UNITED STATES NUCLEAR REGULATORY COMMISSION

BRIEFING ON NEW REACTOR ISSUES – PART 1

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WEDNESDAY

OCTOBER 22, 2008

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The Commission convened at 9:30 a.m., the Honorable Dale E. Klein, Chairman presiding.

NUCLEAR REGULATORY COMMISSION

DALE E. KLEIN, CHAIRMAN

GREGORY B. JACZKO, COMMISSIONER

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PANEL 1: STAKEHOLDERS

CAROL L. BERRIGAN, Sr. Director, Industry Infrastructure, Nuclear Energy Institute

RON PITTS, Sr. Vice President, Fluor Nuclear Power, Fluor Corporation

HAL THORNBERRY, Vice President for Nuclear Construction, Shaw Power Group

BRIAN P. REILLY, Principal VP, Manager of Nuclear Operations, Bechtel Power Corporation

JOSEPH HUNT, General President, International Association of Bridge, Structural, Ornamental and Reinforcing Ironworkers Union, AFO-CIO

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

CHAIRMAN KLEIN: Well, good morning. We have two hearings today. This morning we'll hear from industry and then this afternoon we'll hear from staff. Obviously, a lot of activities have occurred on new reactors, so this is a good opportunity to have an update.

One thing the Commission was looking forward to hearing from industry is while we've been heavily engaged on the COL process, we'd like to hear what's going to happen after that to make sure that industry is ready and make sure there is no activities.

Any comments from my fellow Commissioners?

COMMISSIONER LYONS: Looking forward to the meeting.

CHAIRMAN KLEIN: Well, Carol, I think you get to start.

MS. BERRIGAN: Okay. Thank you very much, Chairman and Commissioners. It's a pleasure to be here with you this morning. I would like to introduce the rest of our panelists.

We have a great panel here this morning. Ron Pitts, Senior Vice President of Fluor Nuclear; Hal Thornberry, Vice President for Nuclear Construction with the Shaw Group; Brian Reilly, Principal Vice President and Manager of Nuclear Operations for Bechtel; and Joseph Hunt, the General President of the International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers with us this morning.

I'll kick off the presentation and talk to you a little bit about how from

NEI's perspective we are looking at preparing for new nuclear construction, starting with -- if you can go to the first slide -- with Preparing the Workforce.

Briefly, I will describe the trends and status in the industry, the industry's activities that we've undertaken so far and our future plans to prepare the workforce for existing plants and new nuclear and our progress in these areas.

Before I begin, I wanted to commend the Nuclear Regulatory Commission on your Educational Assistance Program, on your grants and scholarships and your curriculum development program that you've implemented in the past year. We're really seeing some positive results from that program. So, thank you very much for your efforts in that area. Go ahead to the next slide.

Based on NEI's 2007 Workforce Study, when we looked at operational nuclear plants, the 104 operating reactors, we found that 35% of the onboard staff would be retirement eligible by 2012. Now, one of the things I want to point out specifically in these numbers is the term "retirement eligible".

I found that often that it's misinterpreted as "going to retire in 2012" and it's certainly not. It simply means they would be eligible to retire in 2012.

We're seeing across the industry a growing demand for skilled

workers. By some estimates there will be over $750 billion in energy infrastructure investment by 2020 requiring engineering talent, construction management, operations, as well as skilled craft workers.

The industry is currently supporting over 42 community college programs focused on nuclear workforce development and there are also 19 state-based workforce development efforts underway covering over 20 states in the country.

One of the important elements in the state-based program is so much of workforce development actually occurs at the state and local level, so the nuclear industry working with our peers and the rest of the energy sector and construction sectors are engaging locally as well as at the national level.

If you go on to the next slide, we've seen progress -- significant progress in key areas. We're seeing nuclear engineering enrollments continuing to climb, graduation rates continuing to go up. We see this as a market response due to investment by the Federal Government, actions from industry, as well as a lot of the positive media coverage and buzz that the students are getting about the wonderful job offers their peers are getting upon graduation.

We're seeing the development of workforce programs at community colleges as I've mentioned; everything from radiation protection technicians, I&C technicians, welders and others and the expansion of

"grow your own" efforts looking in the local community down through the high school and even to the middle school level to raise career awareness for students about our industry.

If you go onto the next slide this will show you generally the number of programs that are supporting the nuclear industry. They're very closely located to the nuclear power plants that are there. This is part of our "grow your own" effort.

One of the things that we're beginning this year is a program to look at deploying a uniform curriculum for these community college programs to really harmonize and raise the quality level of the programs at the community college level to support the existing fleet. Go onto the next slide.

The other area I'd like to speak with you about this morning is the supply chain. We understand that there's been a lot of concern in this area. And what we've found in looking at the supply chain are some key challenges.

We're looking at how do we increase the domestic capacity to support the nuclear industry? Looking at how do we do better out read to potential suppliers to support the industry and explain the market opportunities to them recognizing that it is a global supply chain.

However, regional and local suppliers are also very important in new nuclear construction as well as support of the existing fleet.

One of the other activities that we've undertaken is how best to expand domestic supplier access to the foreign markets. Looking at the nuclear renaissance, it's not only happening here in the United States, it is happening globally. There are market opportunities for U.S. industry and many markets around the world from China to Europe and most recently to India with the recent 123 Agreement.

We're also looking at how to better include nuclear and clean energy initiatives. And in the past year a group called The International Clean Energy Alliance was formed to explore those opportunities for nuclear as well as hydropower, wind power and other technologies to be better brought to market.

Some of the activities -- if you go on to the next slide -- that we've undertaken in this area include a manufacturing capacity assessment that we undertook in 2007 to look at the areas where we needed to focus our efforts.

We also conducted this year three outreach events. The first was in Columbia, South Carolina; the second in Cleveland, Ohio; and then in June in San Antonio, Texas. Our goal in these events were to reach out to industry and different parts of the country to explain the market opportunities to them, to explain the quality programs required to enter the market and also to help them meet the key procurement personnel from both the NSSS vendors and also the EPCs that would be their customers.

We found that the response to these was excellent. Nearly 900 people participated in the three workshops representing 440 companies across the country.

The initial feedback that we've gotten from the folks who participated from the NSSS and EPC side is good response from the companies that participated signing up with them, registering on their vendor lists and things of that nature.

We have recently met and have now planned to form more outreach workshops for 2009, roughly once a quarter. We're also working on other forms of outreach from working with different types of trade associations. Different types of components have organizations that represent them; reaching out there. Also working with some of the major conferences to raise awareness about the market opportunities in nuclear.

We're also doing a lot of media outreach as well, sharing information about the market opportunities for folks to get into the industry and that's both safety related and non-safety related components, the broad opportunities there. Go on to the next slide.

In the area of expanding domestic supplier outreach to international markets, we're seeing a lot of progress in that area. The Department of Commerce has initiated an interagency working group as well as announced a Civil Nuclear Trade Advisory Committee to allow U.S. industry to interface with commerce and other agencies on the export

promotion of civil nuclear technologies.

We've seen the deposit of the Convention on Supplementary Compensation which is a key component in establishing a liability regime for U.S. companies to work overseas in the nuclear sector.

We have recently seen the U.S.-India 123 Agreement being signed and we're seeing an increasing engagement in foreign markets across the board, including things like participating in the IAEA General Assembly with the U.S. commercial delegation.

And finally, the last slide, we are seeing results from all of these efforts. This is the most recent report that we've received from ASME's Nuclear Subcommittee on Accreditation. We're seeing a real increase in the number of U.S. nuclear certifications.

What's important to note in this, this is not the number of U.S. companies holding certificates, but this is the number of certificates held by U.S. companies. So, some companies will hold multiple certificates just -- there's a lot of different sort of numbers floating out there and I want to be very clear about what these numbers are.

What we're really seeing that's very positive is in just in a year's time we've gone from 225 certificates held in the U.S. to over 250, nearly 260 certificates held.

CHAIRMAN KLEIN: So, are these certificates held in the U.S.?

MS. BERRIGAN: Yes.

CHAIRMAN KLEIN: So, it doesn't include foreign certificates?

MS. BERRIGAN: I'd have to double check, but I don't believe so. I think these are held by U.S. companies. I don't know that this necessarily covers foreign companies holding certificates for facilities in the U.S. I'll double check on that.

With that, we are seeing some positive results. We're seeing a lot of increased interest and attention in this market segment. I've got just less than one minute left, so with that, I'd like to turn the floor over to Ron Pitts who will talk to you from Fluor's perspective.

MR. PITTS: Thank you. I'll give you a little bit of overview on the work we have right now in the nuclear activities. We are the EPC contractor for Toshiba on the South Texas Unit 3 and 4 project. We have a contract with Duke on the Oconee Tornado Barrier Capital Project at their facility in South Carolina.

We are the EPC contractor for the USEC Uranium Enrichment Plant in Portsmouth, Ohio. We recently were awarded the Savannah River Site M&O contract and we have other DOE clean up activities that are ongoing at some of the other sites. Next, please.

