all the things we really need to and want to do? The answer is no. But are we making progress? Yes. And we've got to demonstrate that we can be good stewards of that money, that it can be effectively spent, we do give good results for the expenditure of that money, but we've got to continue, you know, in real dollars the nuclear budget today is a small part of what the nuclear budget was 35 years ago.

So we've got a long way to go. And you're right, the university reactors, I mean, I know what the MIT reactor looks like. But it's no different than ATR. It's no different. So across the board, we've got work to do.

COMMISSIONER LYONS: I very much appreciate your comments, Dennis, because I very, very strongly agree with you, and we have a long ways to go.

One other question on NP 2010. We've heard here on the Commission how as companies are working towards the COLs and eventually construction that one of the longest poles, maybe the longest pole in the tent is going to be the digital I&C suite and the simulators that will be needed to go with that suite. I was just curious if as a part of NP 2010, either through funding or through coordination, DOE is playing a role in trying to assist in development of both the digital I&C, the technologies that underpin it, and the simulators that are going to be required to train people before there's any operators.

MR. SPURGEON: Well, the direct answer to your question relative to 2010 and the plants that are known now in the pipeline, the answer is no. They're just not part of our, of the 2010 program. 2010 is a program that ends in our fiscal year 2011. It's designed to carry through the design certification, the initial three combined operating licenses, two of which we're doing in fall and one partially if you will, and the early site permits that are almost complete at this point in time.

Where there is potential, but it's future for our involvement in areas associated with this, is what we're doing under GNEP for the advanced simulation

and modeling because as we carry that to its ultimate we're going to be able to not only do basic training which you're speaking of, but I think revolutionize how we both design, and potentially with passing this technology to you all, potentially revolutionize the way you might be able to regulate and license new nuclear plants. But the direct answer to your question is no, we're not participating in that.

COMMISSIONER LYONS: I think my comment also to some extent ties in with a point that Commissioner Merrifield made about the many needs of the existing fleet, because digital I&C is very, very much an issue for them too. It's an issue that certainly NRC is wrestling with, industry's wrestling with, and I can well imagine that there's an important need for DOE leadership in this area too. But thank you.

CHAIRMAN KLEIN: Dennis I know looking at GNEP it seems like at the moment the leading candidate is UREX+ in fast reactors, sodium fast reactors. Is that kind of where you all are headed at the moment?

MR. SPURGEON: I try not to use a brand name relative to separations process. A sodium fast reactor, the answer is yes. Relative to separations it's really, we're criteria based, I would say; we know what we want it to do, we want it to be able to separate out the transuranics, we want it to be able to separate out cesium and strontium, we want it to be able to isolate (unintelligible).

But relative to saying that the process must go from step A to step B to step C, in order to get there the only bottom line is that we do not separate out

pure plutonium. But we're not defining the order of the process. Within any one called UREX+ or others there are different steps involved, and they go by different names and it seems like everybody calls somewhat the same process something slightly different. And so I stay away from saying it's UREX+, I just say that there's the criteria, as long as it meets the criteria, that's totally acceptable.

CHAIRMAN KLEIN: That's helpful, because I think what we need to do as the potential licensee at some point in time is to work in parallel as you're doing your R&D so we can do the licensing R&D as well.

In terms of … could you talk a little bit about, you know, you have two options of how you can go as you move forward, you know, your demonstration scale versus a commercial production and licensing. Could you just talk about what your thoughts are now as to how you intend to proceed? And with the end goal what we want to know is what might we license and when.

MR. SPURGEON: First off let me back up and add to the point of the 2008 decision. What you do in 2008 is decide on the path forward, you're not in 2008 ready to say okay, we're going to start building a facility at that point in time. That's not a decision to say okay, here's the check, let's go build the plant. This is the definition of the path forward we're going to take to get to that point.

I do believe we're going to be able to go to what we call prototype scale, which is certainly larger than a demonstration kind of a scale, but perhaps capable to be expanded modularly to large commercial scale, as a step in a separation facility and a recycle facility. With respect to the reactor we're going to

see what sizes come in that appear from industry standpoint can be done and can be done most economically.

The fast reactor is one that we have a lot of work to do to make it economical. Because in the end all of this has to fit into a business plan and that business plan is going to be carried out by people who have an objective to make money. And consequently we need to see what has to be done in order to get us to the point of having a total system, from a systems approach that can result in a business that can be looked at as desirable by industry.

And you know it's always possible that a decision could be made that these are totally designed, built and operated by the government. But my assumption is that that's not the way this will go. My assumption is that this will be, that these plants will certainly have a government role, certainly have a government technology input, certainly have government incentives to get the early plants up and running and in operation, but will be done by private industry.

CHAIRMAN KLEIN: If you go the prototype option do you expect those would be licensed by the NRC or through your authority?

MR. SPURGEON: I would expect that's NRC.

