

**OVERSIGHT ON THE NUCLEAR REGULATORY  
COMMISSION**

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**HEARING**  
BEFORE THE  
SUBCOMMITTEE ON CLEAN AIR, CLIMATE CHANGE,  
AND NUCLEAR SAFETY  
OF THE  
COMMITTEE ON  
ENVIRONMENT AND PUBLIC WORKS  
UNITED STATES SENATE  
ONE HUNDRED NINTH CONGRESS

SECOND SESSION

—————  
MARCH 9, 2006  
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SECOND SESSION

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# OVERSIGHT ON THE NUCLEAR REGULATORY COMMISSION

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THURSDAY, MARCH 9, 2006

U.S. SENATE,  
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,  
SUBCOMMITTEE ON CLEAN AIR, CLIMATE CHANGE AND  
NUCLEAR SAFETY,  
*Washington, DC.*

The subcommittee met, pursuant to notice, at 9:30 a.m. in room 628, Senate Dirksen Building, Hon. George V. Voinovich (chairman of the subcommittee) presiding.

Present: Senators Voinovich, Inhofe, Isakson, Carper, Jeffords, Clinton, Lautenberg, and Obama.

Senator VOINOVICH. This meeting will come to order.

## OPENING STATEMENT OF HON. GEORGE V. VOINOVICH, U.S. SENATOR FROM THE STATE OF OHIO

I was thinking, on the way over here this morning, that so often what we do here in the Senate and what you do in the Nuclear Regulatory Commission sometimes gets lost in the weeds and we don't look at what the big picture is about. I think it is important for us to understand that what you are doing and our oversight here is so important to the American people in terms of our fulfilling what I like to refer to as the second declaration of independence, and that is become less reliant on foreign sources of energy.

I think we all know, that nuclear power produces a great deal of energy in this country, and that if we are going to get away from the use of natural gas and move toward nuclear power and clean coal technology and some of the other things that our ability to do that is going to be very, very important to the American people, who today are suffering with the highest natural gas costs that we have ever had, that are impacting on their respective budgets at home, that they are giving up things in order to be able to pay their bills.

This Congress has increased dramatically the LIHEAP program because of the fact that these folks are not able to pay their gas bills. Businesses in this country that were very successful are being negatively impacted and we are losing thousands of jobs here in this country as businesses move overseas, because the public doesn't understand that natural gas is part of the feedstock that's so important to them.

So I think that it is important that we all understand that what we are doing is very important and that what you do in the Nuclear Regulatory Commission has a great deal to do with the future

of this country, including the environment. Because as we know, nuclear energy doesn't get into the problems that Senator Jeffords and I have been talking about for years in terms of emissions from NOx, SOx, mercury and the one we have debated a bit, and that is greenhouse gases.

So I am pleased to have all of you here today. I know it is a busy week, the NRC's 18th Annual Regulatory Information Conference is being held this week and a bunch of folks are in for it. This hearing continues this committee's strong oversight of the Commission. This is the eighth in a series of oversight hearings that began in 1998, when Senator Inhofe was chairman of this subcommittee. I thank the chairman for his leadership on this issue, as strong oversight of the NRC is critical to the welfare of the American public.

This is also the third hearing the Committee has held this year on the important issue of energy. We held a hearing on natural gas prices, and Chairman Inhofe held a hearing last week, and I was unfortunately able to attend, on Yucca Mountain, which is a part of all of this. The energy challenges that we face today and into the future threaten our global competitiveness. I have already talked about the impact that this is having on our brothers and sisters throughout America.

Nuclear power provides about 6 percent of the electricity consumed in my State and about 20 percent nationally. It is emission free power. By increasing its use we can help meet our energy needs, our economic needs and improve the quality of our air. That is why this committee spent a great amount of time last year on nuclear-related legislation. In addition to holding an oversight hearing and a closed hearing on nuclear security, several provisions to provide for the safe and secure growth of nuclear power were enacted as part of the Energy Policy Act of 2005. These include three bills that Chairman Inhofe and I introduced. I will not go into the details of it, but you asked for them and we got it done. We know that because of the Energy bill's passage, we understand that in the next 2 to 3 years, you are going to have 11 applications for the construction of new nuclear power plants in this country.

In addition to that, the Commission must continue to deal with license renewals and increased generation capacity for existing plants, something that a lot of folks do not know. They upgrade their plants so they can become more efficient and generate more electricity. And as your workload increases over the next years, I become increasingly concerned about the availability of personnel. That is another committee that I chair, oversight of Government Management and the Federal Workforce. You have to have the right people, with the right skills and knowledge at the right place at the right time. If we do not have them, we are in trouble.

I am particularly interested in hearing from the Commission about the folks you have lost and what you are going to do about bringing in some new people. I think that as an aside, the Commission's needs are a prime example of why this Congress should pass the PACE legislation, Protecting America's Competitive Edge, which will be a Sputnik-like response, to Sputnik 50 years ago, really doing something about math, science and engineering, getting the people we need to get the job done, not only for you, but

for a lot of other governmental agencies where we don't have folks on board because they are not out there.

So we are going to focus on overseeing your work, and I appreciate the private meetings that we have had, Chairman Diaz. I look forward to hearing what you have to say here this morning, and I'd like to then call upon Senator Inhofe for his statement.

[The prepared statement of Senator Voinovich follows:]

STATEMENT OF HON. GEORGE V. VOINOVICH, U.S. SENATOR FROM THE  
STATE OF OHIO

The hearing will come to order. Good morning and thank you all for coming.

I am pleased to have all five members of the Commission here today. Chairman Diaz and Commissioners McGaffigan, Merrifield, Jaczko, and Lyons—welcome. We appreciate all of you taking time out of your busy schedules to be here this morning especially since NRC's 18th Annual Regulatory Information Conference is being held this week.

Today's hearing continues this committee's strong oversight of the Nuclear Regulatory Commission. This is the eighth in a series of oversight hearings that began in 1998 when Senator Inhofe was chairman of this subcommittee. I thank the chairman for his leadership on this issue, as strong oversight of the NRC is critical to the welfare of the American public.

This is also the third hearing that the committee has held this year on the important issue of energy. I held a hearing on natural gas prices, and Chairman Inhofe held a hearing last week that I was unfortunately unable to attend on Yucca Mountain. The energy challenges that we face today and into the future threaten our global competitiveness. High natural gas prices are having a devastating impact on our constituents across the country, and we need to do everything we can to bring these costs down. I am calling for a "Second Declaration of Independence" to make us less dependent on foreign sources of energy, and nuclear power plays an integral role in fulfilling our declaration.

Nuclear power provides about 6 percent of the electricity consumed in my State and about 20 percent nationally. It is emission free power, and by increasing its use, we can help meet our energy needs, be less reliant on natural gas, and improve the quality of our air.

That is why this committee spent a considerable amount of time last year on nuclear related legislation, in addition to holding an oversight hearing and a closed hearing on nuclear security. Several provisions to provide for the safe and secure growth of nuclear power were enacted as part of the Energy Policy Act of 2005. These include three bills that Chairman Inhofe and I introduced: Nuclear Safety and Security Act (S.864), Price-Anderson Amendments Act (S.865), and Nuclear Fees Reauthorization Act (S.858). We were also able to secure \$41 million above the President's request for the NRC through FY 2006 appropriations for security and human capital activities.

The bottom line is that we have provided every legislative and funding provision that NRC requested and more. All of these provisions have led the Commission to project that they will receive applications for 11 or more new plants in the next 2 to 3 years. This is a huge challenge for an Agency that has not seen this type of major licensing actions in the last 25 years or so.

In addition to new reactors, the Commission must continue to deal with license renewals and increased generation capacity for existing plants, security assessments and regulations, licensing Yucca Mountain, and the day-to-day regulatory activities for the Nation's 103 operating plants. As the Commission's workload increases over the next few years, I have become increasingly concerned about the availability of qualified personnel especially when a significant number of experienced employees will be lost due to retirement.

I am particularly interested in hearing from the Commission about the number of employees they have lost over the past few years and their retirement situation today. I understand that the NRC has a goal of hiring 350 people annually for the next several years, and I would like to know how the new Human Capital Provisions that we recently passed are being utilized in this effort.

As an aside, the Commission's needs are a prime example of why Congress must pass the Protecting America's Competitive Edge through Energy Act of 2006 (S.2197). This legislation is aimed at implementing the recommendations of the National Academy of Sciences report, "Rising Above the Gathering Storm"— which focuses on improving our Nation's competitiveness by increasing our Nation's research

capacity, emphasizing math and science education, and producing more scientists and engineers.

Our subcommittee will focus even more this year on overseeing the NRC due to the important role they play in our nation's energy future and their increased workload and resource constraints. I look forward to hearing from the Commissioners and spending some quality time this morning fully exploring these important issues.

We invited only the Commissioners for today's hearing to accommodate the subcommittee's examination of the Commission's progress on a full spectrum of areas. I anticipate that there will be at least one more NRC oversight hearing this year that will include other witnesses. At the next hearing, I am specifically interested in getting a status report on all of the issues that we discuss today.

Notwithstanding some of their high profile activities, NRC and the industry must keep safety at the center of all that they do. Ensuring safety and security of our nuclear power plants is absolutely essential if we are to continue and hopefully increase our nation's use of nuclear energy, which I believe is essential to meeting our environmental, energy, and economic needs.

Thank you.

Senator INHOFE. I would defer to Senator Isakson. He has a timing problem and I do not.

**OPENING STATEMENT OF HON. JOHNNY ISAKSON,  
U.S. SENATOR FROM THE STATE OF GEORGIA**

Senator ISAKSON. Thank you very much, Mr. Chairman, and Chairman of the Subcommittee, Senator Voinovich, I want to thank you for the attention both of you have placed on affordable energy and our needs in the 21st century. Chairman Diaz, I welcome you and the members of the Commission here today.

As you gentlemen are probably aware, my State is served by Plant Vogel, operated by the Southern Company. That facility was built during a time that I was in the Georgia legislature, and on the industry committee that oversaw public utilities and electric utility legislation. For the better part of two decades, it has provided Georgia with safe, affordable, reliable energy. Because of my experience with it, I am a big supporter of nuclear energy, and I am delighted that we are on the cusp of expanding nuclear energy and availability in the United States.

My State is also served by the TVA's Plant Bellefonte, which is in the State of Alabama, but TVA serves 10 of the northern counties in the State of Georgia. Both TVA and Southern Company have estimated by 2015 that their baseline requirements will increase tremendously, and both are pursuing licensing for additional reactors at those two facilities.

Which brings me to my point: I cannot stress enough the importance for the NRC to effectively staff itself to handle the upcoming permitting process. We have been in a rather dormant situation for a while in this country, but that is not going to be the case now.

As I understand it, the NRC has gotten a significant increase in its budget, and we wait to make sure that you are doing everything you can to upgrade the staffing to deal with these additional demands. If you are slow out of the gate, it could suppress what is one of the most important needs we have in this country, to have safe, reliable nuclear energy. If you need help, call us, but do not be slow out of the gate.

There is another issue which has come to my attention. I am going to have to leave, because I am going to be required to cast a vote here in a few minutes in another committee. But I hope someone on the Commission during the course of your testimony

will address the issue of potassium iodine. It is my understanding that HHS has made a recommendation to expand the stockpiling of potassium iodine beyond what is currently now the limit, which is a 5 mile radius around a nuclear facility. They are recommending something in the order of a doubling of that.

I am not aware of the reasons for that nor the scientific information or data that they have that backs that up. But I would certainly like someone on the board to address that subject during the course of this hearing for the record.

I want to repeat again my deep appreciation to Chairman Inhofe and Subcommittee Chairman Voinovich for all the work that they are doing on nuclear energy. I particularly look forward to working with you gentlemen in the years ahead, as we have a second dawning of the nuclear energy era in the United States of America, and produce reliable, effective and efficient and affordable energy for the people of our country.

Thank you very much, Mr. Chairman.

[The prepared statement of Senator Isakson follows:]

STATEMENT OF HON. JOHNNY ISAKSON, U.S. SENATOR FROM THE STATE OF GEORGIA

Thank you Mr. Chairman. I want to thank you for calling this oversight hearing. In the interest of time I will be brief as I have another hearing to attend as well, except to say the following.

As you know in Georgia we have the Vogtle Electric Generating Plant, located near Waynesboro in eastern Georgia near the South Carolina border. I'm also sure you know that both Southern Company and the TVA, who both estimate they will need additional baseload power supplies by 2015, are looking at adding reactors at Vogtle, which is operated by Southern, and at Bellefonte which also serves my constituents and is jointly operated by TVA and Southern.

Which brings me to my point. I can not stress enough the need for the NRC to efficiently staff itself to handle the upcoming permitting processes. As I understand, the NRC has gotten a significant increase in its budget, and we want to make sure you are doing everything you can to ensure that you have enough staff and resources to handle the workload. If the NRC is slow out of the gate on these permits, it could have a negative effect on this growth. Let us know if you have everything that you need. We can help if you don't, but you need to reassure us one way or the other.

One other issue I would like someone to address during the course of this hearing, and I am sorry I won't be around to ask the question, is the issue surrounding an HHS rule regarding the stockpiling of potassium iodine in communities within a certain radius of a nuclear power plant. As I understand it HHS is proposing that radius be increased, I believe from 5 miles to 10 miles. I would like to hear from the witnesses here whether the NRC believes that is a necessary change. I'll be looking forward to reading that in the record from this hearing.

Thank you again Mr. Chairman. I'm sorry I won't be able to stay longer through the hearing, but will look forward to reading the transcript.

I yield back.

Senator VOINOVICH. Senator Jeffords.

**OPENING STATEMENT OF HON. JAMES M. JEFFORDS,  
U.S. SENATOR FROM THE STATE OF VERMONT**

Senator JEFFORDS. Thank you, Mr. Chairman.

Today's hearing continues our ongoing oversight of the Nuclear Regulatory Commission. Chairman Voinovich, you and Ranking Member Carper deserve credit for continuing the commitment to hold these hearings regularly in order to review the NRC's activities. I appreciate that all the Commissioners have made an effort to be here with us today. Thank you for doing that.

While we intend to hold several other nuclear hearings this Congress, this may be my last opportunity as Ranking Member to address all the Commissioners as a group. During my time as both chairman and ranking member, I have followed your careers. I have supported your confirmations. Some of you, your first term, some second and one of you, an unprecedented third term. Four of you, you know the Senate well, having served as former staffers. In fact, three of you served as staffers for this very committee.

I know you all to be dedicated public servants and I want to take this opportunity to thank you for your service to our country. Your job is not easy. It takes you away from family and friends and involves an area of great responsibility: regulating the Nation's civilian use of nuclear materials.

I believe the mission you carry out is one of the most vital roles of Federal Government, ensuring adequate protection of public health and safety while nuclear materials are used to produce power and are disposed of is a critically important job.

In light of the NRC's mission, I want to share my views on a few issues with you. The NRC has no greater responsibility than safety. I want the people of Vermont and across the country to be safe, and it is NRC's job to ensure that that happens.

As much as it seems that the Commission and the nuclear industry may be planning for an anticipated "nuclear renaissance" with new plants, we must maintain continued oversight over existing plants. I make this point because I am concerned that we may lose track of how dependent we are on existing and aging nuclear plants.

The real "nuclear renaissance" has been in our efforts to extend the lives of existing plants by boosting their power output and extending the terms of their licenses. We have not built any new plants. Revitalizing old plants is where we have truly grown our reliance upon nuclear power in the last few years. The dependence will only grow in the near future.

I urge you to maintain the NRC's focus in ensuring these plants continue to operate safely, even as we are asking them to fulfill more of our Nation's energy demand.

I also feel that the NRC needs to redouble its efforts to work with the public, to shore up the public confidence in your regulatory efforts. I continue to hear from ordinary constituents that the NRC regulatory processes are too complex, too closed, too tentacled, that they stifle rather than promote public participation. For people to embrace future use of nuclear technology, they must feel that they are being heard by the Agency.

Again, I thank Chairman Diaz and the rest of the Commissioners for being here to discuss these issues. I look forward to their testimony and to working with my colleagues.

[The prepared statement of Senator Jeffords follows:]

STATEMENT OF HON. JAMES M. JEFFORDS, U.S. SENATOR FROM THE  
STATE OF VERMONT

Thank you Mr. Chairman. Today's hearing continues our ongoing oversight of the Nuclear Regulatory Commission (NRC). Chairman Voinovich, you and Ranking Member Carper deserve credit for continuing the commitment to hold these hearings regularly in order to review the NRC's activities.

I appreciate that all the Commissioners have made the effort to be with us today. While we intend to hold several other nuclear hearings this Congress, this may be my last opportunity as Ranking Member to address all of the Commissioners as a group.

During my time as both chairman and ranking member, I have followed your careers. I have supported your confirmations, some of you to your first term, some to a second, and one of you to an unprecedented third term. Four of you know the Senate well, having served as former Senate staffers. In fact, three of you served as staffers for this very committee. I know you all to be dedicated public servants, and I want to take this opportunity to thank you for your service to our country. Your job is not easy, it takes you away from family and friends, and it involves an area of great responsibility—regulating the Nation’s civilian use of nuclear materials.

I believe the mission you carry out is one of the most vital roles of the Federal Government. Ensuring adequate protection of public health and safety when nuclear materials are used to produce power and are disposed of is a critically important job.

In light of the NRC’s mission, I want to share my views on a few issues with you. The NRC has no greater responsibility than safety. I want the people of Vermont and across the country to be safe and it is the NRC’s job to ensure that happens. And much as it seems that the Commission and the nuclear industry may be planning for and anticipating a “nuclear renaissance” with new plants, we must maintain continued oversight over existing plants.

I make this point because I am concerned that we may lose track of how dependent we are upon existing and aging nuclear plants. The real “nuclear renaissance” has been in our efforts to extend the lives of our existing plants by boosting their power output and extending the terms of their licenses. We haven’t built any new plants. Revitalizing old plants is where we’ve truly grown our reliance upon nuclear power in the last few years. That dependence will only grow in the near future. I urge you to maintain the NRC’s focus on ensuring these plants continue to operate safely even as we are asking them to fill more of our Nation’s energy demand.

I also feel the NRC needs to redouble its efforts to work with the public, and to shore up public confidence in your regulatory efforts. I continue to hear from ordinary constituents that the NRC regulatory processes are too complex, too closed, too technical, and that they stifle, rather than promote, public participation. For people to embrace future use of nuclear technology, they must feel they are being heard by the Agency.

Again, I thank Chairman Diaz and the rest of the Commissioners for coming here to discuss these issues. I look forward to their testimony and to working with my colleagues.

Senator VOINOVICH. Thank you, Senator.  
Senator Inhofe.

**OPENING STATEMENT OF HON. JAMES M. INHOFE,  
U.S. SENATOR FROM THE STATE OF OKLAHOMA**

Senator INHOFE. Thank you, Mr. Chairman. First of all, you have already commented on so many things I was going to mention, the three pieces of legislation that you folks were good enough to get through, and some of the accomplishments.

You also mentioned the necessity for Yucca Mountain. It concerns me a little bit. We had a hearing last week and there are a lot of people who are trying to look at this reprocessing as something in lieu of this permanent site. Let there be no doubt in your minds that this committee is very strongly saying, we are going to get that thing up and running. We have to have Yucca Mountain, we have gone through the process, we are there. There shouldn’t be any doubt in the minds of any of the Commissioners.

I am pleased with the progress we have made. There are some things I think we have not quite lived up to. If you will remember, back in 1998 when I held the chairmanship of this subcommittee, the same as Senator Voinovich is holding now, we actually had goals and deadlines and we got things done and got things up and

moving. There had not been an oversight hearing in 12 years at that time.

So we have a lot of things that need to be—now I understand that only one major regulatory change incorporating risk has been completed, which was the Part 50.69 special treatment rule, which the NRC began in 1999 and did not complete until 2004. I am going to ask some questions, when it comes time for questions, about why this is taking so long and what we can do to improve this type of thing.

Another area of concern has been the recent attention to the concept of potentially regulating safety culture. I do agree on a prominence of safety and that the end result must be safer facilities. I am greatly concerned that the methods to achieve this buzz word might distract the NRC from implementing risk informed decisions.

A simply dictionary definition of the word culture means a set of shared attitudes, values, goals and practices that characterize a company or corporation. My concern is that you cannot regulate attitudes and values. If the NRC attempts this, you will end up ignoring real risk and safety issues.

I understand that the definition the NRC is using includes the word attitude in determining whether the facility is safe for a culture. I am very wary of this effort.

In the 1980's and the 1990's, we saw the NRC inspectors regulating in kind of a bean counting mentality where the violations centered more on measurable items, such as having the operating manuals in certain colored binders, instead of focusing on real risk issues. I am concerned that if the NRC charges its employees with examining attitudes and values, we may actually move backwards on the progress we have already made.

So while I am sure that the current slate of Commissioners is not going to let this happen, let's keep in mind, we do not know what is going to happen down the road 5 years from now, 10 years from now. Very likely some of you or maybe none of you will be here as Commissioners, and very likely many of us at this end of the table will not be here. So we want to set this up for the future, so that we know that the progress we have made is going to continue on into the future.

So we will be here to pay a lot of attention to this. I agree with Senator Voinovich, the second most serious problem facing America today is the energy crisis. I think we are going to have to address it. You cannot address it without becoming aggressive in nuclear energy. I think each one of you agrees with that.

So we need to move, we need to stop all the traditional barriers that are out there and get this thing done in a timely manner.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

I first want to thank Chairman Voinovich for holding this oversight hearing and for his continued commitment to strong oversight of the Nuclear Regulatory Commission.

We have made a lot of progress since our first Oversight hearing in 1998, when I was the subcommittee chairman. The NRC's relicensing reviews are being completed within 2 years, the NRC has moved to a risk-informed reactor oversight process, and we have safely added additional electric generating capacity through power uprates. The total energy added through these uprates are equivalent to four nu-

clear plants. The NRC has also done a tremendous job in responding to security issues following the attacks of September 11. We all worked hard to craft a good nuclear security law and I want to ensure that law is implemented in the spirit in which it was crafted. These changes were necessary, yet reasonable—so I expect the NRC to implement security requirements in a manner that takes into account that “necessary and reasonable” standard.

I want to thank the Commission, and the Commission staff, for the work they have done, and equally important, the work you are about to do.

I commend the efforts of this committee for passing three pieces of legislation that I authored with Chairman Voinovich in the Energy Policy Act of 2005 to provide for the safe and secure growth of nuclear power. These provisions—NRC reforms, security, liability insurance, and human capital—combined with the Energy bill’s sections on risk insurance, production tax credits, and loan guarantees provide the foundation for the construction of new nuclear plants.

You are faced with the continuing relicensing of the existing reactors, you are still implementing new security requirements, you have a new reactor license process to deal with, and of course there is still Yucca Mountain which we have to get up and running as soon as possible. In addition, we can not lose sight of the accomplishments that have been made over the last few years, and we can’t afford to move backwards on the progress made.

Make no mistake, I am very pleased with the progress that we have made under the leadership of this commission—you are to be congratulated. But part of that success is due to us identifying issues of concern as they come up, and to that end I do have a few issues that I would like discuss.

While I appreciate the efforts the NRC has made on moving to a risk-informed oversight process, particularly in regards to inspections, I am troubled by the length of time it is taking to get new regulations through the process, and I am concerned about how those regulations are not incorporating risk.

I understand that only one major regulatory change incorporating risk has been completed, which was the Part 50.69 Special Treatment rule which the NRC began in 1999 and didn’t complete until 2004. Other risk related rule making efforts begun in 1999 such as Part 52 for design certifications and Part 50.46a have yet to be completed. In addition, we have heard concerns that some of these proposals have moved further away from risk-based concerns than where they started.