We really want to talk to you today about the workforce issues in Texas and specifically about the South Texas Unit 3 and 4. We do know

there is a significant shortage of skilled craft labor currently and it's still being projected right now. We do not know what the economy will project out later, but it will have some impact certainly.

The Texas area is certainly undergoing a significant construction boom right now. A lot of that is a being influenced by the Hurricane Ike and its predecessors, all of them. If you look at the Houston area specifically, most of that market right now is dominated by the open shop craft workforce. So certainly, our challenges are where we get the craft, how we train them and more importantly how we retain them. Next slide.

Workforce Solutions: I do want to go ahead and let you know that our workforce solution at South Texas is a combination of open shop and union construction. We need both labor markets working with us on that project. Certainly, to reduce the on-site needs will be through modularization.

Many of today's reactors and specifically the Toshiba ABWR has significant modules planned and we plan to increase those numbers as we go through the constructability.

A little bit of Fluor. We've used modules extensively all over the world for the last 30 years on over 1,000 projects globally.

Attracting, training and retaining current and new craft workers are the issue. We must attract them, we must train them and we need to employ new craft now. You will see some of the slides later, the OJT,

continued development is key for our nuclear construction skills in the future. Next slide.

This is, I just want to depict a little bit of our recent U.S. craft experience. Certainly, we track a little over 11,000 craft right now on all our projects in the U.S. A significant number, 118,000 for the last seven years have been on our payrolls.

If you look specifically in the Texas and the Gulf Coast area right now, we have a little over 4,000 craftsmen working for us, but over 100,000 of those have worked for us since the 2000, 2007. So, if you look at Fluor the significant portion of our workforce in the open shop arena is in the Texas and Gulf Coast area.

Talk about craft workforce development training resources; training for our skills assessment and certification, we do train to the NCCER curriculum. We train craft online for skills assessment. We have craft performance verification online and we have field supervision development online so they can take the online courses or they can come to our training facilities.

Again, NCCER on the training variable delivery platform so it's not geared to just one specific type delivery. There's other delivery platforms and it's certainly individually paced on the individual.

Our training focus right now is welder, entry level and upgrade training. We do this through tech schools. Fluor does have two centers;

one is in Houston and one is in Louisiana. But on every job that we have, we have site training for upgrade skills.

Training -- target training developed through Fluor's advanced helper-level employees, mid-to top level helpers and we're not training just for NCCER qualification and certification, we do train the whole gamut.

And we'll talk a little bit about implement, placement and retention. We are proposing on the South Texas project 100% hiring commitment. And we will talk about that and then certainly we'll formally track and manage that workforce as they are trained. Next slide.

To give you a little bit of flavor on where we have trained skilled craftsman and we do it worldwide on where Fluor performs construction activities. Certainly the largest majority of those skilled training is in the United States. Next slide.

Specifically for the STP Labor Action Plan key elements underway and to be deployed. We have already early identification of the problems and potential resources. We've developed public and private partnerships already. We have identified the target audience that we're going after. We've developed the paths and methods to reach the target audience and we are identifying the most effective incentives to attract and retain the audience. Next slide.

Specifically for STP, if you look at where we really believe the majority of our craft workforce will come from, we want to develop that

craft workforce locally. It is a regional area that we can deal with. We've hired a local educator training coordinator out of the Bay City area. We are in the process of canvassing the high schools within this 100 mile radius to see what high school students would be interested.

We're supplementing that through, right now, regular job fairs and advertising. As far as arranging training and infrastructure and course work, we've developed a local training center in Bay City. We've partnered with local colleges to conduct the training and it's being funded through public and private partnership.

Assuring continued local development opportunities. Once you train individuals, you've got to be able to put them on a job. It doesn't do any good to train them and then send them up to the house. So, that's what I was talking about.

We've got 100% commitment to once we train the craftsmen to put them on the job and then they can go through that OJT training on the job and also they can go through the on-site training programs.

Right now, we work with others to ensure local OJT graduates, certainly Fluor with several of our projects in the Texas area and the Gulf Coast area. We've discussed this program with Bechtel and their projects that they have and they can take advantage of this training also. And certainly, the STP outage and O&M work as it comes forward, we will be using them on that.

We'll offer advanced training through Fluor's Crafts Development Program and again, regularly communicate with all graduates throughout the licensing process to when we need them back at STP.

The question was asked really and truly on what are we learning from Japan? Various forms right now that we are developing within STP projects -- the biggest one right now that we've got going to transfer the knowledge of the Japanese construction of the ABWR in Japan. We are on our fifth team meeting.

Right now, the participants on that is certainly the STPNOC Group, Toshiba and TANE. They've brought in IHI, Kajima, and also Sargent & Lundy. And we go through three days of intense knowledge transfer, how they built this unit in Japan and how we will be build it in the United States. And we focus on construction techniques, certainly construction sequencing.

We are talking right now on ITAACs and how those apply as we go through the modularization and into the field; certainly, what the quality requirements are. Constructability, logistics is very important on how we get the products in and certainly modularization and where they will be manufactured and how they will be transported. And certainly, others as we go through it. Thank you, sir. Hal?

MR. THORNBERRY: First of all Chairman Klein, thank you very much for the opportunity to address yourself and the distinguished

members of the Commission. Today I'm going be addressing basically three different areas. It's Shaw's positioning in regards to the nuclear renaissance issues associated with supply chain and construction readiness. First slide.

The AP1000 Consortium consists of Shaw and Westinghouse and is advancing quite dramatically in regards to two EPC contracts: one with Georgia Power for two units near Vogtle and another site with South Carolina Electric & Gas and Santee Cooper at the Summer site. So, there's a lot of activities progressing currently in terms of design, execution planning, processes and procedures.

In addition to the two units that Shaw has signed contracts for domestically, we also have an interim agreement with units near Crystal River and we're the EPCM contractor for two sites and four units in China. So, there's a lot of activities moving forward.

Taking advantage of the development and the experience that we are gaining from these early activities on these current sites is helping us position ourselves for the actual construction activities as they evolve over the next two or three years. Next slide.

In addition to the current AP1000 activities Shaw has significant experience from the maintenance activities that are associated with 42 of the 104 nuclear plants. And in addition to that we have a pipe fabrication facility that Shaw started some 20 years ago and currently produces in

excess of 50% of the pipe used in the United States and is the largest U.S. supplier of nuclear grade pipe fabrication. And again, those are issues that position us well in regards to moving forward with new nuclear work.

As we evolve into the issues associated with the current facilities that we have EPC contracts for -- the next slide -- we are putting together a module fabrication and assembly facility. It's new. It's going to be located near Lake Charles, Louisiana. It's a 600,000 square foot facility and that, too, is a joint venture between Shaw and Westinghouse.

The facility itself will be used to construct the modules that will be integral to the new EPC contracts that we will be constructing and we'll also be looking at other fabrication, but at the peak there should be around 1,400 workers at that facility. Next slide.

This slide shows seven different locations in the southeast United States in which Shaw is currently the EPC contractor or have interim agreement to proceed with work on the AP100 and there's an additional four facilities that we are engaged in discussions.

So moving forward, there's definitely activities associated with increased interest in the AP1000 and the domestic environment. In addition to that, there's other international opportunities that we will be pursuing.

So, from the standpoint of being positioned to move forward with

the new construction, Shaw is not only well positioned, but actively engaged in moving forward with these facilities. Next slide.

Identified a number of supply chain challenges in regards to nuclear work. Identified our limited safety related certified suppliers that we are going to work to increase the numbers of those, both from a company standpoint but also from an industry standpoint.

There's going to be increased competition for shop space with other infrastructure projects. That's one of the drivers that we need to take a look at from the standpoint of what we have to offer from a fabrication facility in the Shaw network of shops.

Third one is we need to validate the shop QA programs that meet requirements. We've seen a number of instances recently in which QA programs based on lessons learned that we have from the industry, both domestically and internationally to ensure that the QA programs meet requirements moving forward. Next slide.

We need to also confirm suppliers have appropriate attention to detail and evaluate the progress to prevent fraudulent parts and components.

From a construction readiness standpoint - on the next slide - we are actively engaged in reviewing lessons learned from recent nuclear projects including MOX, LES, Browns Ferry experience, our own AP1000 experience in China and then other industry nuclear projects such as

Olkiluoto 3 and Flamanville.

We are actively involved in evaluating INPO reports and any other industry opportunities that provide us lessons learned so that we can incorporate those lessons learned in our processes, plans and procedures moving forward. Next slide.

We are actively engaged right now in looking at our processes and procedures and in measuring our processes and procedures against NRC requirements including ITAACs and inspection programs to ensure that those programs and procedures that we put in place moving forward meet the requirements.

We're actively engaged in a flow mapping process to outline the construction activities from the point in which we receive engineering and procurement to cover construction and installation processes and procedures and also including turnover and documentation processes.

And we're using those flow mapping opportunities to actually identify points in the process of a facility under construction so that we can prepare readiness plans moving forward to the next steps, such as first concrete; being able to take a look at readiness at that point in time to moving forward with construction or material received or other activities associated with the construction of the facility.

And the third bullet is implementation of construction readiness reviews in accordance with CII or other industry guidelines. Next page.

