UNITED STATES NUCLEAR REGULATORY COMMISSION

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BRIEFING ON DECOMMISSIONING FUNDING

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TUESDAY

FEBRUARY 23, 2010

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The Commission met at 9:30 a.m., the Honorable Gregory B. Jaczko, Chairman, presiding.

COMMISSIONERS PRESENT:

GREGORY B. JACZKO, Chairman

DALE E. KLEIN, Commissioner

KRISTINE L. SVINICKI, Commissioner

FIRST PANEL:

ADAM LEVIN, Director, Spent Fuel & Decommissioning, Exelon

DONNA JACOBS, Senior VP, Planning, Development & Oversight, Entergy

JOHN STEWART, Director of Utility Rates and Services, New York State Department of Public Service

PAUL GUNTER, Director of Reactor Oversight, Beyond Nuclear

JOHN MOTHERSOLE, Principle, Industry Practices Group IHS Global Insight

SECOND PANEL

MARTIN VIRGILIO, Deputy Executive Director for Operations

ERIC LEEDS, Director, Office of Nuclear Reactor Regulation

TIM MCGINTY, Director, Division of Policy and Rulemaking, NRR

TOM FREDRICHS, Sr. Advisor, Licensee Financial Policy, Division of Policy and Rulemaking, NRR

PAUL BAILEY, Senior Fellow, ICF International

P R O C E E D I N G S

CHAIRMAN JACZKO: Good morning, everyone.

We will hear today from a group of stakeholders and the staff as well on the issue of decommissioning funding. Decommissioning is such an important issue and it's really an issue that demonstrates the breadth of the NRC's regulatory work.

Our responsibilities for regulating nuclear power plants really begins with making sure that licensees are setting aside appropriate and adequate amount of funds to provide the appropriate financial assurance while they are operating to cover their decommissioning costs after they ultimately shut down.

And our responsibilities don't end until decades later once license operations have ceased, and the agency oversees the actual clean up efforts at the site or facility.

The agency requires licensees to provide detailed reports at least once every 2 years on the financial investments and instruments that they have set aside to cover their decommissioning costs. And certainly during the recent economic downtown, I think we have seen that some licensees have experienced challenges in maintaining sufficient decommissioning funds. And I think we will hear about that today.

Overall, though, I believe that the experience of the last 2 years has shown that our regulatory approach is generally sound, because in a time when almost everyone's 401-Ks and other assets were severely depleted, most of the licensees were able to maintain their decommissioning funds at appropriate levels. So, I think this is really a testament to the kinds of conservative financial investments we allow as part of the rule, and I think it helped many licensees to maintain the appropriate amount in their funds.

So during our first panel today, we will hear from several stakeholders, including State, public advocacy and licensee representatives who will provide several different perspectives and the funding challenges that some of our licensees experienced.

We will then hear from the staff on our second panel this morning. And they provide a general overview of our decommissioning funding regulations, review some of the challenges our licensees have experienced in meeting their financial assurance requirements and discuss some of the proposed changes to our guidance and potential changes to our regulations.

So, we have a lot to cover this morning. I think we will begin, then, with our panelists. I think we will begin with you, Adam Levin, who is the Director of Spent Fuel & Decommissioning for Exelon.

MR. LEVIN: Thank you, Mr. Chairman, and thank you, Commissioners, for the invitation this morning. We will get right to it.

If I could have the next slide, please. As a note on my first slide, there is a discrepancy between Exelon's and NRC's staff's position regarding Exelon minimum funding shortfall. There are three reasons why:

First, in its March 31st submission,

Exelon did not refer NRC staff to previously docketed sight specific SAFSTOR cost estimates for the six units at Byron, Braidwood and LaSalle, which accounted for a substantial portion of that difference.

Exelon had determined but not yet submitted a site-specific SAFSTOR cost estimate and accompanying parent guarantee for Clinton, which brought that unit into compliance.

And finally, for the eighth unit, NRC staff identified Limerick Unit 1. We recognized that it remained under Pennsylvania State regulation, and we were prepared to discuss the shortfall at our next rate hearing with the Pennsylvania Public Utility Commission, if necessary.

After a number of discussions with NRC, on July 29, 2009, Exelon communicated to NRC staff its 15-month remediation plan. We proposed submitting site-specific SAFSTOR cost estimates for Clinton and LaSalle by August 2009, which we have done. We proposed submitting site-specific SAFSTOR estimates for Byron by November 2009, and for Braidwood by January 2010, which we have also done.

And finally, we committed to establishing a financial guarantee for any remaining underfunded position as measured on December 31, 2009, by April 1st of 2010.

Based upon newly submitted estimates for Clinton and LaSalle and recovering the financial markets, we have been informed that NRC staff has determined that Clinton and LaSalle now meet minimum funding requirements. And based upon improvements in the financial markets, Limerick 1 now meets funding requirements without any action on our part.

May I have the next slide, please.

From the onset, although some NRC staff was encouraging us to take early action to bridge the shortfall, we recognized that attempting to close the funding gap along a short time line might be highly detrimental to funding efficiency. Funding strategies are strongly matched to timing as well as the amount needed when required. By rapidly shifting portfolio investments in an attempt to grow assets more quickly for such a long-term liability invites poor investment behavior.

Additionally, for the qualified trust funds in particular, realizing gains in the portfolio earlier than required results in considerable tax inefficiencies. So absent rebalancing our portfolios, we carefully evaluated our options.

We considered contributing to the funds. However, without a mechanism to withdraw assets if the trusts become overfunded, as they will likely do with license renewal, contributions were deemed to be an inappropriate use of corporate liquidity.

We looked into obtaining letters of credit to cover the shortfalls; however, if we turned the clock back to mid-2009, even if we could obtain an LOC at that time on the open market, the costs for doing so would have been a serious imposition on our liquid assets.

Finally, we settled on the action plan that we submitted to NRC on July 29th, with the follow-up actions to complete updated site-specific cost estimates, measure the funding shortfall as of the close of last year, and as we ultimately decided, to put in place apparent guarantee to address any shortfalls.

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As of December 31, 2009, and taking credit for the updated site-specific SAFSTOR estimates we submitted to NRC, we recognized an NRC minimum funding shortfall for three of our units at Byron and Braidwood in the aggregate present value amount of $32 million. The updated decommissioning cost estimates, slightly increased SAFSTOR costs for decommissioning; however, improvement in the financial markets deserve much of the credit for closing the gap. But we did not need 2 years to evaluate all of our options.

I can easily envision a situation where a smaller single asset utility would need to spend additional time performing an assets liability study to evaluate their portfolio mix before committing to any particular funding assurance guarantee. The bottom line is that the most prudent course of action is to allow time for the financial markets to sort themselves out from such a fall in value, and to take the time to move wisely, recognizing that it is likely to be counterproductive and not in the best interest of any of our stakeholders if we move too rapidly.

Thank you.

CHAIRMAN JACZKO: Thank you for those comments.

We will now turn to Donna Jacobs, who is the Senior Vice President for Planning, Development & Oversight at Entergy Nuclear.

MS. JACOBS: Chairman, Commissioners, thank you for the opportunity to address you this morning.

We will go ahead and go to the next slide, please.

Because of the long operating life of nuclear reactors, decommissioning funds are long-term investments that are expected to grow over time to fulfill a future obligation. Over the investment period, market fluctuations are inevitable, and the current NRC regulations are written to allow flexibility in responding to unfavorable market conditions.

Despite the worst financial crisis since the great depression, the decommissioning funds for 70 percent of the operating nuclear reactors remained at or above the NRC required minimum levels. Six of nine Entergy fleet plants were demonstrated to have adequate decommissioning assurance.

Two regulated plants have returned to their Public Utility Commissions or PUCs to reinstate collections that the PUCs had ceased previously. And Entergy employed a parent guarantee on one plant, which we do expect to be short-term.

The conservatism applied to the NRC's decommissioning funding assurance program is clearly effective.

In addition, after ceasing operations, power reactor licensees may opt to place their facilities in SAFSTOR mode in order to allow shorter lived radionuclides to decay prior to undertaking substantial decontamination activities.

Now, while the primary purpose of SAFSTOR is to enhance health and safety by reducing the occupational exposure of decommissioning workers, it also has the collateral effect of adding time to a licensee’s investment horizon for accumulating decommissioning funds.

In fact, licensees currently may take credit for earnings above inflation on their decommissioning funds during the SAFSTOR period if their funding estimate is based on a site-specific cost estimate. This additional earnings period has a significant beneficial impact on licensees' level of decommissioning funding assurance.

The adequacy of the existing regulatory framework is most directly demonstrated by the fact that every power reactor that has shut down and which has been or is currently being decommissioned has been able to fund and safely perform required decommissioning activities. This has been the case even in situations in which the licensee did not operate the facility to the end of its licensed term, for example, a premature shutdown.

For example, the Zion Nuclear Power Station, Units 1 and 2 were prematurely shutdown in 1997 and 1998. Despite the premature shutdown, and the fact that it was caused by economic considerations, the units were safely shutdown, defueled and placed into SAFSTOR status to allow for radioactive decay prior to the conduct of decom activities.

Also, both the Yankee Rowe and Connecticut Yankee facilities shutdown prematurely, and despite not having fully funded decommissioning at the time of plant shutdown, were able to obtain additional funding and complete decommissioning.

That original rule has served its purpose well and it has been fortified by appropriate amendments that have further enhanced the level of decommissioning funding assurance.

In addition, the NRC's decommissioning regulations are supported by regulatory guidance, which has also been the subject of careful NRC evaluation and stakeholder scrutiny.

Next slide.

In response to a 2002 stakeholder comment, the NRC changed the language in Draft Guidance 1106 to reflect the, quote, "at least once every 2 years," end of quote, guidance currently provided in Reg Guide 1.159. Thus, to us, it is evident that the NRC has previously considered and rejected the concept of annual funding adjustments.

Notably, neither Draft Guidance 1229 nor the Federal Register notice announcing its availability provide any explanation or basis for the significant change in the NRC's interpretation of 10 CFR 50.75 BRAVO.

Further, the concern that frequent changes of funding amounts could result in losses and increase cost originally expressed in the stakeholder's comments quoted above is more, not less, relevant today than it was in 2002.

The guidance proposed in Section 2.1.5 of Draft Guide 1229 that interprets 50.75 BRAVO is requiring licensees to adjust funds annually to address any deficiencies would limit the flexibility allowed by 10 CFR 50.75. The current economic crisis highlights the need for increased flexibility not additional restrictions.

If the proposed guidance were applied to the current situation, the NRC effectively would be forcing utilities to pay an unnecessary premium for decommissioning funds that will not be used for decades. This premium would likely be paid at the expense of other programs. That would have an immediate impact on the company's financial health and operations.

Imposing new staff positions prior to publicly dispositioning comments on draft guidance is fundamentally unfair to licensees and is inconsistent with what we see as the NRC's principles of good regulation. Significant changes in staff position, we believe, warrants significant discussion and input by all stakeholders.

Thank you.

CHAIRMAN JACZKO: Thank you.

We will now turn to John Stewart, who is the Director of Utility Rates and Services at the

New York State Department of Public Service. Mr. Stewart.

MR. STEWART: Good morning, Chairman, good morning, Commissioners. I appreciate the opportunity to speak to you on these timely matters.

The only thing I have to offer is disclaimer. I can't speak for the Commission. I can only speak for myself. Unfortunately, I spent the bulk of my time, '99 through 2001, working on the on the sales of five of the plants in New York.

I think if we can jump over to Slide 5 in my presentation. That's really the points I'm trying -- that right there. That's the points I'm really trying to make.

I want to talk about SAFSTOR. I want to talk about commingling of funding and responsibilities. I just want to talk about the RAS 2001/2007 a bit.