Another area of concern is the recent attention to the concept of potentially regulating “safety culture.” While I agree on the prominence of safety, and that the end result must be safer facilities, I am greatly concerned that the methods to achieve this buzzword might distract the NRC from implementing risk-informed decisions.

A simple dictionary definition of the word culture means “a set of shared attitudes, values, goals, and practices that characterize a company or corporation.” My concern is that you can not regulate “attitudes and values,” and if the NRC attempts this you will end up ignoring real risk and safety issues. I understand that the definition the NRC is using includes the word attitude in determining whether a facility has a safety culture. I am very wary of this effort.

In the 80’s and 90’s we saw the NRC inspectors regulating in a bean-counting mentality where the violations centered more on measurable items such as having the operating manuals in certain colored binders instead of focusing on real risk issues. I am concerned that if the NRC charges its employees with examining attitudes and values, we may actually move backwards on the progress made.

Senator VOINOVICH. Thank you, Mr. Chairman.  
Senator Obama.

**OPENING STATEMENT OF HON. BARACK OBAMA,  
U.S. SENATOR FROM THE STATE OF ILLINOIS**

Senator OBAMA. Thank you very much, Mr. Chairman. I appreciate your holding this hearing today and your leadership on this issue. I appreciate the witnesses appearing before the subcommittee and look forward to hearing their testimony.

As my colleagues know, nuclear power provides more than 50 percent of the electricity needs in Illinois. We have 6 plants, 11 reactors, more than any other State in the country. I have said previously before this committee, to the chairman of EPW as well as the chairman of this subcommittee, that as our energy consumption continues to increase in the coming years, we are going to need to

meet this challenge. We are going to have to determine how best to meet it without jeopardizing the environment.

As Congress considers policies to address air quality and the harmful effects of carbon emissions on the global ecosystem, I believe that nuclear power should not be omitted from the discussion. I think in our overall energy mix, nuclear power is going to be a critical component. I would like to see us develop a safe, clean, expanded nuclear capacity that allows us to deal with some of the other environmental challenges that we have.

However, as the NRC knows, the viability of nuclear power, particularly expanding nuclear power to meet additional energy needs, is going to rest in large part on the public having full confidence in the health and safety precautions taken at these facilities. When events occur that surprise the public, even if the potential risks are within Federal health and safety standards, it is understandable that people are skeptical and concerned about nuclear power.

In Illinois, we have recently had an example of this difficulty. Two months ago, it was announced by Exelon Nuclear that over the past 6 to 8 years, there have been several accidental leaks of tritiated water at the Braidwood, IL plant. It is estimated that each leak resulted in the discharge of approximately 3 million gallons of tritium into the surrounding groundwater.

I was troubled to learn that community residents, particularly State and local officials responsible for the safety and health of their constituents, did not receive full or immediate notification of this contamination, either from Exelon or the NRC. I think that's wrong. Our constituents deserve to be notified immediately and comprehensively when substances of concern are released into the groundwater. That is why I introduced a bill to require nuclear companies to inform not just the NRC but also State and local officials if there is an accidental or unintentional leak of a radioactive substance.

Mr. Chairman, I think this is a simple, common sense bill. It is good for public safety, it is good for the public's right to know. Ultimately, I think it is going to be good for the nuclear power industry. I think the more we know about nuclear power, the better the public is informed, the better you are going to be able to do your jobs, and the better we are going to be able to expand, potentially, the use of nuclear power to meet our energy needs.

So I am looking forward to getting the views of the witnesses on this bill, as well as other issues facing the industry. Thank you very much, Mr. Chairman.

[The prepared statement of Senator Obama follows:]

STATEMENT OF HON. BARACK OBAMA, U.S. SENATOR FROM THE STATE OF ILLINOIS

Mr. Chairman, thank you for holding this hearing today. I appreciate the witnesses appearing before the subcommittee, and I look forward to hearing their testimony.

As my colleagues know, nuclear power provides more than 50 percent of the electricity needs of Illinois. We have 6 plants and 11 reactors—more than any other State in the country.

I have said previously before this committee, as our energy consumption continues to increase in the coming years, we will be challenged in how best to meet this demand without jeopardizing the environment. As Congress considers policies to address air quality and the harmful effects of carbon emissions on the global ecosystem, nuclear power should not be omitted from the discussion.

However, as the NRC knows, the viability of nuclear power rests in large part on the public having full confidence in the health and safety precautions taken at these facilities. When events occur that surprise the public, even if the potential risks are within Federal health and safety standards, it's understandable that people are skeptical and concerned about nuclear power.

In Illinois, we've had a very real example of this recently. Two months ago, it was announced by Exelon Nuclear that over the past 6 to 8 years, there have been several accidental leaks of tritiated water at the Braidwood, IL plant. It's estimated that each leak resulted in the discharge of approximately 3 million gallons of tritiated water into the surrounding groundwater.

I was troubled to learn that community residents, particularly the State and local officials responsible for the safety and health of their constituents, did not receive full or immediate notification of this contamination—either from Exelon, or the NRC.

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This is a simple common-sense bill. It's good for public safety, it's good for the public's right to know, and it's ultimately good for the nuclear power industry. I look forward to getting the witnesses' views on this bill, as well as other issues facing the industry.

I thank the Chair.

Senator VOINOVICH. Thank you, Senator Obama.  
Senator Lautenberg.

**OPENING STATEMENT OF HON. FRANK R. LAUTENBERG,  
U.S. SENATOR FROM THE STATE OF NEW JERSEY**

Senator LAUTENBERG. Thanks, Mr. Chairman.

I give my commendation to the chairman of the committee and yourself, for getting us onto this subject. We have been introduced to thoughts about nuclear energy by gas prices, by the politics of oil, by prospective shortages. So we know that we have to find alternative sources for energy creation. That includes research, hybrids, you name it. It certainly includes nuclear energy, as a distinct possibility. The work of the NRC could not be more important. The stakes could not be higher.

Nuclear energy has enormous opportunities for our society. Electricity can be generated, it is believed, without contributing to global warming or the air pollution caused by burning fossil fuels.

Now, my State, New Jersey, has four nuclear reactors. They provide more than half of the electricity that we use. But as we weigh the benefits of nuclear power, we must also be realistic about the potential problems. When we look at nuclear power, safety is always the first thing that pops into people's minds. The Oyster Creek in New Jersey is the oldest operating nuclear facility in the entire Nation. It came online in 1969. It was planned to last 40 years. The current license expires in 2009 and the NRC is now in the process of determining whether it should be relicensed for another 20 years, which would take it until 2029.

As the oldest nuclear facility, Oyster Creek must have special attention. The people who live near Oyster Creek are justifiably worried. They also know that the NRC has never denied a license extension for a commercial reactor. But they want to make sure, and so do I, that this review process is not a rubber stamp.

Now, I wrote in a February 21st letter to Chairman Diaz that my top priority in the process is ensuring the safety of the surrounding

communities and the workers at Oyster Creek. After I sent that letter, I was pleased that the judges of the Atomic Safety and Licensing Board granted a hearing to determine whether the steel radiation barrier at Oyster Creek has been compromised by rust.

Other issues also have to be addressed in our four other public hearings, including now the vulnerability of the site to a terrorist attack and backup power to cool the reactor. This is not only my opinion, it's the opinion of the New Jersey Department of Environmental Protection.

So I hope the NRC is going to exercise its prerogative to ensure that all of these issues get a full and open hearing. If the NRC expects the citizens near Oyster Creek to accept a final ruling as a result of a fair and open process, it can't rush to judgment. You must allow everyone an opportunity to air their concerns.

Mr. Chairman, one of the things that I would like to find out is whether or not the NRC will engage in a field hearing to make sure that there is an exchange of information between the NRC and the nearby residents and public.

Thank you very much.

Senator VOINOVICH. Thank you, Senator Lautenberg.

I will now call on our ranking member, Senator Carper.

**OPENING STATEMENT OF HON. THOMAS R. CARPER,  
U.S. SENATOR FROM THE STATE OF DELAWARE**

Senator CARPER. Thanks, Mr. Chairman.

Commissioners, welcome. I am delighted to see all of you. I have been looking forward to this hearing. I hope you have as well.

I think it is fair to say that a renaissance in nuclear energy, nuclear power, is underway in this country. I welcome that. Today I understand that there are nine companies or groups of companies that are developing applications for new nuclear power plants with the intention of filing those applications with you in the next year or two.

In addition, as Senator Lautenberg and others have suggested, many of the current nuclear plants throughout our country renewed their license to continue to operate, and we expect the rest of the current fleet to apply for renewal very soon.

Although the Department of Energy continues to push back its time line, we can assume that in the near future they will apply for a license to operate a nuclear waste repository as well. The future of the nuclear industry literally begins, though, and ends with you, with the Commission. Your responsibility is a big one, and I believe it is one that the Commission manages quite well.

I am a believer, as you have heard me say before, in nuclear power. I am heartened by its resurgence. I am ever mindful of the need to ensure that the operations, that we be vigilant and that we make sure that the operations are conducted as safely as is humanly possible and then some.

Energy prices continue to drag down our economy. Our dependence on foreign oil for energy continues to be a major concern, I think for all of us. I think nuclear energy is an answer, not the only answer, but an answer to both of those concerns. It is important that the Commission perform your duties and have the re-

sources that you need to perform them promptly and with a high degree of excellence.

I would also say, I have not heard all the opening statements here this morning, but as Tip O'Neill used to say, all politics is local. Just as Senator Lautenberg mentioned Oyster Creek, we have three nuclear plants right across the river from Delaware. When I was Governor of Delaware, I used to say that they are closer to me than they were to the Governor of New Jersey.

So we are always concerned about how well those facilities are operated, and I am going to be talking with you and asking you some questions about how we are doing over there, how they are doing over there, now that Exelon is involved in the operation of those facilities, not only in terms of operating performance, but what is the, if you will, the commitment to safety, the mind set, how is that changing and what are your views of that.

The other thing I want to talk about is just to get an update, and you will probably address this in your comments. I would like to get an update on nuclear waste. The President has proposed, I think in his State of the Union messages, some different approaches on nuclear waste. I would like to hear your take on that and an update on what's going on out in Yucca Mountain and also what you make of the President's proposals.

With that having been said, again, we are delighted that you are here. We look forward to your testimony. Thank you so much for joining us.

Senator VOINOVICH. Thank you, Senator Carper.

Since all my colleagues have mentioned their favorite nuclear facilities—

[Laughter.]

Senator VOINOVICH. I guess I am remiss in not mentioning Davis-Besse and Perry Nuclear. I have spoken so much about that to the Commissioner members and the chairman that it is redundant. But publicly, the beginning of the whole issue in terms of the work of the Nuclear Regulatory Commission, in terms of looking at safety concerns, really was generated by the situation that we had at Davis-Besse.

To Messrs. Jaczko, McGaffigan, Merrifield, Lyons, thank you for being here. We gave all of you a chance to speak for 2 minutes and you decided that you would let the chairman take the heat this morning. Because of that, Chairman Diaz, we would like to hear from you. If you can limit your comments to 10 minutes, we would be most grateful.

**STATEMENT OF NILS J. DIAZ, CHAIRMAN, U.S. NUCLEAR REGULATORY COMMISSION ACCOMPANIED BY: EDWARD McGAFFIGAN, JR., COMMISSIONER; JEFFREY S. MERRIFIELD, COMMISSIONER; GREGORY B. JACZKO, COMMISSIONER; AND PETER B. LYONS, COMMISSIONER**

Mr. DIAZ. Thank you very much, Mr. Chairman. I certainly would limit my comments to 10 minutes. It is a pleasure to be here again and to appear before you with my fellow Commissioners to discuss the Nuclear Regulatory Commission's programs. I request that my written testimony on behalf of the Commission be submitted for the record.

The NRC continues to discharge our responsibilities for licensing and regulating civilian nuclear facilities and materials in accordance with the congressional mandate in an open, balanced, risk-informed and ever more effective manner. Safety is our mission. Safety, security and emergency preparedness and reliability are synergistically improving.

More than one-third of the United States' power reactor fleet has applied for and received, after rigorous review, 20-year extensions of their licenses. Risk-informed and performance-based regulation is now ingrained in the Agency's and the industry's operation of plants. A safety and security framework for reactors and materials is in place, is being tested and is being improved commensurate with the post 9/11 threat and potential consequences.

The Agency's research programs have been focused on the Agency's defined needs, integrated with operational safety and licensing priorities, leveraging resources and expertise with international partners. Research is providing sound technical leadership and results with a foothold in the future. Our many international obligations are executed well. Our leadership is now apparent and our comparative efforts continue to span and serve our Nation and our international partnerships.

Our fiscal affairs are in order. Our financial needs have been supported by the Congress, and we continue to manage and prioritize resources including our human resource needs, investing in the present and the near future while exercising appropriate fiscal restraint.

Having said that, Mr. Chairman, the Commission and the staff have a lot of work to do. We need to do that work well and we need to do it timely.

The NRC continues its vigilant and strong safety focus on operating nuclear power plants. We will not lose that focus. We have continued to make improvements in the licensing and regulatory processes with significant resources. For example, over the past year, as the chairman mentioned, we have renewed nine licenses at five sites and issued six power upgrades. On the regulatory oversight front, we continue to exercise strong oversight of nuclear power plants as we refine our risk-informed process for inspecting and for assessing licensee performance.

The reactor oversight process has matured and improved. But it is still a work in progress.

The committee, and particular Senator Voinovich, has been strong proponents of improving safety culture in the right manner. The Commission is fully addressing this issue, and we are addressing it with a focus on how we can support the licensees, how we can improve and how we can exercise oversight over the licensees' safety culture but not measure attitudes. We are not going to measure attitudes.

The NRC realizes the need for nuclear power plants to maintain a strong safety culture and the requisite safety-conscious work environment. We have been working on this issue both to ensure appropriate oversight of safety culture and to ensure we have a healthy safety culture at the NRC itself. The NRC has been working with stakeholders to further improve the tools we have to assess safety cultures at nuclear power plants, and is working to

complete additional changes to the reactor oversight process to address this issue, including the use of independent assessments, if necessary.

We have also been working on improving the safety culture and climate of the Agency's work force. In 2005, the Inspector General conducted a survey of NRC employees to assess the current safety culture and climate of the Agency work force. The NRC safety culture and work climate, Mr. Chairman, has improved significantly in virtually every area since 2002, as reflected in the charts that we have displayed and that is included in the testimony. Having said that, the survey also revealed areas of opportunity for continued improvement.

[The referenced chart can be found on page 56.]

Today, Mr. Chairman, we are being asked to be ready to license new reactors to meet the energy needs of the Nation. In fact, the number of projected new plant license applications has more than tripled since this time last year, and it continues to increase. We presently have received intentions for 11 combined construction and operating license applications encompassing 17 units. Those poses a serious challenge to our licensing and new construction inspection capabilities.

We anticipate the need to conduct simultaneous reviews of multiple new plant license applications, design certifications and early site permit applications, all of them bunched in a small period of time. Having said that, we will not be distracted. We will maintain strong oversight activities to ensure the safety and security of the operating plants. We are preparing for this with a new work structure.

In order to allow for efficient parallel review of applications, the staff is considering a number of steps and is planning to implement a design center approach which would use a single technical evaluation to support review of multiple combined license applications for each vendor design, meaning that for AP1000, you will have one type of design that will be focused only on the AP1000, how it is used from one applicant to the other. The same thing for the ESBWR and the EPR. In the same technical areas where possible, we will actually use the same review.

In this regard, we are continuing to assess our personnel and work space needs in light of the very substantial increase in the number of anticipated new plant license applications. We might need the support of the committee in some of these areas.

Mr. Chairman, we know we are accountable to the Congress and to the people of this country. Throughout the Agency, we perform our work under that premise. We have structured the Agency to be true to our strategic objective. We accept and discharge our responsibilities to contribute to the well-being of our people by protecting the public, the environment and our Nation's security. We understand the challenges we face in the new reactor licensing and human capital areas, and will continue to work with the committee as we move forward. With your continued support, we will be ready to carry out our responsibilities.

We will be pleased, sir, to answer your questions.

Senator VOINOVICH. Thank you, Chairman Diaz.

In that chart there, in the red, how many senior executive folks have you lost?

Mr. DIAZ. We have lost, sir, a significant number, especially during the last few months, of senior executives. I don't know the exact number, but we keep a significant number of good people. We try to get some of them back. We normally have a cycle that by the end of the year, the beginning of the year, we lose more people than we can get. Then our hiring picks up, as is shown on the chart. It is a continuous cycle.

I have been told by my staff we have lost five SESers in the last few months. We intend to continue to renew our SES and managers by a program that is a tremendous success.

Senator VOINOVICH. I know that you submitted an overall plan and we have had a chance to review. However I am really concerned about it. These are top managers and you do have the authority, if you find yourself in a jam, that you can bring back an annuitant without them losing their annuity, is that correct?

Mr. DIAZ. Yes, sir, and we are grateful for your support on that. We have that authority and we are exercising it.

Senator VOINOVICH. You have already determined what you are going to need in 2000 and 2008. One of the concerns that I have is that the Department of Energy has a very good program that has made money available to engineering schools, nuclear engineering schools, and provided money for reactors in Massachusetts and one other place, I think.

Mr. MCGAFFIGAN. All over the country.

Mr. DIAZ. Twenty-eight places, yes.

Senator VOINOVICH. Twenty-eight places. And it is my understanding that they have eliminated that funding. I would like to know, what are you doing about it? Because unless that money is restored, this effort to train up more of these engineers is going to fall short. What are you doing about it?

Mr. DIAZ. Well, sir, we of course cannot speak for the Department of Energy. But I can tell you that the Commission unanimously supported our request for additional funding for universities and grant programs, as the Energy Policy Act stated. The President's budget is supporting that request.

So the NRC will have, in 2007, additional funds to be able to support the universities with grants, fellowships, assistantships, summer programs. We did what we thought was needed. I will assure you that personally, and I am sure my fellow Commissioners will do likewise, we will try to bring the fact that this is important, that although it might not have an impact tomorrow, it will have an impact the day after tomorrow. This is a critical infrastructure of the Nation and it needs to be supported.

Mr. MCGAFFIGAN. Mr. Chairman, if I could just add, it is out of our hands. I would personally urge you to fix that in the appropriations process this year. That was a mistake, I believe, on the part of the Department of Energy.

Senator VOINOVICH. Have you drafted a letter to the Secretary?

Mr. MCGAFFIGAN. I think I would get in trouble. I probably do just as much as I can possibly do without getting into too much trouble.

Senator VOINOVICH. Well, then why don't you draft it for the members of this committee, and we will get every member of the committee to sign it? How's that?

Mr. MCGAFFIGAN. For you to Senator Domenici, sure.

Senator VOINOVICH. I think we need to get it to Mr. Bodman and we need to get it to the White House and we need to get it to the appropriators. But they are all talking about bringing on new people and the new competitiveness agenda. By God, you can't do it unless you have the people. You have to support it. It costs money.

Mr. MERRIFIELD. Senator, I agree with Commissioner McGaffigan. I think this is vitally important. I am glad you did bring this out.

Just to point out, I think it is not, it doesn't fall quite evenly. It hurts, particularly the graduate members of those programs, folks who are getting their masters degrees and Ph.Ds, which is an area we have already been falling behind. So this is a critically important program as you pointed out. It is something I think we all should be concerned with.

Senator VOINOVICH. We ought to characterize it as implementing the recommendations of the report of the National Academy of Sciences, gathering above the rising storm, something like that.

I have talked with you, Commissioner Diaz, a little bit about total quality management. I hear complaints from a lot of folks out there about the way the organization operates in terms of customer service. I would like you to agree that you will sit down with me and maybe some people that really know, and talk about bringing total quality management to your operation.

I did this when I was Governor of Ohio. We were a leader in the country. I finished up as Governor with 17 percent less employees. I had a much happier work force. We had continuing improvement teams, we had facilitators. People were excited. We found that too often, the people that worked in many of these agencies were not even aware of the fact that people were unhappy with the way that the operation was working. It really made a big difference.

I don't know what your plans are. One of the challenges, I think this committee should know, is that Chairman Diaz's term is up, and I don't know yet whether he is going to tip his hat and leave or not. We have two temporary appointees, Mr. Lyons and Mr. Jaczko. So we may have some leadership changes here, and it is real important that we get this thing taken care of as soon as possible, so that if Chairman Diaz leaves, that we're not just out there without some leadership at a time when the NRC needs leadership more than they have ever needed it before.

Mr. DIAZ. Sir, I would be pleased to sit with you and discuss and learn and improve the way that we manage our people. I think we have really achieved great strides in the last 3 years. We have really paid attention to our people. We have taken our senior managers and the senior managers, their managers, into retreats and we have hammered at the fact that our work force is our best asset, that we need to make sure that we communicate well with them, that the managers' accountability and the staff accountability are one and only one, that they need to integrate it.

We see great results. Having said that, I think we know we have a way to go. I would be pleased to sit with you and work the issue through.

Regarding the leadership of the Commission, no, sir, I am not going to tip my hat. I can tell you that what I have done and what my fellow commissioners are doing is, we are making the institution strong. We are putting the changes in the right places in the institution with the right management, so that the institution will not only endure, but actually keep growing and doing the job that it needs to do for the American people.

Senator VOINOVICH. I would just like to say this, that you are going to have to be as efficient as you ever have been before. Because you have a human capital challenge of getting the people on board to get the job done.

One of the things that, you know, we are talking about the applications, we need the energy now, and what I understand is that it won't be until 2014 that we will see energy finally produced as a result of these applications that have come in. When I talk with folks that have filed applications, they're just worried to beat the band that they may run into what they ran into many, many years ago. In fact, one of the reluctances of people going forward with new facilities is this whole era of one impediment after another impediment after another impediment. I think it's really important that you start talking about how you are going to make sure this thing is going to move along, at the same time, of course, doing the job that you are supposed to do.

Mr. McGaffigan.

Mr. MCGAFFIGAN. Sir, I would only say that I think a lot of what we have been able to accomplish the last few years really reflects the TQM approach. We don't use that word at NRC, but we do expect constant improvement. We have in our strategic goals, we have continued to increase them. So a lot of TQM, I remember I was working for Senator Bingaman and Motorola was one of the first to embrace that. I think an awful lot of what we've done and the success we have reflected in one of those view graphs, the IG survey, comes from a TQM approach, although we don't use that word.

Senator VOINOVICH. What I would like to do, Chairman Diaz, is bring in Mr. McGaffigan and whoever else you want to bring in. I have some experts in the country that I will have them come in, talk about what you are doing, we will see what their opinion is and maybe we will go from there.

Senator Carper.

Senator CARPER. Thanks, Mr. Chairman.

I want to build off Senator Voinovich's question in just a moment. But first, this morning I want to come back to the issue of excellence, commitment to excellence, commitment to safe operations. I remember when I was on active duty in the Vietnam War, some guys in my squadron would talk about Government work, they would say, they would do a job, they didn't do it very well, and they would say, that's good enough for Government work. I never liked that very much.

I remember when a guy named Bert Lance was OMB director in Jimmy Carter's administration. He used to say, if it ain't broke, don't fix it. That's what he used to say.

In my time, I was privileged to serve as Governor of Delaware, we used to say, if it isn't perfect, make it better. If it isn't perfect, make it better. I would just add to what Senator Voinovich has said, that was the creed that we attempted to live by every day. My hope is that you do, as well, at the NRC.

We need safe, reliable nuclear energy in this country going forward. The biggest threat against that is a lack of confidence on behalf of Americans in terms of the safety of nuclear operations, not just in their safe operations on a daily basis of the plants across the country, but also to be sure that as we dispose of the waste that we are safe in that regard, too.