We have the same challenges that Ron talked about and that is certainly challenging the industry from the standpoint of construction talent. We have a focused team that is working on identifying not only staff requirements, but construction craft requirements to meet the challenge.

At peak we would estimate that we would need approximately 10,000 craft, but that doesn't include other infrastructure activities. So, there is definitely going to be a need for growing the skills and the training activities that Ron talked about which Shaw is actively engaged in as well.

Of course, we keep track of the demands for craft across the industry through labor surveys and both internally and external resources. Next slide.

Further on workforce development and construction readiness, partnering with outside organizations, such as NCCER to attract skilled resources and we have developed and continue to use standardized craft training programs and certification processes.

Shaw has a substantial workforce that works outside the nuclear industry in our fossil and other areas of our scope of work for Shaw. We'll be able to draw upon those resources and further train those individuals to meet the challenges of the nuclear challenge.

Last slide: Just put down two or three bullets of how the Commission can help in regards to moving forward. To the extent

practical to allocate resources for those nuclear facilities that actually have signed EPC contracts, such as with Georgia Power and South Carolina Gas & Electric.

The module fabrication facilities: Since it has a lot of similar characteristics associated with construction to the extent that we can put that under the NRC construction program.

And continue to emphasize the support of vocational and technical programs to further develop the workforce necessary to construct the next generation of nuclear facilities. And with that, Brian?

MR. REILLY: Good morning. As I'm responsible for the execution of our projects worldwide in nuclear power, I thought I'd use three live examples of things that we're doing on projects in the area of craft labor, qualification of vendors and staffing of a professional workforce in the area of preparing for new reactor construction, getting beyond the licensing phase and moving into the next steps. Second slide, please.

In April, back when the Building and Construction Trades Department of the AFL-CIO signed a Memorandum of Understanding that we were going to put in place a project labor agreement for the Calvert Cliffs 3 nuclear plant. It's an important document because it's a commitment from the project and from organized labor that we're going to use organized labor on this project and the unions are going to staff it with qualified and skilled people.

It's also important because it brings another major significant stakeholder into the process for the success of the nuclear renaissance with organized labor. It also provides a framework in which we can go forward with the planning for the new unit at Calvert Cliffs.

The project labor agreement right now we're currently in the negotiation stage for it. It's on track to be in place by the end of the year. One of the things we're doing is we're looking back through the different labor agreements that we've had over the years from both the management practice side and the labor practice side and trying to got the best practices in place for this project.

To get alignment on what's involved in the project, we held a kick-off meeting with the internationals. We had all 15 international unions represented in our office in Frederick, Maryland. We provided a detailed overview of the plant, the configuration, the layout, the systems and the commodities including the quantities.

We walked through the process from preliminary planning through engineering and procurement and on into construction. We wanted to try to drive home the sense of scale associated with this project so that everyone was starting from the same page as what was going to be required in the way of resources.

And the final step in that orientation process. In November we're taking the members of the unions over to the Flamanville Plant in France

to see an EPR under construction.

And we believe that these series of activities associated with the PLA at Calvert Cliffs, this is an excellent first step in establishing the framework going forward for planning and getting in place the workforce that's going to be required to construct the plant. Next slide, please.

You have heard some of the front end rebuilding of the supply chain from Carol, Ron and Hal. Bechtel is the lead constructor for the waste treatment plant out in Washington State, which is an NRC licensed facility.

We recognize the need to expand the supplier base when we got on the front end of the project, so we put in place a process to do that. We did a gap analysis that established where we needed vendors; either there were none left in the industry or there weren't enough to have a competitive environment.

We identified the candidates. We had them submit their written program, evaluated that. If they met that hurdle, we did shop inspections and then we let orders with the vendors that made the cut for those shop inspections. And as part of that, we put in place a source inspection program and a surveillance program to make sure that based on their performance we were staying on top of the vendors for their production.

In the process, this is something that evolved over the first few years of the project. We were able to generate lessons learned and put it

back into the process.

We've evaluated over 500 suppliers since the project inception and we've added to our evaluated supplier list almost 200 suppliers that were not available for supply and safety related equipment and material before we implemented this process.

And this covers pipe, pumps, electrical equipment, cable, even structural steel. So, we have a significant challenge on the supplier's side, but by putting in place a plan on this project we are to help overcome those challenges and we see this happening on a project by project basis.

On Calvert Cliffs 3, we're doing the gap analysis right now and identifying the vendors that we need to go work on for that project. Next slide, please.

Third topic I wanted to talk about is professional resources. I thought it would be interesting to compare two major projects that we've been working on over the last six years. They have a lot of similarities, but they also have some differences.

Browns Ferry and Watts Bar both projects for TVA in the same region of the country, large projects. The mobilization is almost exactly five years apart on these projects.

On Brown's Ferry, we mobilized back in October of 2002 and we were bringing on about 25 engineers a week. Our scope was detailed engineering and start up. We controlled the pace of the on-boarding so

that we ensured an understanding of the procedures and the work processes by the workforce we were bringing in.

In 2002, we were just on the front end of this resource crunch that we've been experiencing over the past few years so we were able to get the people fairly readily. The challenge on that project was towards the end as people were leaving and going on to other opportunities replacing them, which led into the time frame of the Watts Bar mobilization.

And we were able to replicate the Browns Ferry staffing pace with some key differences. The supervisory personnel were more of a challenge, but they were still available. It was a bit more competitive pricing to bring them on board, especially when we were bringing from outside the company, but they were still available.

The biggest difference is the picture you see on the slide. It's the next generation of our workers. They weren't available in the numbers in 2002. They are now. They represent about 15% of our workforce and the availability is growing. Carol mentioned the increasing graduation rates. There are people that are coming into our industry and we're taking advantage of that.

So, there is an experienced workforce that's still in place and we're using that workforce with this next generation to make the knowledge transfer. And I know that that's also happening on the regulatory side, too. So, it's something that is going to be able to facilitate the construction of

the next generation of plants. Final slide, please.

I just wanted to give a brief overview of what our major nuclear activities are. We have a very robust business in nuclear power. We're active in many sectors of the business. We have ongoing projects in the operating plants sector. We're doing steam generator replacements, extended power uprates, general engineering services on operating plants throughout the country.

On the new plant front, we've been very active on the licensing end. We've performed two ESPs with clients, seven COLs. We're the detailed design engineering vendor for the EPR project. And we're doing project planning for new units for other utilities.

I mentioned a little bit the Watts Bar 2 completion. We have 1,500 people on that project right now. We're going to peak at 2,300. We've got about 3,000 people on our projects right now and that's just the commercial nuclear power side of our business. It doesn't take into account WTP and folks that we have working for Bechtel at the labs.

Just one data point in our Frederick offices here. We've brought on 700 new engineers from outside the company, many of those associated with the nuclear power business sector. So, we have a very healthy and growing nuclear power business and it's positioning us for the next generation of construction. Thank you.

With that, I would like the turn it over to Joseph Hunt, the General

President of the Ironworkers.

MR. HUNT: Thank you, Brian. Thank you, Chairman Klein and members of the Commission for inviting me here today for this most important discussion.

I come before you today not just as General President of the Ironworkers Union, but as a representative of the Building and Construction Trades Department, AFL-CIO.

The Building Trades Department is an alliance of 13 national and international unions which collectively represent 2.5 million skilled craft workers in the United States and Canada. In addition to the 13 unions officially affiliated with the Building Trades Department, we maintain corresponding relationships with the International Unions of the Operating Engineers and the United Brotherhood of Carpenters.

Suffice it to say, the men and women of the Building and Construction Trades Union are the fastest, are the safest, most highly trained and productive workforce known in North America.

A recent independent project analysis study concluded that in the U.S. union construction projects were almost 17% more productive than non-union projects. And that is a point worth noting as we come together here today to discuss whether or not the U.S. construction industry is ready to meet the challenges associated with the construction of a new generation of nuclear reactors.

From our perspective, I can give you a confident answer: Yes, yes the building trades are. We recognize that an up and coming environment where the construction operating licenses will be issued will be part of the Nuclear Regulatory Commission's statutory responsibility to ensure and regulate a safe and healthy environment surrounding both the construction and the operation of these facilities.

We fully recognize that public confidence and credibility is critical in this regard. First, the building trades operate the finest and most comprehensive training programs for skilled crafts people at over 1,000 facilities across this nation. And collectively, our unions spend over $750 million on this training every year.

And rest assured, safety and health is a primary component in all of our training programs. In fact, the quality and safety are paramount in the culture of the building trades.

But in order to successfully meet the challenges associated with the construction of an entirely new generation of nuclear power facilities in this county we have to deal with the realities associated with the current and future workforce projections.

Put simply, the current supply of skilled craft people is insufficient to meet the projected demands. At the core of this problem are a few root causes.

First, is the demographics. Our current skilled workforce is aging

and nearing retirement age.

Another root cause is economics. The North American construction industry has failed miserably to maintain levels of compensation that are necessary to attract the best and the brightest to this industry.

Lastly, we continue to witness a high proportion of the so-called "open shop" or non-union sector lagging behind the organized union sector of our industry when it comes to making the necessary investments in sustained skilled workforce development and training.