CHAIRMAN KLEIN: Thanks. Commissioner McGaffigan.

COMMISSIONER McGAFFIGAN: Well, staying away from brand names, although I'll use UREX+ generically not as a brand name, my understanding, and you can correct me, is that GNEP involves light water reactors, UREX+ or some type of reprocessing facility to remove the uranium and plutonium

and other things as you outlined and fast reactors to consume the product and then pyro-processing to recycle the product of the fast reactor. So you have both, and pyro-processing may again be a brand name, but don't you need both recycling technologies in the ultimate end game?

MR. SPURGEON: Well, the answer is no, but let Paul.

MR. LISOWSKI: I was just going to say we haven't made the decision as to what fuel type the reactor will take. If it's a metal fuel then clearly pyro-processing is the reprocessing.

COMMISSIONER McGAFFIGAN: Aren't the liquid metal cooled …

MR. LISOWSKI: Well, it would be a metal cooled reactor, but it could be a mixed oxide or it could be an oxide fuel, or it could be a metal fuel reactor. If it's metal fuel then it's pyro-processing. And if it's an oxide fuel reactor then you'd reuse the aqueous processing technology to reprocess a fuel.

COMMISSIONER McGAFFIGAN: Okay.

MR. SPURGEON: The point is that is one of the decisions that hasn't been made. That's the basis for my saying no, we haven't reached that conclusion yet.

COMMISSIONER McGAFFIGAN: I'm not sure there's much of a role for DOE in this, but our staff early in February, February 5th put out an information notice where they talked about construction issues in new plants. And we have one being built in Finland, and they pointed out that in 1984 we had done a report about the problems in quality of construction and that the Fins had come along last

year, in July 10th of 2006, with the report that sounded like an echo of what we had written in 1984, why they were having problems at the Finnish facility; poor communication between design and construction organizations and within organizations, over confidence in personnel with little nuclear industry experience and inadequate oversight and training, ineffective problem identification reporting and inadequate corrective actions, unrealistic and aggressive schedules to complete designs sufficiently ahead of the construction, inadequate assignment of responsibilities to control assigned work, etc., etc.

We're obviously, it's our role to try to tell people please remember the past, but you've talked about the fact that we've allowed the nuclear sector to atrophy and we're an organization that even if we didn't have a nuclear renaissance we'd be desperately trying to hire people, and even if there weren't a nuclear renaissance in the 104 existing plants they'd be desperately trying to find people to replace an aging workforce.

How worried are you about this? As I say I don't think there's much a role for DOE there and there's not much of a role for us except to preach. But isn't that a really probably the major constraint on nuclear renaissance at this time?

MR. SPURGEON: Sure, it is, because it turns out to be generally, the experience turns out to be the long pole in the tent very often. You know I find myself, probably bore some of my colleagues stiff because I keep bringing in

things from my house which are the documents that we wrote in the 1970s. And by the way they're pretty applicable.

COMMISSIONER McGAFFIGAN: Our 84 reports are pretty applicable too apparently.

MR. SPURGEON: I have a complete conceptual design for a reprocessing plant done by Dupont that was done in 1978. And oh by the way it's for a proliferation resistant reprocessing plant, back then we called it co-processing. This was in the Carter Administration. So have we … so what's Yogi Berra saying? De-jevu all over again? Well, you know we have that but now we have to make sure that that experience gets transitioned, so we don't reinvent all the same wheels again.

COMMISSIONER McGAFFIGAN: Going back to GNEP. And this will be our last question. You have these 11 sites that are doing some work, how many of them are really viable? I mean, I read the newspapers and I can see people saying oops, we don't really want a reprocessing plant here, look at the experience at West Valley and Savannah River and whatever. And, you know, of these 11 how many really are politically viable?

MR. SPURGEON: Well, most are politically viable. There are a couple that I would agree with you, and I'm not going to get into specifics, but that politically probably would have a very difficult time sustaining public support, on a broader scale, not local. I think they all have good local support.

COMMISSIONER McGAFFIGAN: But on a state scale.

MR. SPURGEON: But on a state scale would have difficulty sustaining that support. But on the other hand, there's some very strong candidates within that and they're diverse enough, both east and west, that I think we will have some very good competition for siting when this is all over.

COMMISSIONER McGAFFIGAN: Mark me as a bit of a skeptic, but I'll leave it at that. Thank you.

CHAIRMAN KLEIN: Commissioner Merrifield.

COMMISSIONER MERRIFIELD: I think it's your turn. Oh, no, I'm sorry… On slide 7, well, in terms of going forward with Next Generator Reactors, part of GNEP, one of the things that strikes me that we have benefitted from in our current licensing program is a technological capability to have our own test facilities to validate the work done by our licensees.