I want to come back to something I think Senator Voinovich was getting to. I think you said 9, 10, applications, 15 or plants, is that right?

Mr. DIAZ. Eleven applications, 17 plants.

Senator CARPER. Seventeen plants, OK.

Mr. MCGAFFIGAN. Sir, those are the ones that are announced. There are still others working.

Senator CARPER. OK. Just again quickly, the time to ramp until we get the first of those online would be at the earliest when?

Mr. DIAZ. In 2015, sir.

Senator CARPER. OK. How many nuclear power plants do we have in the country, about 100, 103?

Mr. DIAZ. One hundred and three and 104 probably next year.

Nuclear CARPER. As I understand it, even though the number of nuclear power plants has not increased in some time, we do have a greater output of electricity from the plants that we have, just take a moment or two and just explain how that has happened and whether or not we can look for any further increase in output for the next several years as we are waiting for the new capacity to come online.

Mr. DIAZ. Yes, sir. The most significant improvement has been in the capacity factor, due to the reliability and safe operations of the plants. What this essentially means is that we have really increased generating capacity of the country by about 18,000 megawatts over the last 15 years or so. So about the capacity factor of 18 large nuclear power plants, just due to the increased reliability of the plants. They stay operating longer, they operate longer periods of time at full capacity.

The other addition is what we call power upgrades. All of these plants have the capability to upgrade the power, some of them a little bit and some of them a lot. There's almost 4,600 megawatts of added capacity that is being put online just because of those power upgrades.

Senator CARPER. Looking forward, over the next, this is 2006, looking forward over the next 8 or 9 years, as we anticipate the bringing online of additional power plants, can we expect further output from the 103 or 104 plants that exist, or have we basically, are they basically peaked out?

Mr. DIAZ. They have peaked out, sir. They have plateaued at about a 90 percent capacity factor, I think. We think they can go

to 91 or 92. But because of the issue of refueling, maintaining the equipment, that is about the best that they can do. There will be additional power upgrades. But those will be incremental and smaller increases.

Senator CARPER. OK. Across the Delaware River from Delaware City are a couple of, several nuclear power plants that you may have heard of, Salem and Hope Creek are among the facilities that are there. The record of operations reliability has not been good over the years. Questions about the culture or the commitment to safety have not been especially good, either.

There has been a change in ownership management, or there is a change. I don't know if it has been consummated, ownership and management, that would pass the management of those facilities from PSE&G to Exelon. I would just ask you, give us an update of your understanding of how they are doing. I visited a couple of times. How is it coming?

Mr. DIAZ. They are doing better, sir. Our region took some very polite measures with the licensees. They took about three 2x4's and went into the area and let them know that the Agency was going to be very, very strong in exercising the required oversight. They actually took immediate measures regarding both their safety culture, the safety culture work environment. They revised their processes. They revised their corrective action.

I still think they are a work in progress. But progress has been made.

Senator CARPER. Good. Do any other commissioners want to add to or take away from that, please?

Mr. MCGAFFIGAN. Just particularly, I think the advent of Exelon, which I believe occurred about February of last year, has been really good for the site. They've made safety improvements, as the chairman said, they've made significant security improvements as well. I think they're on the right path.

Senator CARPER. OK. I understand, just to follow up briefly, I understand there were several shutdowns over the last year. I presume that that's not uncommon in nuclear facilities. But I think there were at least three, I think two of those happened within maybe a week of each other.

Do you have any understanding of what those occurrences were about, and how they were addressed?

Mr. DIAZ. Yes. You are totally right, Senator. These events do happen. We have now a process in which we look into each one of these occurrences. The licensee needs to take prompt corrective action to try to prevent recurrence.

I believe that the issues were properly addressed and hopefully they have learned the lessons of how to carry out some of this maintenance and maneuvers and will stay without these incidents.

Senator CARPER. I understand last year the NRC conducted, as you suggested, a special inspection of the safety culture of the Salem and Hope Creek reactors. According to the NRC's annual assessment letter, I think it read, and I am going to try to quote this, "The inspection team noted some issue that required additional action and focused attention." You may have already addressed this in your comments. But if you want to add anything to it, I would appreciate that.

Mr. DIAZ. No, sir, I think the region is addressing the entire licensees' capabilities to properly manage their plant. I think we always notice some issues. We are very good at that, especially when somebody has had some problems. We always take our magnifying glass and crank it up a little bit.

I don't see any significant safety issues in these facilities at the present time.

Senator CARPER. Good. I am going to ask you to answer for the record, if you will, just to elaborate on the earlier assessment from that assessment letter, just elaborate on it. And let us know what if any are the further NRC plans to follow up and to ensure that those issues that were raised by that inspection are being addressed.

It would be helpful if you could give us some specific time line.

Mr. DIAZ. I would be happy to provide you with that information for the record.

[The referenced information can be found on page 59.]

Senator CARPER. Good. Thanks.

In the minute and a half that I have left, I want to turn to a pitch that I telegraphed earlier, and I mentioned in my opening statement, the President has spoken during his State of the Union Address, talked about the need to increase reliance on nuclear energy as we try to reduce our reliance on foreign sources of energy. He talked about the disposal of nuclear waste. I would just ask you to take a minute or two to explain what the President was suggesting and then just really, for the commissioners, what's good about it, what concerns should we keep in mind?

Mr. DIAZ. Yes, sir. I believe that what the President and the Department of Energy is chartered to conduct is a review of how this Nation and really the world should actually handle the front end and the back end of the fuel cycle. Because it's not only the back end. Eventually what the President is proposing is an integrated solution to the issue of fuel, fuel from the beginning, fuel to the end, and how to do that in a manner that allows the appropriate use of the fuel and the appropriate disposition of the fuel. Rather than having just one end option, I think the President is saying there are several options and they need to be studied. They need to be analyzed.

We are not a direct part of this process. But we hope to be able to provide expertise as requested to assist in the potential licensing and safety issues that would arise with this proposal of GNEP.

Senator CARPER. Good. And I would love to hear from other commissioners. Commissioner Lyons?

Mr. LYONS. At the moment, it is somewhat unclear when the NRC will be involved in the processes being suggested by the DOE. But as or if those move ahead, as they move into commercial operation, there certainly will be a significant challenge for the NRC. As Senator Voinovich and others have spoken to the manpower challenges, this will present significant additional manpower challenges because the NRC would be asked to evaluate technologies that are well outside the range of those that we are currently working with. If recycling, if advanced burners are to be a part of this process, there is no question that we will have to do significant upgrading of staff capabilities to address that.

Senator CARPER. Other comments, please.

Mr. MCGAFFIGAN. Senator Carper, you have to understand that this proposal is in its infancy. It is decades away from being implementable. As I understand, what Secretary Bodman has proposed is a 3-year effort to see whether something might be possible with a decision in 2008 on doing engineering scaled facilities. But real facilities that would affect the fuel cycle in a significant way are decades away.

My only concern, and there are all sorts of concerns with regard to it, technical, economic regulatory, as my colleagues have said. I don't want them to lose focus on the near term, the nuclear renaissance, the issue that Senator Voinovich raised, which may, the cut in education for the universities may have been part of trying to find money for GNEP. I hope not.

And Yucca Mountain, they have to continue to focus on whether they can put together a license application that can pass muster with us. So I wouldn't want them to lose focus on things they have to do in the next few years. And even on the nuclear renaissance, they have to have a new standard contract with the licenses in order to get listed. That is something DOE has to contribute here and now to the possibility of this nuclear renaissance. GNEP is decades away.

Senator CARPER. OK. Yes, sir, Mr. Jaczko.

Mr. JACZKO. If I could just add, one of the crucials for the NRC in this whole process is to ensure that the NRC has the appropriate regulatory and licensing authority for whatever facilities will be constructed as part of this. That is, from our perspective, one of the most immediate challenges, as Commissioner Lyons mentioned, that could involve tremendous changes to our regulations and other things.

So knowing that we have that role and establishing that role early and clearly will be important.

Senator CARPER. My time has expired. Mr. Merrifield, very briefly.

Mr. MERRIFIELD. I agree with the comments made by both commissioners. Particularly, we have been waiting for the DOE submission for Yucca Mountain application. That is something Congress expects us to do in a period of 3 years. We put in place a process, the procedures and the people in order to take that. The delays in receiving that application are difficult for us, because that's forced us to have to retrench a bit, despite having been right on the edge, willing to accept that.

How GNEP affects that process is obviously an issue of concern. I certainly would say I would agree with Commissioner McGaffigan and hope this does not delay where we are going relative to Yucca itself.

Senator CARPER. Good, thank you. Thanks for your responses.

Senator VOINOVICH. Senator Inhofe.

Senator INHOFE. Thank you, Mr. Chairman.

As you know, for years, since 1998, anyway, I have been advocating a stable and predictable licensing process. I stress predictable. That's the important thing. I think sometimes we forget the massive amounts of investment that is necessary to, it is all predicated on what you folks come out with. So I think that predict-

ability in the licensing process is an absolute, if we are to proceed with the construction of new nuclear power plants in this country.

Yet here we are in 2006, as all these utilities are in the middle of developing their application for combined operating licenses, the Commission is still updating the rule on the licensing project. Now, we talked about this before, Mr. Chairman, and I have to ask you the question, when is the Commission going to finalize the rule?

Mr. DIAZ. Sir, we are going to finalize this rule by next year in time for it to be used by any of the applicants for a COR license. The reason for this rule is the same reason that you addressed at the beginning, this predictability. We really wanted to have, in our books and for the benefit of the licensees and stakeholders, a clear set of rules that can be followed—

Senator INHOFE. See, that's what I'm getting at here. Now, why, you say next year. Next year has 12 months. When?

Mr. DIAZ. It's October of next year.

Senator INHOFE. October of next year you will finalize—

Mr. MERRIFIELD. No, October of this year is I think the goal, sir. We will get the proposed final rule in October.

Mr. DIAZ. I'm sorry, it's January 2007, Mr. Chairman.

Senator INHOFE. No, it's October 2006.

Mr. DIAZ. October 2006 when it comes to the Commission, January 2007 when the final rule should be—

Senator INHOFE. OK, it will come to the Commission, you all will be working prior to that in the process of this, I am sure. Why can't you just go ahead as soon as it comes to the Commission and act on it?

Mr. DIAZ. Well, sir, the Commission is a deliberative body.

Senator INHOFE. So are we, and that is one of the problems.

Mr. DIAZ. Yes. I fully understand that.

Once we get a document that is going to become an official rule of the Agency, the Commission makes sure that everything that should be there is in there. But I hear you, we should be as expeditious as possible. I am sure my fellow Commissioners will try to be as expeditious as possible on that issue.

Mr. MERRIFIELD. Mr. Chairman, I would agree with the chairman. We need to try to get that through the Commission as quickly as we can. Some of the delay in that will be subject to the Administrative Procedures Act, over which we have no control.

Senator INHOFE. Well, OK, do you see any way it could be done before that?

Mr. MERRIFIELD. Any way it could be done before October of this year?

Senator INHOFE. That it would come to you before October 2006?

Mr. MERRIFIELD. I think we have already pushed the staff as reasonably hard as we can push them. What the Commission can do is follow very closely the staff proceedings as they go along and the interactions between our staff, the regulated utility and other interested stakeholders. From my own view, when I voted in favor of moving forward with this proposal, it was with the full knowledge that if we don't come up with something that is workable by that October deadline, I will vote against it. So I think the Commission is going to keep—

Senator INHOFE. Well, that is not going to help.

Mr. MERRIFIELD. I'm sorry?

Senator INHOFE. That is not going to help things if you vote against it. I just want to, it just seems to me, and let's do this for the record. I would like to have you tell me what steps you have to go through, and understanding the administrative procedures problems that might be in there, as to why we can't do it. Then if you couldn't have some guidance. See, every day that's going by, these guys are spending, making massive investments, at least I hope they are, because I am in a bigger hurry than they are or you are, to get to that point where we can have, expand our nuclear capabilities.

So I would like to know what that is. If you are all in agreement right now that it can't happen prior to that time and that it is going to take the deliberative process from October all the way through, what, the middle of January?

Mr. DIAZ. That is what is in the schedule, sir. Like Commissioner Merrifield said, we have already pushed the staff as much as we could. We actually pushed them almost—

Senator INHOFE. Commissioner McGaffigan?

Mr. MCGAFFIGAN. Chairman Inhofe, we had significant negative comment on this 550-page rule before we issued it. Because we put it out while we were contemplating whether to put it out. I am the one commissioner who voted against it and wanted it to be pared down.

I have some hope that, as I put it before the staff, through the help of public stakeholders, we will find the jewels that really need to be done in this dump truck of a rule. But one problem we have is this is a 550-page monstrosity that we put out for public comments. I personally think a vast quantity of it doesn't need to be enacted and we would have better regulatory stability if it were not enacted in final form.

So we are just going to have to see how the staff interacts with the stakeholders during this administrative procedure.

Senator INHOFE. But do you agree that it is realistic that January we will have your rule?

Mr. MCGAFFIGAN. If the staff pares it down—

Senator INHOFE. Well, if you say that, then they won't.

Mr. MCGAFFIGAN. Well, sir, I'm delivering a message right now—

Mr. DIAZ. Sir, the staff is ready to deliver. The draft rule is out. They know what the requirements of the Commission—

Senator INHOFE. Well, OK, let me make a request of the chairman here that if that isn't out, I request a meeting on Wednesday, January 24, 2007. Does that sound reasonable to you, so we can find out at that point if it's not, why it's not?

Mr. JACZKO. Mr. Chairman, if I could just add briefly. I think the Commission is very much committed, if we do get a rule from staff in October that we can act on that in a very expeditious manner. I think it's something the Commission is committed to acting on certainly before the January 2007 date.

Senator INHOFE. In my opening statement, and I will re-read the one short paragraph, I said I understand that only one major regulatory change incorporating risk has been completed, which was

Part 50.69, special treatment rule, which the NRC began in 1999 and wasn't completed until 2004.

Now, we have probably five or six others that are out there that were started around 1999, maybe addressing the Part 52 or another part of this. I would ask you, the two-part question here is, was that time that it took for that one, the 5 years, was that reasonable? Is that what you thought in 1999 it would take? And No. 2, what about the other pending applications that were there at that time?

Mr. DIAZ. Well, sir, first let me just say that personally this is kind of music to my ears. I do like risk and performance based regulation. I have been advocating it since my very first days in the Commission.

No, it was not reasonable. It was a long period of time. However, it was done in a very open way with the industry and the stakeholders. It was a difficult rule, because from the—

Senator INHOFE. So is that reasonable, 5 years?

Mr. DIAZ. No, it was not.

Senator INHOFE. OK. Let's, because we are operating on a time schedule here, let me mention, I understand that it is, and you have said this before, Mr. Chairman, that it is the responsibility of each applicant to submit a complete and quality application that meets all of the NRC's requirements and guidance. I think the problem is that the guidance is a moving target. I think that they in their minds are investing their money, they are in a hurry, they want to comply with everything. They are submitting a good application.

But then when things change here, then they have to go back, and this is a, I am wondering if there isn't a way that even though you can't finalize it, you can come up with a definitive, prescriptive guidance document so that they would not find themselves, so there are certain things with which they could comply during this period of time where they wouldn't have to go back and start a good deal of it over again. Is that reasonable?

Mr. DIAZ. That is very reasonable, sir, and we are working both in the guidance document and in the standard review plans to try to finalize them, upgrade them so that they will be usable. It is not that they don't exist. It is that they don't exist to do the work that they need to do now.

Senator INHOFE. Some of the problems, let me address a couple of them in the 1970's and 1980's, one of them caused the licensing process to bog down. That timeframe was that there was no in to reopening issues during the licensing process. Now, that's something I remember we talked about this some time ago. Have you taken steps to address this problem of reopening and having to go back, and if so, how have you done this?

Mr. DIAZ. Sir, there are two aspects of this. One is the technical reviews of issues and the other is the issues of the hearing process. I really—

Senator INHOFE. That's great, I was going to get to the hearing process next. Go ahead.

Mr. DIAZ. OK. The issues on the technical reviews, I think we have now in place a process that is sound, that will allow us to in a timely manner conduct the reviews. Again, I will say that this

is a two-way street. Sometimes when we ask for additional information, the information sometimes doesn't come the way it is. That is why I keep insisting that we will stick to schedules, but the licenses need to provide us with the right quality and they need to provide us with the right answers so we can keep the process on a timely manner.

Senator INHOFE. So you think you have taken steps to make sure your licensing boards meet schedules and milestones for completing hearings?

Mr. DIAZ. Yes, sir. I think that Commissioner Merrifield actually puts a significant amount of time in these, maybe he would be able to answer that.

Mr. MERRIFIELD. Mr. Chairman, we went ahead and we rewrote part 2 of our regulations, which relates to how we manage these hearing type proceedings. We recognize they did not have the discipline in them and there were problems in the past. We tried to inject in a system which is more effective, more efficient, will resolve concerns of the parties at hand. We have improved case management practices we put in, we have expectations for our judges, depending on the type of legal proceeding. We have told them how long we think that proceeding should occur. If they fail to meet those time lines, they have to come back to the Commission and where appropriate, the Commission can intervene to tell them they need to move through that process in a more disciplined way.

We have also changed it such that not all of our proceedings are the old formal style proceedings. We have moved to a more informal process. We think this too will allow the issues to come to the fore in a quicker way and will allow the parties to resolve those and move forward with a solid decision by our boards.

Senator INHOFE. Well, Commissioner Merrifield, you were the staff director for our former chairman up here. So you understand where I am coming from.

Mr. MERRIFIELD. I do.

Senator INHOFE. I will just make you my point man to make sure that happens.

Mr. MERRIFIELD. I will be happy to do that, Mr. Chairman.

Senator INHOFE. All right, thank you, Mr. Chairman. I am sorry I took so long.

Senator VOINOVICH. I understand from Senator Jeffords that he is going to allow Senator Obama to ask his questions, because apparently Senator Obama has another meeting that he has to be at. Senator Obama.

Senator OBAMA. Thank you so much, Mr. Chairman. Thank you, Senator Jeffords, for your gracious allowance.

I am going to focus a little bit on the situation with the tritium discharges in the Exelon Braidwood Generating Station. As you know, this has generated quite a bit of concern in my State. I recognize that there are some broader issues that we have been discussing here today, but as I mentioned in my opening statement, I think that if we can't generate public confidence about the safety and security of nuclear power, then it is going to be hard for us to move in systematic ways to utilize nuclear energy in the ways that I think it can be used to relieve some of the energy problems

that we have in this country. So I think this is sort of a microcosm of some larger issues that I would like to see raised.

My understanding is that in both 1998 and 2000, 3 million gallons of tritiated water leaked into the groundwater from the blow-down line at the nuclear plant in Braidwood, IL. I am wondering, to your knowledge, did Exelon know at the time that it was tritiated water? Does anybody know?

Mr. DIAZ. It could very well be that Commonwealth Edison, that was managing the plant, knew it was tritiated water.

Senator CLINTON. Mr. Chairman, could we ask the witness to speak into the microphone, please?

Mr. DIAZ. I'm sorry. But it was really never treated as a major issue. So the Commonwealth, which was operating the plant at the time, they surely must have known that this water contained traces of tritium. How the contamination was and the extent of it, I am not sure that the Commonwealth knew, neither did we know.

Senator OBAMA. OK. As I understand it, the NRC has a representative onsite at every nuclear power plant, is that correct?

Mr. DIAZ. That is correct.

Senator OBAMA. So what are the obligations of this representative? How quickly would your site representative know of any unplanned discharge? How quickly would NRC officials at headquarter be informed of the discharge?

Mr. DIAZ. They should know immediately of every unplanned discharge that poses any significant health risk to the public to the public health and safety, or any significant hazard to the public health and safety. So they are there, they should know, they should be informed. The plant should be informed, we should be informed. And to your point, if there is something significant, that any radiological protection measures should be considered, I think we would notify the local and the State officials, sir.

Senator OBAMA. I want to get to the public reporting in a second. But just to stay focused on the facility itself, since this time, what has the NRC been doing to prevent these kinds of leaks from occurring again in the future?

Mr. DIAZ. Some of these leaks are really unplanned leaks. In other words, it is not part of the procedures of the plant. We have of course in all power plants and all industrial complexes, two types of releases. Those are controlled and those are uncontrolled. This goes into the uncontrolled release category. Therefore, it received additional attention.

When a release of significant amounts of water takes place in any power plant, that's obviously, you can see that that certainly would be noticed. I think it was noticed. The fact that tritium is in all these power plants is, I hate to use the word, but it is a normal customer. It is always there. It is always present. We might have tended to remove some of the significance.

Let me just assure you that for the last 2 months, we have been focusing on it. We have a new tritium task force. We have put a web site that deals with the tritium issues. We are interacting strongly with every one of our licensees, and we are moving forward to take care of the potential radiological protection issue that is associated with it.

Senator OBAMA. OK, I just want to make clear here, when you say there are unplanned leaks, unplanned discharges versus planned discharges, the general public thinks nothing should be unplanned when it comes to a nuclear facility, right? So the minute you say unplanned discharges, I am not an engineer, but I like everything planned.

Mr. DIAZ. But things do happen.

Senator OBAMA. So these are accidents that are occurring?

Mr. DIAZ. These are, I would call them incidents, because they are not an accident in the sense that they cause a tremendous amount of problems.

But yes, they are incidents and they are unplanned.

Senator OBAMA. If I spill a cup of coffee, it is still an accident. I mean, I didn't do it on purpose. I may be able to clean it up, but—OK.

Mr. MCGAFFIGAN. Sir, we have performance indicators where we look for things that are significant from a safety perspective, and we follow those very, very, very carefully. On safety system actuations, it shouldn't occur, scrams of a plant that shouldn't occur. These things do, as the chairman said, occur. The slight, the distinction with tritiated water is that it doesn't rise to the level of a scram of safety system actuation or of a significant safety system. Because the public health and safety consequences are expected to be very, very much smaller.

Senator OBAMA. I understand. Is there some mechanism whereby you systematically look for signs of a public health impact from repeated unplanned discharges or do you just sort of estimate, well, here is the amount of leakage that took place, we figure this is not going to be a big deal? Or do you actively go and look, see what's happening with the groundwater, have it tested?

Mr. DIAZ. I believe that in the case of small amounts of tritium that we have seen in different facilities, we take it as what it is. Tritium is a normal component of water everywhere. The EPA puts significant levels of tritium, 20 picocuries per liter of tritium can be in drinking water. If a person drinks 20 picocuries per liter of tritium for a year, that means that is all he consumes is this tritiated water, he will get about 4 millirems of internal body dose, which is about a 4 percent of the dose that will actually allow from a member of the public, or 1 percent of the normal dose that they would take from the environment.

So tritium is a bad customer in the sense that it shows everywhere. It is not one of those isotopes that comes immediately as one of the most threatening to public health and safety. Therefore we deal with it in a safety significant manner.

Mr. MCGAFFIGAN. Sir, just to give you a perspective, and I always do these things to you, I am sorry, if one drinks two liters of water a day for a year of 20,000 picocuries per liter water, as the Chairman said, you get 4 millirems, which is about one-twentieth of what you get working in the Capitol. Because the Capitol has a lot of granite in it and a lot of thorium and uranium and radium.

So these are very, very protective levels. This tritium is about the most benign radioactive substance you can imagine.

Senator OBAMA. Look, I recognize, I read Exelon's talking points before coming here, and they are identical to the ones you just mentioned. I am not suggesting you saw them, I am just saying, everybody is on the same page in terms of indicating that, on the scale of potential hazardous substances, tritium is not at the top of the list.