Many open shop contractors are pursuing a misguided strategy predicated upon building a cheap, low-wage and exploitable workforce comprised of significant numbers of untrained workers. As you can imagine, this results in the strategy that are predictable, unreliable, low-quality work fraught with safety and productivity issues. Much of the non-union industry's short-term vision competes with the long-term needs of our industry.

Now, due to the current economic troubles that our nation is currently experiencing, the demand for skilled craft labor may actually fall as the need for capital for certain heavy and industrial projects become scarce.

However, should the economy rebound in a significant fashion over the next 18 to 24 months, we could easily return to that "perfect storm" scenario of high demand and low supply in the skilled construction labor

market. For the nuclear industry, that will especially be troubling.

Thirteen of the 19 "First Movers" - these plants that will most likely move into construction phase first - are located in the Southeast or South Central states. Those are precisely the regions where labor shortages are expected to be most challenging.

Indulge me for a moment while I do a little math. Each new reactor facility will require roughly 4,000 skilled crafts people at peak construction. Let's be conservative and say that only half of the 19 first movers - nine or ten of them - actually break ground.

Conservatively, the peak craft demand would be in the neighborhood of 36,000 to 40,000 workers. If the craft ramp-up begins in 2010, like Calvert Cliffs in Maryland being the first, the projected overall peak would be sometime between 2012 and 2015.

We need always to keep in mind that most of these planned facilities are to be located in remote, small town and rural areas where craft labor supply is smallest and where the challenge of providing the necessary skilled craft manpower will be the greatest.

First, you should know that we have performed a critical needs analysis focusing on the construction of the 21st century nuclear power generation facilities and we are engaged in ongoing discussions with the nuclear industry leaders, including utilities, contractors and Nuclear Energy Institute.

As a result of these discussions, the Building and Construction Trades Department is now developing the framework for a groundbreaking "Nuclear Power Construction Labor Agreement". This framework is an unparalleled, no-nonsense approach that recognizes and makes a commitment to the national importance of nuclear power.

It is designed to address the many unique challenges of nuclear power construction. It is based upon a regional framework, rather than a single site approach.

Perhaps most importantly, it is structured to maximize efficiencies and contain costs. Specifically, the framework of this agreement will be designed to: (1) address shortages in one craft with available workers from another craft; (2) allow 100% portability for outage work for the same owner so that workers can be used in a manner the owner deems to be most effective. And if the same owner starts another project in the same region, the agreement would permit the contractor to transfer up to 20% of the workforce to jump start the new project; and (3) mandate the use of apprentices and other sub-journeymen workers to contain unit cost and to encourage efficient crew composition.

And (4) - this is very important, I believe - establish on-site or near site multi-craft training facilities in order to ensure a steady supply of qualified workers to provide specialized training for journeymen and apprentices and to provide a location for vendors to train and certify

workers on the installation of the specialized equipment; (5) provide a commitment to train nuclear plant operations and management personnel for a utility by integrating them into the construction phase and rotating them throughout the various craft disciplines. This would provide a well-rounded employee who understands in greater detail the workings of the entire facility; and (6) mandate OSHA-10 safety certification for every employee as a condition of employment.

And finally, each project will be staffed with an individual craft steward who will be trained and certified in their union's "Code of Excellence" or "Accountability" program and will be given complete authority to demand compliance with these programs.

Overall, we believe this agreement is a revolutionary concept that is being already met with rave reviews from the industry.

A lot has changed over the last 30 years since our nation last built a nuclear power facility. I truly hope that after my presentation here today that the Commission realizes that the American Building Trades have changed as well. What hasn't changed is our desire to be full partners in this crucial American endeavor.

And again, I would like to thank the Commission for giving me this opportunity to present these views. Thank you and any questions you may have.

CHAIRMAN KLEIN: Well, thank you very much for a

comprehensive presentation and we will begin our questions with Commissioner Jaczko.

COMMISSIONER JACZKO: Thank you, Mr. Chairman. Well, thank you for those presentations. They were very interesting. I want to try to turn my questions mostly I think to perhaps some issues that weren't necessarily brought up, but I think are related to a lot of these issues that you talked about.

I think we're at a point right now where we have an opportunity to look forward to potential challenges and have an opportunity to try and address those in a timely manner, so if we get to a point where we're doing construction at any facility in this country that we're not dealing with regulatory challenges, we're not dealing with policy kinds of issues at that time.

So, the first one that I want to touch on although you didn't raise it, I hope you have some experience with it and that has to do with some of the lessons that the staff put together in a recent advisory on the ITAAC process and ways to improve the ITAAC and ensure that the ITACC are more workable in actual use.

One of the key components of that is ensuring that the ITAAC are structured in such way that they're consistent with the way that construction is actually going to be done.

For instance, if some component is going to be done at an off-site

in a modular facility and there's an inspection that needs to be done with that, that the staff is aware of that and that ITAAC isn't structured with some other activity that would be happening on-site. And so, in essence, staff would have to be in two places at once; something to that effect.

So, just in general terms maybe you can comment on where you think we are with addressing some of those lessons learned, if you've been involved in that or if that's something that's being done generally more at the licensee level? Anyone who wants to comment on that?

MR. PITTS: Well, I can tell you what we're doing for the South Texas project. We've had regular meetings with the NRC group on the ITAAC. We are looking from where our schedule is right now and when that schedule will have work in the module shops, what's the requirement that we see in the ITAAC inspection points that will need to be performed there all the way through the module fabrication and delivery and when we get it in the field.

So, we're working that process right now. I see a little bit of mismatch right now, but I think that's just because we're trying to figure out where we are. I've talked to Mark McBurnett with STP about getting further involved with it where we understand exactly what the inspection criteria is, where the inspection point is; our Level III detailed schedule will call it out and we'll make sure that the NRC inspection groups are there.

So, I think we have to do that in order to get to the construction and

get into the final stages of it. What we don't want to do is get a module or get some inspection point in the field that we've already covered up or it's already installed and that inspection point won't be there.

So, we're working very diligently with the NRC to make sure we understand every aspect of those ITAACs and what you want to do to inspect them and we're working with you on that.

COMMISSIONER JACZKO: Anyone else?

MR. THORNBERRY: Just a quick comment and I echo what Ron stated there. I mentioned in my presentation that we're in the process of putting together flow maps and that includes prerequisites to get to a certain point, say placing concrete. And currently, we're reviewing ITAACs to see how they fit into our installation processes and procedures so that we don't miss an opportunity to ensure that the inspections are done that's consistent with the ITAAC requirements.

COMMISSIONER JACZKO: Well, I appreciate that and I think it was a good lesson that the staff had identified in ensuring that again with construction that those activities -- the ITAAC are reflective of the realities of how construction will take place and it sounds like from you've said that that's something that are you seriously engaged on and that's good to hear.

If I can turn to another issue. We talked a lot about workforce issues. The biggest challenges that I see from a workforce standpoint

from the regulatory side I think obviously has to do with some of the new requirements we put in place for fitness for duty requirements as well as for access control, access authorization, those kinds of important issues.

And I'm wondering if you can touch a little bit on how you see from the industry side the ability to comply with those new regulations, the ability to -- when you're dealing with such a large workforce to ensure that the kinds of access authorization the NRC intends to require will be workable and will function properly at these work sites. Again, anyone who wants to comment.

MR. THORNBERRY: I'll take a first shot at fitness for duty. These are programs that we already implement on a lot of our large scale work outside of nuclear. It's not just a regulatory issue for us. It's an industrial safety issue. So, we have experience in doing that and I don't think that there's a great leap that needs to be made in order to implement it on new nuclear construction.

MR. PITTS: Fluor implements a majority of the fitness for duty right now on all of our construction jobs. A lot of our clients already require background investigations. Certainly, from an industrial safety standpoint, we do drug testing on every employee. We have random testing certainly just as the NRC is requesting.

And so our fitness for duty right now is, I think, approaching what we need to do and we understand what we need to do, so we'll be in

compliance, but that's not that much different than where we are today in the industry.

MR. HUNT: For the building trades, the building trades are committed to a drug-free workforce and a safety trained workforce. The building trades has established industry-wide drug testing programs which is being implemented in many projects and many of the unions, the UA, the ironworkers, the boilermakers have their own drug testing programs which are being integrated into this.

And I think that the trades are going to be able to meet that. And as you saw in the agreement that we are putting together a mandatory -- a man has to have his safety training and certifications before he is even eligible to access the job.

So, I think the building trades are going to be well prepared and with setting up training programs on-site is going to be for specialized training on whatever need to be done; certifications and certain things that will be available. We'll be able to meet that demand very well.

COMMISSIONER JACZKO: Okay. Thanks. This is a question perhaps more specifically for you, Mr. Thornberry. I think you discussed this a little bit in that are you looking at the lessons from some of the recent construction projects and some of the issues that have been identified with concrete problems, concrete pours and various issues.

I wonder if you can just go into a little bit more specific detail about

what you see -- how you see addressing some of those issues going forward. A lot of them - as I look at some of the work the staff has done - a lot of them seem to involve project management kinds of issues more than anything else; quality control, those kind of things.