We have, for example, a facility in Oregon State that was used for pressurized water reactors, notably the work that we did relative to the AP600 and the AP1000. At Purdue we have a boiling water test loop facility that was very helpful in the work that we did to validate work on ABWR and will be utilized for the purposes of the ESBWR design work that we're going to be reviewing.

As we go forward if you all were to decide to go down the road toward a liquid metal reactor we don't have the capability to access a similar type of facility, and that obviously will make our job a little bit more difficult. Are you thinking about in your programs how we collectively might be able to address that issue so that whatever technology you choose we're going to have access to it in a

way that we can independently validate the information that you all would ultimately be giving to us?

MR. SPURGEON: Well, obviously we have a challenge relative to our current, your domestic capability and fast reactors. So since FFTF was shut down we don't have an operating fast reactor in this country. And so we do ourselves find ourselves relying quite a bit on our international cooperation in order to do some of the work that we need to have done to irradiate fuels, especially the fuels development work that's going to be required.

And I don't doubt but what perhaps we may need to look at some of those similar kind of arrangements that might, that you might want to have in order for you to have cooperative arrangements from a licensing standpoint, which you do, because you have the international licensing, the precise title I don't remember, but initiative.

COMMISSIONER MERRIFIELD: Multi National Design Evaluation.

MR. SPURGEON: And perhaps could make use of that very effectively with the French, with the Japanese, for example, then perhaps the Russians in this arena.

MR. LISOWSKI: May I just comment, there are actually three facilities under consideration for GNEP, the reactor, the recycling facility and what we're calling the advanced fuel cycle facility. The advanced fuel cycle facility will have a lot of capabilities for testing and independent evaluation. And I don't know

how many people actually have seen the view graph that I have, but in one of the viewgraphs, you probably saw it, I had the word NRC.

And the idea there was if we're able to fund and build this facility that we would be able to put in place testing facilities that other people could use as part of the overall understanding of the performance of these facilities. And so we are thinking about how we could involve other agencies who might need to use those facilities in an independent way.

COMMISSIONER MERRIFIELD: Well, I think if you've got some additional information on that you can provide the Commission … I didn't get a chance to see the slides, but I certainly …

MR. LISOWSKI: It's just one line on a slide, but the point is, the idea is that if this facility comes into being it's not only for use by the National laboratories but by industry and by NRC and others who may have to use this capability.

MR. SPURGEON: I'll be glad to give you the viewgraph background.

COMMISSIONER MERRIFIELD: The other question I had, on slide eight you talked about some of the work you have underway relative to the hydrogen initiative. And I understand the deployment of the program; I understand the intension behind it. What has always sparked my concern obviously as the safety regulator we're worried about the safety of the reactor that these facilities might be tied to; hydrogen is after all a difficult material to safely handle.

And I'm wondering the extent to which in the research that you've undertaken as part of this that you have been addressing the safety issues that would fall into our space relative to co-locating these types of facilities right next to an operating nuclear power plant?

MR. SPURGEON: I don't think we have it in this, we don't have that depiction of the processing facility. And when you see the way they're drawn, there's one, there's a good bit of physical separation and there's certainly a good bit of isolation between the reactor system and the process heat application. So the answer is yes, there's not a close coupling between a large hydrogen storage facility or generation facility and the reactor that could cause you to have a safety concern.

COMMISSIONER MERRIFIELD: Well, I think that's an issue that obviously you thought out. If the information has been shared with our staff it certainly hasn't percolated to our level. And I think that if you've got some follow up material that would be more instructive than I would be particularly interested in it.

I think in terms of the public dialogue about where these programs are going to go and the impact that they're going to have on the future units we may regulate I think we've got to able to better capture that information so we can articulate it in the audiences that we have to grapple with.

MR. SPURGEON: I think that's good. We'd be glad to give you that because I think we'd like you to have that kind of … because we'd like the feedback as well. That's feedback that would be helpful to us.

COMMISSIONER MERRIFIELD: Great, thank you, Mr. Chairman.

CHAIRMAN KLEIN: Commissioner Lyons do you have any more questions?

COMMISSIONER LYONS: No.

CHAIRMAN KLEIN: I just had one question, and I haven't looked at your 08 budget, is the Next Generation Gas Reactor in your budget for 08?

MR. SPURGEON: Yes, it is.

CHAIRMAN KLEIN: Thanks. Any other questions? Well, on behalf of my fellow Commissioners and I, I'd like to thank you for coming out today. It's a very helpful presentation and important dialogue, obviously a lot of work for both your department and our agency as we move forward.

One thing I've been impressed with from the NRC's perspective is that we have taken a lot of initiative with the early site permits, the combined operating license activities, modifications of Part 52. So I think we've done a lot to make the licensing process move as you move forward with some of your concepts. So I think it's very important that we stay in communication so that we do things in sequence, so again thanks for coming today.

MR. SPURGEON: You're welcome, thank you for having us.

CHAIRMAN KLEIN: Meeting is adjourned.