

# Transcript of Proceedings

## NUCLEAR REGULATORY COMMISSION

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BREAKFAST MEETING  
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The meeting was held at 10:00 a.m., Llewelyn King, presiding, with guest, Nils Diaz, Chairman, U.S. Nuclear Regulatory Commission.

# PROCEEDINGS

MR. KING: Good morning, ladies and gentlemen. Thank you for coming. I'm Llewelyn King, the publisher and founder of *Energy Daily*. We appreciate you all coming on what is essentially a holiday week, a holiday coming up. This is another notorious breakfast which we've been running since 1974. The purpose is to provide everyone with the stories of the day, with no advantage to the *Energy Daily*. It's a pretty straightforward situation where everything is on the record, and we could play it back on our website from about noon on, so if you miss something, you can get it off the website. We have television today, C-Span, and I'd be grateful if you would identify yourselves for the record.

Our guest today, an old friend of mine. He just reminds me how long we've known each other. After a while it doesn't get to be flattering.

CHAIRMAN DIAZ: I know that.

MR. KING: The Chairman of the Nuclear Regulatory Commission will (inaudible), and I think we have a few remarks, and then we'll move into questions. And (inaudible) together to handle the questions. Welcome and (inaudible).

CHAIRMAN DIAZ: It's my pleasure. Well, good. I think I'll just focus your attention on a series of issues. I'll go down a few bullets that I have in here, and as everybody knows, this is the 50<sup>th</sup> anniversary of the Atomic Energy Act, and in many ways for many people this is a celebration, and for other people this is an area of concern.

And this brings out the fact that nuclear power has both many benefits, but it also creates many questions for humanity. And in the NRC we deal with those issues day in and day out, because our job really is to provide the means to protect the people of this country from radiological hazards. In many ways, that's what we do day in and day out. We provide radiological protection from the uses of nuclear energy, and for civilian materials that are based in medicine and industrial issues.

There is no doubt that many things have changed in the last 50 years. I think even Mr. King and I have changed a little bit in the last 50 years. The reality is — well, a little bit.

MR. KING: A little bit.

CHAIRMAN DIAZ: Yes. I'm not going to get into that. Fundamentally, in the 50 years there's a tremendous amount of increase of the two main uses of nuclear power and radiation, so the energy portfolio has increased significantly from the standpoint of the production of electricity. If you look back 50 years, there's significant development which in many ways stagnated during the crises that came in the 70s when the prices of oil drove the prices of reactors very high, but the level of safety, which is what I am concerned with, has continued to increase.

The level of safety in reactors is a continuous improvement that has really been remarkable, especially the last 10 to 15 years. I don't know whether you can say well, that is true because of the mishaps like Three Mile Island, some big mishaps like Chernobyl, but the reality is that nuclear power plants in this country and abroad are operated at a much higher level of safety than what they were.

The other part of the equation that we deal with is, of course, the issue of the use of radioactive materials, and the increased use of radioactive materials for medicine and for industrial purposes have also continued to increase. In these areas, safety has also increased.

I must note, however, that every year we have several incidents, especially at hospitals with misutilization and misadministrations of radioactive materials. This continues to be a concern, and the agency is systematically trying to come up with better ways to protect the patients, and occasionally work with some of the industrial uses.

If you look at our reports to Congress for the past many, many years, the only real issues were the large amounts of radiation were either given to a person as an internal or external radiation event, really comes from the medical and from the industrial communities. Those are the

two that actually in many ways directly related to the project and many ways more significant than any other type of issue that we have ever seen.

If you look at the NRC, we have changed too, and we believe we have changed for the better. When I came to the NRC eight years ago, we were still in the process of accelerating and looking at how we become more focused on safety, because the NRC many times is preoccupied with the issue of is the right thing being done. There was a lot of little tables with checkmarks put on it, and people were worried whether people were complying with a procedure or not.

I think we have changed tremendously, and changed for the better. This change is that things that are important to safety rise up from where they were and are given national attention, and things that are not are taking a different perspective.

We no longer do enforcement on minor safety issues. We just work with the licensees to make them better, but we do take serious safety issues and elevate them. And like I keep saying, you can always tell when something is very serious by the amount of inspectors that come into a site. The numbers of inspectors are multiplied.

We are in a new phase. There is no doubt about it, and this focus on safety goes not only from the reactors, it goes all the way to the materials arena. And we are trying to get to be an agency that is risk-informed and performance-based, a new way of doing things that allows to do things more efficiently and more effectively.