How do you see those issues being dealt with now so that if we get to construction that we're not seeing the same kind of problems in the future with those kind of issues?

MR. THORNBERRY: Foundation is making sure that we have a robust lessons learned program that not only includes the things that we're working on at the present time, but also other activities that are going on domestically and on an international basis.

That lessons learned program is fashioned in a manner that's consistent with gathering the information as it comes forward and a lot of it is quite honestly pretty detailed information. There's a specific thing such as concrete placement and plasticity and bend radius, those kinds of things that we've seen thus far.

Taking it beyond the next step, we're really looking at what does this really mean. That may have been a particular instance that happened at a particular site, but what does it mean from a QA program standpoint, supplier quality programs and those kind of things and oversight.

And that is where the lessons learned program is headed to, certainly to understand the specifics and deal with the specifics and

ensuring that our programs from an industry standpoint are consistent with the findings, but also looking at it from -- as you stated -- what do we do from a culture standpoint, a project management perspective and making sure that things such as a safety conscious work environment are actually implemented such that we can communicate to our workforce, both the staff and the craft, particularly the craft because they are the ones performing the work, of what the expectations are.

And indeed, if they have questions or circumstances that they raise those issues and feel free to do so. But in addition to that is what we learned making sure that we pass that down through the organization so that we can not experience the same kind of complications.

But the foundation is certainly from the standpoint of having a very solid lessons learned program that encompasses the entire project and the entire organizational aspects of executing the work.

COMMISSIONER JACZKO: Thank you. Anyone else want to add anything? I have one more question if I can ask it now.

CHAIRMAN KLEIN: Sure.

COMMISSIONER JACZKO: This gets to -- perhaps some ways touches on this idea of lessons learned as I -- and I wasn't heavily involved with the nuclear industry, the regulatory side the first time around for construction, but it seems that one of issues that always, I think, we point to is a challenge certainly from the regulatory perspective and I think

also certainly from just a construction perspective is the idea of completeness of designs.

I think there is always an intention that with design certification and the new Part 52 process that a lot of the issues associated with completeness of designs would be complete -- or would be resolved.

I'm wondering if you can comment today from your perspective as companies that will be involved in the -- potentially in the construction where we're really at the detailed design stage where you think we stand right now with completeness of designs and is the right kind of design detail there, getting there, or are we behind or ahead of where you think we need to be from that perspective?

MR. THORNBERRY: I'll take a first shot at it. I think that from the projects that we're working on that the detailed design is not mature enough to go construct a plant today. But that's our plan to get it to the state where we are 70%, 80% complete before we hit the field with safety related concrete.

Some of the lessons that we've learned from the overseas construction that's been going on in recent years is they didn't do that and it's a painful lesson that we learned in the '70s and the '80s and it's not our intent to repeat that.

So, I think that the schedules that you see for the new plant construction are all going to have the design at a state of maturity that it

supports first time quality in the construction processes.

MR. PITTS: Yeah, I'll echo that. Our plan right now at STP is at issue of COLA we will be 100% complete with design. We are able do that from an ABWR standpoint because ABWR has been built before, so we understand that.

We have Sargent & Lundy doing the nuclear island design. They've had a history of that for the last 30 years of staying on the industry as far as a nuclear island. Fluor will be doing the Turbine Island and balance of plant where we feel comfortable and Toshiba will be doing the basic design. So, we have a well established division of responsibility that everybody understands what they'll be producing.

We have a detailed Level III schedule of when those deliverables will be met. So, our plan -- and we understand the modules. We know exactly what modules were fabricated for the ABWR and we're going to replicate that modularization plan.

So, from my standpoint and I was in the other renaissance of nuclear power, we did not have design when we needed it. We were in the field and we were hand to mouth as they say. So, I'm looking forward.

I believe I need to give the NRC credit for the cycle and the process you have where we're able to do the -- submit the COLA, the DCD, and you take time to review it. We take time as an EPC contractor to design it, buy the material. When the COLA is issued, we will have a lot of the

modules fabricated. A lot of the work will be done on-site. Work will be there. We'll be ready to go.

When the COLA is issued and I feel comfortable that we as a constructor can construct the units in the timeframe we've got. And certainly we're betting a lot on being able to have cost and schedule certainty once we do that.

So, the whole process is laid out right now I believe will work if everybody has got to meet their commitments down the road. So, I think we're headed to doing that. So, our plan is 100% complete at COLA.

MR. THORNBERRY: Just a quick comment on that and I agree with Ron in regards to design certainty and having the design 100% complete. On AP1000, much of the design is significantly advanced, both in the modules and the plant itself.

The only thing I would add to that is that consistent with CII guidelines and certainly --

COMMISSIONER JACZKO: CII guidelines? I'm not familiar --

MR. THORNBERRY: Construction Industry Institute. Constructability reviews by construction personnel is integrated in the design aspect so that we can get issues associated with the ability to set modules or the ability to -- even down to the point of looking at operational issues, constructability issues that we have construction professionals

working with design engineering currently so that hopefully we can identify some of those problems and get them ironed out today rather than at the point in time when the construction is ongoing.

COMMISSIONER JACZKO: Is Shaw's goal 100% design completion at end of COLA as well?

MR. THORNBERRY: Yes.

COMMISSIONER JACZKO: Okay. Thank you.

MR. HUNT: I just have one comment from a crafts perspective. I was involved in the former -- when we were building nukes. I was the business manager for the ironworkers in St. Louis when we built the Callaway I and I was involved all the way through.

From a craft perspective, it's very demoralizing when you get started on a project and the men have to wait for the NRC to come in and inspect. It's cost overruns. I hope that my partners here are right because the crafts when they go in to do a job, they like to be able to have some momentum and be able to keep moving without waiting.

That was very, very -- with cost overruns and for morale of the individual craft people when those delays happen. Hopefully, they can deliver on that.

CHAIRMAN KLEIN: It's probably also frustrating to do something and then tear it out and have to do it over.

MR. HUNT: That's right.

CHAIRMAN KLEIN: Commissioner Lyons?

COMMISSIONER LYONS: Well, I'd first join Commissioner Jaczko in thanking all of you for very good presentations and very interesting. First question or maybe more of a comment. Let me direct it to Carol. Carol, you mentioned and several of your colleagues also mentioned or referenced the educational program that the NRC administered that Congress asked us to.

We received very, very few applications from the two-year or the trade schools. I hope that perhaps through the NEI, perhaps through some of your colleagues we can encourage a much stronger participation in future versions of that program. I don't know if you want to comment on that or not?

MS. BERRIGAN: Certainly. There were a couple of reasons I think we didn't see strong participation of the two-year schools. One of the challenges was that some of the community colleges didn't believe that they were eligible with the specific way the grant opportunity was worded and I believe that's being looked at by some of NRC staff based on the feedback we got from the community colleges.

The other challenges that we heard back from the community colleges, they typically are not used to applying for grants of the type that were offered, so we're doing a lot of outreach with the 42 community college partnerships that the industry has right now to advise them of this

opportunity and make sure that they know that this is an opportunity for them to participate. So, we're starting that outreach and we've provided that feedback.

The third factor that we found that impacted the community colleges in applying for this was the deadline for this grant opportunity was virtually the same as a Department of Labor grant opportunity for substantially more funding.

So, when some of the community colleges had to determine where their grant writer was going to spend their time, they went for the bigger dollars. So, that was some of the other feedback that we got and we've provided that back to NRC staff that are responsible for the program.

COMMISSIONER LYONS: Thank you very much for doing that and certainly our time scales, our time fuse was very short since we didn't even know we were going to have the program until it was about the time to start administering it.

Another question, let me sort of address to Carol, but I think others of you may want to comment. Several of you have alluded to the fact that we certainly may have a renaissance in the U.S., but I think whether we do or don't in the U.S., we definitely have a global renaissance.

I'm just wondering if in your thinking you have evaluated the possible concern that while our discussion here has focused on U.S. workers building U.S. plants, have you addressed a possibility that U.S.

workers will be enticed to go to opportunities overseas in a global renaissance further exacerbating a problem here?

And I raise this particularly because I was surprised -- maybe I shouldn't have been -- in some recent press coverage of issues at Olkiluoto in which it was noted that there was, I believe it was 1,000 Polish workers at the Finnish site. That simply hadn't occurred to me. Even though in retrospect it's probably completely logical for any number of reasons.

But I'm just wondering if in your thinking there is any concern with a global drain pulling workers out of the U.S. and further exacerbating our problems?

MS. BERRIGAN: I actually see the global renaissance as a very positive thing for workforce development in nuclear. I think it sends signals to people looking at their career opportunities that there are opportunities right now in nuclear, both within the U.S. and globally, but I think when you start looking at the craft labor issues and those sort of things those are much more regional labor market issues.

I'm not particularly concerned -- and gentlemen if you want to weigh in on this -- of U.S. craft workers going in great numbers to work in Europe. I think you may see that in engineering and other areas, but again, that's to me a positive thing because it's opportunities. It means more students, more workers getting into the industry and looking at this

as a very positive opportunity for them. So, I see growth as very positive.