Regarding SAFSTOR, back in '99 when we were in the process of selling the power plants, nuclear power plants in New York, the main concern for the Commission was getting maximum value for ratepayers in order to offset stranded costs, my stranded cost responsibility for ratepayers. In that vein, to the extent that we could do things like purchase power contracts on any other vehicles like lighten regulation to get more value for ratepayers, we were all ears. We were very interested in doing it.

As a result, we had the sale of several of the nuclear power plants. And our reviews of the bids when they came in were interesting. The best bids, the most lucrative bids from a ratepayer's perspective were those that assumed two things. One was license extension in almost all cases.

And the second was SAFSTOR would be employed as a vehicle for accumulating money to decommissioning at a point in time that looked to us, at least, to be substantially later than the end of the license life.

And I can say this with pretty much confidence because our point of reference prior to the sales was that in every rate case we would have arguments about what the right amount was in rates for decommissioning expenditures. Ratepayers were contributing money for decommissioning in every case.

By contrast, the new owners agreed that ratepayers would never have to provide any more money into decommissioning funds. It was their responsibility, it was the new owners' responsibility on a going forward basis.

So, I guess while I have heard some people say that SAFSTOR should not be viewed as a vehicle to accumulate funds, I think the reality that, at least we have known for 10 years, is that the industry practice, at least for the companies buying power plants in New York, was that it would be used as a vehicle for accumulating funds to do decommissioning at a much later date.

The second thing I want to talk about is commingling of funds. I also call it commingling of responsibilities.

At the time of the transfers in the late '90s, early 2000s, we knew commingling was a possibility. There was a lot going on. There were Federal income tax concerns, there were transaction costs of keeping various funds separate. There was a possibility of NRC taking additional action. And there were also accounting requirements that were possibly being promulgated at the same time.

We also knew that time was on our side. The more time it took, if we went SAFSTOR, we would have time to hopefully have other companies get experience with decommissioning of radioactive decay, hopefully more time to address spent fuel, and, of course, more time to accumulate funds.

So given all this, it was very easy for the Commission to disengage the idea of whether funds were commingled or not commingled, and instead just go to the general requirement as a condition of sale that the new owners agreed to decommission the plant radiologically and nonradiologically, including site restoration.

And just as an aside, site restoration is not a unique requirement in New York for nuclear plants. It is a requirement for all generating plants.

So basically, we were aware of commingling being an issue, but we got around it by requiring full decommissioning including site restoration.

Final point, which is really where we are at today. And NRC and New York DPS have different legal responsibilities, although I think we do have a common interest. And the common interest is that to be sure there are sufficient funds available at some point in the foreseeable future -- I'm not saying at the end of the license life, but in the foreseeable future to perform a variety of decommissioning activities.

Your definition is a little different than ours, but we still have the same goal that we want to get it done. And we want to make sure funding is sufficient.

Regarding the RIS, I think your questions were right on point, and I'm loathe to say that if I look at the information as filed in New York, I could not give you the answers to those questions on the basis of New York, since we have sort of went to enlightened regulation.

So, I think your questions were right on point, but I also understand why the industry might be loathe to want to respond to them, particularly if it causes them to re-create reality that has not existed for them for some time. They have not had separate funds. They have not differentiated what funds were available for what purposes.

So, that leaves us with a question of what to do going forward. And what I would urge at some point would be to get specific information from each operator indicating, one, what their nonradiological responsibilities are; two, if funds are commingled; and three, what their plans are to do both radiological and nonradiological responsibilities.

That may make you feel a little nervous because your responsibilities are just for radiological, but reality, I believe, is that if funds may be available do a radiological -- just because they are available to do radiological does not mean that it will go forward for decommissioning if funds are not available for the nonradiological at the same time.

So you really -- in order do determine

whether or not radiological decommissioning can go forward, you need to have a point of view of fund availability for the other responsibilities of cotenants or the operators have made.

So I thank you for your time.

CHAIRMAN JACZKO: Thank you for your presentation.

Now I will turn to Paul Gunter, who is the Director of Reactor Oversight at Beyond Nuclear.

MR. GUNTER: Mr. Chairman, Commissioners, thank you for the opportunity to address the Commission on the issue of decommissioning funding.

Peter Shumlin, the president pro tem of the Vermont State Senate recently made some remarks relevant to this briefing in an announcement that the State legislature will vote this week on whether or not to allow Entergy's Vermont Yankee to operate beyond its current 40-year license, which terminates on March 12, 2012.

He is quoted to say, “Vermont Yankee has been further marred by Entergy's attempt to create a debt ridden, spin off corporation to take ownership of the plant. The cleanup fund is already more than a half billion dollars short, and Vermonters cannot afford a corporation that may shift that risk to ratepayers."

Monthly decommissioning funding disclosures to the State of Vermont, made Vermont Yankee the nuclear industry's bellwether for the steep decline industry wide in decommissioning funding. This practice should be required of each nuclear power plant and provided to state and federal regulators.

Vermont Yankee may now become the bellwether for an industry also misrepresenting facts, significantly affecting accurate estimates for, quote, unquote, "minimum decommissioning funds," namely, the presence and condition of an uninspected, miles long tangle of corroding buried pipes that run under every nuclear site in the country carrying radioactive effluent amidst protected groundwater resources.

Senator Shumlin's remarks exemplify an

emerging public mistrust, exacerbated by an operator's false statements made under oath to State officials with regard to tritium leaks into ground water and underground radioactive contamination that has now moved off-site, at least as far as the Connecticut River.

In fact, the public confidence and trust is more broadly eroded in the industry's commitment to decommissioning with each additional uncontrolled and unmonitored radioactive release at still growing numbers of reactor sites in the United States.

As we know, tritium is a tracker isotope for a larger host of slower moving radionuclides that can escape through those same uncontrolled and unmonitored radioactive effluent release paths.

Senator Shumlin's remarks are poignant for our dialogue today. They point to the increasing uncertainty and mistrust with regard to the nuclear industry's accountability for the protection of natural resources and the adequacy of funding for decommissioning operations in light of these uncontrolled and unmonitored radioactive leaks.

Uncontrolled and unmonitored significantly escalate the unreliability of "minimum" decommissioning cost estimates, and therefore, the availability of maintained funds for cleanup of the sites and protected resources that flow beyond the company's property lines.

Two examples illustrate this concern. The decommissioning costs for the Yankee Rowe atomic power plant escalated from an initial estimate of $120 million to $750 million, in large part, the result of the spread of groundwater contamination, some readings of elevated tritium in aquifer systems as deep as 300 feet.

Because of the company's inadequate decommissioning funds, true to Senator Shumlin's concerns for Vermonters, the bulk of the cost was passed on to Yankee Atomic ratepayers.

Connecticut Yankee had set aside $410 million in its fund for decommissioning that ultimately tallied up to the cost of 1.2 billion, do in no small part to Strontium-90 contamination traveling along with a radioactive tritium plume into surrounding water table.

The extent of that contamination was only discovered well after the decommissioning process began. Again, the decommissioning fund shortfall and mitigation cost overrun was passed on to Connecticut ratepayers.

Uncontrolled radioactive releases have raised the issue of how current methods of establishing meaningful, "minimum" decommissioning cost target estimates are fundamentally flawed and misleading with a formulaic one-size-fits-all approach that does not take into account the potential for significant, even catastrophic groundwater contamination from uncontrolled and unmonitored radioactive leaks.

These formulaic and generic flaws raise the public's concern that a reactor's parent company or its subsidiary limited liability corporation could some day declare bankruptcy and leave extensive and costly clean up operations of contaminated soil and water as well as the indefinite or permanent on-site storage of irradiated nuclear fuel to a State and its ratepayers.

As Senator Shumlin further pointed out, the establishment of shell corporations are recognized as financial liability firewalls for parent corporations and foster further public concern for the adequacy of environmental protection, supposedly afforded through current decommissioning funding mechanisms.

Furthermore, inadequate funding compounded by the added and uncertain cost of extensive soil and water contamination can in and of itself cause a delay in the completion of an environmental cleanup for decades, leaving long-lived radioactive toxins to infiltrate deeper and contaminate underground aquifers as well as surface water rivers, lakes in proximity and downstream of the site.

The issue before the Commission regards how these gaps in decommissioning funds will be closed to protect public health and safety and maintain environmental quality. However, one element missing from the equation is how the cost from these recurring and uncontrolled, unmonitored radioactive releases around the country are to be captured and incorporated in the impact of already significant financial gaps and shortfalls in decommissioning funds.

Beyond Nuclear concurs with Senator Shumlin, as well as Fairwinds Associates in Burlington, Vermont, and other public interest advocates that these untallied costs should not be the financial burden of the ratepayers and of the states. Having significantly profited from plant operations, the parent companies should be more tightly regulated and held accountable to absorb these costs as part of a thorough completion of decommissioning and site clean up operations.

In fact, uncontrolled and unmonitored releases from reactor effluent discharge paths are in violation of 10 CFR 50, Appendix A, General Design Criteria; 60, Control of Radioactive Effluent Pathways; and General Design Criteria 64, Monitoring Radioactive Effluent Pathways.

Given that uncontrolled radioactive

releases are in evidence, is significantly increasing decommissioning costs and widening an already significant gap in decommissioning fund shortfalls, we contend that stronger regulatory action is warranted. In our view, it is reasonable for the Nuclear Regulatory Commission to take enforcement action against violators of their license conditions at minimum by imposing on the licensee the loss of options for decommissioning finance methods as designated in DG 1229.

The loss of design control and monitoring of radioactive effluent pathways would result in a licensee being required to establish and maintain, in a prepaid segregated fund, 100 percent of an independently assessed final decommissioning cost. Factors for making additional future adjustments in decommissioning cost estimates would include a periodic independent review and reassessment of costs associated with each disclosure of uncontrolled and unmonitored releases from the reactor's radioactive effluent pathway.

Similarly, the advent of limited liability corporations formed as a result of the growing consolidation of nuclear ownership has created the very real risk of shifting decommissioning shortfalls to the public from the parent corporations whose LLCs only asset may, in fact, be an individual reactor site.

We contend that LLCs should be required to similarly establish prepaid segregated decommissioning funds with 100 percent of an independently assessed decommissioning cost.

I thank you for your time.

CHAIRMAN JACZKO: Thank you.

We will now turn to Mr. John Mothersole; is that correct?

MR. MOTHERSOLE: Yes, you got it right.

CHAIRMAN JACZKO: Who is the Principle with the Industry and Practices Group at IHS Global Insight.

MR. MOTHERSOLE: Thank you. I would just like to again thank the Commission for being able to present here today.

I'm going so shift gears a little bit and talk about escalation in nuclear plant decommissioning costs and what we have learned or what we have gleaned from the data that is available. And I state that because nuclear plant decommissioning is something unique and very specialized. In some sense, it reflects construction.

It is a deconstruction project, not a construction project, but because of the limited amount of work in this arena, as an economist, there is not the coveted time series to be able to look at these costs over an extended period of time. However, we do have experience with nuclear plant construction, and here we do have a number of data points, time series that are available that help us track escalation in nuclear-specific construction.

And to the extent that deconstruction, nuclear plant deconstruction and nuclear plant construction share some similar elements, we can use the evidence or the information on nuclear plant construction to draw some inferences or conclusions about decommissioning cost escalation.

Okay. So having established that affinity between these two sets of costs or cost escalations, some basic similarities, what are the conclusions that we can reach? Based on our analysis, over the last 40, 45 years, we do see that nuclear plant construction and/or decommissioning cost escalation does exhibit a premium over general inflation and general types of construction. We estimate that premium, that real increase to be about one percentage point, 1 percent.