Even now in the past year, we changed the NRC even further. We used to be a safety agency. We just always did public health and safety, public health and safety. Well, 9/11 changed that completely. We are now a safety, security, and preparedness agency. We are no longer one-dimensional. These three areas, safety, security, and preparedness are being integrated in a synergistic manner so each one reinforces each other. I know that you have very strong interest in security. We have done significant security enhancements.

The agency in February of 2002, three months after 9/11, in that very, very I'll almost say arbitrary manner issued orders for all nuclear power reactor licensees and told them flat out to go ahead and increase their security in a manner that was, even at the time we were not sure of all the intelligence that was available but we actually went and did it. We actually increased the security for access control, security for protection against ground, a land-based attack. We issued new water-based criteria, and we required the licensees to actually be prepared to deal with the potential effects of an aircraft attack. And out of that came out a continuing study which is called our Aircraft Vulnerability Study.

The studies, as you know, are classified but they do confirm that the power reactor facilities are the most protected civilian facilities in the country. And that this criteria, this approach that we have used for many years is called Defense-In-Depth, gives us time to deal with unexpected events no matter where they come from.

What we have learned in the last two and a half years is a sophisticated set of analyses that I believe have ever been done on power reactors is that we have time, and time is on our side. And, therefore, we have concluded that the potential radiological consequences from aircraft attacks on nuclear power reactors are low.

You can say that it's low but it's not zero. Absolutely true, it is not zero, and we deal with that day in and day out; therefore, the next phase that we did is we say what is our next step to make sure that we're protecting the people of America, so we have increased emergency preparedness.

We have taken an agency preparedness like a routine. You do it every do. You check it out, you do it into a vital component of our triad, safety, security, and preparedness. What we have done internally is created an organization, doubled the number of people. We're integrating right now emergency preparedness with incident response. We are shaking that issue loose and making sure that it is on par with the amount of attention that we always gave safety, and now to security, and now to preparedness.

I know that I could go on for some time. The other issue that I think is very important is the issue of sources. We have been working in securing radioactive sources with the Department of Energy. We actually have worked in a very, very close manner with Homeland Security, with EPA, FAA, with DOE, and with all the other agencies and have created a series of response plans, including things like assessing what the results of any potential device is, both healthwise contamination and cleanup levels. We are a lot better now than we were.

We have answers, we have action plans. We believe we are capable of addressing these issues in a manner that are protective of public health and safety. Are we there? Do we have everything we should do, no; but we certainly have come a long way.

I think I'm going to stop right there because I've done enough damage.

MR. KING: If you've got a question, would you identify yourself and give your affiliation so that we'll know for the television. Questions. Go ahead.

QUESTION: Hi. I'm Darren (inaudible) Daily. There's an issue right now in the Senate where there's a fight over whether to allow DOE to reclassify certain high-level waste at at least one site, the Savannah River site. Folks that oppose it say that this would create some kind of precedent for some kind of reclassification at a public site. What is your feeling on that about what DOE would like to do with some of that waste?

CHAIRMAN DIAZ: Well, I do believe that the issue of incidental waste, as it's called, which are waste that are in the stream of the higher-level waste, is an issue that DOE is trying to deal with in a manner that I call it risk-informed. Can I separate enough of this waste, can I handle this waste in a manner that still provides protection that doesn't really entail all of the processing that we have to do with the other waste. And I think this is a issue for the Congress of the United States to address, which is where it's being addressed.

I do believe there are things that can be done to separate waste in a manner that classifies them and is easier to handle. I think DOE has a series of problems with this thing, and I would like to say they are not my problems.

QUESTION: I'm with the Las Vegas Sun. The State of Nevada that I have asked the Nuclear Regulatory Commission to intervene in the Department of Energy's idea to move waste from Fernald to the Yucca Mountain site. I don't know if you're responded to them yet, or do you —

CHAIRMAN DIAZ: We are in the process of responding. Of course, we have a series of regulations that deal with what is called 11E-2 waste. And fundamentally, we've tried to classify waste that has been used in the processing of Uranium and what is separated, and the law allows us to do certain things and does not allow us to do other things. And the issue for now, what we're trying to do is make sure we're responsive to whatever needs are presented, but we go slow on these issues. These are the type of things that we don't decide overnight, and I hate to say this but my lawyers have a lot to say about the kind of things that we do. It's not purely a technical issue. It goes into legal issues and, therefore, there is a lot of back and forth into it. I don't think the issue has been totally reviewed, but I do know that the commitment has been made not to move them until every "I" has been dotted.