Mr. JACZKO. Senator, if I could just make a point, I think you raise a good point about the importance of this with public confidence. I think while these may not be planned incidents, they are unplanned release. I think the NRC needs to take a look at what we are doing to plan to respond to them and plan to do cleanup activities and do that in a prompt way.

Senator OBAMA. Commissioner, I think that is an excellent point, which brings me to just a couple, two final areas of questioning.

It appears that the NRC knew about these problems several years before it notified Illinois EPA. I am just wondering what our policy is, why is that, what is the relationship between NRC and EPA in these kinds of situations, just because they are closer to the ground and may have information or interaction with the general public that would help assure them that this is not a major problem?

Mr. DIAZ. Sir, we presently are looking at each and every one of these issues in a holistic manner. The staff is preparing to analyze them and brief the Commission. The Commission will take a comprehensive look at it, and we will be, when we finish this process, we will do it as soon as possible to give you a complete look at both what the tritium situation is, as well as the way that is monitored, the environmental situation and also the communication situation. We will be pleased to submit that to you for the record.

[The referenced information can be found on page 54.]

Senator OBAMA. Yes, sir.

Mr. MERRIFIELD. If I may, I think, just to put it clear from my standpoint, I think we take our environmental mission very seriously. I think we are going to look at it through these lessons learned panels and realize we made some mistakes, we could have done things better in terms of communicating both with the State, interactions between the NRC and the licensee, I think there are areas where we can find enhancements.

We can talk all we want about the technical issues associated with how dangerous these substances are. But the point you are trying to make, and I understand it, is the people who live around these plants are very concerned. We need to recognize that. We need to explain what the facts are, we need to improve the way that we provide that information to people so they can get a greater sense of what is going on and feel more confident.

Senator OBAMA. Mr. Commissioner, I agree with you. I know I am running out of time or have run out of time. But if folks would just bear with me for two more questions. One, currently what is the trigger for reportable events? How severe does an event have to be before you inform local and State officials?

Mr. DIAZ. Sir, we have what we call our Part 20, which establishes what releases are and what are the triggering points. We normally do not wait, in many occasions, to have, to reach what is called a permissible level before we interact with local officials. I

think it mostly depends on the circumstances and how, whether there is a significant release that has taken place that is actually not controlled versus sometimes we have controlled release that are of a significant nature, but they are way below the limits.

So there is a whole variety of circumstances. I think the point that we're getting, and getting very clear, is that there might be a need to increase our communications with local and State officials on the seriousness of these issues. Your point is duly noted.

Senator OBAMA. Good. I just will close by saying this, and maybe, Commissioner, you can have the last word. I have introduced legislation, I would like my colleagues on the committee to know that I have introduced this legislation. It is very simple. All it does is it simply says, when these events occur, you need to inform the local and State officials.

Given the example that you are using right now, I think it would be terrific if, let's say, the county board chairman in Will County, who wrote me a letter saying, I am greatly concerned with the revelation that radioactive wastewater has been released. He had some sense that in fact this was something that could potentially be dealt with.

Senator VOINOVICH. Senator Obama, your time is up.

Senator OBAMA. I appreciate that, Mr. Chairman.

So I would just ask that those on this committee, as well as the Commissioners, work carefully to try to see if we can get this system, these systems approved. Thank you for your forbearance, Mr. Chairman.

Senator VOINOVICH. Senator Jeffords.

Senator JEFFORDS. Thank you, Mr. Chairman.

Chairman Diaz, on April 6, 2005, the National Academy of Sciences released a report on the safety and security of commercial spent fuel storage. About a third of the U.S. nuclear facilities are designed with a spent fuel pool above ground, including the Vermont Yankee facility in my State. I am repeatedly asked by my constituents what NRC is doing to implement the report recommendations.

Mr. DIAZ. Thank you, Senator Jeffords. We have taken that report to heart. We have implemented a majority of the recommendations of the National Academies. However, in order to do that well, we undertook a specific assessment of every site, site by site. In other words, rather than look at it generically and say, this is what we do, we actually conducted, the licensees did, and we conducted independent assessments of the spent fuel and the spent fuel situations and even the dry cask situations, on all of our facilities. That study was completed in December 2005. We are now putting together the report recommendations.

In the meantime, we have been effecting what we call mitigating strategies at each one of these facilities. I can assure you that every one of the spent fuel pools in the country has additional mitigating measures that makes them safer and in many ways goes a long way or beyond where the National Academies recommendation was.

Senator JEFFORDS. I know that the results are classified, and I can't share them with my constituents. Will NRC communicate the

results of the assessments it has done to the public in unclassified form?

Mr. DIAZ. Sir, when we finish the final analysis and discuss it fully with the licensees and it is vetted in the Commission, we will make an effort to release to the public those parts of the report that will not compromise the safety and security of the people of the United States. So we will try to extract from it whatever components should be in the public domain and we will maintain secret and classified those that could be an issue by terrorists or other malevolent types of uses.

Senator JEFFORDS. Last week, the Commission voted to deny a request to stay the power upgrade at Vermont Yankee until after planned hearings were completed. In power upgrade cases, a hearing may be requested but it's not required.

A hearing has been granted for Vermont Yankee, and it will be the first extended power upgrade to have a hearing. In cases of license extensions now under consideration at Vermont Yankee, hearings are required. Generally, how often is it the case, and in what circumstances does NRC issue a change to a license before completing the hearing process?

Mr. DIAZ. Senator, I am going to turn to Commissioner Lyons, because he was just in Vermont Yankee. He is now our resident expert on the issue.

Mr. LYONS. Senator Jeffords, I can address part of your question, I believe. I was at Vermont Yankee within the last 10 days, and I went there specifically to better understand and discuss not only the NRC's oversight of the power upgrades, but also the licensees' preparation and to better understand the license conditions. This isn't quite getting to your point, but I can, I think you are aware that as part of those license conditions, there was a requirement for a hold at each 5 percent increment for, and during and after that hold, the NRC would analyze, along with the licensee, the results obtained from the instrumentation on that upgrade.

At the moment, the process is working. After the first 5 percent operate, there was one indicator that was somewhat outside of the anticipated range. Because of that, we are analyzing, as is the licensee, and there will not be additional upgrades until that indicator is well understood, and we can be assured of safe operation.

In the meantime, as you indicated, we will be awaiting the outcome of the licensing board review, and of course, we will be the final appeal of that licensing board.

Mr. MCGAFFIGAN. Senator Jeffords, on your question, I could just say that the vast majority of licensing actions that appear before the Commission, the staff is able to make a so-called no significant hazards determination, consideration determination. The hearings are post hearings. In some cases, such as the new plants, a prior hearing is required. But in the vast majority of cases, normal licensing actions of the staff, no significant hazards consideration is determined by the staff and the hearing is a post hearing. In all previous power upgrades, the staff has made a no significant hazards determination.

Mr. DIAZ. In other words, Senator, the Act requires that the staff makes a no significant hazards determination and when they have reached that point, they issue a license. Any conditions will then

be dealt after that license has been issued. In this particular case, that is what happened.

Senator JEFFORDS. Let me clarify your response. Could the license be extended another 20 years at Vermont Yankee before the hearing process has concluded, as happened with the update?

Mr. DIAZ. Yes, sir, it could.

Mr. MCGAFFIGAN. In that case, the hearing would almost surely be completed before the period of extended operation began, because that is still years away. But the license could be issued. There is always the possibility under our process that the board and ultimately the Commission could reach the opposite determination, and the licensee at its own risk proceeds because it might have to undo what was done.

But it is less of an issue in license renewal, because the time periods are much longer.

Mr. DIAZ. In other words, there is always several years between the issue of a licensee renewal and the time that the license renewal takes place. In this particular case, that is absolutely still correct. There will be time in between the issuance of the license and the time that the license renewal will be effective.

Senator JEFFORDS. From a constituent perspective, when changes to a license are made before hearings are completed, it makes it appear that the hearings have no value and the outcome doesn't matter. I know all of you believe that is not the case. The Commission seeks to remain neutral, as you can implement any changes to a license that result from the hearing process.

Chairman Diaz, will you commit to me to have the Commission consider this issue, so that we can insure the constituents have greater confidence?

Mr. DIAZ. Sir, we can commit to you that we will deliberate and fairly reach a decision that is unbiased and in no way takes anything under consideration but the safety of the people of Vermont.

Mr. JACZKO. Senator, if I could add on this point, the provision that allows us, with a license amendment, to move forward before the hearing is complete is a very unique provision that applies just to license amendments. In this case, it is something that I do not believe was applied appropriately. It is something that I intend to address with my fellow Commissioners as we work forward on this issue.

Senator JEFFORDS. As a part of the upgrade process at Vermont Yankee, the NRC conducted an engineering assessment at the State of Vermont's request. The delegation supported that action. My State found this information helpful. The NRC used the inspection results in its consideration of the upgrade.

This was the first time that the NRC's evaluation of an extended power upgrade included a physical inspection. Is the Commission considering revising its guidelines to make physical inspections a normal part of the extended power upgrade process? Or at least available for the States on request?

Mr. DIAZ. Sir, we have now in place what we call risk-informed or special engineering inspections that were used at Vermont Yankee. It was a very good process. I think that we will certainly consider in any similar type of occurrence to conduct an engineering inspection that will assure that the facility, especially the facility

safety systems, are operating and will continue to operate as designed.

Senator JEFFORDS. Thank you very much, Mr. Chairman.

Senator VOINOVICH. Senator Lautenberg, I want to say that I appreciate your patience. You are one of the most conscientious members that we have of this Committee. I am looking forward to hearing your questions to the Commission.

Senator LAUTENBERG. I hope that the Commission is as well, Mr. Chairman.

[Laughter.]

Senator LAUTENBERG. Thank you very much.

I want to just, Commissioner Diaz, just go back to something that we kind of passed over before, and that relates to the staffing. Are you presently short of staff? Is there anything that perhaps could have been done more rapidly if your staffing was more complete?

Mr. DIAZ. Sir, we couldn't staff more rapidly, because we did not have the resources to do so. We have been very well supported, and I thank the committee for the support this last year. But the reality was that we didn't—there is another chart in here that shows what happens to the new nuclear power plant licensing requests.

Senator LAUTENBERG. I saw that. But there is a lot of anxiety for review where there is more than resolution in some of the things. Particularly, Commissioner Merrifield—

Mr. MCGAFFIGAN. Senator Lautenberg, I would like to supplement. Irrespective of the potential for new plant orders, which has really increased the demand for our staff, we recognized some years ago that we were going to have some aging demographic issues, that we were going to have a number of our staff who were going to retire. We needed to and we did reestablish our connections to colleges and universities. So we started our aggressive recruitment program actually 4 or 5 years ago.

Senator Carper asked a question about what are we doing about SES retirements. We recognized as well we were going to have a problem with this. So we, 5 years ago—

Senator LAUTENBERG. I don't mean to cut you off, but I am concerned about this in the contemporary situation. In the State of New Jersey, the ASL Board has denied hearing of the contentions by the New Jersey DEP and some environmental groups on the review for Oyster Creek. As you all know, we are going through a major change in structure and ownership. Exelon comes in and Public Service Electric and Gas gets merged into that company.

We heard fairly crisp detail from Senator Obama about tritium and there are safety concerns generally. Here we have Oyster Creek, 40 years old. And questions of what would that technology, I believe, would not be used today. It is out of fashion. It has had some problems, incidents, accidents. I was interested in that definition as well. But the fact it, it worries the hell out of people, whether it's an I or an A. We are concerned about it.

Now, is it possible that because of this concern and because of these incidents, vulnerability, now the security issues have become major issues confronting us, would you be able to take your inherent capacity and review the ASLB's decision on not to hear these

petitions? I think that's an important first step, because time is running out. We'd like to know what's going to be done there.

I frankly am going to request that there be a field hearing. I don't know what kind of supervision you have over the ASLB. They are an integral part of the NRC. But does that include management instruction?

Mr. DIAZ. No, sir, it does not. We maintain a separation to allow the boards to make their decisions. We can take review of the Board's decision—

Senator LAUTENBERG. At your option?

Mr. DIAZ. Right, it is our option. And we do that.

Senator LAUTENBERG. Well, in this situation, would you consider exercising your inherent supervisory authority to order additional public hearings on Oyster Creek?

Mr. DIAZ. Sir, we will always consider, if there is an issue of public health and safety or issue of adequate protection, what the Commission would do. I don't see presently that we have that issue. But I will let my fellow commissioners answer.

Mr. MCGAFFIGAN. Sir, we are like an appellate court. We're hamstrung in talking to you about this just as Judge Roberts and Judge Alito, when they were recently before the Judiciary Committee, this is an issue that is likely to be appealed to us in the near term. We can't show our cards one way or the other as to how we might rule on such an appeal.

Senator LAUTENBERG. You have the responsibility of, with safety as the rule, of trying to move these things along. I'm not encouraging rush at the expense of safety or good management. But the fact of the matter is that I think there's a legitimate reason to hear the contentions by our widely respected DEP. I'm appealing now to get some expeditious treatment to a hearing. I'm not asking for an outcome. I don't want an outcome that would be contrary to good science or your judgment. What do we do?

Mr. DIAZ. Well, the Board is trying to set the hearing time now. I believe that hearing will be held and will be held near Oyster Creek, to make it available. I understand that the staff has a public briefing set up for early summer to make sure that the people are informed. So the processes are going. We hear you, that there is an urgency. But these things do take a tremendous amount of deliberation and discipline, because you want to be fair to all parties involved.

So we stay away significantly from getting involved, not in the management, but the Commission does ask the Board with certain frequency to make sure they deliver with expediency both the hearing process and the decisions. That we can do.

Mr. MCGAFFIGAN. Senator, if the State felt it was not being treated fairly in its decision by the board, that is obviously something they could appeal, they, the State, could appeal to the Commission as well. So that is yet another opportunity if they don't feel they are being heard in a decision of the Board, then that is obviously something we could look at.

Senator LAUTENBERG. In response to an earlier question, it was confirmed that a licensed decision can be made at the staff level without involvement of the Commission. I heard that correctly, I assume.

We are very concerned for the evacuation facility available, the density of the population around Oyster Creek. So I would like to know whether I can get a commitment that the full Commission will engage itself in the review and sign off on any staff decision regarding whether or not to renew Oyster Creek's operating license.

Mr. DIAZ. Sir, the way that our process is now set is for the staff to make the final determination on the license renewal and that authority has been delegated to the Director of NOR. Having said that, the Commission can take review of any one of those issues, any one Commissioner can ask for it and any one Commissioner, after reviewing all of the documentation and the decisions that have been made, could actually then take additional review of the issue.

I don't think it is appropriate for, it is definitely not for me, I don't know for my fellow Commissioners, to commit to do that unless there is a significant health and safety issue that pops out of this analysis.

Senator LAUTENBERG. There have been enough scares, let me say, over the years, with the age of the plant and once again, the technology and the rusting of some of the structure. I would plead with you to satisfy the needs and the concerns of the people that are dependent on Oyster Creek, but those who are also worried about it. I would like to get an assurance that as, I don't want to trivialize it and call it backstop, but I would like to know that the Commission or a Commissioner will look at this and review any decision made by the staff to confirm that there shouldn't be any concerns about that.

Mr. DIAZ. Well, sir, let me give you, I think I can do this on behalf of the Commission, a commitment to ensure that we continue very strong oversight over Oyster Creek, that we will review issues, that we will make sure that they fix whatever they have to fix, that they take appropriate corrective actions, that they manage the facility with the safety requirements that they have to.

Once it comes down to decisions that in many ways involve a series of processes, I think the Commission will have to wait until we get to that point to make additional commitments.

Mr. MCGAFFIGAN. Mr. Chairman, I would say this. The Oyster Creek license renewal, the current license expires in April 2009. So there are 3 years ahead of this before there would be the circumstance where that would lapse. The staff will be conducting its review.

As the Act is set out, there are legal separations in order to provide the protections for interested parties. If the staff were to act in a way that New Jersey objected to, it would have the opportunity to go before the Atomic Safety and Licensing Board with contentions arguing why a license renewal should not be conducted. If that board acted in a way that went against the interest of New Jersey, the Commission would in fact be the final level of appeal if the State of New Jersey wished to continue through our process.

So in that regard, if the State felt it was not being appropriately treated, we would in fact be the final review of the staff decision.

Senator LAUTENBERG. Thanks. Thanks very much, Mr. Chairman, and I want your interest, as you see.

Senator VOINOVICH. Thank you, Senator Lautenberg.  
Senator Clinton.

Senator CLINTON. Thank you, Mr. Chairman, for holding this hearing. Thank you to Chairman Diaz and the other Commissioners.

As you might expect, I want to talk to you about Indian Point. I can't imagine that you would be surprised by that. I want to thank Commissioner Jaczko for going to Indian Point and meeting with a number of the local officials in the area.

But before I do, I want briefly to note that in your testimony, you indicated you are in the process of implementing the provisions of my Dirty Bomb bill. I really appreciate that, because the Dirty Bomb Prevention bill that we've worked on, in conjunction with Senators Voinovich, Inhofe, Jeffords, and Carper are very important to us and we look forward to seeing how you develop the implementation of that. I thank you for it.

I have asked my staff if they would to follow up and I would really appreciate the NRC coming to brief my staff and the other interested Senators' staff here on the committee if we could set that up. Because with all of the debate about the port, the Dirty Bomb Prevention bill is even more important.

Now back to Indian Point. Chairman Diaz, and Commissioners, you and I have discussed Indian Point many times, both in hearings like today and in private hearings and in private meetings. I think we have made progress in some areas. Last year with the help of Senators Inhofe, Jeffords and Voinovich, I drafted legislation to require backup power for the Indian Point emergency notification system, including its sirens. That legislation was ultimately included in the Energy bill that passed last summer. I know that the NRC has been working closely with Entergy to see that the new system gets in place by January of next year.

However, today in the newspaper, once again, glitch silences Indian Point sirens. We are just snakebit. I am deeply concerned that it is no accident or incident. It is a pattern that we just can't seem to get problems resolved and be able to take a deep breath here.

Shortly after the siren issue was addressed in the Energy bill, other problems cropped up at the plant. Last fall we received word there was a leak from the spent fuel pools at Indian Point. When the leak was reported, we found out that Entergy didn't tell the NRC about the leak for a number of weeks. You and I met to discuss this issue last October, and as I said at the time, it seems like for every step we take forward at Indian Point we take at least one backwards.

During that meeting, you committed you would put enhanced oversight in place and I appreciated that. But unfortunately, the problems continue. In addition to the sirens still not adequately working, we recently found out that the New York Department of Environmental Conservation had withheld information from the public about detecting Strontium 90 in wells that had been drilled to determine the extent of groundwater contamination associated in the first instance with tritium. So now we've got tritium, we've got Strontium 90. I know that Senator Obama raised these issues because he has experienced a similar but at least so far as we know a far more serious leak in the State of Illinois.

In response to that problem, he has introduced legislation that would require plants to quickly disclose any such leaks to the NRC and to the State and to the county in which the facility is located. Now, to me that just makes common sense. I hope that you will support Senator Obama's legislation. It seems that it is something that NRC could even probably require right now under current law which would perhaps obviate the necessity for legislation. So I would like you to address that issue as well.

Then I want to raise a larger question. That is, whether there should be an independent safety assessment for Indian Point. Now, as we all know, public confidence in the plant has steadily eroded by a series of mishaps, misinformation and failure to communicate. So when the NRC completes its annual assessment, as happened recently, and gives the plant a clean bill of health, it doesn't inspire public confidence because local officials and the public pick up the newspaper a day or two later and something else has happened.

A number of local and Federal officials, both Republicans and Democrats, have recently called on the NRC to conduct the independent safety assessment. Several House members, again, both Republicans and Democrats, have introduced legislation to require that the NRC conduct such an assessment. This would result in extremely thorough review of the plant's operations, as well as its evacuation plans, which as you know has been the subject of intense concern in the area around the plant.

Now, I personally think this idea makes a lot of sense for several reasons. I know that the NRC thinks that the plant is being operated safely. I know that the operator, Entergy, thinks that the plant is being operated safely. So I don't understand why such a review would be resisted. I know it's unusual, but the fact is that Indian Point is uniquely situated among all of our country's reactors in its proximity to such a heavily populated major urban center.

So I think the NRC ought to conduct such an assessment. I for one would not prejudge the outcome. Going through the process can only increase public confidence that the plant is being run well, as the NRC says, and that it therefore holds up to this extremely high level of scrutiny.

So I guess my questions come down to these. First, will you support legislation such as that introduced by Senator Obama to require disclosure of leaks and other releases, or will you commit to implement such a requirement on your own? Mr. Chairman.

Mr. DIAZ. Thank you, Senator Clinton. I think you and I have talked several times about the fact that somehow the licensee of Indian Point likes to be in the news and you and I don't understand that very well. We also of course, we would both like to have them more quiet or lower profile.

Having said that, let me address a couple of issues and then I am going to turn to Commissioner Jaczko, who was just there recently to talk about the issue of the sirens and the tritium and so forth. We talk about the issue of the independent safety assessment. You heard Senator Lautenberg, what the NRC conducted for Vermont Yankee, which was a special type of engineering assessment that is safety focused that we had a small part in creating, a couple of years ago, and that is working very well.

We are going to conduct that type of assessment early next year in Indian Point. We will have people that are not the typical NRCers that work in the plant and contractors that have no relationship with Indian Point or any of the Entergy operations, to actually conduct a safety assessment, an engineering safety assessment of Indian Point. We call it an independent safety assessment because we are an independent Agency. It will be conducted completely thoroughly and independent of any undue influences.

On the issue of the tritium and Senator Obama's legislation, I would repeat what I told Senator Obama, we are taking this very seriously. We think that it's a radiological protection issue, not a significant public health issue, because tritium is just a minimal hazard as a radiological substance. However, it does have all of the connotations that you and have talked about for some time, public confidence, information. So the staff will review the issue, the Commission will deliberate on it and we will deliver a product that will address the issue, once we have had a chance to fully consider all of the aspects of it.

Senator CLINTON. Mr. Chairman, do you also consider Strontium 90 to be in that category, the same category as tritium?

Mr. DIAZ. No.

Senator CLINTON. We are now dealing with the Strontium 90 and that's a deeper concern.

Mr. DIAZ. No, Strontium 90 means a totally different category. We are not certain that there is a Strontium 90 and there actually were, as I understand it, there were three samples. One of the samples that the State took and went to a special set of equipment showed a small, very small amount of Strontium 90. We are trying to confirm that Strontium 90 exists all over the eastern Seaboard from the weapons. It is decreasing, as it should, with time. So is tritium.

The way the things are detected and the cleanness of the sample and the labs have a lot to do with it. We are on top of the issue, Senator. We will make sure that whatever it is, we will find out and we will be very pleased to communicate with you on that fact.

Senator CLINTON. Let me just clarify the commitment, which I very much appreciate, to the independent safety assessment. Is that in accordance with the legislation that has been introduced and also the request by Congresswoman Kelly?

Mr. DIAZ. I don't know that it is exactly the same. This is something that we believe we must have available to us as a tool. I believe that what we call an engineering safety assessment is a special program that was developed in the last 2 years to address the fact that there were engineering issues showing up at different facilities and that we needed to pay attention to the safety systems. So we developed this new type of inspection that was used in Vermont Yankee and is now being used in several places. We think it is an excellent set of inspections, and we believe it is independent. I am not sure that it matches exactly what the legislation was, but I can tell you it is a very good set of inspections.