What's interesting, though, is when we look at the sources of those increases, it's not due to commodity prices. In fact, commodity prices, real commodity prices have fallen over that span, over the last 45 to 50 years. And in fact, if we want to go back a full century, what we will note is that commodity prices have fallen over an extended period of time.

Go to slide -- I guess my second slide.

We can note that raw material price volatility, commodity price volatility has increased since 2000. But this volatility, this growing volatility, in our view, does not reflect growing resource scarcity.

Now, I don't not claim to be a geologist, and my firm does not employ geologists, but our review of the literature would suggest that there is no fundamental resource scarcity for the types of goods, the raw materials that would go into either nuclear plant construction or deconstruction decommissioning. And that is on a long-term basis, not a 10 or a 20, but even as far out as a 50-year basis.

And then point three in the slide sort of plows over the ground about real commodity prices, that, in fact, that they have fallen.

If we can go to chart one, Slide Number 4. Here we have a graphic depiction of escalation in a number of different construction cost indexes. One is the producer price index for building materials, strictly materials, no labor included.

The second is the engineering news record building cost index, a recognized index of general construction in the building industry.

And the third is focused specifically on nuclear plant construction. And these are the Handy-Whitman Indices of public utility construction costs specifically for electric utilities and specifically for nuclear generating units.

And you can see the 10-year intervals, the escalation rates displayed. And the fact that one, the 2000 to 2009 time interval, we have seen uptick in those escalation rates. But more prominently and I think the point I want to communicate is that over a long period of time, the nuclear plant index exhibits a slightly faster rate of increase.

Looking at the data in a little more detail, in Slide 5, this speaks to the volatility in these indices and indeed in commodity prices generally.

Chart 2 looks at the volatility in commodity price movements, again over 4-year intervals going back to 1982. And what stands out in chart number 2 is the increase in volatility as defined by the standard deviations in the price changes for a group of commodities, the increase in volatility in just the most recent 3 or 4 years.

If we look at Slide Number 3, we translate that commodity price volatility and look at measures of building cost escalation. And again, the volatility in nuclear plant construction stands out as being more prominent, higher than the others, again, sort of re-enforcing this notion. Good deal of uncertainty with regard to nuclear costs, but over a broad period of time that those have increased with a slight premium over the general rate of construction cost inflation.

But finally, Slide Number 4, when we look at the source or try to decompose the source of those increases, what we note is that, in fact, commodity price escalation is not the source of those increases.

Chart number 4 looks at a collection of real commodity prices, in this case, the producer price index for industrial commodities deflated by consumer price index to gain a measure of real price change over a very long period of time. And here we are going back a full century.

And I think what is noteworthy is that the super cycle in commodity prices or what has been labeled the super cycle in commodity prices which took place over the last 3 to 4 years, really represents a small blip in this long continual either steady decline, or if we believe something has changed in the past couple of years, maybe a certain flattening in that real price decline.

CHAIRMAN JACZKO: Well, thank you for those comments. I think those are certainly interesting conclusions and probably interesting what happens in the next 10 years on that chart.

And probably, if we knew the answer to that, we would probably all not be sitting here -- well, you may be sitting here, but the rest of us would probably be doing something else.

We will begin our questions with Commissioner Svinicki.

COMMISSIONER SVINICKI: Thank you. Thank you all for your participation today.

I think a number of your presentations addressed more or less directly the proposed change that staff has put forward to Reg Guide 1.159 regarding -- well, there is really, two prongs here. One is the frequency of assessing the adequacy of the decommissioning funding assurances. And then there is what I call the doing something about it or the remedy part.

And staff has proposed to shorten the time period within which licensees would have the ability to address a shortfall, I think, from 2 to 1 years. And, Ms. Jacob, you addressed this in a lot of detail in your comments. But I wanted to throw it open more broadly for anyone who wanted to express an opinion on that.

I will, of course, be asking the staff panel about the basis for their proposed change. But are there any additional thoughts that anyone would like to put forward or comments on that proposed change to the guidance?

MR. LEVIN: I would, Commissioner. As a matter of fact, based on our experience with the downside market that we have seen over the past 24 months, as well as the plans that we took the time

time to exercise and put in place, it is my belief that the 2-year cycle is an appropriate cycle.

We were able to finish up our analysis and work in 15 months. But as I did point out in my comments, I can see where a smaller company may have to step back and look at what I call the asset liability study, which is to take a look at their assets, take a look at the timing of the liability and when that is incurred. and sit down and decide based upon that portfolio, the appropriate investment measures or other types of guarantees to put in place as a corporate entity. And that does take a long time.

Plus, I think that what was very beneficial here was the opportunity to allow the markets to sort themselves out a little bit over the past 24 months. Without some sort of understanding, at least market direction, and where the market may settle out, I think one would be sensitive to making knee-jerk reactions, if you will, in terms of investments or portfolio strategies that may not necessarily in the long run be appropriate for these types of long time liabilities.

COMMISSIONER SVINICKI: Did anyone else want to address the --

MR. STEWART: The only thing I would add, just from experience in New York, is anything that would cause an operator to have to think about adding more money to decommissioning in the short run probably forces them -- I think this goes to something we just heard -- probably forces them to consider pushing out the decommissioning date a little further on a SAFSTOR approach in order to buy more time.

COMMISSIONER SVINICKI: Mr. Mothersole, I might ask you, and I'm not suggesting you spend your free time reading proposed revisions to Reg Guide 1.159, so I'm going to step the question back a little bit and say, as someone who looks at volatility in markets, so here is a government regulatory agency, we have an obligation to look at the adequacy of these funds that will be needed at some point in the future, I don't know where markets would be headed. As the Chairman mentioned, if I knew that, I might be somewhere else doing something else.

But it's been suggested that this may be a period of some heightened volatility in market returns over maybe the next 10 or 20 years. I don't know if that is true or not. But my question to you might be, what would you say from an economic standpoint is a meaningful period of time? Is it 2 years, as the agency requires now, in order to compel again these replenishment or augmentation of funds if they are found to be falling short against the calculations? Is a 2-year period meaningful? Is it 1-year? Is it hard to pin it down?

MR. MOTHERSOLE: It is hard to say. I think the question you're asking is how long is a business cycle? When would we move from a peak to a trough and then back?

And in post-war history, you know, again, answering the question rather loosely, I think the interval of time over a full business cycle ranges anywhere from -- you know, can be anywhere from 2 to 5 years, depending on the cycle. And that's sort of just a rough estimate.

So, if you're asking me if 2 years is prudent or a longer time interval, that is hard for me to say.

What I can say, generally speaking, is that business cycles play out over a period of time. And that span would seem to be -- you know, I'm going to say on a 2 to 4, 2 to 5-year interval or length.

COMMISSIONER SVINICKI: I got Levine written down but is it --

MR. LEVIN: Levin.

COMMISSIONER SVINICKI: Levin, I'm sorry. Then I had that in error.

But you had mentioned in your presentation that NRC's estimated shortfall for your units was 1.1 billion approximately, and that your estimate was 184 million. And you explained at least three causes that were the principle -- made up the principle difference there.

I have only been at NRC really for one cycle of review of these assurance calculations. Is it typical that the NRC would calculate very differently, then, the licensee or was that a uniqueness having to do that licensees found themselves in a shortfall situation so then, there began this forensic examination of the differences in the shortfall calculations?

MR. LEVIN: The NRC's staff had put forward their estimate of the shortfall based upon NRC minimum funding formula. And one of the things that, unfortunately, we neglected to do was to refer staff back to previous filings we had made for site-specific cost estimates for Byron and Braidwood and LaSalle. And that was a big part of that large difference between the two.

But, typically, I think in conversation back and forth with the staff as we go through this process, typically, we either recognize collectively or don't recognize where we should be with respect to minimum funding, and we land in the same place.

Again, I think this was part of one of those instances where enough communication was not made for the staff to be fully aware of certain pieces that were out there that would factor into that shortfall though.

COMMISSIONER SVINICKI: The heart of the question really is my sense of the methodology for doing the calculation was that it was well-defined, up to and including various Bureau of Labor Statistics factors and other things, so I guess I was, you know, surprised that there would be a significant difference.

Often when there is a big range like that, it means that the calculation is given to a lot of assumptions or it's highly stylized. And, so, I don't think I'm hearing that from you.

I think I'm hearing that there were just some elements and components here that were a factor in this big difference between the NRC staff and your calculation.

MR. LEVIN: That is correct, Commissioner, because, again, the NRC staff referred to the NRC minimum funding formula in their estimate, and we had existing site-specific cost estimates out there. And the measure by which you look at shortfalls or calculations of funding sufficiency are a little different from the formula to the site-specific studies themselves.

COMMISSIONER SVINICKI: Okay. Thank you.

MR. GUNTER: Commissioner, can I respond just quickly.

COMMISSIONER SVINICKI: Certainly.

MR. GUNTER: Just as the Commission has this flexibility for enforcement discretion, it would seem reasonable in this period of financial uncertainty that the Commission also has the discretion to speed up these reporting requirements, or, you know, to take an opportunity for a determined discretionary period that the Commission could require more frequent reports.

COMMISSIONER SVINICKI: Thank you for that.

And Mr. Stewart, very quickly, you mentioned the topic of the commingling, which is something I learned about as I began to learn about how we go about decommissioning funding assurance.

What I took from your presentation, and please augment this if there are additional elements of concern here, but that because of the commingling, I think you called it a commingling of responsibility as well as funds -- and so that the nature of the commingling is that it is difficult to kind of suss out, you know, what is truly for radiological and then what might be driven by other requirements.

Are there other just concerns about the commingling, or is it just the inherent ambiguity of what funds are then truly dedicated to what?

MR. STEWART: I think that the concern is really the ambiguity, and the other concern -- and I'm not saying it's happening in New York, but to the extent you have those situations, you know, has to do with what the showing is to the NRC concerning the adequacy of the funding for the radiological piece.

COMMISSIONER SVINICKI: Thank you. Thank you very much.

Thank you, Mr. Chairman.

CHAIRMAN JACZKO: Sure.

Mr. Mothersole, I don't know if you have -- you may not have looked at our Reg Guides, but I don't know if you have ever looked at our rules, our minimum funding requirements is $150 million plus and there is this factor of three things with various weighting factors that get added. They are -- I guess there's a multiplication or an addition, however it works out but these three factors.

One is, as Commissioner Svinicki mentioned, Bureau of Labor Statistics that measures the increase in labor costs; one of them has to do with, I think, increase in some commodities cost, perhaps; and the last one is a fact factor that deals with waste disposal costs.

Given your statements and your understanding of the costs of decommissioning and how that may be rising slightly faster than inflation and other kinds of things, if you're familiar with that formula, is that the right formula? Is there a better formula we should use to try and figure on how to escalate those costs and figure out what they need to be?

MR. MOTHERSOLE: I mean, what we always argue for is that you try to identify a measure or set of measures that as closely as possible represents what you're actually going to be spending money on. And it seems to me that the formula that is in place today does attempt to do that.

It says, okay, these are our big buckets, these are the things that we are spending money on. Now, what is an appropriate measure for tracking movements, cost escalation in those buckets?

And then it is just a question of whether you have selected the appropriate index or set of indices. And that's something that we do -- as part of what my firm does for our clients. And it seems to me in this instance, that you're going through the same basic function and in the same basic way and methodologically in a straightforward and correct fashion, it seems to me.

CHAIRMAN JACZKO: You don't use our

formula, do you?

MR. MOTHERSOLE: We have advised clients on sort of developing indices, measures of cost escalation that can be more detailed. And it, again, goes to the degree of specificity in defining these indexes. How close can you get to the unique set of inputs that you're using?

And in some cases, we can zero in a little more closely. In some cases, that additional detail does not necessarily yield any great insight. So, again -- especially when you're looking out over a very long period of time. You have to ask yourself whether the exercise is worth the end result, if the original, more simple formula captures those cost categories adequately, and I think, you know, for the most part, they do.