QUESTION: Mr. Chairman, (inaudible) of Reuters. Last week before Senator Voinovich's hearing, he took a little bit of heat from a GAO report regarding the Davis-Besse incident. There was some discussion. Part of the issue was safety culture and whether NRC should be involved in the safety culture. Have you considered your position or the agency's position, that that really doesn't fall under your jurisdiction, or do you think you're likely to?

CHAIRMAN DIAZ: Well, any time that the Congress of the United States (inaudible) issue, we pay very serious attention to it. And we believe we have some good answers to the issue. There is no doubt that the NRC is committed to a strong safety culture in our licensees, but the way we do it, rather than just saying have a safety culture, we have a series of indicators.

I referred to it in the hearing as paying more attention to the management of safety, which are things that we can actually probably measure, and actually see in the issue of the safety

culture. So we require our licensees to have a strong safety culture. That somebody once in a while doesn't do it, there's no doubt about it, and it happens. It happens here, it happens everywhere.

However, I'd like to say that we are very much aware of the need to address the issue. And, in fact, you can see a couple of little speeches I have given to the industry, at INPO last year in which I addressed the issue of safety culture and complacency and so forth.

I do believe that the role of the NRC is definitely not to manage these plants, and I think that Senator Voinovich completely agrees, that we're not a manager of nuclear power plants. I think our role is to make sure that the licensee does what they have to do. And in this case, Davis-Besse did not do what they had in their own plan regarding safety culture. In other words, they violated their own plans and their own standards, and that we can hold them accountable for.

I do believe that we're learning more about what are the type of things that we can measure by the type of things that we can add to it. And in the case of Davis-Besse, because the culture was really not good, we went a step beyond what we would normally do, because in the case of safety, the Commission and the Atomic Energy Act, 50 years that tells us we have a tremendous amount of flexibility and latitude. We require it for five years provide independent assessment of their culture, their operations. And that's kind of unique. We have only done that — we did a little bit with Milstone when we required them to provide an independent body to look at their culture, and an independent assessment of their safety system. So in unique cases, we do it. We'd rather the licensees do it, and we see what the results are.

QUESTION: Well, the GAO report mentioned the possibility for other mishaps is still out there. You mentioned that First Energy's safety culture obviously wasn't good. Are you concerned that there are other ticking time bombs out there that could come up if you don't look at it more closely.

CHAIRMAN DIAZ: We haven't seen any ticking time bombs. Okay. I can categorically tell you that there's never going to be another hole in the head of a reactor vessel in this country. I mean, you're never going to find one. And you can say well, is that because of the strong regulator? Well, a little bit, take a little bit of credit for that. But fundamentally if you look at what it cost them, there is no other industry in this country that's going to take that risk.

Now we're going to make sure that there's strong regulations, and we have gone that way. However, I think what the GAO was saying, and they might have even quoted me, is the fact that I said that there might be some other things that are not as obvious and as clear as the Boric Acid corrosion in the plant. And that's why a year ago I started to push very hard and established a Materials Degradation Program, a program that is not only looking at the nozzles of the pressure vessel head, looks at the materials in the plant and all of the systems that could actually have an impact on safety.

At the same time then, the industry has established major programs in Materials Degradation. This, by the way, is not an issue only of the nuclear power industry. You talk to the Presidential Science Advisor, which I occasionally have the pleasure of doing, that's an issue that is very big on his list. This is an issue of America, do we have many, many assets that have materials degradation problems, and we need to come up with a new technology, a new way of fixing them.

QUESTION: Chairman, you're a nuclear engineer by training and a nuclear professor before you joined the NRC. Do you feel that the need for technology is evolving or is it frozen in time? We haven't seen a new plant, since everybody knows in more than 30 years. In everything else we see technological evolution, oil (inaudible) is something different after 30 years than it was before. How do you feel about the evolution of the technology?

CHAIRMAN DIAZ: Well, it certainly hasn't evolved very fast. You're absolutely right, the nuclear technology in this country, and really in the world is kind of — is not frozen. It has evolved slowly. That doesn't mean that changes are not being made even to existing reactors or to the new reactors that are being built, especially in the East, in Japan, South Korea, Taiwan, China. But the changes are evolutionary in measure, and the reason is this is a very conservative industry.

And by being conservative, they have tried to assure themselves and whoever invests in these things, and the country, that what they are doing already fits the framework of performance and of regulation.