Mr. MCGAFFIGAN. Senator Clinton, if I could just add, the last time we used the word independent safety assessment in NRC parlance was when Chairman Diaz and I joined the Commission in 1996. It was used at Maine Yankee. What we meant at that time

by an independent safety assessment was to get a group of people, independent of Region I, in to look at Maine Yankee. It was headed by a man named Ed Jordan who is now long retired. And he brought in contractors and NRC staff from the other three regions. They did a very thorough review.

We have come a long way since 1996. We think we have a much better core inspection process today than we had in 1996. And as the Chairman said, and he is modest, this new engineering, risk-informed engineering assessment that we piloted a couple of years ago, and that he was the inventor of, is a very, very thorough review. So I think the spirit of Congresswoman Kelly's legislation is being followed in what the Chairman is talking about. But if people are longing for Maine Yankee style independent safety assessment, I think we do better today in our baseline program than we did then with that ISA.

Senator CLINTON. I would appreciate if I could get a letter to that effect, because certainly the idea of an independent safety assessment has a lot of credibility and support. I really appreciate your commitment, No. 1, to do a thorough safety assessment, whether we call it engineering safety or independent safety. I just want to be assured that it is as thorough and comprehensive and independent as we possibly can make it.

If I could get a letter to that effect, perhaps explaining, as both you and Commissioner McGaffigan have just done, that we have come a long way, you have actually increased the thoroughness and the comprehensiveness of the safety assessments. Because I think that this is obviously very, very much a personal issue to the people I represent, and even to my neighbors. Because I live very close to Indian Point as well.

But I also think it's part of the larger series of questions that are around the new push for nuclear power. I think that getting it right at Indian Point is going to be critical to the future of nuclear power for people asking for licenses, very far from where we are, but who will be looking at the entire country and the performance of the plants. So restoring public confidence, helping to educate the public and public officials, particularly at the local level, because I think you heard from Senator Lautenberg and Senator Obama, as well as myself, that they are the ones who are really on the front lines. The sirens don't work, there's leaks of dangerous sounding chemicals. It's very hard to know what to think.

So I appreciate this. I will look forward to the letter and hope that we can work on this.

Mr. DIAZ. Thank you.

Senator VOINOVICH. Thank you, Senator Clinton.

I am going to make some comments and then ask some more questions. Public relations are very important. I have got to tell you that over the last several years, your PR has been horrible. You are a public body and people are very interested in what you are doing. Somebody ought to sit down and figure out, we should have had this conversation today about Senator Obama and that information getting out and then somebody getting hold of it, and of course, always we will demagogue it. Tritium is the worst thing that's ever happened, and boy, off you go, and once the water is over the dam, guys, it's very difficult to bring it back.

So somebody ought to sit down and think about what kind of public relations in terms of reporting to the public, reporting to the EPA, to the local county commissioners so you get the information out there before they jump to conclusions about something that may not be a problem. Maybe you don't think it is, but by golly, it's a problem for those individuals. Because we are the ones that hear about it, and the locals hear about it. That's No. 1.

No. 2, in terms of where are we with safety in the country, and I think you have made great progress, I can tell you did, from what I can understand, at Davis-Besse, you really did a job over there and you are staying on top of it. I saw you did, over at Perry Nuclear, you got in there and did the job and stopped some things. I think that the lessons learned have sunk in.

But again, I think it's important that you report to the public on a regional basis, where are we, how are we doing, progress has been made, still some problems. Maybe some of the companies may not like it that say there are still some problems. But I think the public should know about it and not be hiding out.

So I think that's an area where a lot of work has to be done. If you don't, we will get legislation passed, then the next thing is we will legislative something else and before you know it, you will have no discretion left whatsoever. So that's the one thing.

Second of all, this whole business about the process on these new COL cases. There's got to be some confidence out there that the process is going to be streamlined, that you're going to be fastidious in terms of it, that there's a beginning and an end. That's important to these people making applications, it's going to be important to their getting the financing they need. This is going to go on for 10 years. Some type of commitment should be made that you're going to move along in an expeditious fashion and get the job done.

I will let you comment on the public relations.

Mr. DIAZ. All right. Sir, I almost, I'm not delighted, but I am very happy you asked the question, because that's what I have been doing for the last 3 years. Maybe too quietly. I realize we have not been very good and we probably still are far from being as good as we should be in the issue of public relations. But we have come a long way.

We have changed not only the culture but the processes inside the NRC. Every manager and every staffer knows they need to communicate. Davis-Besse was a big lesson. But the reality is that we have been moving forward in every one of these issues, including, I established more than a year or so ago meetings with congressional delegations in different parts of the Nation. It got the process going. We have one major one going next week in Florida.

Senator VOINOVICH. Let me ask you this question. Do you have a tickler system for the people that operate that facility for the NRC that come into the area to go see the chief editorial writer of a paper on a regular basis to include them in on what's going on, so they are aware of it? Because they are real interested. There are reporters interested in it, so that if you do it on a regular basis and develop a relationship and communications, so if something goes wrong, they know there's somebody they can talk to?

Mr. DIAZ. Yes, sir. We have a new Office of Public Affairs which is charged with maintaining this relationship, with not only keep-

ing the public informed directly, but having the connections with the different organizations.

Senator VOINOVICH. Well, I'd like to see in writing what the word is out there. The companies should be smart enough to also—

Mr. MCGAFFIGAN. Sir, I would only say, I think the management of public relations in an Agency as open as ours, I think we are the most open regulatory body in the American Government. People can look at our daily event reports, they can look, Senator Clinton knew that yesterday there was a siren problem when they tested the sirens. That is because it's public.

I think something that goes with the degree of openness we have is that we can't manage every piece of information that emits from us. Sometimes other people interpret it for us. So it's, you know, FAA does not tell you what the maintenance records are of the various planes that people might use to go home this weekend to their States. If they did, they would have the same problems that we do.

We have chosen to make the information available. We make some attempts to manage information when we know it's really bad, we try to be ready with the public affairs officers, the talking points, as to why this is or isn't significant and what NRC is going to do about it. But we get caught by surprise, because the amount of information that goes onto our web page on a daily basis is enormous. There's a lot of people who read it, and there's a lot of people who will interpret it for us. So we do the best we can. I can never promise you it's going to be perfect.

I do believe we should talk to the editorial boards. I think that's something we should do. I think the bottom line of your question is that we can do better. Your point is we can do a better job. That's what I take from your point. I agree. I think we can do better.

Senator VOINOVICH. The companies should do a better job.

Mr. MCGAFFIGAN. Yes, they should.

Mr. DIAZ. We agree.

Senator VOINOVICH. In reviewing the NRC strategic human capital plan, the Commission is focusing on hiring young recent college graduates. How is the Commission working to fill in the gaps of its succession plan in recruiting and retaining the necessary cadre of mid-career employees, and how is the Commission implementing the workforce flexibilities for the NRC in last year's Energy bill, and is the Commission utilizing all available flexibilities, including those authorized in the Federal Workforce Flexibility Act? These would include flexibilities such as categorical hiring and enhanced annual leave.

You hired a bunch of new folks. But one of the problems that I've observed from my other committee chairmanship is in an area of middle management, we don't do a very good job of bringing people in. They come in, they stay, but I'm sure in middle management areas you need some people from the outside to come in. How are you doing in regard to that?

Mr. DIAZ. We are hiring at both sides of the spectrum. We are hiring young people and we train them. But if I might ask the staff, is it 40 percent?

Mr. MERRIFIELD. Twenty-five percent of our hiring is university graduates. So 75 percent of folks that we are hiring are people who are in fact mid-career.

Mr. DIAZ. We are having reasonable success in attracting people from different areas of industries or the nuclear navy and areas where we find the right expertise. So we are doing well in the mix.

Senator VOINOVICH. OK. Getting back to the research and test reactors. I understand that, well, they are very concerned about the fact that the \$27 million has been zeroed out. We have to take care of that problem. The student enrollment in nuclear engineering programs at universities has increased substantially in the last 3 to 5 years, and you have shared that with me, due in large part to DOE grants and assistance. At MIT, student enrollment in nuclear engineering has more than doubled in the last 5 years. But school officials fear that the proposed cut, if not restored, will undo the progress they have achieved in the last few years.

I just want to emphasize again how important that is in terms of your future recruiting. I really would like to have a letter drafted so that maybe all the members of this committee could share it with the Administration and also with the Appropriations Committee.

Mr. JACZKO. Mr. Chairman, if I can make a point on that, too, one of the things that I think is important to keep in mind is, we don't just hire nuclear engineers. We hire electrical engineers, we hire mechanical engineers. They are in fact a large portion of the kinds of people that we hire.

So this issue is broader than just what's happening with nuclear engineering programs. But it goes in general to the broader issues of engineering programs in colleges and universities throughout the country.

Senator VOINOVICH. That's why Senator Carper and a bunch of us, almost 50 of us now, have supported the PACE legislation. Because we know how important it is that we get this thing going.

Mr. MCGAFFIGAN. Senator Voinovich, there is a very good draft already signed by a couple of Senators named Domenici and Bingaman that dealt with issues other than just this. But there's a letter from them to Secretary Bodman on the issue of the zeroing of this nuclear engineering money.

Senator VOINOVICH. Great. You are undertaking licensing of two uranium enrichment facilities, one located in New Mexico, the other located in Ohio. This is a major undertaking by the Agency. Both are at a critical juncture, and I want to know, does this Commission have the resources to provide oversight in order to ensure the goal of a timely review? Does he have the resources? Can you meet the time table?

Mr. DIAZ. Yes, sir. We have the resources and they are on schedule right now.

Senator VOINOVICH. One of the questions that's been raised is you've got two companies that are trying to beat each other out in terms of who is going to open the door first. Is there a market for two companies doing uranium enrichment?

Mr. DIAZ. I believe they think there is. I think that's what they are going into the business of. It will eventually depend on the total demand. Right now the demand for enriched uranium in the

world is increasing. As you see from the numbers we have shown it could increase in a year.

So I cannot judge what their marketing strategies are, but we will do what we need to do, and that is, they gave us a good application, we will put it through the process. If they comply with the requirements, then the Commission will considering issuing their license.

Senator VOINOVICH. Mr. Lyons.

Mr. LYONS. Mr. Chairman, you pointed out the concerns that industry has on whether the COL process will move forward in an expeditious way. In my mind, and I think for the whole Commission, we have been acutely conscious of the fact that our performance on license applications like the enrichment plants, like the upgrades, like the license renewals, are also being judged by industry and contribute to their degree of confidence that we can successfully carry through the COL process.

Mr. MCGAFFIGAN. Sir, we did an LES mandatory hearing for the one in New Mexico earlier this week. It really went very, very well. There are some issues still in play that are likely to be appealed to the Commission in that case. I believe with only a short delay of a few months, USEC is following along.

So our hearing process under the new rules in these two instances has not been the horror story that we have had in the past and that was—it was one of the reasons we amended Part 2 of our adjudicatory rules, so that we would have a better process.

Mr. MERRIFIELD. I think to put a finer point on it, the hearing process appears to be working very well, exactly as we had planned.

Senator VOINOVICH. Very well. Well, as I said in my remarks at the beginning of my formal statement, I really believe that the NRC is going to have to be the most efficient, innovative that it's ever been in the history of the NRC. All these issues today that people have raised have an impact on the future. It's really important that you get the job done. Because we have a real crisis in the United States of America that is impacting on our ordinary citizens and on our economy. Part of developing the infrastructure of competitiveness is that regulatory agencies like yours have got to get a whole lot better.

Chairman Diaz, in front of all your colleagues here, I want to congratulate you on the progress that you have made. You still have a long way to go. You and I are going to spend a lot more time together. Because I am bound and determined that you're going to get the job done, and I know Senator Carper and I want to do everything we can as members of this committee to help you.

Mr. DIAZ. I am looking forward to it, sir.

Senator VOINOVICH. Senator Carper.

Senator CARPER. Thanks very much.

I'm going to ask you a couple of questions, I want to tell you what the questions are and then I am going to make a statement, so you will have a chance to think about your answers to my questions.

One of my closing questions is just to reiterate for us, what can we do to help you do your jobs better. That's No. 1.

Second, I want to ask you to comment on the ongoing developments of lack of developments with respect to Iran and their interest in developing a nuclear capability, some of us think for building nuclear weapons. The idea of the enrichment only in the Russia approach, the idea that the Iranians should be able to, they want to be able to do at least a modest amount of enrichment in Iran, it's sort of off the beaten track a little bit, but if you have thoughts on that, I would welcome your counsel.

The other thing, you may have gotten into this while I was away, I have a couple other hearings going on right now. But just looking over the next couple of years with respect to disposal of nuclear waste, we continue to retain them onsite, a lot of work, a lot of money has been spent on Yucca Mountain. How do you see the next couple of years playing out there?

So those are the three I want to close with.

I want to go back, Senator Voinovich was talking about the increase in nuclear engineering students. My oldest boy Christopher is a senior in high school, he graduates this June. He's gone to a math-science charter school in Wilmington, DE, very good school. Only charter school in Wilmington, and they produce a lot of not only good math and science students, but a lot of engineers and scientists and researchers.

Senator VOINOVICH. I understand he's been accepted at Harvard.

Senator CARPER. I tell people, they say, where is he going to go when he graduates? I tell people he's going to go to Delaware Technical and Community College, and they say, he is? Because it's a really good high school. But then I tell them it's because he is going to take a summer course in auto mechanics, so that he can fix his mom's old Ford Explorer and take that to wherever he's going.

[Laughter.]

Senator CARPER. We'll see where he ends up going. He's so much smarter than his father, it's just amazing, and so much more humble, too, I might add.

But there are, as we visited colleges of engineering around the country, we have heard the very same thing, anecdotally, that more people want to be nuclear engineers. So that is good.

I had my staff dig up some numbers for me last week on the number of engineers that were training in this country compared to some other countries. They came back and said that the last numbers we had were for 2004. In 2004, the Chinese trained and produced over 350,000 new engineers, we produced fewer than 150,000. While there may be a few more nuclear engineers coming along, which is good, we still need, as some of our other Commissioners have mentioned, we need those electrical engineers (EEs) and those mechanical engineers and a variety of others, as well.

I would just remind the Commission, if you will, several of us have mentioned time lines, timeliness, I did and I know Senator Inhofe did. I would just ask you to keep that in mind. It is an important thing for us.

All right. Go back to my three questions. Just re-emphasize for us a couple of things that we can do to help.

Mr. DIAZ. Can I start with a small personal comment, sir? I love nuclear engineers. I happen to be one. So I'm totally biased regarding that issue. I think they make great overall engineers because

they get both of the nuclear, the mechanical, the electrical, and I will put in a plug for nuclear engineering.

Senator CARPER. Jimmy Carter used to say the same thing.

Mr. DIAZ. All right. What can you do? I think the committee has been extremely helpful to us in two areas that are vital. We will need to have the right resources, both the financial resources. We had legislation last year that helped us along. We might have a few pieces of legislation.

The support that we get, we really are going to need in the area of hiring and space. We might have to use your influence in different places to get the right time lines. Because we are out of space. We don't just—we are flat out of space. We are going to have a little bit of space outside, but eventually we need to move. We don't have space, we can't put the computers, we cannot have the infrastructure.

So Senator, I believe those areas will continue to be important. We will continue to work with you in making sure that you are aware of our financial needs, of our legislative needs and our resource needs.

Senator CARPER. All right, good enough.

Mr. MCGAFFIGAN. Senator, I am just going to hit on the space issue. We were supposed to have our training center, our headquarters training center moved to Bethesda by now, as a temporary measure, in order for people who are working in conference rooms and hallways currently could actually have a decent space to work in. That is now August. The General Services Administration had a contractor, the owner of the building we were going to move into switched to another building. The new owner tells us, oops, you're a training facility, not an office building. We have to get another permit from Montgomery County. And GSA has also told us—you can't fix that, that's just the way the Federal Government works, unfortunately.

But GSA has also told us that our ultimate goal of having proximate office space to us in Rockville, so that we're not spread all over the Maryland suburbs, they think there may be a statutory problem, because they are supposed to have full and open competition. If you go to Rockville, you'll see there's a lot of stuff popping up around us, and we think we could have a pretty good competition within a half mile of headquarters. But you may have to legislate that. You may have to say, competition in this case is good enough, we don't want NRC stressed with people having to wander all over the Maryland suburbs when they're trying to process 11 simultaneous applications for new plants, trying to deal with Yucca Mountain, trying to deal with the enrichment facilities, etc.

So that's Governmental Affairs. I look at Senator Voinovich because he's the dual-hatted member here.

Senator CARPER. Actually, there are two of us. We both—

Mr. MCGAFFIGAN. Oh, you're both on Governmental Affairs. Well, we could use your help, I think.

Senator CARPER. When you were responding, I was thinking, from time to time, our delegation from Delaware will invite folks from another Agency that we're looking for cooperation from, maybe GSA, just literally to come and to meet with us. We'll invite

in whoever has an issue or concern to join us in that meeting. I don't know if that might make some sense.

Senator VOINOVICH. This committee has jurisdiction of GSA.

Senator CARPER. Yes.

Mr. MERRIFIELD. To put a fine point on it, I completely agree with my two fellow members. That is the most important thing that this committee can do to support us.

Senator CARPER. Well, we'll see what we can do. I don't know if this committee or Homeland Security and Government Affairs Committee.

Senator VOINOVICH. It's this committee, we've got GSA.

Senator CARPER. The other thing I would ask, if you have any comments on Iran. I know our time has escaped. But forget Iran. Yucca Mountain and disposal of—we're out of time. It's a lot easier. Please.

[Laughter.]

Mr. DIAZ. Let me quickly say one thing. I just came back from Russia last Sunday. I was able to meet with the, essentially the chief negotiator of Russia for Iran. What I can tell you is that it appears that Russia is aligned with the interests of the United States in making sure that Iran does not develop the capabilities to enrich uranium or proliferate. I think in that area, the United States and Russia are well aligned. We still are looking forward to a conclusion of those negotiations.

Senator CARPER. Good. I hope you're right. That's encouraging.

Last one, on the disposal, we have all this nuclear waste that is building up around facilities, nuclear facilities. And progress out in Yucca Mountain goes slowly, as I understand it. Just the next couple of years, what lies ahead?

Mr. MERRIFIELD. I would like to, in a regulatory information conference I spoke quite extensively, that was the entirety of my speech yesterday, talking about waste. We have in place right now a program where the fuel was placed in the pools of the reactors or through the use of the dry cask storage facilities, which will ensure the safe storage of that fuel for years to come. So obviously, we spoke earlier this morning about wanting to see the Yucca Mountain application at some point, so our Nation's resolution to this issue can be resolved one way or the other.

But in the interim, we do have the ability to safely store this fuel, so that individuals in Delaware, New Jersey and other parts of the country can be assured that we are dealing with it in a way that makes sense and is protective of public health, safety and the environment.

Senator CARPER. Thank you. Thanks, Mr. Chairman.

Mr. MCGAFFIGAN. Mr. Chairman, there is one issue that is hanging. Senator Isakson at the outset asked us to address something, and we haven't had the opportunity. If you want, I can spend 1 minute on that, or if this was the KI to 20 mile issue or we can answer for the record.

Senator VOINOVICH. I would prefer that, because I have somebody waiting in my office.

Mr. DIAZ. We will answer it for the record, sir.

Senator CARPER. If you could respond for the record, that would be great, thank you.

[The referenced information can be found on page 54.]

Senator VOINOVICH. Thank you very much.

Senator CARPER. Yes, thanks to all of you, very much.

Senator VOINOVICH. We appreciate your being here today and look forward to working with you.

[Whereupon, at 12:04 p.m., the subcommittee was adjourned.]

[Additional statements submitted for the record follow:]

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STATEMENT OF NILS J. DIAZ, CHAIRMAN, U.S. NUCLEAR REGULATORY COMMISSION  
ACCOMPANIED BY: EDWARD MCGAFFIGAN, JR., COMMISSIONER; JEFFREY S.  
MERRIFIELD, COMMISSIONER; GREGORY B. JACZKO, COMMISSIONER; AND PETER B.  
LYONS, COMMISSIONER

#### INTRODUCTION

Mr. Chairman and members of the subcommittee, it is a pleasure to appear before you today with my fellow Commissioners to discuss the Nuclear Regulatory Commission's (NRC's) programs. The Commission appreciates the support of the Subcommittee and the Committee as a whole, and we look forward to working with you in the future. We would also like to take this opportunity to thank Congress for the additional budgetary support that was provided last year.

I would like to highlight our key ongoing oversight and licensing activities, including activities to implement the provisions of the Energy Policy Act of 2005 (the Act), initiatives to meet the new challenges posed by the dynamic nature of today's nuclear arena, and in particular current and anticipated new reactor licensing activities and human capital initiatives.

#### ENERGY POLICY ACT OF 2005

The Commission is pleased that key legislative provisions to augment the oversight of nuclear facilities and materials were enacted in the Energy Policy Act of 2005. The NRC has begun rulemaking activities to implement the authorization of the possession and use of certain firearms by security personnel, expanded fingerprinting and criminal history checks, Federal criminal sanctions for the unauthorized introduction of dangerous weapons at nuclear facilities, and Federal criminal sanctions for the sabotage of additional classes of nuclear facilities or designated materials.

The Commission has initiated and in some cases completed work to implement the other provisions in the Act. These activities include the following:

- The NRC is currently preparing a rulemaking to include within the definition of byproduct material under our regulatory authority accelerator-produced material, discrete sources of radium-226, and certain discrete sources of naturally-occurring radioactive material (NORM), other than source material, if these materials are produced, extracted or converted for use in commercial, medical, or research activities. In accordance with the statutory schedule, the NRC plans to issue a final rule by February 2007. However, the need for substantial stakeholder involvement is a challenge to meeting the deadline. As authorized by the Act, the NRC issued a waiver of the requirements to allow States to continue to regulate this material under their existing programs until the Commission adopts regulations and implements a plan for the orderly transition of the jurisdiction of the material to NRC regulatory oversight.

- The NRC has been taking action to implement key provisions of the Act that enhance our capabilities by authorizing the NRC to recover its costs from other government agencies through user fees, permanently extending the NRC's authority to collect 90 percent of its budget authority through fees, eliminating NRC's antitrust reviews for new utilization or production facility applications, and clarifying that the existence of an organizational conflict of interest does not bar the NRC from entering into a contract with a DOE laboratory under certain circumstances.

- The NRC is taking action to implement all of the human capital initiatives in the Act, such as the pension offset provision, to enhance the NRC's ability to maintain and improve its regulatory expertise.

- On January 31, 2006, the NRC issued a Confirmatory Order to the licensee for the Indian Point Nuclear Power Plant to implement the provision concerning backup power for certain emergency notification systems.

- The NRC issued a grant to the National Academy of Sciences (NAS) in January 2006, to assess whether there are other processes which either can replace radiation

sources with economically and technically appropriate alternatives or can use radiation sources that pose a lower risk to the public. As provided by the Act, the NRC plans to submit the results of this study to Congress in August 2007.

- The NRC continues to exercise strong oversight of security at nuclear power plants, which includes force-on-force exercises for reactor licensees at least once every 3 years as required by the Act, and will provide its first annual report to Congress on the security evaluations before the end of FY 2006.

- On November 7, 2005, the NRC issued for public comment a proposed rule addressing the Design Basis Threat. Congress directed the NRC to consider 12 factors in developing the DBT rule, and the Commission has requested comments on those factors. A final rule is expected by February 2007.

- In July 2005, the Commission published proposed regulations that would establish a nationwide mandatory tracking system (National Source Tracking System, or NSTS) for Category 1 and 2 radioactive sources. The final rule is expected to be issued in August 2006.