CHAIRMAN JACZKO: I appreciate that. I think there is so many things that we have done as an agency. If you go back and look at them in a historical context, they seem to be fairly straightforward and perhaps unsophisticated in a way. But this is one perhaps that, as you have indicated, maybe have stood the test of time and may be our best guess at trying to estimate this.

Mr. Gunter, I wanted to ask you a question. You make a very interesting point about on-site contamination and the impacts that that has on decommissioning.

I remember one of the very first meetings I attended as a Commissioner here was a Commission meeting on decommissioning, and we had an individual, I think, from Big Rock Point who had been the decommissioning manager.

One of the things that he indicated, I would not exactly say said, because I have gone back and looked and he didn't exactly say, but indicated is that one of the best things to do when you get around to decommissioning is to have cleaned up or have kept track of where things got spilled, I think along the lines of what you said. So, you have a good inventory, you know where materials are, that will help you better estimate then what your actual decommissioning costs are going to be.

One of the things that the Commission has or the staff has certainly has proposed within the last year is a change to our decommissioning regulations. That would, in many ways, address that issue and require licensees to more directly catalogue and report and potentially even look at remediation of spills if they are going be a challenge for decommissioning.

I don't know if you have looked at that regulation, if you think that that would address some of the concerns that you have about how some of these spills can have an impact on ultimate decommissioning costs?

MR. GUNTER: I think the problem is that the extent of these -- I think the examples that I cited, particularly with Connecticut Yankee, points to the difficulty of actually ascertaining the extent of a contamination until the decommissioning process is on you and you actually have spades in the ground. And frankly, that's too late in many ways, because you're left with the responsibility to be transferred to a third party, which is -- you know, in effect, turns out to be ratepayers and the States.

So, I think there is this problem that we are not addressing that goes back to -- and I understand it's not really the point of this meeting, but they are closely related. They are very closely related in that if we have a “leak first, fix later” kind of approach to this source of cost, I think we are going to -- we are not going to really address the problem at the other end of how much it actually costs.

CHAIRMAN JACZKO: Right. I think -- I think that is an interesting point. And I think -- you know, if you want to take a look that rule, it may be -- it is a proposed rule at this point that is in front of the Commission. I think it does try and get at the issue.

I would, perhaps, characterize it, and maybe the staff can do it better than me, is maybe if you leak, then you characterize early. And the intention being so that these spills are known well in advance so that if remediation work can we done earlier, that will make decommissioning more effective, and that can be done, those kinds of things.

So I think it gets at many of the concerns that you have expressed in terms of from the decommissioning funding standpoint.

MR. GUNTER: Thank you.

CHAIRMAN JACZKO: Both, Ms. Jacob and Mr. Levin, you're both here as sites that didn't weather the economic cycle as well as others. What do you all think you didn't do as well as the other folks did? How are you managing your portfolios and your funds in a way that was different from the others? Either one of you if you want to comment.

MS. JACOBS: I'm not sure when you say "than the others," so if we look at and say that --

CHAIRMAN JACZKO: You mentioned there were 70 percent --

MS. JACOBS: -- 70 percent of the reactors maintain the minimum requirements. I think part of it looks at -- and I would have to go back and check -- but investment strategies and really allowing the length of time to take care of that.

And I know that that's been -- one of the discussions today is about that length of time.

But you mentioned it in your opening comments with our 401-Ks that many of us become 201-Ks, right. It looks at that period of time and just like we tell people to start and invest early, you have to take advantage of that.

I think the other point for us, which may be a little bit different, is within our regulated group, we had two regulated plants that we had met with our PUCs, gone through the process as it exists and had actually based on the projections before from that cycle of reviewing it, had backed off on some of the funds being put into it.

And I think the process now has us come back up in our regularly scheduled meeting with the PUC to discuss decommissioning, it addresses that shortfall, that will be addressed, we will make an adjustment , and frankly, I think that works.

The time frame, perhaps, may not be what we were looking at. That may be really -- the question is, what about that length of time? But if

I look at it from a broader sense, that process is working for us. And so for those plants, that's going to be addressed.

MR. LEVIN: Frankly, I don't think I can add anything further to that. We fell in exactly the same shoes with respect to our funding.

One of the things that we look forward to is that Byron and Braidwood and LaSalle, three sites that have not received license renewal, we be applying for. Obviously, we can not take credit for that at this junction in time. But we understand that when the license renewal does occur, that these funds would then be rather robust at that point in time.

Mr. Chairman, if I may step back for a second and comment on something Mr. Gunner said? Characterization --

CHAIRMAN JACZKO: I have a couple of more questions that I need to get to --

MR. LEVIN: Oh, sure. Sure.

CHAIRMAN JACZKO: -- so I would rather finish those and then --

MR. LEVIN: Please.

CHAIRMAN JACZKO: -- if you want to make some comments, you can do that afterwards.

To what extent -- you use the term, and I think -- which perhaps is a term that I think in a regulatory position, I'm not sure what it means and I'm not sure if it is the right approach for us. I think both of you may have used the term "market sorting out," which seems to be -- I would interpret to mean, well, the market is now going back up again, because we know markets always go up, and that's what they do. Perhaps that is why I sit on this side of table, and I'm not over there with Mr. Mothersole.

But I don't think that is a good assumption to be using to base our strategies around for the approach, because there was a time when markets went down, too. And I don't know that everyone is clear exactly where the market is going tomorrow. It has been bouncing around for a while and could go down, could go up, I don't know. I wish I did.

So, to what extension does that play into your strategy, and to what extent do you think that that is an appropriate mechanism for these funds to be correcting themselves is that the market corrected it for us?

MR. LEVIN: These funds are enormous, tens of thousands of different investments invested in international, equities, invested in fixed instruments in the United States. And I think when we discuss sorting themselves out, the market sorting themselves out, it's trying to take a more global look at the direction of the markets as opposed to assuming that the markets are necessarily going to come up.

Are the equities going to be stronger? Are the fixed instruments going to be stronger? Where is the strength in the market so that we can rebalance our portfolio? So I think when we talk about sorting out, really what we are looking for is market direction in these various places to understand that to be able to make our forward investing proper.

CHAIRMAN JACZKO: One more question. How often do you rebalance these funds? Is this an annual, biannual, semiannual?

MR. LEVIN: We are typically doing asset liability studies, where we looked at our assets, we looked at our liabilities and trying to figure out how to match the two up.

We are doing those about once every 3 years or so at this point in time. And we do take a look at it annually. We actually have an internal committee that meets four times a year to discuss are we still appropriate in our portfolio strategy.

So this is something that as a corporation, we do take very seriously.

CHAIRMAN JACZKO: So it's about once every 3 years?

MR. LEVIN: Yes.

CHAIRMAN JACZKO: Okay. Great. Thanks I'm a little over time, so if you want, we can have another round, and I will give you an opportunity to make the comments.

MR. LEVIN: Please. That's fine.

MS. JACOBS: The only thing I would add with those comments, because we approach it quite similarly, is that the other piece is the length of time.

And if you look at how something reacts, the shorter the time frame that you look at that, I don't think you can get a full, perhaps, evaluation of that. And so if you even look at the market or whatever you're looking at, if you have an appropriate length of time, I think you see what that cycle is going to do, or at least get a better indication of the trend.

And that's why we really look at what we have with the current 2-year is appropriate, if we shorten that down, I think it could yield some trends that may not be appropriate and force us to take direction that may not actually be in the long-term the right direction to take.

So that's what the other piece I would add is just that length of time.

CHAIRMAN JACZKO: Thanks.

COMMISSIONER KLEIN: Commissioner

Svinicki and I had a briefing from our staff many months before people's 401-Ks went into 201-Ks, and we were trying to better understand our decommissioning fund requirements and what those funds were. And it was one of the most confusing briefings I think that I have experienced, and I’ll let Commissioner Svinicki comment on how her perception was.

But I thought it would have been fairly straightforward, that we would have a formula that the industry understood on what the amount of funds were required for decommissioning. And we were looking at this issue regarding some large components at sites, whether they should be moved off-site early or should they just be stored on-site, you know, steam generators and things of that nature. So, whether those decommissioning funds could be used for that.

And, so, what I would have expected us to have had was a very simple table that said, Plant X, this is how much money you should have in your decommissioning fund, and over to the side, how much funds were actually there.

It turns out that was not what we found. We found commingled funds, we found a very confusing answer from the staff that was hard to follow on how much -- you know, how did they determine their amount of funds. So it was a challenging presentation, to say the least.

And I guess from -- you know, a lot more focus has been directed towards the decommissioning funds because of the issues related to the stock market and I guess from Exelon's standpoint, I was also surprised, as Commissioner Svinicki was, that the NRC estimated shortfall was much different than Exelon's, both in the magnitude and the number of plants. So, I guess are we now on the similar pages from both Exelon and Entergy's standpoint? Do we sort of agree with what amount of funds should by required for each plant in the formula that we come up with those?

MR. LEVIN: I believe we are working towards that end. We are about halfway there, I believe, with staff. I know they are in the process of reviewing two sites specific-cost estimates that we have for Byron and Braidwood. And obviously, they will pass their judgment on the validity of those estimates. But I think we are approaching that, and we should be there certainly by the end of this quarter.

MS. JACOBS: And from our perspective, I think we are much closer than that. I think that we see the alignment on the amendment funding requirements and what it is going to take to be able to achieve those. Like I mentioned with the three units that we have, two going back into the regulated market and one putting through the parent guarantee.

COMMISSIONER KLEIN: And were those differences primarily due to site-specific considerations as opposed to the methodology, the formula?

MR. LEVIN: I guess I'm not sure I understand exactly the question, in that we produced site-specific estimates which resulted in the minimum funding requirements that were different than those when calculated by formula. So that's where we are different.

COMMISSIONER KLEIN: Have you addressed the commingling issue? Do you now have a table that says this is how much funds the NRC requires and this is how much amount is in those funds?

MR. LEVIN: Five years prior to plant retirement, we are required to submit site-specific cost estimates. And we do typically look at and indicate to staff where we are with respect to the various bins of funds at that point in time. So that is something that is done 5 years prior to shutdown.

COMMISSIONER KLEIN: And I guess from the State's perspective, I think when we first started looking at the decommissioning funds, we did not anticipate large components being removed and potentially stored on site.

Does the State take any position on whether you have a preference for those components being moved off or safely stored on-site.

MR. STEWART: I think ideally, we would

like to see them moved off the site, but, you know, we also recognize that that may not be practical for a variety of reasons right now.

COMMISSIONER KLEIN: Thanks. And I guess Paul had raised a comment that it might be good for him to talk about but also from the utility standpoint, you gave a couple of examples of Yankee Rowe and Connecticut Yankee where the costs ended up being higher.

And I think, Donna, that the good news is that the sites were cleaned up; in other words, it was not an issue. And I guess are you recommending that the decommissioning funds be larger than they currently are?

MR. GUNTER: Well, the concern is that -- these are profit making ventures. And that I think that these are costs that are unduly and unfairly being borne upon ratepayers that, in fact, represent sort of uncontrolled costs. And I don't think that is the intent of the regulation and oversight that these costs sort of be randomly tracked.

So, I think that particularly in terms of trying to capture the actual costs, that we need to have a -- I don't see that this formulaic approach, particularly with a number of the issues that are arising now is actually working for us in terms of capturing costs, but, clearly, this minimum standard, I think, has grossly missed the mark. That it's not reflecting true costs. And those are costs that I believe are unfairly being passed on to States and ratepayers.

COMMISSIONER KLEIN: I remember there was a commercial where you can pay me now or you pay me later. And I think for the regulated utilities, aren't you allowed to include decommissioning costs as part of the rate base? Eventually, they would go to the ratepayers probably anyway in a regulated environment.