COMMISSIONER LYONS: Does anyone else want to comment?

MR. PITTS: Yeah, from a Fluor standpoint and you can see the graph I have relative to where we train craftsmen. When you look at nuclear plants in UAE or South Africa or Turkey or anywhere else, what we see from a Fluor standpoint when we have a big major job in those areas, we don't necessarily send craftsman to do hands-on work.

Certainly, the craftsmen might go down as supervisors or mentors to help train those craftsmen, so I don't see the labor force, pipe welders, electricians, iron workers actually going to any of these foreign countries right now and actually doing hands-on work at all.

COMMISSIONER LYONS: I hope you're right and certainly we're going to have enough challenge within the country. So, let me turn to another question and again I'll start, Hal, with you, but maybe some of your colleagues would like to chip in.

On your slide 12 where you talked about the module fabrication facilities and you talked about the NRC construction inspection program. I know there has been considerable discussion between all of you folks and the NRC as to how to handle inspection of modules.

I was curious if your comment reflected a concern that we're not going in the right direction in terms of our inspection processes or

inspection plans or if you would suggest other approaches to inspection of the modules?

I just would like to know if you're driving at a particular point here of an area that we need to change in terms of inspection of modular construction. And some of you others may wish to comment, too.

MR. THORNBERRY: My understanding in conversations with the industry and the NRC representatives is that there is a lot of parallel in what we are talking about. I don't think there's any significant differences there.

But the point was primarily that we are taking activities from a modular standpoint that would -- as historically been done at the site and putting that into a module facility in which full modules are going to be constructed or smaller modules that will then be shipped to the site to be assembled.

And to the extent that we can get commonality in the inspection process beginning with the modules and then be able to take that common understanding of the inspection processes to the site such that the fabrication shops and then at our sites, which there will be people that follow the modules that are on the modules today that will end up following the modules at the site, that there is consistency in how the inspection processes are being performed.

And my understanding is that thinking is pretty well amongst

ourselves, but also within the thinking of the Commission itself.

COMMISSIONER LYONS: That's my understanding, too. I just wanted to know if there was an issue underlying your comment?

MR. THORNBERRY: Just to the extent that we can maintain that and collaboratively work to achieve that outcome, I think that is something that we can work on.

COMMISSIONER LYONS: If I could ask you another question on the same slide. You suggested that we should allocate resources based on applicants closest to construction. Speaking just for myself, I worry that if we did something like that we would quickly get into an area where the NRC could be picking, if you will, winners and losers, which would worry me a great deal.

On the other hand, I would think that industry could choose to organize their activities across multiple construction sites and make such a proposal to the NRC.

I'm curious if there has been any discussion across industry, maybe it's also a question for NEI that would perhaps lead to such prioritization of activities, but I'm nervous if we do it.

MR. THORNBERRY: Whether or not this has been an issue that's been discussed across the industry -- I would have to leave it to Carol. As far as the recommendation it's really based on the schedule intensity of where we are and where we're going. And some of the

applicants, at least from our view, are not as advanced in terms of where we are with particularly Georgia Power and South Carolina Electric & Gas and Santee Cooper.

And to the extent that you want to call it prioritization and moving forward and applying resources, it would be beneficial for those clients and EPC contractors that have active contracts currently underway to ensure that they are not delayed specifically from a schedule standpoint.

COMMISSIONER LYONS: Did anyone else want to comment on that?

MR. REILLY: Just briefly, I think you're going to see some of that on a technology basis; applicants that are committed to a particular technology may be able to prioritize amongst themselves, but across the industry, across the different technologies I think that's going to be a very difficult challenge to do because everyone has their own power requirement needs that they are trying to meet.

COMMISSIONER LYONS: I, too, have a couple more questions. May I proceed or would you prefer --

CHAIRMAN KLEIN: Why don't you proceed.

COMMISSIONER LYONS: If I could turn to Joseph with your very excellent presentation. You referred to strong training programs organized through the union. And you referred to a very substantial resource commitment in that training.

I was just curious. Can you contrast the number of folks trained per year with the number you're seeing in retirement attrition? I'm guessing that your craft people as well as --

MR. HUNT: I can give you some information on my particular craft and it may parallel some of the other trades. Forty percent of my membership are either eligible to retire today or will be within the next ten years. In that 40% we have an active outside membership. When I say "outside", in the outside construction industry and not our shop industry. It's about 40,000 crafts iron workers that will be retiring or be eligible to retire within the next ten years.

So, I mean, you can see its just to replace the iron workers that we have and not grow with the possibility we may see with the nuclear industry and the rest of the economy because it is a real challenge. And our statistics show that in our recruitment we have to recruit about – to retain one person at least about three people to retain one with the attrition that we have.

And some of that you obtain more if there's more work and they can have continuous employment, but those demographics hold fairly true throughout the building trades. As I mentioned in my remarks that's one of problems we have is our aging workforce.

COMMISSIONER LYONS: I appreciate that comment.

CHAIRMAN KLEIN: Commissioner Svinicki?

COMMISSIONER SVINICKI: Thank you. There have been a number of specific questions that my colleagues have raised, I think, to return to a couple of those topics or maybe make some comments since you've answered some of these questions already. But I appreciate that Commissioner Lyons talked about the suggestion from a couple of you that NRC resources would be applied against those applications closest to construction. Again, that would be an interesting topic I think to engage with COL applicants.

My concern would be that we -- NRC has a prioritization scheme right now and we have discussed that, the fundamental fairness of it with the COL applicants that we have. My concern was it would take us beyond prioritization that would really take NRC into almost a handicapping type of role where we would have to apply maybe things -- expertise that we don't have against those applications and I think that that would be a tough suggestion for us to implement and it would be interesting to hear what various COL applicants would think of that.

I also appreciate that Commissioner Jaczko has asked about the involvement that any of you might have in working with NRC staff on ITAAC closure, tracking, all of the -- I think of it as a real vast complexity there because there are going to be so many ITAAC for every individual site.

And for NRC which then has responsibilities for each construction

site, it becomes a very challenging orchestration or choreography, I think, and it even gets down to extremely mundane and detailed things like various people scheduling software, and I think we might hear from NRC staff this afternoon about trying to reconcile people's hold points and different scheduling software that they use.

So, I think that that will become very challenging and again, I think we're going to have to call on IT expertise and other things to make all of that orchestration work out.

I appreciate also that there was discussion of design build concurrency and I wondered, Mr. Riley, if you were going to talk at all about the Department of Energy has a willingness to take on construction projects where design and construction work in a very tight concurrency there and that's been challenging.

You mentioned the waste treatment project and it's also been challenging for the worker there. It's been a start/stop and a hurry up and slow down as very fundamental things like seismic design criteria will remain unresolved well into construction.

And I think I heard conclusively from all of you that that is not how you would recommend we go about the construction of nuclear power plants. So, it's challenging to do and it may be that DOE has other necessities and drivers that cause them to engage in it that way, but I certainly have had a first hand view of how challenging that is.

I might turn to the others. There's been a lot of discussion about educational support and there's the NRC grants program. You've talked about the significant financial commitment that your organization makes to training, but as we look across all the different programs I'm wondering is there anyone who's looking at any gap areas?

Is the support everywhere we need it to be between what industry is doing and the trades are doing and NRC's program. Is anyone looking at any kind of under resourced area or under supported area? Is anyone aware of that?

MS. BERRIGAN: I guess I'll start off with an answer in that area. We've started to pull together the different stakeholders in this process to really talk about what they see coming in the future, both from a demand perspective as well as there has been so much variation in the kinds of programs and the kinds of educational support available from year to year.

A lot of changes in the amount of money, what the money can be used for; those sorts of things that we're really starting to foster a better dialogue between the different stakeholders in this area.

We held our first meeting about a week ago just to really talk about what people are seeing and that's stakeholders from the commercial nuclear sector, from the Department of Energy side. You had NRC staff that participated in the discussion and other funding agencies like the

Department of Labor, like the National Science Foundation and others really do talk about what do we see, what do we see as potential opportunities and how do we better share information about what plans are, what activities are in place, what funding is in place.

I'm hoping that that discussion will continue over the next year and into the future because there really is so much -- it's such a fluid situation going forward.

COMMISSIONER SVINICKI: And I appreciate that. In response to Commissioner's Lyons you indicated that you have at least on NRC's grant program tried to provide feedback to the NRC staff on what you see going forward. And I would -- speaking only for myself as you continue to compare these programs I would be interested in any suggestions you have and I would encourage you -- Congress has taken a very strong interest in these various programs.

So, if you have any findings or recommendations, I would encourage you to share those with some of the congressional sponsors who have been very interested in supporting these programs because I'm certain that everyone has an earnest desire to tailor these in the most efficient way. So, I appreciate that. Did anyone else want to comment?

MR. HUNT: I would just like to add that the Building Trade's commitment to do on-site training or near-site training on specific tasks and so on is an area that we feel in Building Trades is going to fill a lot of

the gaps.