Several provisions of the Act relate to the export or import of Atomic Energy Act material and equipment. Some of these provisions were satisfied by a final rule that was issued on July 1, 2005, which provided additional controls on the import and export of radioactive sources. The NRC anticipates issuing in Spring 2006 a final rule to, among other things, revise the regulations regarding the export of HEU for medical isotope production. Additionally, the NRC expects to publish in Spring 2006 a proposed rule addressing those classes of individuals subject to background check requirements for import or export shipments.

The new Task Force on Radiation Source Protection and Security convened in the fall of 2005 and included two additional entities whose participation was not mandated in the Act—the Department of Health and Human Services and the White House Office of Science and Technology Policy. On January 11, 2006, the NRC published a Federal Register notice requesting public comment on major issues before the Task Force. A Task Force report will be delivered to Congress and the President in August 2006.

Those I mentioned are just a few of the activities we have undertaken since the passage of the Energy Policy Act. Let me say a few words about ongoing activities in the areas of new reactor licensing, human capital, and other core Agency activities.

#### NEW REACTOR LICENSING

The Commission's Strategic Plan includes the Agency objective to:

Enable the use and management of radioactive materials and nuclear fuels for beneficial civilian purposes in a manner that protects public health and safety and the environment, promotes the security of our nation, and provides for regulatory actions that are open, effective, efficient, realistic, and timely.

Consistent with this objective and its statutory responsibility, the NRC has been conducting reviews of new plant licensing related applications, including early site permit and design certification applications. Also consistent with this objective, the NRC is preparing for the significant workload to review combined license (COL) and other new plant licensing related applications that are currently being projected by the nuclear industry.

To date, the NRC has received three early site permit applications for sites in Virginia, Illinois, and Mississippi that currently have operating reactors. The NRC staff has issued three safety evaluation reports and three draft environmental impact statements for public comment, although additional work is being performed in connection with one application that has recently been significantly revised by the applicant. The adjudicatory proceedings associated with the early site permit applications are currently ongoing. These ESP reviews are first-of-a-kind and have identified numerous lessons learned for both the NRC and industry, which will be used to improve new reactor licensing processes in the future. The NRC is expecting an additional ESP application to be submitted during the summer of 2006. The NRC is also currently reviewing the General Electric Economic Simplified Boiling Water Reactor design certification application, is conducting pre-application activities for Areva's U.S. Evolutionary Power Reactor design, and is also conducting some activities for three additional reactor designs.

The NRC is preparing for the increasing number of projected new plant licensing applications. Last year at this time, the NRC had been notified of three potential COL applications in the next few years. Today, the number of expected COL applications is 11, and continues to increase. Some of these applications are expected to reference designs already certified, while others are expected to reference designs that are still under NRC review for certifications. We continue to assess our re-

source needs in light of the very substantial increase in the number of anticipated COL applications and related work.

In order to allow for the review of multiple COL applications in parallel, the staff is considering a number of steps and planning to implement a design-centered approach. Using this approach, the NRC staff would use a single technical evaluation to support multiple combined license applications for the same technical area of review, as long as the applications standardize the licensing basis to a level that would make this approach viable. Standardization is key to success of this approach.

In addition, the Commission recently approved a proposal to revise 10 CFR Part 52, which contains the requirements for Early Site Permits, Standard Design Certifications, and Combined Licenses for nuclear power plants, to clarify it and enhance its usability. The proposed rule incorporates the lessons learned from previous regulatory reviews to enhance regulatory predictability at the COL stage. Furthermore, in the Part 52 rulemaking, the Commission is soliciting comments on an approach that would facilitate amendments to design certification rules after the initial certification. With such a provision, a detailed standard certified design would be able to incorporate additional features that are generic to the design and thereby encourage further standardization. Also, changes to the limited work authorization process will be considered. The NRC staff is working to provide a final rule in October 2006 for Commission consideration.

The Commission and the NRC staff continue to prepare the Agency for the significant workload in the area of new reactor licensing. The NRC understands and accepts its share of this responsibility; however, a successful outcome depends on many factors, including the quality of the applications submitted. With the support of Congress, we will be ready to carry out our responsibilities and meet the challenges we will face.

#### HUMAN CAPITAL AND SPACE PLANNING

As you know, the NRC's ability to accomplish its mission depends on the availability of a highly skilled and experienced work force. In a recent ranking of the Top 10 Federal Work Places, by the Partnership for Public Service and American University's Institute for the Study of Public Policy Implementation, the NRC was designated the third best place to work in the Federal government. In addition, the NRC was ranked first among those surveyed who are under 40 years of age. Nonetheless, the NRC continues to be challenged by the substantial growth in new work at a time when experienced staff are increasingly eligible to retire. To address these challenges, the Agency has human capital strategies to find, attract, and retain critical-skill staff, and a space acquisition plan to accommodate these additional employees.

The NRC is aggressively recruiting a mixture of recent college graduates and experienced professionals to meet the Agency's hiring challenges. The current projection is that over 400 additional FTEs will be devoted to new work by FY 2008. The Commission is striving to hire approximately 350 new employees in FY 2006 to cover the loss of personnel and to support growth in new work. The Agency expects to have a critical hiring need for the next five years.

The NRC closely monitors its voluntary attrition rate including retirements, which has historically been below six percent, and will continue to do so as the attrition rate could potentially increase as industry competition for skilled individuals increases and as older staff retire. The Agency uses a variety of recruitment and retention incentives to remain competitive with the private sector. We continue to experience success utilizing the provisions of the Federal Workforce Flexibility Act of 2004 and the Energy Policy Act of 2005. The NRC has budgeted for continued and increasing use of these recruitment and retention tools in the coming years.

Our steady growth and accelerated hiring program has exhausted available space at our Headquarters buildings. We have developed strategies to obtain adequate space to accommodate our new hires. We are creating additional workstations within our Headquarters buildings, including temporarily building workstations in conference rooms, and we are moving our Professional Development Center off-site to use the space it currently occupies for new hires. We are also seeking additional office space to support the expected growth of the Agency.

The NRC will be continually challenged to maintain adequate infrastructure and the personnel needed. However, the Commission believes the Agency is poised to meet these challenges successfully through the ongoing human capital planning, implementation, and assessment process, the space planning program, and the various tools provided by the Energy Policy Act of 2005.

### *NRC Safety Culture and Climate Surveys*

An Agency's organizational culture is a key to the accomplishment of its mission. In 2005, the Inspector General conducted a survey of NRC employees to assess the current safety culture and climate of the Agency's workforce. Approximately 70 percent of the NRC staff participated in the survey. The NRC improved its scores in virtually every category from the results of a similar survey conducted in 2002. These significant accomplishments included the areas of Communication and NRC Mission and Strategic Plan. Recruiting, Development & Retention and Management Leadership also showed significant improvement since 2002. In addition, the survey results revealed areas for continuing improvement, including workload and stress, knowledge transfer, and the use of the Differing Professional Opinion program.

### REACTOR SAFETY PROGRAMS

The Agency's overall reactor safety functions are executed in a variety of ways, including licensing, inspection and oversight, rulemaking, enforcement, and investigations. Reactor safety programs ensure that safety of operating nuclear power plants is maintained, and the NRC is continually evaluating and improving these programs. NRC safety programs include evaluating past events, identifying lessons learned from those events, and partnering with stakeholders to increase their participation in the regulatory process.

#### *Reactor Oversight Process*

The Commission believes that the revised Reactor Oversight Process (ROP), which was implemented in April 2000, has brought a more disciplined and objective approach to oversight of nuclear power plants. Plants continue to receive a level of oversight commensurate with their performance. The results of NRC oversight activities, including performance indicators, inspection findings, and the current assessment of overall performance for each reactor are publicly available on the NRC's web site. The NRC staff continues to enhance the process through stakeholder participation and as a result of internal reviews, feedback, and lessons learned. For example, the NRC has begun conducting revised engineering inspections and continues to focus on improving the timeliness of the significance determination of inspection findings. In addition, the NRC is assessing the use of the ROP for new reactor designs.

#### *Safety Culture*

Last year, I discussed an initiative to address the management of safety and safety culture issues by licensees and to develop better methods, tools, and training for the NRC's inspection staff. I would like to update you on this initiative and on the NRC's recent accomplishments.

The NRC issued generic guidance for establishing and maintaining a safety conscious work environment, including guidance on effective processes to encourage and address concerns and tools to assess the work environment. This guidance reiterates the NRC's expectation that senior licensee management will be involved in detecting and preventing retaliation.

The NRC staff is also enhancing the ROP to address safety culture more fully. The NRC staff continues to work with external stakeholders and has developed an approach to enhance inspection and assessment programs to better align the ROP with those aspects of plant performance that are important to safety culture. The approach provides a means for the NRC to evaluate licensee actions to address identified performance issues which may be indicative of safety culture weaknesses to use a graded approach for having a licensee perform an evaluation or obtain an independent assessment of safety culture at the plant if needed, and to follow up with an independent NRC evaluation of safety culture for plants that have experienced a significant deterioration in performance. The NRC staff plans to complete revisions to the inspection and assessment programs in May 2006 and will be conducting training over the next few months for NRC inspectors and managers in order to support implementation of the safety culture-related enhancements on July 1, 2006.

#### *Radiological Protection*

As part of NRC's requirements for operating a nuclear power plant, licensees must keep releases of radioactive material to unrestricted areas during normal operation as low as reasonably achievable and comply with radiation dose limits for the public. In addition, NRC regulations require licensees to have various effluent and environmental monitoring programs to ensure that the impacts from plant operations are minimized. The permitted effluent releases result in very small doses to members of the public living around nuclear power plants. The NRC oversees these

licensee programs to ensure adequate protection of public health and safety and the environment. Recently, the NRC staff has been monitoring instances of, and licensee actions to address, groundwater contamination involving tritium at operating and shutdown power reactors undergoing decommissioning. In addition, the NRC is in the process of establishing a tritium lessons learned task force to review these incidents and identify lessons learned from them to determine what, if any, changes are needed.

#### *Operating Reactor Licensing Programs*

The reactor licensing program, coupled with a strong oversight program, ensures that operating nuclear power plants maintain adequate protection of public health and safety. NRC licensing activities include using state-of-the-art science, engineering, and risk assessment methods and information from operating experience to establish and refine reactor safety standards, to promulgate the related rules, issue orders and generic communications as appropriate, and to review applications consistent with these requirements. In FY 2005, NRC staff completed 1,609 licensing actions associated with the 104 licensed reactors.

In 2005, the NRC reviewed and approved license renewal applications for 9 reactors, bringing the total number of renewed reactor licenses to 39 since 2000. Twelve additional license renewal applications are currently under review, five of which are on schedule to be completed in this fiscal year. Approximately one-half of the reactors in the United States have either received or are currently under review for a reactor license renewal. The NRC anticipates that the remaining reactors currently licensed to operate will apply for renewal of their licenses and the NRC staff will continue to face a significant workload in this area for the next several years.

To date, the NRC has completed reviews of and approved 108 power uprate applications, which have safely added capacity equivalent to more than four large nuclear power plants. Currently, the NRC staff is reviewing 10 power uprate applications and expects to receive approximately 7 additional applications through FY 2007.

An extended power uprate increases the reactor's power by up to 20 percent. In some Boiling Water Reactors that have been implemented extended power uprates, the NRC has observed steam dryer cracking and flow-induced vibration damage in the steam and feedwater systems. The NRC staff has conducted extensive inspections at the affected plants and has held technical meetings with the affected licensees to discuss the causes of the adverse flow effects and to evaluate the corrective actions. The NRC will continue to monitor plant-specific and industry actions to resolve these issues and has factored this experience into reviews of pending power uprate applications.

#### SECURITY

The NRC continues to evaluate and inspect security plans, procedures, and systems to ensure that acceptable security measures remain in place to protect the health and safety of the public. The NRC also continues to conduct the force-on-force exercise inspection program to evaluate licensee's defensive capabilities and identify areas for improvement. In the materials arena, the NRC continues to devote considerable effort to determine what additional actions should be used to enhance the security of radioactive material of greatest concern. In addition, the NRC maintains close communication and coordination with the Department of Homeland Security and other agencies in the intelligence and law enforcement communities. As requested in your letter of January 10, 2006, attached as an addendum, is NRC's report on research and test reactors.

The NRC has three important security rulemakings planned or under way to codify security requirements for power reactors. The first is the rulemaking on the design basis threat for radiological sabotage. The comment period for the proposed rule ended recently and a final rule will be issued later this year. The second rulemaking will amend the power reactor security regulations to align them with the series of orders the Commission issued following September 11, 2001, and to ensure that safety-security interface issues are properly considered in plant operations. The Commission intends to issue a final rule as early in calendar year 2007 as possible. Finally, the Commission's expectations on security design for new reactor licensing activities are scheduled to be codified in a third rulemaking by September 2007. The expectation of the Commission is that the lessons learned by the Agency and reactor licensees pre- and post-9/11 should be considered by the vendors at the design stage. We have learned much and I believe improvements can be realized without major design or construction modifications.

### *Reactor Security Assessments*

As Congress is aware, shortly after the September 11 attacks, the NRC required nuclear power plant licensees to implement mitigative strategies using existing or readily available resources to address the loss of large areas of any plants due to explosion or fire. At about the same time, the NRC initiated the performance of detailed engineering studies of representative nuclear power plants that assessed the damage that could be caused to the plants if large commercial aircraft were employed as weapons. Based on the differences in plant designs and capabilities found by these studies, the NRC is conducting evaluations at each U.S. nuclear power plant individually to identify specific methods that could be used to prevent or delay fuel damage, prevent or delay containment failure, or reduce or prevent releases of fission products. To expedite the studies, the NRC performed the spent fuel pool assessments completely independent of the reactor core and containment assessments.

The NRC has completed site-specific spent fuel pool assessments that addressed the recommendations of the National Academy of Sciences' study on spent fuel pools. Plant-specific reports were issued in December 2005 to all licensees, listing mitigation strategies identified during the assessments. As a result of these assessments, the industry proposed steps to ensure that plants have specific independent capabilities to mitigate spent fuel pool events. The NRC staff is evaluating the industry proposal. The NRC will determine if further actions are necessary after evaluating plant-specific details concerning licensees' implementation of the proposal.

In addition, we continue to enhance mitigation strategy capabilities by conducting plant-specific assessments of strategies for core and containment events. The NRC's assessments include an audit of each licensee's effort to identify mitigation strategies as well as an independent evaluation performed by NRC staff and contractors. These assessments began in September 2005, and will be completed in the spring of 2006. To date, the results of these assessments have validated the actions the NRC has taken to enhance the security and safety of the plants and have confirmed the robustness of these facilities. After all the assessments are completed and all strategies have been identified, the Commission will consider lessons learned across the Nation and determine if additional actions are warranted.

### *Materials Security*

NRC continues to work with the DOE, DHS, Department of Transportation, Department of State, and the IAEA to prevent the malevolent use of radioactive materials. Actions the Commission has taken in 2005 include the following: (1) issuance of additional security measures for shipments of radioactive materials in quantities of concern from power reactors, research and test reactors, and materials licensees; (2) issuance, along with the Agreement States, of additional security and material control enhancements for other industrial, medical and research licensees; (3) publishing a proposed rule to amend NRC's regulations to implement a National Source Tracking System, to replace the interim database; and (4) revision of regulations regarding the import and export of radioactive materials to be consistent with the IAEA's Code of Conduct.

#### MATERIALS PROGRAM

The Agency's overall materials safety functions are executed in a variety of ways, including licensing, inspection and oversight, rulemaking, enforcement, and investigations. The NRC, in partnership with the 34 Agreement States, conducts comprehensive programs to ensure the safe use of radiological materials in a variety of medical, industrial, and research settings. In 2005, the NRC had a number of significant accomplishments.

On June 15, 2005, the NRC staff issued the safety evaluation report and final environmental impact statement on the Louisiana Energy Services license application for the National Enrichment Facility, a gas centrifuge uranium enrichment facility, proposed to be located in Eunice, New Mexico.

In September 2005, the NRC published a proposed rule to amend its Yucca Mountain regulations to reflect the new proposed Environmental Protection Agency (EPA) standards. The NRC staff has continued its interactions with DOE on a variety of technical issues related to recently announced design changes and quality assurance program issues.

During FY 2005, the NRC oversaw decommissioning activities at numerous complex sites and power reactor sites. The NRC terminated six complex materials licenses, two uranium mill licenses, and two operating reactor licenses. In addition, the NRC approved the license termination plans for the Big Rock Point and Yankee Rowe power reactor sites. The NRC's review of the license termination plans ensures that the procedures and practices proposed by the site operators will protect

the public health and safety and that the proposed decommissioning activities will make the sites suitable for release and license termination.

On September 9, 2005, the Commission concluded the Agency's adjudication over the Private Fuel Storage LLC (PFS) application to construct and operate an independent spent fuel storage installation and authorized the Agency staff to issue a license upon resolution of any outstanding issues. One matter that remained to be resolved was completion of consultations with other Federal and state agencies concerning the identification and protection of historic sites. After coordinating with the Advisory Council on Historic Preservation (ACHP), the NRC issued a license to PFS on February 21, 2006. The license contains a condition requiring PFS to first arrange adequate funding for the project. Additionally, PFS must obtain the requisite approvals from other agencies.

#### INTERNATIONAL PROGRAM

The NRC also carries out an active international program of cooperation and assistance involving 38 countries with which it exchanges civilian nuclear safety information. This program provides public and occupational health and safety information and assistance to other countries to develop and improve regulatory organizations and overall nuclear safety and security worldwide. The NRC continues to strongly support multinational programs for enhancing the level of nuclear safety worldwide and serves in leadership roles on technical committees that develop and monitor best practices. In addition, the NRC supports implementation of certain treaties and conventions that encourage the wider adoption of safety standards and practices. It is worth noting that the NRC proposed an initiative, the multinational design approval program, that will allow several regulatory authorities to work together in reviewing new reactor designs. In addition, the NRC amended its regulations in 10 CFR Part 110 concerning the export and import of radioactive materials to require certain licensees previously operating under general licenses to file for specific export and import licenses. In accordance with the revised regulations, licensees will also have to provide advance notification to the NRC before shipment and will need to verify the recipient facility's licensing status.

#### AGENCYWIDE LESSONS LEARNED PROGRAM

As previously reported, we have undertaken a critical review of our programmatic and oversight activities to evaluate our own actions associated with the reactor vessel head degradation at Davis-Besse. A significant finding in the NRC Davis-Besse Lessons Learned Task Force Report was that some of the issues identified were similar to problems previously identified. The report recommended that the staff conduct an effectiveness review of actions taken in response to past lessons learned. NRC established an Effectiveness Review Lessons Learned Task Force (ERLLTF) and the task force issued its report on August 2, 2004. The ERLLTF found that some corrective actions from previous lessons learned had not been effective and that the root causes of the ineffective corrective actions were the lack of a lessons learned program, the lack of effectiveness reviews, the lack of a centralized tracking system, and weaknesses in closeout practices.

In response to the ERLLTF report, the Executive Director for Operations chartered a team on January 24, 2005 to develop an agencywide lessons learned program that would capture and address significant Agency lessons learned reports and provide reasonable assurance that the problems identified will not recur. The team has completed development of a preliminary program and will be piloting the program this spring.

#### BUDGET

In order to meet new challenges while at the same time continuing to discharge our statutory responsibilities, the Agency's financial needs have increased to meet the expanded workload for FY 2007. Again we appreciate your support for the additional funding for FY 2006. The FY 2006 appropriation provided \$41 million in funds above the President's budget request. Of this amount, \$20 million will be used in support of new reactor licensing and \$21 million will be used principally in support of nuclear security initiatives. Additional funds have been allocated to the ongoing nuclear power plant security assessments and other near term security-related activities. Funding is being used for security initiatives such as site specific assessments of spent fuel pools and core and containment analysis. Funds also support the development of security rulemakings, regulatory guidance for new reactor security licensing, workshops and policy position documents to improve transportation regulations and support to the Department of Homeland Security's Comprehensive Reviews.

The President's FY 2007 budget provides \$777 million for the NRC, which is an increase of \$35 million (approximately 5 percent) above FY 2006. The budget request includes an increase of approximately \$22 million for the Nuclear Reactor Safety program, which includes the new reactor licensing work, \$21 million for the Agency's infrastructure and support activities, and \$10 million to fund Federal pay raises and other non-discretionary compensation and benefit increases. These increases are offset by a decrease of approximately \$18 million for the Nuclear Materials and Waste Safety program due to the delay in the Department of Energy's application for the high-level waste repository at Yucca Mountain, and other program changes.

#### CONCLUSION

The Commission continues to be committed to ensuring adequate protection of public health and safety, promoting the common defense and security, and protecting the environment in the application of nuclear technology for civilian use. We understand the challenges we face in the new reactor licensing and human capital areas and will continue to work with the committee as we move forward. We continue to build on our work in the area of security to enhance the safety and security of the American public. The Commission will ensure that the Agency is discharging its responsibilities as mandated by Congress in an effective, efficient, and timely manner.

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#### ADDENDUM TO NRC'S TESTIMONY FOR MARCH 9, 2006 OVERSIGHT HEARING

##### RESEARCH AND TEST REACTORS

The NRC has licensed 49 research and test reactors (RTRs), of which 33 are operating. These 33 RTRs are used to train the next generation of nuclear professionals, and to perform research and development activities in many fields of science. The NRC licenses RTRs under the provisions of the Atomic Energy Act of 1954, which directs the Commission to impose only the minimum amount of regulation as the Commission finds will permit the Commission to fulfill its obligations under this Act to promote the common defense and security and to protect the public health and safety and will permit the conduct of widespread and diverse research and development.

The NRC has always required RTRs to have security plans or procedures in place to detect, deter, assess, and respond to unauthorized activities. These plans use a defense in-depth philosophy, and reflect a graded approach that considers the attractiveness of the reactor fuel as a target, and the risk of radiological release. The NRC reviews and approves these plans.

Between 2002-2004, NRC issued Confirmatory Action letters (CALs) to all but 7 RTRs to formalize the commitments made to implement previous compensatory measures. Seven RTRs did not receive CALs because of the very low radiological risk associated with these facilities. The compensatory measures taken by the RTRs addressed vehicle threats, insider threats, and external land-based threats. The NRC has verified the implementation of these measures through on-site inspections and evaluations.

The NRC conducted security assessments of most RTRs to evaluate the facilities for theft or diversion of special nuclear material and radiological sabotage. These assessments used a three-phase approach which included screening of the threat scenarios, assessments of RTR security measures and detailed consequence assessments. The results of these security assessments indicate that no credible reactor sabotage would result in a prompt fatality to a member of the public and that it is highly unlikely that a formula quantity of highly enriched uranium can be stolen or diverted for malevolent purposes. These security assessments also found that theft of irradiated fuel for use as a radiological dispersal device or as a radiological exposure device is unlikely to result in prompt fatalities to members of the public. The security assessments for RTRs concluded that no additional security requirements are currently needed. From these security assessments, the NRC identified generic best practices which were shared with all RTR licensees and many of the licensees voluntarily incorporated some of these best practices at their facilities. On October 7, 2005, the NRC issued requests for additional information (RAIs) for licensees to reevaluate implementation of post 9/11 security measures. The NRC will continue to verify that security requirements and commitments continue to be implemented and to work with DHS, DOE, and the National Organization of Test Research and Training Reactors (TRTR) in a Government Coordinating Council (GCC) sub-council on RTRs to assist RTRs with security.