And I guess I was just curious about whether you wanted to start collecting from the ratepayers earlier or later, if that was the end goal that you were looking at.

MR. GUNTER: Well, again, I believe that

these -- you know, as it is currently being addressed, these costs are not being reflected accurately in terms of the operation of these facilities.

And I think these represent a very real concern in terms of hidden costs, particularly in terms of how these plants are affecting -- how they are competing or not, these are issues that I believe are related to these hidden costs and raise concerns for ratepayers and States.

COMMISSIONER KLEIN: Well, John, you were talking about the business cycle, typically a 2 to 4-year. So, I guess based on that, a 1-year look is a little short?

MR. MOTHERSOLE: I would agree with that, yes.

COMMISSIONER KLEIN: Thank you. No more questions.

CHAIRMAN JACZKO: Commissioner Svinicki, you have more? Sure.

COMMISSIONER SVINICKI: I would like to

follow-up on something that Chairman Jaczko was asking about, and it was this rebalancing of the funds or kind of the investment philosophies.

And with forecasting it depends on when someone writes a paper or publishes a report on something. But I was looking at a published report by the Bank of New York, and it was from 2006, which I think is the interesting thing here, because that was a right before the downturn in '08, and certainly, where maybe if you had, as you said, a large, large fund and you saw the kind of returns the market was generating and you needed to get up to decommissioning funding level, ultimately, you might have been looking at those returns rather enviously and saying how could I have a more aggressive strategy?.

And, so, this report in '06 concluded with the statement that says while there is still a strong case for investment conservatism, some utilities are moving to enhance their returns using or considering the use of securities lending, alternative investments and equity classes beyond the S&P 500.

And, so, is that something that in your view, you saw kind of occurring in the early 2000's, was there a movement towards -- I think typically, there was the -- this report claims that there was a more traditional balancing of 60 percent equities and 40 percent fixed income ratio. And this 2006 report said many utilities were considering something more aggressive, maybe 55 percent equities, 30 percent fixed, and 15 percent of these alternatives that might generate a better rate of return.

Would it be your observation that that was occurring in that time period?

MR. LEVIN: I can't go back in time, unfortunately, and give you details about the investment strategy at that point, because I have only been involved with the investment strategy about the past 4 years or so at this point.

But what I can tell you is that as I look back as I prepared for this meeting today, one of the things I did was to look back at how we did at the end of last year with our trust funds relative to the S&P 500. And I took a 5-year window because I thought that was a reasonable window to look at.

And as it turns out, the S&P 500 was down a fraction, I think .4 percent or something of that nature. And our trust funds overall were up about four and-a-half percent over that same period.

So, I think in general, we have been successful with our investment strategy and managed by virtue of some prudent investing to not -- although we did get burned just as everybody else did, where folks were looking at 30 to 40 percent downturn in their personal asset wealth, we dropped 15 to 25 percent.

So we are actually pretty will well off in terms of the investment strategy and style that we have.

COMMISSIONER SVINICKI: And maybe the core that I'm really getting to there is that -- and I'm reluctant to compare this to personal finance, but I will in this case, which is that a financial planner would advise a young person entering the work force that if they are too conservative for their retirement investments, then they will actually punish themselves.

So they cannot have an entirely guaranteed return on investment punishing to you over the financial long-term. There has got to be a risk management and balancing. So that's what I found curious.

And again, looking at a time when markets -- as the Chairman was mentioning, you know, maybe there was a fiction that they were trending up and they would always be trending up, is that the compulsion there was to maybe have a little bit more risk in the investment strategy.

And, so, it's interesting, like I said, it always depends on the window in time. That's the nature of forecasting rates. So right now, many people might advocate a more -- returning to a more conservative philosophy. Thank you.

Thank you, Mr. Chairman.

CHAIRMAN JACZKO: I just have one question, I think.

As I understood one of the difficulties that we had with the submittals from Exelon, and I think it was the phrase that you used, which was site-specific minimum estimates, my understanding of our regulations is that minimum estimates or the minimum estimates provided by the formula that licensees are allowed to provide site-specific estimates if those estimates are above, but can't replace minimum estimates, I think probably without an exemption request.

Were your initial submittals of the site-specific estimates lower than the minimum estimates?

MR. LEVIN: No. The costs for decommissioning the site-specific estimates are larger than the minimum funded amount.

CHAIRMAN JACZKO: I'm sorry, say that again.

MR. LEVIN: The site-specific SAFSTOR estimates are larger than the minimum funding calculation.

CHAIRMAN JACZKO: Okay. So the

difference, then, was in the staff's calculation of the site-specific estimates and your site -- and your submittals of the site-specific estimates? What was the difference?

MR. LEVIN: Well, the difference is that the SAFSTOR decommissioning cost estimates because they contemplate expenditure over a much longer period of time, the present value of the cost to decommission is lower for the SAFSTOR style of estimate.

So what happens is that our shortfall, based on our lower site-specific SAFSTOR estimate was not as large as staff's calculation of the minimum formula verses our actual needs.

CHAIRMAN JACZKO: Because they were not considering the longer term for accumulation with the SAFSTOR?

MR. LEVIN: And as I mentioned, we neglected unfortunately to highlight that in our submission.

CHAIRMAN JACZKO: Okay. So, that accounted for a large portion --

MR. LEVIN: It accounted for a large portion of it, yes.

CHAIRMAN JACZKO: Okay. Good. That's helpful.

Well, again, did you want --

MR. LEVIN: No. Actually, there was one other comment I wanted to make about soil contamination. I think it's a very relevant issue with respect to decommissioning and decommissioning costs. I can't speak for other utilities, obviously, but I can speak for Exelon.

We are required by regulation, 10 CFR 50.75G, to keep what's colloquially known as a spill log. So we do keep track, in fact, of all of the issues that we have with leaks, et cetera, at the sites. And typically, what we will do is we will identify and keep a characterization record of soils that are contaminated. And I will factor those into our site-specific estimates.

So as a minimum, 5 years prior to shutdown, when a site-specific estimate is required, you should have or we will have certainly that record of soil contamination and identify what funding needs are required for that sort of clean up effort.

CHAIRMAN JACZKO: Are you aware of the staff's proposal to modify Part 20 and I think it is 20 1406?

MR. LEVIN: Yes, I am.

CHAIRMAN JACZKO: Are you comfortable with that change to perhaps provide then a greater degree of fidelity on the characterization and -- well, I guess on characterization, on the spills as they -- more as they occur --

MR. LEVIN: Frankly, I would like to sit down with staff and discuss it a little bit more, because I think some of the utilities are taking some actions already to ensure, and they have to by 50.75G, to keep this record, this log. And the question is what beyond that is really necessary.

So I think the staff and utilities need to spend a little bit more time understanding where the gaps are before we go forward with this.

MS. JACOBS: And I guess I have to say I

agree. We look at it the same way with 50.75G and how we look at our site specifics. And with any of the material that may be -- if we want to call it leak -- but the material that's there, and the updates that we perform.

And also, we think it would be worthwhile to have a good dialogue on the proposed regulation. I think we need to talk through that, and again, look at what's being done currently and what differences, you know, we would be looking at with that proposal.

CHAIRMAN JACZKO: We are actually at a final rule stage. This was a proposed reg and I think it -- you know, it's an interesting, I think, the standard of kind of significant spills that the staff established in that regulation is something that would challenge decommissioning.

So that's -- which seems like a fairly common sense performance-based standard that should be relatively easy, I think, for licensees to comply with. If you have a tritium contamination, and that is likely to be causing you costs at decommissioning, then I think the rule would say take a look now, it may be cheaper to remediate that now then to wait and have the plume migrate, depending on where you are in your operation, in your facility in a lifetime.

So, I think it's an interesting regulation. I think it has gone through a lot of notice and comment, and I hope we will be able to finalize it soon.

Again, I appreciate all of your testimony. And your information, I think, has been very helpful for us, and we will now conclude this part and turn over to staff for their presentation.

Thanks.

CHAIRMAN JACZKO: We're ready for the second half of the meeting and I will turn it over to Marty for staff presentation.

MR. VIRGILIO: Good morning Commissioners. Thank you for the opportunity to discuss our decommissioning financial program. I will say that our financial assurance program began over two decades ago and during the period of public utility dominance in the industry and since then, the program has evolved and become much more sophisticated and I can say that with some credibility having many years ago been a branch chief responsible for this program in NRR. I would cite as examples, the rate deregulation of the industry that resulted in major changes to the program in the late 1990's And the program continues to build on past successes and responds to new challenges.

For example, as you heard from the panelists this morning, roughly a quarter of the U.S. power reactor fleet experienced shortfalls in decommissioning financial assurance during the recent market downturn. The majority of the facilities with short-falls now we’re very confident that they provide adequate decommissioning financial assurance and the six remaining facilities that you will hear about today we believe are on the right track.

So I think we have some degree of confidence although we are not complete yet. With that, I want to turn this over to Eric Leeds who is going to introduce the members of our staff at the table and our special guest speaker.

MR. LEEDS: Good morning Commissioners, Mr. Chairman. Today's public forum on decommissioning financial assurance is especially appropriate since the origins of the agency's current regulations was a petition for rulemaking submitted by a public interest group.

That petition eventually led to the 1988 creation of Section 50.75 to the Code of Federal regulations governing the accumulation of funds for decommissioning nuclear power plants. The concern was and remains today that funds are for decommissioning a plant will be available when needed. Today the staff will provide a discussion of the NRC's financial assurance program. Tim McGinty, the Director of the Division of Policy and Rulemaking, will lead off with a discussion on the current status of decommissioning funds for the nation's commercial reactors.

Thomas Fredrichs, our Senior Level Adviser for Licensee Financial Policy will cover the remaining topics in the staff presentation.

Following the staff's presentation, we will hear from Mr. Paul Bailey, but let me introduce him now. Mr. Bailey is a senior fellow with ICF Consulting. He's consulted for the NRC and other United States and Canadian agencies on financial and environmental matters.

At the end of staff's presentation, Mr. Bailey will provide his own perspective on the inter-jurisdictional nature of decommissioning funding and provide some remarks on the parent guarantee method of assuring funds.

But at this time, I will turn it over to Mr. McGinty.

MR. MCGINTY: Thank you Eric. Regarding the status of 2008 short-falls, as you will recall, we received the biennial reports from all 104 units in the March of 2009 time frame.

I think you will also recall we had a very focused and detailed effort to quickly ascertain the situation given what we knew about the market conditions.

And we determined the 77 units that had adequate decommissioning funding assurance rather readily and by June of last year, we had sent letters to the 27 units for which we had found we did not have adequate decommissioning funding assurance.

As of today, 21 of the 27 short-falls have been resolved. I want to give you a flavor for the way those 21 short-falls were resolved from the NRC perspective.

There was one license extension at Beaver Valley. One parent guarantee resolved an issue at Vermont Yankee. Six were resolved effectively by market gain, Nine Mile Point 2, Point Beach 1 2, Calvert Cliffs 1, Indian Point 2 and Palisades. Five were resolved with the SAFTOR projection methodology that was discussed previously at LaSalle 1 and 2, Clinton, Nine Mile Point 1 and Ginna. Two were by rate increases that are to be requested in the future. And Limerick and Waterford and six were by rate increases that were already obtained and those were the TVA units.

Which brings to us the six that are currently considered to still be in the short-fall situation. Five of those are within the process of exchanging information and actually, the five are Braidwood 1 and 2, Byron 1 and 2 and Duane Arnold. And the staff does have responses to our RAIs for those and we are evaluating them.

And one of them is a contractual obligation type of review for which we are about to issue another RAI. But I would say that the near term resolution for all six of these remaining outstanding short-fall situations is going to be resolved timely in the very near term.