I believe that for the nuclear power industry to move forward, and I'm now talking as an old nuclear engineer, they need to evolve more rapidly. They need to actually have plans that run more efficiently, at little higher temperatures. They need to really get rid of all this whole analog systems going to digital controls and instrumentations. There are many, many things that are state-of-the-art, and they are bringing them in into the old plants. But if there are new power plants, they definitely need to move into an area that makes them more efficient, and at the same time, we will require them to be moving at a higher level of safety; meaning that inherent safety becomes part of the criteria, rather than something that you add on later on.

QUESTION: (inaudible) evolution?

CHAIRMAN DIAZ: In a certain way, yes. I think that in a certain way in this particular area where conservatism is such a big part of all that is done, it inhibits it because people say I do not want to have uncertainty. Uncertainty is one of the great enemies of this area.

On the other hand, I do believe there is enough known learned now that the basis is there to move forward. I think we know much more now than we did many years ago. There is a good, strong, scientific and technological basis to move reactors from where they are to a higher level of performance. And I think the industry is looking seriously at that.

QUESTION: Do we learn enough from the Nuclear Navy and the nuclear submarines, do we learn enough to do. I believe there's evolution going on now.

CHAIRMAN DIAZ: Yes, we do. We, of course, as you know, we do have significant programs with the Nuclear Navy and there is a learning process. I do believe that those programs, of course, have improved also in the areas of materials and controls. But I think the big step in the nuclear power plants comes in the area of can we increase the efficiency of generation. We're stuck at the 32, 33 percent level, I think, that that can only be resolved with higher temperatures. And this is why the move to either gas turbines. You know, it's probably a very good move for the future. Nobody is going to go there, as you well know, in the next 20 years. They need to be assured that this fits both the expectations of performance, the expectations of safety, and the expectations of what the country was to be assured that these things are very, very safe. So I have, by the way — I coin a phrase about a couple of years ago, which is an interesting phrase. It's just that we need to be conservative, but we need to be realistically conservative. We need to avoid the extreme levels of conservatism, because it doesn't serve the American people very well.

QUESTION: Mr. Chairman, (inaudible). There seems to be a lot of pressure and uncertainty on the Hill this year, and I know the NRC has asked for increases in several areas, including preparations for the Yucca Mountain license application.

CHAIRMAN DIAZ: Yes.

QUESTION: If you don't get the budget in time (inaudible) that's needed, how is that going to affect the agency's goal to start up on that project?

CHAIRMAN DIAZ: Well, it certainly will impact us after a while. If there is a continuing resolution, we will be essentially at the previous year's level, and we have anticipated a significant increase from the nuclear waste fund. And if that increase doesn't come, we will be curtailed.

Now the agency, of course, will look to right now how to accelerate other projects we already have on our plate. We have the licensing of the MOX facilities, we have potentially two enrichment applications for fuel enrichment plants, so we can juggle our things for a few months, but if it goes longer than a few months, then it would curtail what we can do in the high-level waste area.

QUESTION: If I can ask a follow-up.

CHAIRMAN DIAZ: Sure.

QUESTION: If the agency has three, maybe four years to get through this very complex license application, even in the best of times, is this a job that the NRC could get done in that period of time, or do you think it's going to take longer?

CHAIRMAN DIAZ: How long do I have to answer this question? No, fundamentally three years is very tough. I would say it's very, very difficult for us to handle this massive adjudicatory process, which is going to probably be the largest that has ever been done in this country in a three year period, but we're going to try. We're going to give it our best try.

We have a one year leeway which we have to justify, so given that the Department of Energy is telling us they're going to deliver an application in December, and given the fact that we have insisted that the application be as good as it can be, if it's a very good application and it's delivered on time, we're going to try our best to do it in three years, but we will do it in four years.

QUESTION: (inaudible), National Public Radio. Back to the question of the (inaudible). The DOE's plan is to take out it says over 99 percent of the waste. That still could leave tens of thousands of gallons of high level waste in the bottom of these tanks. What has the NRC done to evaluate the safety of that proposal? Has all the science been done, and how confident are you that the rivers will be safe (inaudible)?

CHAIRMAN DIAZ: Well, we have not done it, because like I said, it is not on our plate, so we don't provide those evaluations. It's Department of Energy evaluations. The NRC does not regulate DOE's abilities, so they are not on our every day plate. We do have memorandums of understanding with the Department of Energy, and we do conduct a series of evaluations, and we have done that. We have projects in Hanford support some of the departments work in the Hanford area, specifically in the radiological protection arena. But I think what they are trying to do is handle the problem in a manner that allows them to do what is more important first, and the things that can be done, and then have the assessment that although this waste are still radioactive, they do not pose the significant hazard that the rest of the waste would. I think that's a good way of doing things, because if not, we might not be able to handle all of it, so doing it in phases is a good approach.