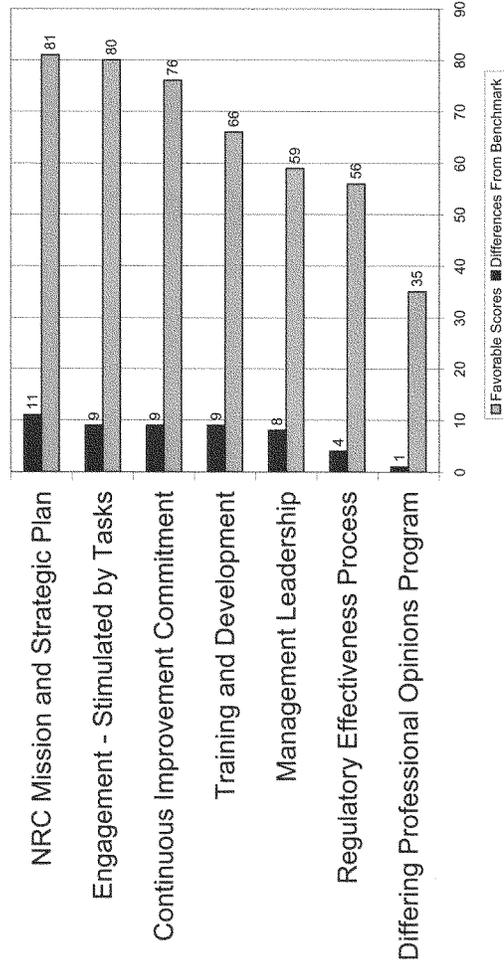
The NRC assessed the potential security issues raised in the ABC "Prime Time" telecast on October 13, 2005. All but one of the issues raised by ABC were determined to be appropriately addressed by applicable site security plans, procedures, and post 9/11 compensatory measures. One violation of security requirements was identified and processed in accordance with the NRC's Enforcement Policy and the Licensee has implemented appropriate corrective actions. The NRC determined that the conditions associated with the ABC identified issues were previously evaluated in the NRC's review and approval of RTR site security plans, procedures, and/or post 9/11 compensatory measures.



# U. S. NUCLEAR REGULATORY COMMISSION

## IG's NRC Culture Survey Results Overall Strengths and Opportunities

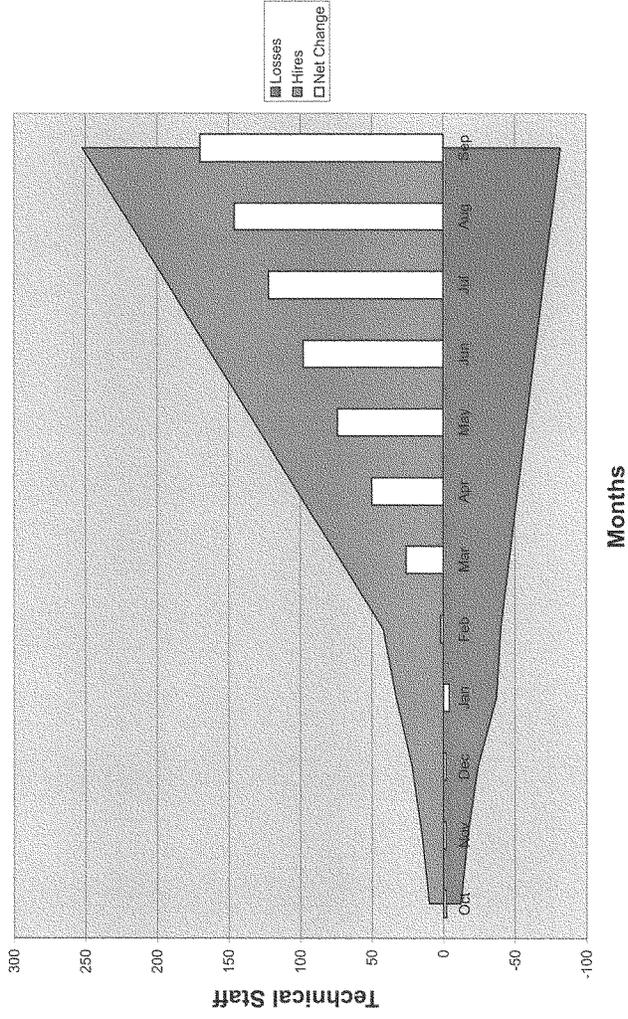
NRC Overall 2005 vs NRC 2002





# U. S. NUCLEAR REGULATORY COMMISSION

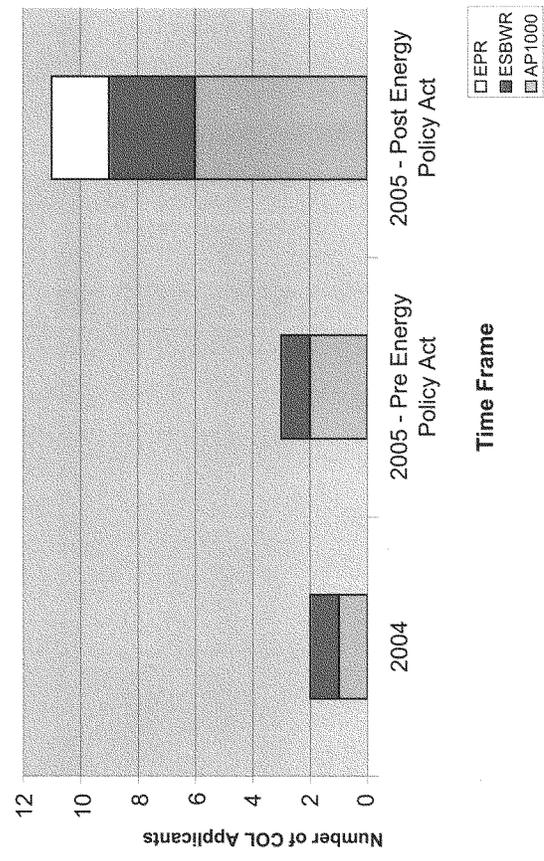
### FY 2006 Technical Staff Hires and Losses





# U. S. NUCLEAR REGULATORY COMMISSION

**Announced COL Applicants**  
Data Based on Received Letters  
As of March 7, 2006



**DETAILS OF THE SAFETY CULTURE WORK ENVIRONMENT SPECIAL  
INSPECTION AT SALEM AND HOPE CREEK**

Our March 2, 2006, Annual Assessment letters to PSEG Nuclear, LLC, the licensee for the Salem and Hope Creek Stations, indicated that issues were found during our Safety Conscious Work Environment inspection which was completed on September 30, 2005. Attached to this enclosure is the inspection report which provides more detailed information on the issues we identified during the inspection and how the inspection was performed.

PSEG currently plans to perform an assessment of its Safety Conscious Work Environment in April 2006. If the assessment concludes that substantial, sustainable progress has been made, PSEG plans to provide the results to the NRC in early May 2006. The NRC has tentatively scheduled a team inspection beginning June 12, 2006, to review the results of PSEG's assessment. We will document the inspection results in an inspection report which we anticipate issuing in late July 2006. The results will be considered during the NRC's mid-cycle 2006 assessment of station performance in August 2006.

In the event that PSEG's assessment is unable to reach the conclusion that substantial, sustainable progress has been made or is delayed, we have scheduled an alternate date for this inspection in November 2006. This information would be considered in our annual assessment of Salem and Hope Creek Station performance for calendar year 2006, scheduled for February 2007.

In addition to the inspection described above, we have additional ongoing activities to monitor and assess the Safety Conscious Work Environment at the Salem and Hope Creek Nuclear Generating Stations that will continue until our reviews show they are no longer necessary. An internal NRC coordination team continues to meet monthly to help coordinate and focus our review efforts. Quarterly, NRC inspectors review PSEG Safety Conscious Work Environment performance metrics to evaluate trends and progress. Senior NRC regional management are involved in periodic licensee meetings and site visits.

The NRC is currently planning to hold a public annual assessment meeting with PSEG on May 17, 2006, to discuss station performance for calendar year 2005. During this meeting, PSEG will address the status of its efforts to improve the Safety Conscious Work Environment, including available results from its assessments. As is our practice, we will respond to questions from the public following this meeting.

Our top priority has been, and will continue to be, ensuring the protection of public health and safety through oversight of the facilities we regulate. I want to assure you that we will continue to closely monitor PSEG's actions to address the Safety Conscious Work Environment at Salem and Hope Creek.

Enclosure

November 10, 2005

Mr. William Levis  
Senior Vice President and Chief Nuclear Officer  
PSEG Nuclear LLC - N09  
P. O. Box 236  
Hancocks Bridge, NJ 08038

SUBJECT: SALEM AND HOPE CREEK NUCLEAR GENERATING STATIONS - NRC  
SPECIAL INSPECTION - SAFETY CONSCIOUS WORK ENVIRONMENT -  
REPORT 05000272; 05000311; 05000354/2005013

Dear Mr. Levis:

On September 30, 2005, the US Nuclear Regulatory Commission (NRC) completed a Special Inspection of the safety conscious work environment (SCWE) at the Salem and Hope Creek Nuclear Generating Stations. The enclosed inspection report documents the inspection results, which were discussed on October 19, 2005, with you and members of your staff.

On August 23, 2004, the NRC's Executive Director for Operations approved a Deviation from the NRC's Action Matrix to provide a greater level of oversight for the Salem and Hope Creek Generating Stations than would typically be called for by the Reactor Oversight Process Action Matrix. The Deviation Memorandum provided for a number of additional oversight activities, including management meetings with PSEG, an oversight coordination team, and additional inspections. The Deviation Memorandum was renewed on July 29, 2005, and included plans to perform a team inspection of the SCWE at the stations.

The purpose of this inspection was to review your program and implementation progress in addressing the safety conscious work environment substantive cross-cutting area, which was most recently discussed in the NRC's Reactor Oversight Process Mid-Cycle Performance Review letters for Salem and Hope Creek dated August 30, 2005 (ADAMS accession numbers ML052420726 and ML052420725). We evaluated your progress and plans for improving the work environment, your metrics and means to monitor the effectiveness of the work environment improvements, and the effectiveness of your corrective actions and self assessment initiatives. The NRC inspection approach included using focus group forums to receive input and comments directly from a broad range of site workers. These comments were used to evaluate the extent of the site change management challenge and provided an input to our review of the program's effectiveness measures.

Overall, we concluded that you have made progress in addressing work environment problems. No findings of safety significance were identified during this inspection. Consistent with your recently completed self assessment, we also noted issues that require additional action and focused attention. We understand that you have initiated actions to address the recommendations from your self assessment, including efforts to evaluate and resolve negative perceptions in certain work groups.

Mr. William Levis

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In addition to these conclusions, the inspection team identified two observations. First, the team determined that the security work group, which was not evaluated in your self assessment, also has negative perceptions of the work environment. Second, due to the importance of the role of the Salem and Hope Creek operations' groups, the team challenged the priority of your actions to address the existing negative perceptions within these groups. We understand that you have initiated actions to address these inspection team observations.

We intend to discuss the results of this inspection report and your progress in improving the safety conscious work environment at the stations as part of a public meeting on November 17, 2005. The Meeting Notice is available on the NRC website (ADAMS accession number ML052910207). We will continue to monitor your progress in addressing work environment issues through our enhanced oversight of the stations as described in the Deviation Memorandum. Additionally, we will review the SCWE and problem identification and resolution substantive cross-cutting issues during our End-of-Cycle Reviews for Salem and Hope Creek.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Brian E. Holian, Director  
Division of Reactor Projects

Docket Nos: 50-272, 311, 354  
License Nos: DPR-70; DPR-75; NPF-57

Enclosure: Inspection Report 05000272; 05000311; 05000354/2005013  
w/Attachment: Supplemental Information

Mr. William Levis

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cc w/encl:

G. Barnes, Site Vice President

D. Winchester, Vice President - Nuclear Assessments

M. Gallagher, Vice President - Engineering and Technical Support

W. F. Sperry, Director - Business Support

D. Benyak, Director - Regulatory Assurance

M. Massaro, Hope Creek Plant Manager

J. J. Keenan, Esquire

M. Wetterhahn, Esquire

Consumer Advocate, Office of Consumer Advocate

F. Pompper, Chief of Police and Emergency Management Coordinator

K. Tosch, Acting Assistant Director of Radiation Programs, State of New Jersey

Chief, Bureau of Nuclear Engineering, NJ Dept. of Environmental Protection

H. Otto, Ph.D., DNREC Division of Water Resources, State of Delaware

N. Cohen, Coordinator - Unplug Salem Campaign

W. Costanzo, Technical Advisor - Jersey Shore Nuclear Watch

E. Zobian, Coordinator - Jersey Shore Anti Nuclear Alliance

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos: 05000272; 05000311; 05000354

License Nos: DPR-70; DPR-75; NPF-57

Report No: 05000272; 05000311; 05000354/2005013

Licensee: Public Service Enterprise Group (PSEG) Nuclear LLC

Facility: Salem and Hope Creek Nuclear Generating Stations

Location: P.O. Box 236  
Hancocks Bridge, NJ 08038

Dates: September 26 through 30, 2005

Inspectors: B. Welling, Senior Project Engineer, Team Leader, Region I  
L. Jarriel, Agency Allegations Advisor, OE  
J. Persensky, Senior Technical Advisor - Human Factors, RES  
A. Kock, Allegations Specialist, OE  
T. Wingfield, Project Engineer, Region I  
S. Dennis, Senior Operations Inspector, Region I  
M. Keefe, Human Factors Analyst, RES  
J. Cai, Human Factors Analyst, NRR

Approved By: Eugene W. Cobey, Chief  
Projects Branch 3  
Division of Reactor Projects

Enclosure

**SUMMARY OF FINDINGS**

IR 05000272/2005013; 05000311/2005013; 05000354/2005013; 09/26/2005 - 09/30/2005; Salem and Hope Creek Nuclear Generating Stations; Special Inspection.

The report covered a Special Inspection of the safety conscious work environment by regional inspectors and by NRC headquarters specialists in safety conscious work environment review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

- No findings of significance were identified.

B. Licensee Identified Violations

- None

C. Conclusions and Key Observations Related to Safety Conscious Work Environment

The inspection team concluded the following:

- Overall, the team concluded that PSEG has made progress in addressing work environment problems. Consistent with PSEG's self assessment, the team noted issues that require additional action and focused attention.
- Given PSEG's current stage of progress in addressing the work environment issues at the stations, there remains a wide range of worker perceptions across each of the four safety conscious work environment pillars (Willingness to Raise Concerns, Normal Problem Resolution Process, Effectiveness of Alternate Avenue for Raising Concerns, and Preventing and Detecting Retaliation). PSEG has not fully evaluated and addressed the negative perceptions in certain work groups.
- PSEG's metrics and other means to monitor the effectiveness of the work environment improvements are adequate. The PSEG self assessment and the inspection team identified examples where the metrics and means to monitor are somewhat limited with respect to providing clear information to management and communicating their effectiveness in resolving issues.
- PSEG's self assessment was effective and its findings were generally consistent with the inspection results. However, the self assessment did not fully explore workers' views on the progress of improvements in work management and the corrective action program, did not review all major work groups, and did not

review inputs to the corrective action program, all of which limited its effectiveness.

The team observed the following:

- Security is a work group with negative perceptions of the work environment.
- Negative perceptions in the Salem and Hope Creek operations' work groups could be addressed in a more timely manner.

## REPORT DETAILS

## 4. OTHER ACTIVITIES

4OA5 Other - Safety Conscious Work Environment Reviewa. Inspection ScopeBackground

In late 2003, the NRC initiated a special review of the environment for raising and addressing safety issues at the Salem and Hope Creek stations. The NRC undertook the review in light of information received in various allegations and inspections as well as NRC management insights related to the safety conscious work environment (SCWE). Information gathered had led to concerns about the work environment, particularly as it related to the handling of emergent equipment issues and associated operational decision-making.

On January 28, 2004, NRC Region I issued a letter to PSEG that provided interim results of the special review. This review had included numerous interviews of current and former Salem and Hope Creek employees, at various levels of the organization up to and including nuclear executives. The interviews sought to understand the extent to which a SCWE existed at the stations. The review had accumulated information about a number of events which, to varying degrees, called into question PSEG management's openness to concerns and alternative views, strength of communications, and effectiveness of the stations' corrective action and feedback processes. Several events had involved disagreements or differing perspectives of operators and senior PSEG managers regarding plant operating decisions, particularly as they might impact on continuing plant operation and outage schedules. At a minimum, these interviews raised questions about whether management had fully assessed and addressed the negative impact such disagreements have had on station personnel.

In response to the NRC's January 28, 2004, letter, PSEG committed to provide significant financial resources to improve station performance and discussed plans to assess the work environment in February 13, and February 27, 2004, letters, respectively. In a March 18, 2004, management meeting, PSEG provided the preliminary results of three major assessments of the work environment at the stations and subsequently communicated the results in a letter dated May 21, 2004. These assessments included: (1) a safety culture survey conducted by Synergy Corporation in December 2003; (2) a safety culture assessment conducted by the Utility Service Alliance (USA) in March 2004 to evaluate the Salem and Hope Creek safety culture against standards of excellence; and (3) an evaluation of the work environment for raising and addressing safety issues conducted by an Independent Assessment Team (IAT) between February and April 2004. The assessments identified the need for improvement of the work environment and equipment reliability. These assessments also identified that better implementation of station processes, such as corrective actions and work management, were important to achieving equipment improvements.

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Subsequently, PSEG discussed their plans to address SCWE issues in a June 16, 2004, management meeting with the NRC staff. In a letter dated June 25, 2004, PSEG indicated the general methods they intended to use to improve the work environment at the station.

On July 30, 2004, NRC Region I issued a letter to PSEG that provided the results of the special review. This in-depth review generally agreed with the results of PSEG's self-assessments. Specifically, the NRC did not identify any serious safety violations; however, the agency concluded that there were numerous indications of weaknesses in corrective actions and management efforts to establish an environment where employees are consistently willing to raise safety concerns. Some PSEG staff and managers felt that the company had emphasized production to a point which negatively impacted the handling of emergent equipment issues and associated operational decision-making. Additionally, management had not been consistent in its support of station staff identifying concerns and providing alternate views. The NRC found examples of unresolved conflict and poor communication between management and staff, as well as underlying staff and management frustration with poor equipment reliability. The equipment issues stemmed, in part, from weaknesses in implementation of station processes such as work management and corrective action.

On August 23, 2004, the NRC's Executive Director for Operations approved a Deviation from the NRC's Action Matrix to provide a greater level of oversight for the Salem and Hope Creek Generating Stations than would typically be called for by the Reactor Oversight Process Action Matrix. This deviation was subsequently renewed on July 29, 2005. One provision of the renewed Deviation Memorandum was to perform a team inspection of the SCWE at the stations.

#### Inspection Objective

As stated in the NRC's Action Matrix Deviation Memorandum, this inspection was performed to monitor PSEG's progress in the safety conscious work environment substantive cross-cutting area.

The inspection assessed three main areas:

- PSEG's progress and plans for improving the work environment;
- Metrics and means to monitor the effectiveness of the work environment improvements; and
- Effectiveness of PSEG's corrective actions and self assessment.

The team's inspection plan is included in the Supplemental Information attached to this report.

Enclosure

Inspection Methodology

The inspection methodology included the following:

- Document reviews;
- Observations of meetings and general discussions;
- Focus group meetings and interviews; and
- NRC analysis and team interaction to develop observations and conclusions.

The majority of the team's effort concentrated on focus group meetings and interviews as means to gather and understand workers' perceptions of the work environment. The team held 19 focus group meetings and 20 individual interviews, which allowed the team to interface with about 200 site personnel. The team evaluated the perceptions and beliefs expressed by these individuals, with the understanding that these perceptions and beliefs may not directly translate to actual performance.

The team performed a thorough review of PSEG's self assessment of the safety conscious work environment, which was completed by PSEG on September 21, 2005, shortly before the inspection began. The self assessment included interviews of over 100 station personnel, a review of PSEG's SCWE initiatives listed in the 2004-2005 PSEG Nuclear Business Objectives, and a review of the "PSEG Plan for Improving the Work Environment," detailed in the June 25, 2004, letter to the NRC.

The team also performed an independent review of PSEG's planned actions and commitments to the NRC described in the June 25, 2004, letter and the SCWE-related items in the 2004-2005 PSEG Nuclear Business Objectives. In addition, the team reviewed the results of the January 2005 "Comprehensive Cultural Assessment" performed by Synergy.

b. Findings and Observations

No findings of significance were identified.

The team assessed PSEG's progress in addressing work environment problems in what is often termed "the four pillars" of a SCWE: Willingness to Raise Concerns, Normal Problem Resolution Process, Effectiveness of Alternate Avenue for Raising Concerns, and Preventing and Detecting Retaliation. In addition, the team collected observations related to SCWE in other areas. Finally, the team analyzed the results of these assessments to develop key observations and conclusions.

Observations

.1 Pillar 1: Willingness to Raise Concerns

During the team's focus group interviews and individual interviews, workers indicated that they will raise nuclear safety concerns, and most workers stated that they would have no reservations about raising issues or writing notifications. Some expressed the

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opinion that management now exhibits an attitude of not shying away from any issue. Some staff view this type of management behavior as a positive posture that will allow for significant improvements to the corrective action program and thus will remove employee-perceived barriers against raising concerns. The belief by some that management is more receptive to opposing viewpoints is another example of positive change that encouraged raising concerns. Many workers have perceived that improvements in conservative decision-making also have had a positive influence on workers' willingness to raise issues.

While there were many examples of support for raising concerns and issues, there were also some negative comments made during some interviews, especially with specific work groups. For example, some individuals in a Salem operations focus group stated they may not raise some balance-of-plant equipment issues. These individuals expressed an opinion that most in the group (60-70%) did not feel comfortable raising concerns themselves. Some of these operations personnel stated that inconsistent expectations regarding procedure use have adversely affected their willingness to raise procedure adherence issues. Likewise, some workers in the Salem chemistry work group also indicated that they may not raise procedure compliance issues due to inconsistent expectations regarding procedure use. In addition, some personnel indicated that they would be unwilling to self-report fatigue issues. The team did not identify instances where this had actually occurred.

The team noted several factors that affected some workers' willingness to raise concerns. For example, a few individuals from maintenance organizations stated that they perceived some negative responses after raising some issues that affected the work schedule. Further, some in a few groups reported that those who raise concerns or challenge management decisions were labeled as "roadblocks" or "troublemakers," which made those people and others reluctant to raise concerns. Perceptions of a lack of timely or comprehensive resolution for issues exist and contribute to an apathetic approach to raising concerns for some groups, such as Hope Creek operations and some maintenance groups. Additionally, a few employees believe that high workload and long work hours limit the willingness to raise issues, because it only adds to their own workload. Though not a direct nuclear safety issue, workers in several groups expressed reluctance about reporting industrial safety accidents.

#### Conclusion

Workers indicated that they were willing to raise issues that they recognized as nuclear safety concerns. Almost all workers across a majority of work groups also indicated that they are willing to raise concerns, write notifications, and challenge management decisions that they believe are unsafe. Overall, the team noted improvement in this area from 2004 assessments.

In a few work groups, such as Salem chemistry and Salem operations, there were several workers that stated that they would be hesitant to raise concerns in other areas, some of which may have nuclear safety implications. For example, some operations personnel stated they may not raise some balance-of-plant issues. These equipment

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issues could potentially have an impact on the initiating events and mitigating systems cornerstones. The team also noted that factors such as timeliness of response, comprehensiveness of corrective action, and inconsistencies in expectations have affected the willingness of some staff to raise concerns.