With that said, I would like to turn it over to Tom Fredrichs who's going to provide an overview of the regulations, financial instruments as well as the path forward on the broad topic.

MR. FREDHICH: Thank you Tim.

Thank you Commissioners and also, thank you all our stakeholders and members of the public here attending our meeting. I'm going to talk about the regulations in a more conceptual manner rather than going through a detailed recitation of requirements. The two sections that are most important to us in this context are 50.75 which governs accumulation of funds during operation and 50.82 which governs the spending of the funds once decommissioning starts.

The accumulation phase was intended to be a forward looking three step process that starts out with a certification by the licensee or an applicant that they would meet the minimum requirement which is specified in the regulations.

During operation, the intent is that they will adjust the funding levels according to an escalation formula that we have and provide ongoing financial assurance.

And finally, about five years before license expiration, they are expected to come in with a site specific cost estimate which would account for any special circumstances on the site and also provide hopefully, enough time to make sure that funding is available at the time of permanent shutdown.

In 10 CFR 5082, the basic thrust is that they have to complete their decommissioning within the budget allowed them by the decommissioning fund. And they are restricted from withdrawing from that fund if that would put them into a case where they were unable to make up the shortfall and complete the project.

The original rule was issued in 1988, was utility based at the time and the NRC rules were complimented by the economic oversight of the states where the NRC regulated the form of the financial assurance and methods that could be used, and although there was a rule requiring annual contributions to the trust funds, it was left up to the states to decide exactly how much that would be per year.

The goal was to accumulate the full amount of funding by the time of permanent shutdown and those words are actually in the regulations from 1988 and have been continued at least for the prepayment and external sinking fund methods through today.

One reason that I believe that the rules have been successful in the past is because the State Public Service Commissions have a duty to act in the public interest and they have access to funds outside the company itself.

And because of that, there is a reduced risk of financial stress that the NRC relied upon when it created its original rule. And our experience as a number of people have noted has been successful in that regard even for some utilities that have shut down early and have not had time to fully fund their trust amounts. In 1998, the agency amended its rule in a major amendment recognizing that rate deregulation was coming and that some licensees would no longer be subject to the oversight by the Public Utility Commissions.

As a result, the NRC increased its own oversight notably by requiring a decommissioning fund status report at least every two years, and annually in the case of a merger or acquisition or within five years of the anticipated site shutdown.

It also required from the merchant plants, full up front financial assurance as opposed to the accumulation over time that was allowed for the public utilities.

And the NRC explicitly reserved the right to review the accumulation of fund and if necessary, to modify their schedules.

We also expanded the number of financial assurance methods that were allowed based on some experience and also, to allow flexibility for the licensees.

We no longer required annual contributions. And for the first time, we recognize that the accumulated funds do make earnings and those were allowed to be counted as a credit toward the financial assurance that was being provided.

However, we had limited experience with non-utility decommissioning of reactors at that time and we've learned more since then.

Next slide please.

Some the financial instruments, I will talk about the -- but first, I'll mention the criteria for funding methods.

This was actually first published by the Commission in an advanced notice of public rulemaking in 1985. And of the 2 criteria, the degree of assurance is provided by the mechanism is the more important one. And there was a discussion of which were the highest. At the time, it was thought that prepayment was considered the highest level because the money was there and even in the case of premature shutdown, the funding was available.

The second one is reasonable cost that financial assurance needs to be reasonable because there is -- to make it available at a reasonable price to the ratepayers.

And we have several methods and I have categorized them here rather than naming them because it helps people to understand the differences between them. The first one is the cash accumulation which is prepayment or external sinking fund.

And although prepayment when you realize that it is allowed to take credit for earning is similar in some ways to the external sinking fund because you don't need the full amount up front to get credit for a number of years of earnings.

The second one is an agreement to provide cash and there is quite a variety of instruments there, surety bond, insurance, letters of credit and also contractual obligations with customers. And that turned out to be a fairly effective method in decommissioning of some of the Yankee plants because while they were wholesale plants, their customers were electric utilities and they had contracts which required the utility to pay for decommissioning even in the event the plant shutdown early. But still, it's only agreement to provide cash because this was cash that was supposed to come in over time.

There is a commitment to seek cash. This is available only to our governmental licensees because that's essentially a commitment to seek cash from a legislative body, no power reactors used that and there are a number of research and test reactors that qualify as being owned by a state university for example.

And finally, there are combinations of the above that can be used and there is a possibility that some method that we have not thought of can be proposed by a licensee and if it provides equivalent assurance, we may approve its use.

The next slide: Final thing that I would like to say about financial instrument are some of the potential trends that we have seen. And one of them is a response to increasing fund balances although last year was characterized by a number of shortfalls, at the same time, funds are being built up in some states. And a few states have created a refundable escrow account where collections from the ratepayers are held in escrow for a period of time and the State will decide sometimes on an annual basis whether those funds should be poured over into the decommissioning trust fund which cannot be withdrawn, or refunded to the ratepayers depending on the projections that the State is making at the time.

We have initiated some discussion with our licensees on this matter because there is a question of whether those funds should be reported to us as actually useful for financial assurance or if they should not be because until the State makes its decision, it's not clear whether they will be kept or not.

The second trend we have seen is using SAFSTOR as a vehicle to provide decommissioning funding assurance. The regulations permit that because you are allowed to take an earnings credit for a period of safe storage after shutdown. If you subtract out the cost of maintaining the unit in safe storage.

However, as I mentioned earlier, the goal of the regulations has long been to get full funding at the time of permanent shutdown. And in the 2002 rulemaking for decommissioning trust provisions, that goal was reiterated. And we mention it again, in a rulemaking petition by Energy Solution asking to withdraw from the trust fund. This was a goal.

So, we have a situation where the rules permit using SAFSTOR but that's in some tension with the goal of full funding at time of shutdown because SAFSTOR implies that you won't be getting your decommissioning funding and you won't achieve full funding until some time after shutdown.

We are also noticing a greater reliance on market gains to make up the amount of monies being held. And we notice that some licensees have discontinued contributions to the trust funds relying on market gains instead. Next slide please.

And this slide is 113 year history of the Dow Jones Industrial Average.

And as everybody knows, its goes up generally speaking over time but the point of this is to show that first of all, that are long term bull and bear markets. And I wanted to give people an appreciation of the frequency of these flat markets and how long they persist although it may by hard to read on the reproduction. The first one starting about 1906 was I think 18 years, the great depression, 25 years. Another one of 17 years and by this count, we are in a ten year market now of relatively flat returns. And I put this here because we want to balance the optimism that the market will rise with the realization that returns can stagnate for decades at a time and while decommissioning is a long term goal, decades are also long term and we don't want to unnecessarily delay the decommissioning because we are depending too much on market returns. Next slide please.

I'll talk about draft guidance 1229, that's -- the full title of that is Assuring the Availability of Funds for Decommissioning Nuclear Reactors. And this is meant to be a revision to Reg Guide 1.159 published in June and proposed a number of changes to our guidance.

The staff intended by this guidance to enhance the consistency between our guidance and the regulations.

One of the changes was an adjustment to the guidance on the time to adjusting the funding levels and this was thought to bring in greater consistency with regulations and 50.75(b)(2) and (3) which require plants to do an annual update of the target amount and to cover the target amount.

We reduced the time for merchant plants from two years in conjunction with the biennial report to every year when they recalculate the target amount.

And utility plants have been allowed to wait six years to address them in the rates and we suggested that they do it with every rate case.

And there is a reason for the difference between the two of them and particularly because as I mentioned, the Public Service Commissions and the rules that have worked with them have been successful in the past and the states have done a good job of keeping those funds fully funded or properly funded.

The merchant plants on the other hand have no access to ratepayers or other sources of funds and so, it's appropriate for them to maintain a closer watch on their own funds.

We had a public meeting in August of last year to gather comments on that. That was pretty well attended.

We had over a hundred participants both in person, by the phone lines and by webinar and received extensive industry comments that staff is still working through.

Next slide please: Staff is also looking at ways of enhancing decommissioning funding assurance.

In the shorter term, we are looking at regulations and guidance. I mention revising Reg Guide 1.159. We also expect to have revised our office instruction on calculating the amounts of financial assurance. That should be out very soon. And it's also going to be publicly available document. The previous revision had been removed from public distribution and that may have contributed to some of the confusion because people could not get the original document.

And also, there is decommissioning planning rule that is with the Commission for approval. The Chairman mentioned that a few times earlier in the program.

And while it's primarily a lead by FSME and geared toward material sites, there are also a few parts for reactors in that and some revised reporting requirements for decommissioning reactors to be sure that their funds are not out running their project -- I should say their spending is not out running their funding.

And it was mentioned that there is going to be more emphasis on monitoring and characterizing sub-surface contamination because that can be a large cost driver. And the earlier the licensees are aware of it the better they can prepare for it.

There is also going to be some changes on the parent company guarantee to enhance its I guess defensibility in case of a bankruptcy.

So, some other things we are working on, Pacific Northwest National Lab is looking again at the minimum formula to reassess it. We expect their report in early 2011. They have been working with industry to get actual cost data and compare that to the studies earlier made and how the formula works out with them.

In the longer term, we want to continue to work with our stakeholders to clarify the rules. I think one experience that we had with the shortfalls was a lot of discussion with licensees as to what is the shortfall. And it has to do with how we calculate it and how they calculate it and a number of cases the difference came down to whether we were using discounting future expenses back to the present with present value or not. And the NRC does not do that.

We wanted to work with them to clarify those and some other things such as reporting requirements, separation of fund issues.

We are also considering a probabilistic approach to decommissioning financial assurance. Our current rule is deterministic where earning are set at a certain rate, either two percent or some other rate specified by a Public Service Commission and the escalation is essentially backward looking and picks a number based on our NUREG that we publish every two years. We believe that a statistical method could give us technical basis to assess the probability that given a specific amount in the trust fund with certain amounts of annual contributions, and what are the chance you will actually achieve the funding target in your time frame? We can do that not just by looking at a specific rate of return and cost escalation but over a range of them to give us a better sense of whether it appears they are on track or not.

Well, thank you for time, I appreciate it and I will turn it back to Mr. Leeds.

MR. LEEDS: Thanks Thomas.

In closing, the staff's portion of this session, I would like to point out that the decommissioning regulations have been successful in preparing licensees to fund and complete decommissioning of a number of commercial U.S. facilities, including Main Yankee, Fort St. Vrain, Trojan and others.

Our regulations as you've heard and Commission policy have evolved to meet the new conditions facing the industry and the nation.

However, as you just heard, staff believes our regulatory structure needs to continually evolve to handle current situations.

We plan to have continued interaction with our stakeholders, plan to explore the differences between utility and merchant plants and their access to funds, and we want to enhance licensee ability to avoid to possibility of shortfall.

We need to maintain the nation's confidence that funds twill be available for decommissioning, that each licensee decommissioning fund remains adequate to meet its obligation.

As we discussed the majority of U.S. power reactors have adequate funds available for decommissioning and the six remaining units are on track to resolve their shortfalls.

That conclude the staff presentation and I will ask Mr. Bailey to provide his perspective on decommissioning funding.

MR. BAILEY: Thank you Eric. I'm very honored to be able to appear today before the Commission. This may be the highlight of my 30 year career as a financial assurance professional. As Eric mentioned and the reason I'm seated here with staff is ICF has been working for the past 20 years as a task order support contractor for NRC's financial assurance programs, initially on the materials licensee side and subsequently on the reactor side.