COMMISSIONER SVINICKI: Okay, I appreciate that. Some of you have spoken about increasing -- on the supply chain issue of increasing domestic capacity and Mr. Pitts you spoke about the plans that you have in that area. And I think Mr. Thornberry, I think you also touched on that topic. And you may, Mr. Thornberry, also have talked about a competition for shop space with other infrastructure projects.

So, I'm not real familiar with the issues there. Could either of you speak generally about any of the obstacles? Is it kind of your classic if you have enough orders, you'll build to capacity, but until you have the capacity you don't have the orders? Are these some of just the classic challenges to this type of thing?

Moving forward, I think certainly as a regulator, it will simplify things if more things are being fabricated in the United States. I think it makes it a little easier in terms of our inspection programs and other things. So, I'm just curious about this, but as folks who are trying to increase domestic capacity, what would you characterize as the obstacles or impediments to doing so?

MR. PITTS: Where we are right now in the supply chain we're in the process right now of identifying all our needs and what we need at the STP project. Certainly, the technology supplier, Toshiba, manufacturers his commodities and parts and supplies in Japan, so that

will be his scope of work or Toshiba's scope of work.

When we look at the U.S. market right now, we are seeing a robust market in pipe, in valves, in pumps, in heat exchangers, condensers; that type of mechanical commodity. So, we feel very good right now that the U.S. market can handle that.

Certainly, NEI and everything that they're doing to make sure that the suppliers understand this market, but to some degree it is that way. They're not willing to jump until they see it coming, the same chicken or the egg syndrome.

Where we're really seeing -- and I think we need to do something about it really and truly is in the electrical IEEE qualifications. That type of component switch gear is -- those commodities are not being manufactured right now at a nuclear grade in the U.S., so we need to increase that.

Certainly, we'll have to -- for the time being we'll have to do a commercial grade dedication program on that, but I think overall we were fairly surprised that the market was as robust as it is. But then when you look at it you say, "Well, why is that?" Then you go back to look at the steam generator replacement projects still all upgrade and improvements on all four of the nuclear operating facilities.

So, we didn't know it was going to be there until we started looking for it and yet it is there. So, I do not see really and truly heavy forgings

probably will not be in the United States unless something radically changes.

So, I think the technology supplier will still bring those in from overseas.

MR. THORNBERRY: I would agree with everything that Ron stated. Working with Westinghouse as a consortium partner in the development of suppliers reviewing of capabilities, helping suppliers that might be interested in getting into the industry is certainly something that our two procurement departments continue to work on and moving forward.

And we do see pretty good capability from a mechanical standpoint, valves and piping, those kind of things, but from electrical it's a little bit more challenging. But collaboratively we're working to identify those resources and educating them in regards to an industry that was robust some couple of decades ago to where it needs to be today.

So, it's a challenge, but I think there's a lot of resources there moving forward that we can take advantage of and help the suppliers understand what the deliverables are actually going to be. There seems to be the interest. We just need to educate.

MS. BERRIGAN: If I can add one point. One of the things that we learned through our outreach workshops and going out into communities and working with the supplier base, we found that there

really was a lack of awareness amongst many of the people who potentially had capacity to come into the market of the timing necessary; when decisions would be made, how real the market is, those sort of things.

So one of the key efforts that we've undertaken through these outreach workshops is really telegraphing that timing as best we can for when people are putting together bidder's lists, when people are qualifying vendors.

I think there was somewhat of a perception where people are talking about new nuclear plant in 2010, 2012, 2014 that that's when the procurement would begin amongst some of the suppliers who had been reading in the paper, but hadn't been engaged in the industry.

So, just getting the word out and raising that awareness I think is helpful for these companies to understand when the market, when they need to get engaged and how best to do that.

MR. REILLY: Looking a little bit longer term, I think that for the first few movers there's going to an infrastructure available and it's going to be a combination of domestic sources and global sources.

I do think that in order to get a sustained infrastructure to support the supply chain, it's going to be a recognition that there is a viable market there. We did a study for the DOE a couple of years ago in which we surveyed all our of suppliers from the '70s, '80s, and '90s that were still

around as to what it would take to entice them to get back in the nuclear business and almost to accompany, they said, we need to see a sustained market there, not just a plant that gets built.

So, I do think it's an accurate statement to say there needs to be a long-term market before they're going to jump back in.

COMMISSIONER SVINICKI: Okay. Thank you. And Mr. Chairman, if I could just ask one more question, I would not need a second round. Thank you.

That's kind of a good lead in. I was going to ask something that's a little bit philosophical, I guess, but we've heard a lot about looking at construction experience. There's kind of three things that have been referenced today.

The historic U.S. experience which you were just referencing, Mr. Riley, and there is the more recent U.S. experience. We heard about MOX and LES and looking at those construction experiences and then there's the international experiences that are going on now as well.

But for those who are standing outside of the nuclear industry and wanted to somehow be persuaded or convinced that this time around is going to be different if you look at the historic experience in the '70s and '80s in the U.S.

If any of you would like to comment, what would you point to to say this is the key and significant reason why it will be different this time

around? As a regulator I think Part 52 is obviously a really significant difference, but we do have those and I was noticing and reading just this morning that there was a statement made and this is "liquidity requirements will be a key consideration in Standard and Poor's rating services, credit analysis of new U.S. nuclear projects."

And so I think that there are still a community of skeptics that think that it maybe won't be that different this time around. So, would any of you -- and some of you have confessed that you have first hand experience with the historic builds in the U.S. -- would you like to give any comment on that? It got really quiet.

MR. REILLY: I'll jump in. I think the key thing that's going to be different this time around is the fact that there will be a well thought out plan based on completed design before we start into major construction. That's the key.

If you look at where things got off track in the last build out, it was just that. We were working hand to mouth as Ron said. Things were changing as projects were evolving and things just stretched out, costs overran. We can avoid all of that with a very well thought out plan.

The plans incorporates some of the things we've been talking about this morning with ITAAC and all of that needs to be in the detailed plan going forward. I think that's the key.

COMMISSIONER SVINICKI: Thank you.

MR. PITTS: I'll comment again. I said it and Brian is exactly right. Everybody knows what happened 30 years ago. It's different now and I think the NRC has done an excellent job of that and I'll say it again. When you have a COLA and you know exactly a period of time when you're going to get that COL issued for construction, you got that period of time that you can do the design, you can get your materials, you can get all your quality programs in place. You can test those quality programs.

NRC understands what they are looking for from an ITAAC and inspection standpoint. They are qualifying those inspectors to be able to work us with and everybody is working together and then we get the COLA and it's just like what Mr. Hunt said. The craftsman want to come to the job and be busy 95% percent of the day. They don't want to come to a job and not have work to do or be restrained from being able to do that work for either somebody not doing their job or not having the part.

So, engineering and quality programs in place, COLA application, hire the craft, install it, have a good start up and commissioning program and then fall into operations.

So, I'm excited about it. I really am. I was in the other one and we grudged through it and we got them built. I was at Callaway. I know exactly what happened at Callaway.

So, from a program standpoint, I think the program we got is excellent. We need to meet our commitments. Everybody needs to meet

their commitments to meet those dates and I think if we do, I think we've got an excellent chance to succeed.

COMMISSIONER SVINICKI: Thank you.

MR. THORNBERRY: There is one other thing I would add to that. It is very essential that we have our processes, our programs together, the design complete, trained and qualified staff and craft.

But one of the things that is when you look back at the past and some of the disastrous results that happened when we weren't able to maintain momentum and get the job done was indicative of the culture that was existing at that point in time in regards to nuclear facilities.

It's incumbent on us moving forward that we do a very credible job in educating our staff and our craft in the culture in which we're performing our work. I mentioned earlier about a safety conscious work environment. Self identification, problem identification resolution goes along with those things and it's really critical that we engage our craft and our first line supervisors which is absolutely critical because that is the point in which the information that everybody does over a three or four year time frame goes into the hands of the individuals that actually perform the work.

And that culture is critical to our success. Without the culture, we can have indeed 100% design. We can have trained and qualified craft. We can put together all the best processes, procedures and execution plans, but integrated into all of that is the culture that you're working on a

nuclear facility here and there's something different about that basic and fundamental difference that we are going to end up taking a work force. Many of them never had the experience that we have had and they're coming from a local area just like Mr. Hunt stated a minute ago.

A lot of these facilities are in rural areas and you want to tap into that rural work force there to the greatest extent possible. And when they come in, they're going to have to be provided with good communication, good guidance, good direction that's consistent with a nuclear environment in which we work. So, the culture is very important as well.

COMMISSIONER SVINICKI: Thank you. Thank you, Mr. Chairman.

CHAIRMAN KLEIN: Thank you. Well, I have a series of questions and I tend to write them down as the victims make their presentations, so I'll just go down the row starting with Carol.

I'd just like to comment and thank you as Commissioner Lyons had done as well for your thoughtfulness on our educational program. I know our staff really worked hard to get those out in a timely manner and it was a challenge as indicated that the funds came in late and we wanted to get those funds out as quickly as we could and our staff worked hard. So, thanks for those comments.

Ron, I guess I have a question for you. We've heard a lot in the press about undocumented workers and I have no doubt that you have

excellent procedures to minimize that with your company.