I am not really familiar with what is the total amount of radioactivity, or what it is, but I am sure that a lot of people are going to be looking at it. And it might end up that we might be consulted, but that has not taken place.

QUESTION: I mean, part of their defense is that they say well, the NRC has approved our plan, is one of the things they say. What (inaudible) true? Have you run any computer models (inaudible)?

CHAIRMAN DIAZ: What we have done is look at the sequence of operations, but we have not any long-term effects or issues. We assume that the Department of Energy is going to do that, and provide it to us. That it still (inaudible) and the process is being done.

QUESTION: Actually, do you evaluate the details and models —

CHAIRMAN DIAZ: We don't evaluate all the detail models or predictions. Now I could be wrong on that, but I have not seen — it hasn't crossed my desk. It hasn't my crossed my desk, it means that there is a process that has not taken place.

Now can we be asked to do that? The answer is yes. Can the Congress turn around and say we want NRC to — the answer is yes. But has the process been done and completed? The answer is no.

QUESTION: Jeff Beatty with Energy Daily. In the past couple of years, the NRC has looked at individual problems at individual plants and judged them to be important enough to issue sort of a fleet-wide generic (inaudible) inspections or assessments (inaudible). And given the discovery of the missing spent fuel rod noticed at Vermont Yankee, and discovered at Millstone a couple of years ago, I'm wondering if the NRC is considering any sort of similar fleet-wide communication (inaudible)?

CHAIRMAN DIAZ: Well, we have already done it. We pick up the phone and call all of the people that have similar reactors and could have similar materials and tell them to make

sure they start accounting for all the material, which we have already done. The issue is we're now in a little more demanding mode because this practice of having a pail that breaks, it's okay. This is something that (inaudible) fuel is doing to occasionally may be damaged and come apart. The issue of putting it in a pail and sitting in a place is probably ok. Most plants have a pail that is locked and cannot be opened, and cannot be moved. In this case it was not, and obviously somebody did not really realize what they were handling.

Now the good part of the story is that that means that that fuel was no longer very, very radioactive as we consider it, because if not, once you take it out of there, something would have alarmed, so it was probably handled underwater or put in a shielded cask. It was probably, and this is all conjecture, that we don't have any real data on where it went. It probably is not there. It's not on a part of the plant. It was probably with all the radioactive waste, so it was taken to the waste handling facility. It was probably mixed with concrete, and so by the time it left the plant, it met all of the criteria for shipping fuel because they checked the outside of it, and there was no contamination on the outside. It met the transportation radiation level, and so it met what the criteria that we have for moving things outside of the plant.

How it happened, we don't know. We're still trying to figure that out. Have we addressed the issue? The answer is yes. Will we be able to, once we get some answers, go back and make sure there is proper communication that identifies what they have to do? The answer is yes.

QUESTION: Steven (inaudible) McGraw Hill. Chairman, you mentioned a moment ago that most over-used word in Washington, but that a paradigm of realistic conservatism and at meetings I've seen the staff on technical issues this is beginning to be considered and brought into technical meetings on various issues. Can you tell us more about how you hope, and how management is going to make sure that this approach is brought into NRC's technical analyses and decisions on a more nuts and bolts level with what I think Commissioner McGaffigan referred to as several layers of bounding conservatism studies, how it causes the agency to look to make conservatism in its technical studies more realistic without eliminating important parameters in the study?

CHAIRMAN DIAZ: Sure. The issue of realistic conservatism, of course, came out very clearly when we started to deal with some of the vulnerability assessment and some of the consequence analysis. And what happens is that we scientists, I used to be a scientist. I'm no longer qualified, but I used to be able to doodle in the issue, they have a tendency of taking a complex issue and then saying all right. I'm going to deal with it in a manner that allows me to make the calculations, and so we take issues that have - let's just say the word that is seven dimensions, and we say I'm going to make it one dimension. I'm going to be able to work with this problem. And when they do that, they get to a result, and that result normally could be slanted one way or another. And the way that in our business we do it, we make it conservative.

Then they say all right, now I know what it is in this simple one point analysis. Let me go to the next level. And they go to the next level, they say all right, I'm going to consider another factor. And then they start saying but I want to be conservative, and then they add another layer of conservatism. And when they do this five times, the fifth iteration has already forgotten what the first one was, and so the end result is that you don't know how conservative you are.