But, what we bring to NRC is also informed by 30 years of work on a variety of financial assurance programs both for Federal agencies such as different EPA programs, Department of Transportation, a whole host of state agencies, agencies in Canada and the European Commission and this work has covered a broad variety of types of facilities ranging from the small being an underground tank of petroleum, albeit, there may be 2 million of them around the country, to the very large and very few such as reactor sites or currently, looking at prospects of underground storage of carbon dioxide for long time period. So, in our work when we are tasked by NRC, we bring that breadth of experience to the technical support we provide such as on the decommissioning planning rule that Tom has mentioned.

Now, we have not been tasked to work on the issues that are the subject of today's meeting So, my comments are going to reflect a little bit different perspective.

I'm not going to be commenting from within the weeds but taking a step outside as you will see a couple of themes with respect to transparency and accountability effect my comments and there are three points -- next slide -- that I will be discussing.

And we can go to the next slide. The first has to do with the variety of roles and responsibilities and stakeholders that you have that are part of the decommissioning financial assurance policy challenge.

And the jurisdictions aren't always totally encompassing so that NRC's jurisdiction is with respect to radiological issues, FERC’s concern is with their jurisdictional wholesale power producers. You have state environmental and health agencies, who are more involved in the spending side than the accumulation side as Tom described those two sides. You have the PUCs who are involved where ratepayers are funding these costs. They are on the accumulation side and somewhat concerned with the spending side. And stepping back, next slide please, the question is given all those roles and responsibilities, is it clear how much is being or needing to be assured for radiologic, versus non-radiologic? Is there some transparency in the division of labor that all parties are aware of?

The dollar amounts as you mention, Commissioner Klein, can one easily figure out what are the dollar amounts either being assured for the different purposes and or required for the different purposes. And the question of whether the radiologic and non-radiologic funds are some how walled off from each other or whether they are commingled in a way that can allow use of funds for perhaps unanticipated purposes.

My second point has to do with parent guarantees and this is an issue that has come up with the states and U.S. EPA and may well be expected to be an issue for NRC.

Your guarantees like EPA’s are based on solid technical basis and require satisfaction of financial tests. Experience with those mechanisms has actually been excellent where it's been reviewed and researched. Unfortunately, that's rarely been the case.

And despite that solid performance and technical basis, there are lots of concerns and opposition to the use of a guarantee which is sometimes somewhat accurately characterized as a promise to pay. And I note here that the vulnerability to criticism of these mechanisms is facilitated because in a number of cases, parts of the financial test have not been brought up-to-date in the last 20 years and this is something the decommissioning planning rule would address if finalized.

I guess I do want to say as strongly as I feel about the strength of the parent guarantee, I'm uncomfortable linking it to a net present value amount of coverage.

Finally, the third point I want to make goes back to the notion of accountability and transparency and that relates to the issues that you all have been sorting out in terms of when and why should NRC or perhaps other agencies that are stakeholders intervene in the accumulation of funding for decommissioning and documenting the criteria and the processes to be used coordinating with the other stakeholders and certainly no reason that NRC can't provide the leadership but I would like to see involvement of the other parties.

And a good documented rationale, I'm a sucker for technical basis for any exercise of authority. I think that is desirable in terms of transparency and accountability.

That conclude my prepared comments.

CHAIRMAN JACZKO: Thank you for your presentations. We will begin questions with Commissioner Svinicki.

COMMISSIONER SVINICKI: Thank you all for your presentations. I want to augment what Dr. Klein said.

It took me a little time between listening to the presentations to recall the briefing he was talking about because it was a long time ago and it was hard to remember these things. But some dim details begin to be filling in in my mind. And so with NRC staff represented at the table, I don't think any of you were at this briefing.

But it was I guess two points. One is that it was engineers trying to talk to economists and that's always going to be ugly no mater how you slice it. But I do remember that it cumulated toward the end, it was orderly, every one was seated and there were briefing charts but it ended up I think you and I were at your white board, we each had markers and so did the staff briefing person and we were all markings up the same diagram

I think.

So I recall that but, the reason I mention that is that obviously, this is a complex topic. Tom, you even mentioned that in terms of getting stakeholder comments on the proposed revision to the Reg Guide, what a complicated topic this is,

When I look at the history and we heard kind of a quick overview of that in your presentation, what I interpret there, it is the regulator really trying to keep apace of changes in the corporate structure that we're regulating.

So I think we've not tried to be ahead of it but we need to be apace of it and where kind of the industry is corporately changing, we need to modify our requirement in ways that make sense.

So that's kind of what I interpret from the history and I think at this moment in time, we are struggling once again to make sure we are contemporary and that we have in place what we need.

I might since I did mention to the first panel, I have to make a note to remind myself when I tell the first panel I'm going to raise this, sometimes I forget, but Tom, you actually covered it in your presentation very thoroughly but I wanted to return to it. It is the proposed revision in the Reg Guide that on merchant plants reduce the time to adjust the funding level from two years in conjunction with the status report to once per year. And you've given the basis for when you propose that revision, what was staff's basis and I will not repeat it. But you also heard the commentary of the first panel.

Is there anything -- I wanted to give you this opportunity since I said I would; do you have any reaction to what they put forward, the other caveat being that you said the staff is still reviewing the comments received. So you alerted me that you are not done yet reviewing those?

MR. FREDRICHS: Yes, thank you. One thing I think strikes me when our licensees are talking about the long time frames involved and the amount of money involved is that they have great faith in the market being able over a period of time to reach the targets that they have had.

As prudent regulators, we need to question that and show whether or not -- whether or not those targets are reasonable and whether or not our assumption that we have in our regulations are the right ones. We now have about 12 years of experience with the earnings credit and we have learned more about how well that works.

The other thing is I guess on the timing issue is the fact that we were suggesting that it should be trued up every year. Part of that was due to our reading of the regulation but also part of it was due to the fact that we believe small increments every year are easier to handle than large increments every once in a while.

Another thing that I think I might take some issue with, that the idea that having to true up the fund on some regular basis would lead to risky investment behavior I think is kind of an overstatement of the facts.

Our regulations in fact require a prudent investor standard so our licensees are not really free to engage in any particular risky investments.

So those are some of the perspectives I have on that.

COMMISSIONER SVINICKI: I would just comment that I didn't necessarily hear from the first panel, and I will review the transcript but I didn't really hear necessarily an objection to having to true up the funds on some frequency. I think the question became more of what's the right frequency. And I addressed that question to Mr. Mothersole, again, maybe thinking it would be a helpful perspective if he is not too close to the issue to say what is a reasonable time period. And I think his response is characterized, there is no magic number and that a business cycle is a little bit longer.

But he wasn't willing to say that as the regulator, there is some really natural choice for us there. So that was that topic. But on the concerns about the parent guarantees, can you again, you know, this is the engineer/economist thing, can you help me understand what the staff's concerns are and were proposed in modifying the requirements associated with the use of the parent guarantee? What are we guarding against there in kind of the simplest terms?

MR. FREDRICHS: With the parent guarantee that’s available to all licensees essentially and one of the concerns, well there are two concerns really and one of them goes back to some of the accounting scandals around 2000 with Enron and World Com and off balance sheet types of requirements. So the parent guarantee will include an auditor's opinion of the off balance sheet transaction, whether there might be significantly adverse risk to the parent. And the second thing we are putting in there is some protection in the event that the parent company would be called into bankruptcy. We propose requiring an acceleration clause which is that if they are called into bankruptcy, the immediate amount would be immediately due if the NRC so choose to do so. It was primarily to give us a larger claim in the bankruptcy court because your votes on the settlement plan are commensurate with the size of the debt that they owe you. So those were a couple of the major thing that is I recall.

COMMISSIONER SVINICKI: Thank you. That's very helpful.

MR. FREDRICHS: If I could, expand on my earlier answer on the timing of these covering the shortfalls: The other thing that I think I'm struck hearing the licensees is that they are asking for a certain amount of time from the time that shortfall occurs.

Our regulations as I mentioned earlier in the three step process are intended to be forward looking.

The licensee know that every two years they are going to have to give us a report.

They know that before they give the report which way the markets are trending and how their funds are doing. And the real intent there is for them to use some planning ahead rather than taking that report date as the discovery date and working from there, they should be looking ahead and when they make the report, at the very least, we would expect them to at least have a plan to resolve it if not already resolving it.

That's part of the experience we had that except for one case, 26 of the 27 licensees waited until we called them and said, what are you going to do about it?

So, that's something that I think we would like to encourage licensee to do is get that forward looking response rather than backward looking.

COMMISSIONER SVINICKI: First step of course would be to come to some agreement on the magnitude of the shortfall and I think each of us on this side of table with the Exelon example asked about at least what were the differences and why was there such a large range there.

There would need to be some understanding if that was the case where your suggestion that they have a plan immediately if they calculate the shortfall to be significantly different, they are going to have a proposed remedy that would also be different.

So it seemed to me that coming to some adjudication of the agreed upon shortfall would be a necessary kind of precursor to the step that you just outlined.

I wanted to turn quickly to commingling of funds since that also came up with a number of the participants in the first panel. And Mr. Bailey, you talked about this some in your presentation. And I had asked the earlier panel about this inherit ambiguity, it’s a little bit like -- and I said I was going to resist comparisons to personal finances, but if I look at my bank account and I say well, next month's mortgage payment is in there but so is my utility bill, my cable bill and I can't tell you which dollars are for which but I know it's in there. You don't really have proof of that until you pay it out.

So is there anything that you see again given your broader experience with decommissioning funding, anything that gets to the heart of this or nervousness about the inherit ambiguity of commingling these funds?

Are there any smart people who have come up with great ways other than complete segregation of it?

MR. BAILEY: Well, there are advantages and disadvantages to commingling. Commingling by creating a pool gives you the advantage of risk sharing so that if indeed the costs for radioactive cleanups turn out to be more than needed, perhaps you can share the funds that have been put aside for none radioactive cleanup. That's an advantage, a disadvantage of course is that you have a common pool that may be drawn upon for purposes that are in conflict with purposes for which you have asked that the money be put aside.

And certainly, I could envision provisions that could be added to trust funds that might be able to provide a process if the funds remain commingled for the interested parties to try to arbitrate situations where they may be crossing the lines for the amount that each is asked to be set aside.

COMMISSIONER SVINICKI: And I guess I would just add in response that there is some commonality and effort here in that we used a lot today soil contamination or spills, that if I hire labor to go in and remediate, they are not going to pick out if it has hazardous and radioactive constituents. That is going to be one remediation that solves both,. Thank you, Mr. Chairman. I'm sorry, I'm over my time.

But I'm done.

CHAIRMAN JACZKO: Well, we had a lot of discussion about the dates and unfortunately all of us on this side of table, we probably don't understand the dates as well as we would hope or I should speak for myself, I certain don't. A year has been thrown around a lot and right now, as I understand right now in practice essentially we do is every two years, licensees are required to come in and report the status of their funds.

That's the current phase in which we find ourselves now. When did licensee actually report the status of the funds to us? When is this cycle?

MR. FREDRICHS: March 31, of the odd number years.

CHAIRMAN JACZKO: So it's almost a year ago already that they reported.
Now, so we are already a year into getting --

once we do the staff review and do all of this. So when we talk about the current practice, it's effectively, every two years they are require to report and at that point, they come to us, they tell us what the status of the funds are and we maybe have a situation in which there are things that need to be modified. It is shown that right now, that took us about a year to do that.

So, what is the year at which we are talking about -- what is the year we are talking about? Is it a year from the time they report? Is it when they report? What do we mean by when we say we change the guidance to a year?

MR. FREDRICHS: The guidance now says every two years in conjunction with the biennial report so that would be March 31 of every odd numbered year.

CHAIRMAN JACZKO: They should come in on March 31 with the status of the fund and their correction.

MR. FREDRICHS: And their correction. In fact, there was a case where that arose, I think in the 2003 report where there was one licensee who had the opinion that they had two years from the time of the report to do it.