.2 Pillar 2: Normal Problem Resolution Process

The team determined that PSEG has taken a significant number of actions to improve the effectiveness of the corrective action and work management programs. PSEG has established and enforced expectations stressing personal and organizational responsibility and accountability with respect to implementing these programs. This area of improvement was evidenced by the perception of most employees in the majority of work groups that there has been progress in implementing the corrective action program (CAP) and resolving longstanding equipment problems. Increased individual and organizational accountability was cited most often by the majority of workers as the largest contributor to the positive changes in these programs. PSEG has implemented improvements to the CAP which appear to address the problems with the CAP noted in the 2004 assessments. For example, a new screening committee was formed and more structured trending of CAP issues is being conducted. Improved CAP and work management-related performance metrics, such as corrective and elective maintenance backlog reduction, are also key indicators of improvement in this area.

However, the team noted that many employees mentioned some specific areas requiring focus and improvement to ensure that continued progress is made in CAP and work management. For example, many employees in maintenance organizations cited difficulty securing parts and specialized tools and ineffective work group coordination as examples of lingering problems in the work management area. Some workers in other groups indicated that supervisors were not particularly responsive to concerns raised by their subordinates. Some workers in certain groups described workarounds for equipment deficiencies and discussed corrective actions that did not address the common causes of failures. The team also noted that many individuals in certain work groups (Salem chemistry, Salem operations, Salem mechanical maintenance, Hope Creek operations, and Hope Creek maintenance) indicated that they would raise issues, but believed that these issues would not be resolved or corrected in a timely manner. Likewise, they expressed that the lack of timely or comprehensive resolution made them feel less inclined to report minor equipment problems.

Conclusion

Overall, there has been improvement in the Normal Problem Resolution Process area. To address the issues identified in previous NRC and other independent assessments, PSEG has taken a significant number of actions to improve the effectiveness of the corrective action and work management programs. However, the team noted that many employees indicated some specific areas requiring continued focus and improvement to ensure that substantial progress is made in CAP and work management.

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.3 Pillar 3: Effectiveness of Alternate Avenue for Raising Concerns

The team determined that PSEG has taken actions to improve the effectiveness of the Employee Concerns Program (ECP) as an alternate avenue for raising concerns. Specifically, PSEG has increased staffing in the program, and has taken steps to address perceptions of the ECP as discussed in the 2004 Independent Assessment Team review, which noted that 15-20% of personnel did not view the program as viable due to concerns over confidentiality and independence. In addition, PSEG's staff has conducted bench-marking at other sites and has implemented changes to the ECP's processes and procedures in response to this bench-marking.

The inspection team's interviews of plant staff confirmed that most individuals are aware of the program and recognize the efforts taken to improve the program since 2004. Most individuals in a majority of work groups indicated that they were satisfied with the program.

However, consistent with the NRC's observations in June 2005 (NRC Inspection Report 05000272;05000311;05000354/2005009), many individuals continue to perceive that the program is not sufficiently confidential. These perceptions can be attributed to both: 1) rumors regarding historical incidents in which the identities of individuals who reported concerns to the ECP were revealed and, 2) that the process requires that management be notified of these concerns. Following the issuance of the NRC's June 2005 Employee Concerns Program Inspection Report, which documented that about 20% of individuals interviewed would not use the program due to confidentiality concerns, the ECP staff initiated additional actions to address the staff's perceptions regarding the confidentiality of the program. For example, the ECP staff initiated "in-plant Wednesdays" and lunches with the staff, so they could engage the workforce in the field and provide training on the steps that the ECP takes to protect the confidentiality of individuals. In addition, to address the NRC's observation that the ECP procedures require that several members of management be notified of concerns, PSEG modified the procedures to reflect that efforts are made to protect the confidentiality of individuals. While the team determined that the corrective actions taken in response to concerns about confidentiality appear appropriate, it is too soon to fully assess the effectiveness of these actions.

The team's interview with the ECP Manager and review of statistical data regarding the number and type of concerns received by the site indicated that the program has elements to support a SCWE. For example, the ECP Manager monitors the number and type of anonymous complaints, the number of discrimination complaints, and the departments which generate the majority of concerns. Data reviewed by the inspection team indicated that, while the number of complaints has increased since last year, the ECP staff is effectively assessing the data for SCWE implications.

Conclusion

The site has implemented several corrective actions in the area of the ECP that address the issues from a 2004 independent assessment. Most workers in the majority of work

Enclosure

groups indicated they were aware of and satisfied with the ECP or believed that other workers who had used the program were satisfied. However, several workers in certain work groups indicated they would not feel comfortable using the program due to confidentiality concerns. While PSEG has recently taken actions which appear to be appropriate to address these perceptions, it was too soon to fully assess their effectiveness.

#### .4 Pillar 4: Preventing and Detecting Retaliation

The team determined that PSEG has taken actions to address work environment issues in the area of Preventing and Detecting Retaliation. PSEG established an Executive Review Board (ERB) to review proposed personnel actions, before they were taken, to ensure they were not in violation of 10 CFR 50.7 employee protection regulations. To ensure personnel actions did not unnecessarily challenge the safety conscious work environment (SCWE), the ERB was also chartered to: 1) assess whether the actions planned could be perceived by the workforce to be retaliatory and, 2) propose mitigating actions, where appropriate, to address the perceptions of the workforce.

One member of the inspection team observed an ERB meeting to assess the current status of its effectiveness. The meeting involved three separate proposed actions by contractors. During the meeting, the ERB members demonstrated a healthy questioning attitude and working comprehension of important SCWE principles. In addition to this observation, information gathered during employee focus groups provided insights with regard to the licensee's effectiveness in preventing the perception of retaliation for engaging in protected activities. Discussions were also held with two members of the ERB concerning the meeting observed and recent changes to the ERB charter.

In addition to the ERB, PSEG has established and recently modified the Executive Protocol Group (EPG). The revised EPG replaced the People Team, and one of its purposes is to provide a mechanism for timely and comprehensive response to events that could involve harassment, intimidation, retaliation, discrimination or otherwise challenge the SCWE. The EPG has held two meetings, and the team concluded that it was too soon to fully assess the effectiveness of the Group.

Most of the workforce interviewed were not aware of incidents of retaliation for raising concerns or challenging unsafe acts. However, as evidenced by information shared with the inspectors during four of the focus groups, there are perceptions that subtle actions occur within a few groups. These actions allegedly included supervisors demeaning individuals or providing undesirable work assignments.

Prior to the NRC's inspection, a few personnel actions taken by a contractor (Wackenhut) were not reviewed by the ERB, as required by the charter. The team determined that this was a minor issue, due to the isolated nature. PSEG's corrective action, a review of all recent disciplinary actions taken by contractors on site to ensure they were appropriately reviewed by the ERB, was appropriate.

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Conclusion

The team determined that PSEG has made progress in the area of Preventing and Detecting Retaliation by instituting the Executive Review Board and the Executive Protocol Group. Most of those interviewed had not experienced, nor were they aware of others experiencing, retaliatory actions for engaging in protected activity. However, there are perceptions that subtle actions occur within a few groups. These actions, although not directly affecting the raising of safety issues, are important for PSEG to address.

.5 Assessments and Observations in Other AreasSafety Conscious Work Environment Self Assessment

The team concluded that the recently completed safety conscious work environment self assessment was effective in that it evaluated work environment actions taken to date, appropriately identified a number of additional actions needed to improve the work environment, and identified some actions previously planned that were not fully implemented. As appropriate, these items were placed in the CAP for further evaluation and action. There were about 150 specific actions and recommendations to evaluate issues that were initiated following the self assessment. Most of these items were issued during the week prior to the team inspection. Thus, the effectiveness of these actions could not be fully assessed by the team.

The team identified three areas that were not in the scope of the self assessment and, therefore, limited its effectiveness. First, the team identified that the self assessment did not fully explore employee perceptions of the progress in work management and the CAP. The team noted that the survey questions in the self assessment did not specifically address CAP and work management. Consequently, workers' perceptions of performance in these areas were not fully captured. Secondly, the inspectors noted that the self assessment did not review all major work groups; specifically, security was not included. Therefore, the self assessment missed an opportunity to identify security as a group with negative views of the work environment. Finally, the self assessment did not review corrective action program notifications. Consequently, the assessment did not benefit from insights in these items.

The team noted that the self assessment reviewed the actions taken to address groups with significantly negative views of the work environment. The self assessment appropriately noted that the Synergy survey results were not used in a timely manner to address these groups. The team found that for the groups with longstanding negative perceptions prior to the 2005 survey, such as Hope Creek operations and Salem chemistry, actions taken to date have not yet fully addressed the negative perceptions in these groups.

Additionally, the team determined that for the Salem and Hope Creek operations groups, the negative perceptions are not currently being addressed at a pace consistent with their role in day-to-day safe operation. The perceptions and potential impact on

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workers' willingness to raise issues in these groups could be addressed in a more timely manner than indicated in the PSEG plan. Operators play a critical role in identifying deficiencies that have safety significance, so it is important that PSEG routinely assess and take timely action to address negative perceptions that could influence their willingness to raise issues.

#### Conclusion

PSEG's self assessment was effective and its findings were generally consistent with the inspection results. However, the self assessment did not fully explore workers' views on the progress of improvements in work management and the corrective action program, did not review all major work groups, and did not review inputs to the corrective action program.

#### Safety Conscious Work Environment Metrics and Means to Monitor the Work Environment

Overall, the SCWE metrics that PSEG committed to tracking in the June 25, 2004, letter to the NRC provide valuable information related to the work environment improvement efforts. Additionally, the Synergy surveys conducted in January 2005 and management observations have been useful for monitoring the work environment.

The details of the self assessment describe some opportunities to improve the metrics and related performance measures. For example, the assessment noted that metrics are not tied to pillars and do not clearly indicate how they apply to SCWE. The self assessment also indicated that survey and management observation tools could be used more effectively or in a more timely manner for improving SCWE.

The team identified that some metrics have vague acceptance criteria. For example, the Repeat Maintenance and Operational Challenges metrics have a criteria of "no adverse trend," but this is not defined. The numbers in some of these metrics were significantly worse during the last quarter, but this trend was not considered adverse, nor was the trend explained in the metric information. As such, it was unclear how these metrics provided insight into trends for assessing the work environment. The team noted that PSEG documented this issue in the CAP and intends to improve the documentation for these metrics.

With respect to the use of other means to monitor the work environment, the team noted that the work environment related aspects of inputs to the corrective action program (notifications) are addressed through actions by the SCWE leader and line management. However, in a few instances, the team noted that the work environment related aspects of notifications were not addressed. These included closing of notifications and orders with deficiency tags left hanging (20242994, 20242730, and 20245100) and issues related to shift technical adviser and reactor operator responsibilities (20240134). These types of notifications provide valuable insight into work environment trends and were not fully utilized.

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Conclusion

PSEG's metrics and other means to monitor the work environment are adequate. The PSEG self assessment and the inspection team identified examples where the metrics and means to monitor are somewhat limited with respect to providing clear information to management and communicating their effectiveness in resolving issues.

Communications

The team determined that, for discrete work groups, the effectiveness of communications was an underlying contributor to many of the negative perceptions of the work environment. The team observed that communication effectiveness was mixed with regard to PSEG's reorganization, the Exelon management model, Synergy survey results, and the priority of issues in the corrective action program. The team also noted positive comments about the communication of the bases for operational decisions. With respect to change management, some personnel were concerned about shifting tasks and responsibilities without proper resources and trained staff.

.6 NRC Analysis, Key Observations, and Overall Conclusions

The inspection team analyzed the information collected in document reviews, meeting observations, personnel interviews, and focus group meetings to develop common themes, assessments in the four safety conscious work environment pillars, key observations, and overall conclusions. Following the period of the onsite inspection, the team reviewed this information, and then conducted a debrief meeting with PSEG management on October 14, 2005. The team considered PSEG's feedback during this meeting while developing final observations and conclusions.

Key Observations

- Security is a work group with negative perceptions of the work environment.
- Negative perceptions in the Salem and Hope Creek operations work groups could be addressed in a more timely manner.

Overall Conclusions

- Overall, the team concluded that PSEG has made progress in addressing work environment problems. Consistent with PSEG's self assessment, the team noted issues that require additional action and focused attention.
- Given PSEG's current stage of progress in addressing the work environment issues at the stations, there remains a wide range of worker perceptions across each of the four safety conscious work environment pillars. PSEG has not fully evaluated and addressed the negative perceptions in certain work groups.

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- PSEG's metrics and other means to monitor the effectiveness of the work environment improvements are adequate. The PSEG self assessment and the inspection team identified examples where the metrics and means to monitor are somewhat limited with respect to providing clear information to management and communicating their effectiveness in resolving issues.
- PSEG's self assessment was effective and its findings were generally consistent with the inspection results. However, the self assessment did not fully explore workers' views on the progress of improvements in work management and the corrective action program, did not review all major work groups, and did not review inputs to the corrective action program, all of which limited its effectiveness.

4OA6 Meetings, Including Exit

On October 19, 2005, the team presented the inspection results to Mr. Levis and other members of PSEG management and staff. PSEG acknowledged the inspection results and stated that they initiated actions to address the inspection team's observations.

ATTACHMENT: SUPPLEMENTAL INFORMATION

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**SUPPLEMENTAL INFORMATION****KEY POINTS OF CONTACT**Licensee personnel

G. Barnes, Site Vice President - Hope Creek  
J. Barstow, Corrective Actions Manager  
D. Benyak, Regulatory Assurance Director  
C. Fricker, Salem Plant Manager  
M. Gallagher, Vice President - Engineering/Technical Support  
G. Gellrich, Plant Support Manager  
T. Gierich, Salem Operations Manager  
H. Hanson, Hope Creek Operations Manager  
S. Jones, Employee Concerns Manager  
T. Joyce, Site Vice President - Salem  
J. Keenan, PSEG Counsel  
T. Lake, SCWE Leader  
W. Levis, Chief Nuclear Officer  
M. Massaro, Hope Creek Plant Manager  
D. Romashko, NOS Manager  
D. Winchester, Vice President Nuclear Assessments

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

None

**LIST OF DOCUMENTS REVIEWED**

In addition to the documents identified in the body of this report, the inspectors reviewed the following documents and records:

PSEG Self Assessment: Safety Conscious Work Environment (SCWE), Rev. 1, dated September 21, 2005  
Independent Review Responding to the January 28, 2004, NRC Letter Regarding SCWE at Salem and Hope Creek Generating Stations (IAT Report), dated May 4, 2004  
Salem/Hope Creek Safety Culture Assessment, Utilities Service Alliance, March 1 - 5, 2004  
2003 "Comprehensive Cultural Assessment" performed by Synergy, dated February 2004  
2005 "Comprehensive Cultural Assessment" performed by Synergy, dated April 2005  
NRC letter to PSEG, Work Environment for Raising and Addressing Safety Concerns at the Salem and Hope Creek Generating Stations, dated January 28, 2004  
PSEG letter to NRC, Plan for Improving the Work Environment to Encourage Identification and Resolution of Issues, dated May 21, 2004  
PSEG letter to NRC, PSEG Plan for Improving the Work Environment, dated June 25, 2004

Attachment

NRC letter to PSEG, Work Environment at the Salem and Hope Creek Generating Stations, dated July 30, 2004  
 Salem/Hope Creek Corrective Action Program Excellence Plan  
 PSEG Metrics for Improving the Work Environment, Salem and Hope Creek Generating Stations, Quarterly Report, dated July 29, 2005  
 PSEG Frontline Emails (various)  
 PSEG Roadmap of How People Team Triggers are Addressed in Executive Protocol Group  
 Salem/Hope Creek Work Environment Improvement Strategy  
 Work Environment Improvement Plan, dated September 22, 2005  
 Source Report to Business Plan Matrix  
 PSEG 2004 - 2005 Business Plan (selected portions)  
 Safety Conscious Work Environment Training Material  
 Compliments and Concerns Meeting Minutes (various)  
 Executive Protocol Group Charter  
 Executive Review Board Charter, Revision 2  
 Nuclear Review Board Reports 05-007, 05-008, 05-009  
 Nuclear Review Board Meeting Minutes , No. 05-01

Notifications and Orders:

20187069	20242994	20252181	20253880
20206978	20244108	20253170	20253962
20229112	20245100	20253283	20254206
20232916	20245412	20253380	20254283
20232948	20250300	20253409	20254300
20236084	20251489	20253539	70044173
20236499	20251944	20253587	70044229
20238223	20251945	20253748	70045758
20240134	20251946	20253750	70045907
20240137	20251947	20253769	70046605
20242730	20251948	20253783	

**LIST OF ACRONYMS**

ECP	Employee Concerns Program
EPG	Executive Protocol Group
ERB	Executive Review Board
IAT	Independent Assessment Team
NOS	Nuclear Oversight
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
PARS	Publicly Available Records
PSEG	Public Service Enterprise Group
ROP	Reactor Oversight Process
SCWE	Safety conscious work environment
USA	Utility Service Alliance

Attachment

**SALEM & HOPE CREEK**  
**SAFETY CONSCIOUS WORK ENVIRONMENT INSPECTION**  
**SEPTEMBER 26 - SEPTEMBER 30, 2005**  
**INSPECTION COVER SHEET**

**INSPECTORS:**

Lead:	Blake Welling J. Persensky Lisa Jarriel Andrea Kock Ted Wingfield	Facility:	Salem 1 & 2, Hope Creek
		Report No:	50-272;311;354/2005-013
		Insp Dates:	Stand-alone Team Report 9/26/05 - 9/30/05
Trainees:	Steve Dennis Molly Keefe June Cai		

**CONTACTS:**

NRC SRIs:	Dan Orr, Mel Gray	Phone:	856-935-5151
Licensee POC:	Howard Berrick, Licensing	Phone:	856-339-1862
Team Leader:	Blake Welling	Office:	610-337-5328
Lodging:	Pennsville Hampton Inn	Phone:	856-351-1700

**INSPECTION PLAN:**

Refer to the attached plan.

**INSPECTION PROCEDURE DATA:**

<u>Procedure</u>	<u>IPE Code</u>	<u>Title of Procedure</u>	<u>In RPS</u>
71152	OA	Identification and Resolution of Problems	Y

**OpE REVIEWED:** (Summary)

- Davis-Besse Special Inspection Reports 2002-018, 2003-012, 2004-003, 2004-013
- Regulatory Issue Summary (RIS) 2005-18, Guidance for Maintaining a Safety Conscious Work Environment. Note: This RIS is intended to provide guidance to the industry, not the NRC inspection staff.

**ACKNOWLEDGED/APPROVED:**

/RA/      9/20/05  
 (Gene Cobey / Date)

**Distribution:**

Assigned Inspectors  
 Inspectors' Branch Chiefs (Region I)

Attachment

**INSPECTION PLAN - Salem and Hope Creek**  
**SAFETY CONSCIOUS WORK ENVIRONMENT INSPECTION**  
 Inspection Report 50-272;311;354/2005-013

I. Inspection team make-up:

Lead Inspector -	B. Welling
SCWE Specialists -	J. Persensky
	L. Jarriel
	A. Kock
	T. Wingfield
	J. Cai (trainee)
	M. Keefe (trainee)
	S. Dennis (trainee)

II. Inspection Schedule:

TL Prep	September 1 - 23, 2005 (in-office)
Team Prep	September 7 - 8, 2005 (at HQ)
TL Prep (bagman)	September 15 - 16, 2005 (on-site)
Team Prep	September 19 - 23 (in-office)
Team Inspection	September 26 - 30, 2005 (on-site)
Exit Meeting	October 6, 2005
Team Doc	October 3 - 14, 2005 (in-office)
TL Doc / IR to BC	October 17 - 21, 2005

III. Inspection Deliverables:

This special inspection will evaluate Public Service Enterprise Group's (PSEG) completed and planned actions to mitigate the work environment problems described in PSEG's May 21, 2004, letter for Salem/Hope Creek Nuclear Generating Stations. The following deliverables will be documented in the inspection report.

A. An assessment of the metrics and methodologies used to monitor the effectiveness of the work environment improvement plan.

B. An assessment of the plans for and progress in improving the work environment.

C. An assessment of the effectiveness of the corrective actions taken thus far to address the identified work environment problems, as well as an evaluation of any effectiveness assessments conducted for those corrective actions.

Attachment

## IV. Inspection Details:

A. Evaluate the licensee's methodology and metrics for monitoring effectiveness of the improvement program in the following areas:

1. Adequacy of monitoring work environment problems
2. Ability to identify problems similar to those found by the surveys/assessments described in the May 21, 2004, letter
3. Appropriateness of the criteria and thresholds used to assess program effectiveness
4. Implementation of licensee's processes to address metrics with declining trends

B. Review the licensee's plan for improving the work environment in the following main areas, as described in the May 21, 2004, and June 25, 2004, letters, and additional documentation. Assess progress in each of these areas:

1. Safety Conscious Work Environment (SCWE):
  - a. Use the following guidance in the review, as appropriate
    1. Inspection Procedure 71152 "Identification and Resolution of Problems" section 03.03d "Assessment of Safety Conscious Work Environment"; and
    2. NRC: Policy Statement for Nuclear Employees Raising Safety Concerns Without Fear of Retaliation
  - b. Assess the appropriateness of actions for each of the following licensee goals:
    1. Improve willingness of employees to raise concerns
    2. Improve the effectiveness of policies and procedures for resolution of issues
    3. Improve the effectiveness of the alternative mechanism for resolution of concerns-the Employee Concerns Program (ECP)
      - a. Use the following guidance in the review:
        1. Inspection Procedure 40001, Resolution of Employee Concerns;
        2. NRC Policy Statement for Nuclear Employees Raising Safety Concerns Without Fear of Retaliation; and
        3. NEI 97-05
      - b. Evaluate the effectiveness of the ECP to address and resolve employee concerns
    4. Improve management effectiveness in detecting and preventing retaliation and chilling effect
      - a. Evaluate ERB corrective action effectiveness
      - b. Review any recent examples of perceptions of retaliation or chilling effect

2. Corrective Action Program

- a. Review corrective actions associated with the surveys/assessments results in the May 21, 2004, letter for
    1. Applicability to original problems
    2. Effectiveness of implementation
  3. Work Management Program
    - a. Assess the appropriateness of actions
    - b. Assess the appropriateness and effectiveness of current and planned implementation methods
  4. SCWE Training
    - a. Assess the appropriateness of training program content and methods
    - b. Assess the effectiveness of current and planned implementation methods
- C. Corrective Action Effectiveness Review
1. Evaluate the effectiveness of corrective actions associated with the work environment problems and determine whether they addressed the causes of the conditions

#### V. Methods

- A. Document review
1. The inspection team will review documentation related to the work environment problems
  2. The inspection team will review documentation related to actions for improvement in the main areas from the May 21, 2004, and June 25, 2004, letters, selected business plan items, and current action plans
  3. The inspection team will review a sample of relevant documents related to problem identification and resolution of work environment issues at the sites, including:
    - a. Notifications (NOTFs)
    - b. Corrective actions
    - c. ECP reports
    - d. Employee survey results
    - e. Training Materials
- B. Focus group meetings and individual interviews. These activities will be a major portion of the NRC's onsite inspection. The team will conduct approximately 18 individual interviews and 18 focus group meetings.
1. The inspection team will interview and/or conduct focus groups with a sample of individuals, including
    - a. Staff and managers responsible for the corrective actions associated with the plan to address work environment issues
    - b. Selected members of the site management team

- c. Individuals at the staff level, randomly selected and/or on an as needed basis
- d. Work groups selected on the basis of survey results and at random with the intent of providing a cross-section of groups at the site

2. The inspection team will meet with any individuals who request to discuss issues related to the work environment.

- C. Observations of meetings and workgroups, as available, such as
  - 1. All hands meetings
  - 2. NRB
  - 3. SORC
  - 4. ERB
  - 5. Executive Protocol Group (formerly People Team)
  - 6. Daily Meetings and Plan of the Day Meetings
  - 7. Others as needed