People used to think that conservatism is good. My point is that unnecessary conservatism is paid by the American people. They pay for it. Power companies don't pay for it. You, I, everybody pay for the electricity. You, I, everybody pays for the medical procedures, so are we having the American people pay for unnecessary conservatism? And the answer is yes. Okay. So what we're doing is from the beginning, we want people to add just the amount of conservatism that they can justify because of the end use, the amount of conservatism that can be assessed.

It's very simple when people design a bridge, you know, designers, and normally the way it used to be, they'd come and say I want this bridge to do this, and this, and this. Then at the end they say I'm going to have a safety margin of two. Well, that to me is very realistic. They knew

what they wanted and they added a safety margin of a factor of two. Well, I think we should be able to do the same thing. It might be that we want to add a safety margin of five. Because we want to be more conservative. That is the case, but when we don't know what the amount of conservatism is, it becomes not realistic. It doesn't serve anybody.

And what the staff is doing, and they started with research, but is cooperating to the other offices when we make analysis, we make technical vulnerability assessments, when we made comparisons, we are going to not take the worst case scenario at every step. We're going to try to determine what is the margin of safety because that's where our low is. We are supposed to be have a margin of safety, they're going to ensure that there is a very good margin of safety. We're going to know what that is.

QUESTION: Tom (inaudible) International. Am I'm not sure if (inaudible) but earlier this month, Secretary Abraham said that it might be worth considering federalizing some of the guard forces at nuclear facilities. And I was wondering if you could explain any of the considerations surrounding something like that, or any progress made in that direction.

CHAIRMAN DIAZ: Sure. I believe that what Secretary Abraham was saying is there are facilities which have potentially higher risk profiles, and those facilities he might consider having an extra level of security, which would include the federalization of those guards.

The issue, of course, the way that is played out is because of the different ways that people come out with the so-called design basis threat, and the design basis threat is being compared to the so-called postulated threat. Now there is a big difference between the postulated threat and the design basis threat. Postulated threat is what can happen in 10 years, what if serious or circumstances converge that allow terrorists to gain this, or this, or that, and are really more pointed to the acquisition of nuclear weapons than some of the other facilities.

I believe Secretary Abraham was specifically addressing the security of facilities who have or could have nuclear weapons or nuclear weapons materials. It really doesn't cover the other DOE facility, and is really not applicable to civilian nuclear reactors, where this threat is much more reduced. And it really does not compare to the postulated threat.

QUESTION: The Commission right now is two commissioners short. I know the Senate is — that there's a hold-up in the Senate on one of the nominees. Have you heard the White House giving any names for the second nominee, and how has it affected the Commission?

CHAIRMAN DIAZ: Well, we love good company. There's no doubt about it. But the Commission is working well. I haven't heard from the White House what they intend to do. I believe that there have been many, many times in the history of the Commission where we worked with even two Commissioners, which makes it even more difficult to do certain things. Although, as you know, the agency becomes a single agency administrative as to commissioners, which is what happened when Chairman Jackson came into the Commission. She was a single agent administrative for a series of months.

I do hope that the Congress is working on the issues. I'm sure the White House is, but we are working well. My two fellow commissioners and I have worked together now for many years. We communicate very well, and we are addressing all the issues that need to be addressed. It's not impacting the work that we do. Could we have a little more help? Yes, I think that's fine, but we're doing well.

QUESTION: Can I ask you about the sources at NRC. We've had movement and talk about maybe somebody building a natural uranium Canadian CANDU reactor. A while back there was talk about a pebble bed reactor, and you have just talked about a high temperature light water reactor, I think. Do you have any sources to license any new designs?

CHAIRMAN DIAZ: We have made preparations to license what is on our plate. To go beyond that, the answer is no, but we are fully manned to complete the licensing for the AP1000, which final design approval is expected for September. And then we're going to rule making, and it should have — the rule making should be done December, '05. We have two other pre-

applications which includes the ESBWR and the Advanced CANDU 700. Those are in the pre-application space. We have cut back in the work on the high temperature reactors, like the pebble bed or the gas core reactors because we see them as being further in the future, and we have enough on our plate.

I don't think there would be a very high temperature light water reactor. We need to change the fuel, and we need to change the medium to be able to go to the high temperatures. And I think that that is in the future. I believe that the materials technology and the fuels technology have advanced to the point that we can consider high temperature reactor. Those reactors that will give a thermal efficiency of conversion of 42, 43, 45 percent, and that makes a big difference for the economics of those plants, and with the fuels, and the fuels also makes a big difference, and the safety of the plants. There's much more inherent safety in the larger, potentially graphite reactors than the light waters.