The staff position was no, you are supposed to look forward two years and be done by March 31st in the event and that particular case by September of that year, the market had risen so it become a moot point.

CHAIRMAN JACZKO: So going back to our current situation, so effectively, nobody did what they were supposed to do here because we got accounting on March 31st. And now, it has taken us nine months to a year to get some folks to make the correction. So, at a minimum, we're not even following the current guidance?

MR. FREDRICHS: I would say that's reasonably fair. And I think the change we are going to make, you were asking about the year, is that the regulations do require the licensees to recalculate the target amount every year.

And in the guidance, it was I guess it was taken to be as of December 31st of the year. So if on for example last year, they would have calculated a shortfall, the proposed guidance would say to correct it by the end of the following year.

CHAIRMAN JACZKO: So and I think and we got some interesting things from OGC and they gave us a good look back at the historical development and it was clear at some point the Commission said we're not going to specify in the rule when you have to do this but leave it to guidance which is a double edged sword because that puts it into guidance which throws it into a year, two years, six months, two months, 25 years, I don't know what the right number is.

But, it seems at a minimum at least understanding that concept, that when we get -- the request comes in, because in theory what it was this time around was 3 years realistically because from the last reporting to this reporting was a two year period and now it has taken us about a year to get the funds corrected so we are really talking in this case about a three year time period when the current guidance says at least two years so we are not even in the current guidance so the starting point is to try to get the current guidance to work maybe before we start shortening down further to a year as we go forward but I think that certainly, and that's something that I think as we -- I'm sure as the Commission continues to look at this issue, we will figure out some way to do that. But I guess now, I was looking at it as kind of a four year, every two years they update us and I had that interpretation as the others from what I have been seeing happening around me that then, they had another two years to make good on the shortfall.

But that is not really the practice and is not what's in the guidance. At least, even if we don't change the guidance, we should be expecting in March, 31 if there are shortfalls, those should come with a kind of get well plan what that time which is about a year from now.

I don't know what that means in grand scheme of the years and all the things that we are doing but that may be a place at least to start and put some great focus on this.

One of the issues as I heard at the discussion with Exelon was about the differences in their use of

SAFSTOR.

Maybe you can talk a little bit more about what was the confusion there and how do we go forward, if there are things we can change to make the to guidance that would further clarify how if people are going to use SAFSTOR how they properly do their submittal so what we are aware of it appropriately and we can come to a better agreement as Commissioner Svinicki and Dr. Klein said in making sure at least, we understand the numbers to begin with.

MR. MCGINTY: I would say the primary confusion is that as Mr. Levin mentioned, the licensee needs to explicitly reference the appropriate methodology that they are using in order for staff to make a determination, otherwise, we default to the minimum formula. That was the primary driver.

As you know through the course of the year for plants even beyond Exelon, we have successfully resolved issues. We had a number of conference calls. My staff which is primarily located over there in that section, they are truly experts in this field.

They very successfully got to common ground and common understanding with the licensees upon discussions. It is a complex topic. It takes some amount of working through the issues but they are able to get there. So that's what I think was the primary cause.

CHAIRMAN JACZKO: Well, I think I certainly appreciate the work the staff did to do that and I think in general, this has been a success story. By and large, I think that there were certainly a lot of utilities that had challenges. There were a lot that didn't and the ones that did, we by and large made progress and the six remaining we have a path forward particularly with the SAFSTOR clarification but certainly I guess as we go forward perhaps if there is anything we can leave folks who are listening with if you are a utility out there and intend to use SAFSTOR just le us know and then it is easier. I didn't every any other questions so I will turn to Dr. Klein.

COMMISSIONER KLEIN: I guess I'll start with you, Tim. Of the six plants that are in process and about to be resolved, was there any theme that made those more challenging than the 21 that are okay?

MR. MCGINTY: I can't really come with a common theme so we discussed that in advance. Again it is working through issues.

I think the most valuable thing the staff is endeavoring, we mentioned we did a workshop in August of 2009 and we are doing a -- we have a session at the RIC, continuing to work with all stakeholders to make sure there is a common understanding and in future changes to seek to achieve clarity, certainty in the regulations and the guidance is the best thing that we can do to prevent any such issues in the future.

COMMISSIONER KLEIN: Well Tom, are the merchant plants allowed to consider market gains in their decommissioning funds?

MR. FREDRICHS: Well, they can take advantage of any gains they have made to the extent that the balance on the trust fund has risen.
As far as going forward, the regulations allow them an earnings credit of 2 percent on that balance until well, until such time as they get to

the decommissioning project which could be at license expiration or could be after a period of SAFSTOR. But they only get the 2 percent. They can't really project something else.

COMMISSIONER KLEIN: I guess Mr. Bailey, from your perspective, should merchant plants be considered significantly different than non merchant plants for their decommissioning funds?

MR. BAILEY: I would have to say absolutely yes. They live in a different world unless they have non bypassable wire charges or other mechanisms that get them back to the ratepayer. They are in the marketplace by choice and they will reap the benefits but also reap the risks of that. And from the financial assurance point of view, I would say they have to fall in a different category than the rate regulated utility.

COMMISSIONER KLEIN: I thought that Commissioner Svinicki's assessment of engineers trying to talk to economists was a very good assessment. In terms of us trying to come to a common language. I will repeat a question that Commissioner Svinicki asked at our briefing many months ago, are there any utilities that have a surplus in their decommissioning funds?

MR. FREDRICHS: Yes, there are.

In particular the California utilities where apparently, the State has decided that more money is better than the minimum amount for NRC.

COMMISSIONER KLEIN: And then, her follow-up question was, if a utility that has a surplus in their decommissioning funds wanted to, can they come in and use some of those funds to move some of these large components off-site with the understanding that they might have to replenish those funds at a later point if they were not sufficient?

MR. FREDRICHS: Well, I believe the staff position on that is that the regulations would state that once money is into the fund,, that withdrawals are not permitted except for decommissioning purposes.

So, the staff's position would be that it should not be so used.

However, it is also possible in extraordinary cases to get an exemption from that and it would depend on I think the precise case that's before us. In the event where there is a public service commission there is extra funds and it may be that there is a set of circumstances where it would be approved. But staff position at least on the face of it would be that generally speaking we would not entertain withdrawals from the decommissioning funds.

COMMISSIONER KLEIN: So is the staff's position that removing those large components is not decommissioning?

MR. FREDRICHS: To the extent it is done during the operating phase, yes, that's true.

The definition of decommissioning is to remove residual radioactivity in order to release the site. Radioactive waste removed during operation is not decommissioning. It's operating cost.

MR. MCGINTY: Commissioner, if I could, could you also discuss how the use of subaccounts would be germane to this topic?

MR. FREDRICHS: Yes. It is a little different view on it but, particularly in the case where there is a State Utility Commission involved but a merchant plant could do the same because they still have to collect money that certainly, a plant could set up forward looking saying starting today I'm going to start collecting money to dispose of large components and assuming they could show decommissioning funding assurance, they might be able to reduce contributions to the trust fund for . example on a going forward basis and in fact, the South Texas project recently came to that sort of understanding with the State of Texas. Although the plant itself was a merchant plant, nonetheless, the State has arrangements for ratepayers to pay into their trust fund. And they recently set up a series of subaccounts where some of the decommissioning. collections will be paid into an account to dispose of their reactor head rather than being paid into the decommissioning trust where it would be they couldn’t withdraw it.

So there are ways for the licensees to approach the problem without necessarily withdrawing from the funds from the trust account.

COMMISSIONER KLEIN: Are there many utilities that have subaccounts that could let them remove vessel head and steam generators if they so desire?

MR. MCGINTY: I would have to defer to Tom.

MR. FREDRICHS: The one we were aware of is South Texas partly because there is a provision in their trust fund to notify NRC if there are withdrawals going on so they notified us. I mean, I mentioned before, refundable escrow accounts that some states have set up and you could imagine the case where that's in the escrow funds, not really in the decommissioning funds and the State could refund it, pour it into the decommissioning fund or authorize it for use in these large components removal purposes.

COMMISSIONER KLEIN: When you established your decommissioning guidelines, were you considering the possibility of removing large components at that time?

MR. FREDRICHS: Well, if you're referring to the latest guidance that we reviewed with the timing on the funding, I would say no, that was not something we had looked at that point.

COMMISSIONER KLEIN: You also talked that you had a draft Reg Guide 1229 out for comment. Has there been a theme of comments you been getting back?

MR. FREDRICHS: Well, the theme is really amazing variety and breadth of comment, although kind of summarized them all, I would say that the comments which are essentially industry comments are that our rules are good now, they have been successful in the past and no change is needed.

And that there are concerns for financial disclosure requirements. There are concerns that the use of parent company guarantee as staff believes it should be used could impact their bond ratings. There is concern that truing up the trust funds too quickly could cause sub-optimal investment decisions, that sort of thing. But it's just a wide variety.

COMMISSIONER KLEIN: What has been the response to the possibility of using PRA for the decommissioning funds?

MR. FREDRICHS: Well, we have not really had responses yet because while we were working through I think the comments and also in preparation for this in trying to look forward to the future, that this is I think probably, the first mention that we might want to do that.

So, that's why we were putting it in the phrase of considering it and of course, we would be welcoming a lot of comment and information on it.

COMMISSIONER KLEIN: Thanks. I would encourage you as you move forward to how you handle your decommissioning funds to consider really the best way to handle some of these large components, that if utilities want to remove those off-site as you heard from the State of New York and I have heard from others where several of the states would like the opportunity for those components to be moved, and so I would encourage you to look at a balance of how one can do that but yet still maintain appropriate funds if various states and utilities want to do that and not just get locked in on no you can’t and so I encourage you to consider that as one of your options as you move forward.

Thank you.

No further questions.

CHAIRMAN JACZKO: Well, thank you. I will just close with a couple of thing and one I think certainly Dr. Klein brings up an interesting point on the large components the staff did have a petition for rulemaking. The staff denied so staff's position has been clear on this issue and the Commission didn't take any action at the time.

So certainly baring any Commission action, the staff position is what it is and I think it will stay that way.

I think it's interesting when we talk about these issues of large component decommissioning, do you know how much a s steam generator replacement costs a utility?

MR. FREDRICHS: I can recall being at Point Beach. It took six months to do it so half a year's revenue. It's expensive

MR. LEEDS: Hundreds of millions of dollars.

CHAIRMAN JACZKO: How much does it cost to dispose of steam generators? Does anybody in the audience?

AUDIENCE MEMBER: The South Texas proposal for the large component removal estimated it at about $20 million.

CHAIRMAN JACZKO: So we are talking about hundreds of millions of dollar projects, a cost of $20 million. I continue to believe there is a way for utilities to find the resources to appropriately dispose of those steam generators without needing to use decommissioning funds. They find the resources to do hundreds of millions of dollars in steam generator replacement.

We are not talking about a significant cost relative to steam generator replacement, of course, the steam generator replacement often has advantages from a revenue standpoint. It generates additional revenue. It does a lot of things that potentially provides the incentive for longer operation of facility, all of those kind of things. So, there is a tremendous financial incentive to it. I think in the end from a safety and a radiological dose perspective, the right answer is to move those steam generators right away regardless of what the funding mechanism is and I don't think it is a prohibitive cost at all in the entire program of steam generator replacement.

So I think as we go forward, it is important to keep that in mind as we do this. But I think this has been a very informative meeting and I think the Commission probably has some interest I would sense on the Reg Guide as you go forward and figure out the right mechanism to get that up to the Commission so we can review it and make any comments or give you feedback and suggestions on that as you go forward. But appreciate very, very good presentation. I appreciate the work you did in the last year to get these decommissioning funding issues solved and the whole issue put behind us until next year. Thanks.

(Whereupon, the proceedings were concluded)