QUESTION: Jeff Beatty with Energy Daily. I'm wondering if given some of the materials related discoveries have been made over the past couple of years again with Davis-Besse and steam dryer at Vermont Yankee. And given that there's an enormous number of plants lined up for either power uprated systems (inaudible), do you feel that those systems for judging those applications and improving uprates and license extensions is catching everything that needs to be caught (inaudible) this point? I mean, simply you approved or reclassified the State of Vermont (inaudible) independent engineering assessment of (inaudible) and the uprate proposal there. Is that — are you considering anything additional for other similar applications?

CHAIRMAN DIAZ: We are reassessing the power uprates because we just had a power plant that was granted what we call an instrument power rate of 1.2 percent, I believe, and the licensee itself came and said that they are not able to meet the requirements of the uprate, and so they are going back to their original power until we can do it.

These are highly technical issues. We believe we have done a very good job in assessing the power rate, especially in placing them in what we call our safety framework. The issue of the steam dryers is really not a safety issue of concern. It is an operational issue. It is only a concern if the steam dryer starts breaking into pieces, and could go into the core vent. Normally, most plants would be able to detect that. They make noise, they have loose parts monitors that should be able to tell them. Also, what happens very quickly is the amount of moisture that goes to the turbine increases very rapidly, and the turbine you don't do that. Turbines don't like moisture.

So to answer your question, we are, of course, increasing our assessment, especially of the extended uprates, making sure that they fit into our safety framework. We believe they do. What we're doing in Vermont Yankee is part of another role, enhancements of engineering inspections that we are going to do everywhere, because we realize that we could do engineering inspections a little better.

And these engineering inspections are going to be called risk-informed inspections, in which we're going to go and take vertical slices of safety systems, and Vermont Yankee was the perfect one to do the first one, and so we're going to dedicate additional resources to it. We're going to do it, and it's independent because the NRC is an independent agency. It's independent because we're going to make sure that everybody that works on it has no ties or relationships to the licensee, or the way that things were done. And it's new and it's better, because we just started working on it in December and established with many hours. And I have been directly involved in this, by the way. Occasionally, I like to go back to my engineering roots.

QUESTION: (inaudible) National Public Radio. You talked a bit about the possibility of a plane flown into a nuclear power plant. What's the worst case scenario if a plane gets a direct hit on a spent fuel pool and you talked about time. How much time?

CHAIRMAN DIAZ: Well, enough time to do all of the things that we need to do to protect the people. Spent fuel pools are really, in our assessment, have come down several levels of safety assessment. Spent fuel pools are okay. We know what we will have to do. There is really

very low probabilities of any significant hazards to the public from a direct hit on the spent fuel pool. It's just really not there.

That doesn't mean that everything is honky-dory every place. We have systematically analyzed all of these systems. What I can tell you is that there is enough time to protect the people around this plant and the people of this country. And that we know.

QUESTION: What's the technical basis, that it's just that it's hard for them to actually catch fire, hard to imagine a leak of the water? What is the —

CHAIRMAN DIAZ: Excellent question, by the way. Nuclear power reactors don't have mechanisms for quick releases of radioactivity. They're just not there. Small releases of radioactivity, a little bit of radioactive water in the place; yes, but those are not consequential. We always worried if the core of the reactor melts and the radioactivity of the core goes to the environment. Okay.

What we have found is that the way that these plants were built, operated, and what we call the severe accident and mitigation strategies that were put in these power plants in the late 1980s, early 1990s, are very good at mitigating whatever can happen, whether it's a plane crash or somebody throws a bomb. The combination of these systems are so robust that even if worst case things happen, we have plenty of time to protect the people of this country.

So what I'm saying flat out is that there are no quick mechanisms for significant releases of radioactivity that we have identified. Does that mean that the probability is zero? No. I can't say that, but it is very low. Does it mean that we know everything that we need to know? It doesn't mean that. It means we have analyzed every angle that is most probable, every structure, every system. We have looked at every type of airplane. We have looked at different ways of doing it, and we are convinced enough for me to stand here and to tell the Congress of the United States that the probability of a significant radioactive release to occur before the time that we have protected the people is very low. And that includes not only nuclear power plants, it includes all the spent fuel pools, the independent spent fuel pools at facilities, it includes dry casks and it includes transportation of the spent fuel. Beyond transportation, the transportation casks that we have analyzed. And in those cases, there is either little release, no release, very little release, but in all cases there is time to protect the American people. And that's the answer that we needed, that's the answer that we have. And that's what we are clearly coming out and saying.

QUESTION: Does that mean evacuating people, or just getting it under control?

CHAIRMAN DIAZ: Both. It means eventually if we have enough time to get things under control. If things we have not foreseen happen, there would be plenty of time for evacuating the people and having our emergency plans in action. And as you heard me said, and this is a reality, is that emergency preparedness has been elevated to a new level. Does that means we're not confident of our result? No. We are confident that we're getting good results, but we also realize that we cannot stop there; therefore, we have taken emergency preparedness to the next level of activity.

QUESTION: Thank you. Along the same lines of emergency preparedness, we understand that there's some real plan for the IP 2 Plant up in New York in the next few weeks. What makes these drills special in terms of their security profile, and why aren't more of these drills being done at other plants in the United States?

CHAIRMAN DIAZ: Well, first you see these gray hairs? That's where they come from. Yes, we have an emergency preparedness exercise that will take place at the Indian Point Power Plant in New York that contain a terrorist scenario, and that has been the subject of significant attention, both by Homeland Security, the NRC, and especially the local authorities, the county executives and the State of New York. It is the first of a kind.

And Indian Point will be the first power plant in this country to have all three of our elements of scenarios, which includes three things. Very up-to-date force-on-force. It includes an integrated tabletop. Integrated tabletops are at the present time — of course, they are tabletops

because we have not really done a complete exercise yet. If the integration of the federal agencies in this country get together to put all their resources to address whatever can happen at a power plant, and in this case, we are the lead role. We are the ones that have established this. We identified the need to establish the scenarios. Secretary Ridge was extremely helpful in moving this issue forward. The White House got involved, so we now have many players involved from the different federal agencies. And Indian Point was actually the second plant to have an integrated response analysis. The third one was Calvert Cliffs, as a matter of fact.

QUESTION: When is this exercise going to take place?

CHAIRMAN DIAZ: The one on — the federal exercise I think is June the 8<sup>th</sup>. The tabletop already took place, so they have two of the three legs. The third one is emergency preparedness exercise with a terrorist scenario built into it, and that has been the subject of a tremendous amount of preparation.

It involves a significant amount of resources, and in which we're going to test all of the elements of emergency preparedness, including these issues that have been brought up regarding communications, regarding it will happen, but I think it would be a fairly tough test. I would like to say that I believe that FEMA and the NRC, the licensee, and the county executives, which I met with them last week on this issue. I went to New York, and went into the Lion's Den, and sat in there and talked with them, are prepared. And we are moving very quickly to that deadline.

QUESTION: Linda (inaudible). You seem to be pretty confident about airborne attacks. How about shipborne attacks. What are you doing about that aspect. I'm usually around the water around Calvert Cliffs. I guess that makes me really nervous to go by Calvert Cliffs.

CHAIRMAN DIAZ: Again, we have run the scenarios of water-based attack since February of 2002. Our licensees have had to consider the potential for a water-based attack. They are prepared. They're ready. We also did assessments on the potential vulnerabilities if something much larger than what is anticipated is done. We have identified what we call mitigating strategies. And I go back to this integration of safety, security, and preparedness.

What happens is that the things that we identified years ago that could mitigate a very large reactor accident are in place, and the people are being able to be drilled in how to deal with these issues. This has served us very well. We've been able to address every single one of these effects that we have identified. There's always the one that we have not identified; and, therefore, we always go a little bit beyond where we should be.

And, in fact, some people in the industry claim that I am very, very, very — too safety conscious. I'm always pushing them a little bit beyond where they should be. And maybe so. But I do believe that we're now at a stage where the licensees have responded. They have submitted their plans. We have inspected them, and we know where they are. And, therefore, we're confident they're capable of handling the vast majority of what could be thrown at them.

MR. KING: Well, before we conclude and we reach the end, I want to thank our co-sponsor, BP, and acknowledge Mike Ryan, who heads the Washington office, and Sara Howell who is here from BP in New York, and we appreciate your support for a vigorous dialogue with the press on energy issues. Nils Diaz, Chairman of the Nuclear Regulatory Commission, thank you so much for being with us.

CHAIRMAN DIAZ: Thank you.

MR. KING: Thank you all for coming. I appreciate it.

(Adjourned.)