How do you handle, though, the sub-sub-sub-contractors to verify that? Because you know the headlines will be much different if undocumented workers are working on an office building compared to a nuclear plant.

MR. PITTS: Well, one of the key aspects of Fluor right now, we will be doing right now, probably 65% or 70% of the work with our own workers. We will either use our workers from the open shop environment or actually we'll use Joe's workers, so we'll have control of 65% or 75% of those craftsmen.

The rules and regulations on documenting craft workers is known and everybody knows it. We do on our sub-contractors we audit those records with them. We make sure they are in compliance with those requirements. So, I think that's the biggest challenge we have is certainly making sure they understand the requirements and then we audit and document those requirements.

But once you get on to the nuclear site, I think the training that will be required, the rigor that will be required through that I believe that we'll understand that real quick, whether the employee, one, if you can't speak the language, something's wrong. You better do some investigation on him.

Certainly, the fitness for duty programs that we'll implement should

help us with further understanding those craft persons. So, I believe if you look at the whole process from subcontractor and documenting his employees making sure they have the proper identification and witness them in the training program and witness them in the fitness for duty program and then once you get them in the field, I think you'll see that come in and you'll recognize that.

So, certainly an issue that we all need to be aware of. You see it all over and I'm not telling you that we haven't had that same problem in our rigor and vigilance that we do today. So, we're aware of the issue.

CHAIRMAN KLEIN: I think that's going to be a challenge and I think we'll just have to all keep the antennas up. You talked a little bit about modular construction. In general, do you have any rules of thumb on if you do modular construction what the reduction of skilled craft on the site is?

MR. PITTS: No, I don't think we've actually looked at it per se. We're in that line of it. The ABWR has 181 modules. We know exactly what they look like. We know exactly what sizes they are. We know exactly what weights they are.

When we looked at it and when we performed our estimate, we just took that amount of work hours away from the job site. So, I don't know if I've actually heard whether it's 2 to 1 or not.

I'm sorry, but I'll take a look at it and let you know, but I don't know

that we looked at it. We looked at specific modules, specific durations, specific craft hours to be able to perform that module at the location.

CHAIRMAN KLEIN: Clearly, in general if the modular construction works it should make it much easier at the site itself?

MR. PITTS: Oh, absolutely. If you look at the numbers, we will have both Unit 3 and Unit 4 in the construction at the same time and we're talking about a 4,000 peak craft for both units at that time.

I don't want to compare the other years ago because there's a lot of things different, but our plan right now is certainly 25% or 30% of those hours that should have been on the job site will be at a fabrication of modulation facility.

And we're looking a lot further. If you look at modules I think everybody thinks and what I've discussed is everybody thinks a module is real big and the bigger it is, the better it is. Well, in some aspects that's true, but a module to us is as big as this table where you've got four, five valve components on it or some other type of component in it and then you're moving this one in.

So, our plan right now is 181 we've identified, but to continue during the constructability process to identify other areas that we can actually modulize and subassembly and make them and take welds off the job or hours off the job even further.

CHAIRMAN KLEIN: Well, continuing on the modular aspect,

Hal, when is your Lake Charles modular facility going so be up and running?

MR. THORNBERRY: The plan is to break ground within the next month and the facility needs to be up and running to support the large modules that will go in the AP1000 such that they are delivered fundamentally a year before the first concrete.

So, when you look at the current COL dates of 2011, the modules need to be -- the large modules -- and like Ron, they're smaller modules, but on the AP1000 there's several very large modules. To be able to outfit those on the site, they need be there a year ahead of time so you're looking at a year prior to that to be able to get the facility up and running.

So, certainly, within the next year the facility needs to be ready to start working on modules.

CHAIRMAN KLEIN: And I assume that facility will be used for other industries, oil and gas, as well as nuclear or is it just nuclear?

MR. THORNBERRY: It would be used for other purposes as well, but primarily it's being put in place to support the module fabrication.

CHAIRMAN KLEIN: Okay. Well, not to go unnoticed, also on slide 12 that you talked about prioritization. You can tell that that's a little bit of an anxious issue for us. If Carol wants to prioritize for us, we'll certainly take that into consideration; otherwise, it'll be challenge.

I guess the question is is there a problem now with priority? In

other words, are there any issues in which the NRC is not meeting the needs?

MR. THORNBERRY: The current schedule for our two active projects -- if the schedule is met, as we currently understand it that it would support the start of construction.

CHAIRMAN KLEIN: So, are you anticipating a problem? If there's not a problem now, are you anticipating one?

MR. THORNBERRY: I guess the message would be we just need to maintain focus on ensuring that those early projects are indeed not delayed and moving forward.

We're dependent upon the COL to be able to get started and if you look at the issues that we just talked about in terms of modules, getting the module facility up and running to be able to support module delivery a year ahead of concrete, first nuclear concrete, that COL is right before that date.

CHAIRMAN KLEIN: I know this might surprise you, but usually there are two parties involved in schedules; that's usually the NRC and industry. And so, sometimes if we have RAIs or we need information, then the industry needs to respond as well. So, it's a double edge.

So, I would encourage you to keep communicating with our staff if there's any issues where the priorities or the schedules are slipping that the communication occurs.

MR. THORNBERRY: We will certainly do that.

CHAIRMAN KLEIN: Brian, on your aspect, I know on the Browns Ferry Unit 1 when it was being finished and brought back into compliance had a challenge with certified welders, a shortage of certified welders, so they didn't have as many as they would have liked.

Are there any other skilled areas that there's a shortage of? We talk a lot about welders, but are there others?

MR. REILLY: I think welders is, from a crafts standpoint, welders is certainly one of the key pinch points. I&C technicians were also a critical item on Browns Ferry. There was at least a regional shortage at that time.

I think that from a going forward standpoint looking at pinch points on resources I would be concerned about the, what are called the second tier or evolved type of skills, QA personnel. There is not a QA college. Those people come from other areas of the industry and we need to make sure that pipeline is full, also.

But I think welders from a craft standpoint, welders and I&C technicians.

CHAIRMAN KLEIN: Thanks. Joseph, you talked about a fairly high percentage of your current workforce are eligible -- of course, that probably depends on what happens with the stock market --

MR. HUNT: That's right.

CHAIRMAN KLEIN: -- in terms of whether they actually retire or not. Are you using your experienced workers to train your younger skill sets?

MR. HUNT: Yes, we are. We've had an experimental program in the California areas that's being fostered through our labor management impact program for training using skilled craftsmen that mentor new entering crafts people to train them and to train in particular foremen. Naturally, we have a shortage of foremen and to use even retired gentlemen who were foremen to mentor our up and coming foremen. So, we're very active in that and most of the trades are.

CHAIRMAN KLEIN: You had also talked about OSHA-10 certification. Do you currently do that with all your metal trade?

MR. HUNT: The iron workers do it with all of our members. Every graduating apprentice is certified. We have journeymen upgrading programs to upgrade our journeymen. And the other trades I can't speak specifically to their program, but they are doing the same.

We recently put, with the problems that the Building Trades experienced with some terrible accidents in the Vegas area, put together a Building Trades program to certify every crafts person that was working or recertify them, make sure they had OSHA-10 on that city center project where there was six or seven deaths through falls or different types of construction accidents.

So, the Building Trades are very active in making sure that every journeyman and apprentice has their safety training OSHA-10 or 30.

CHAIRMAN KLEIN: If you look at a lot of the young people today it seems like the first thing they want to do is sit behind a computer terminal and maybe play video games or other kinds of things, but it seemed like, certainly, computers is an area that people want to go into today, but yet the skilled craft is an area that we really need workers nationwide. How do you go about recruiting and retaining the younger people?

MR. HUNT: We've developed several new programs. The Building Trades has their "Helmets to Hard Hat Program" which has been very successful in recruiting through the military when they're discharged. And most of our programs throughout the country and all of our building trades have direct entry for military individuals who are being discharged.

We go to job fairs. I left you some material that gives a booklet that shows all of the ironworkers training facilities and all of our apprentice coordinators attend job fairs. They go to the charter schools where they have a construction charter school to recruit and to try to entice young people that computers aren't the only way that you can make a good living in the ironworkers.

But we see we have more success with a little older group now than trying to get individuals right out of high school because they do have

that desire in construction. They don't look at it as a permanent type of career. So, the bulk of our people come from individuals who have gone out, tried the computer business or tried something else and they find they're not satisfied or they can't make a living. And then they come back and they look and they see that the trades are a good -- not just a job -- but a good career and they can make a good living and provide for their families.

So we're very active with the high school, very active with this group that goes out after high school graduation and trying to recruit them. And as we know there is so much unemployment or under employment in this country with the loss of industrial base that there's many people out there.

We have a group right now out at the Young Farmers Convention. I think they hold it out in Illinois. We've been able to recruit from that group and they make great tradesmen. They've got a good work ethic.

So, we're looking under every rock we can find to find good qualified people that want to make a career out of the building trades industry.

CHAIRMAN KLEIN: I think that "Helmets to Hard Hats" is a really good program and I think another area that we all need to work on is make sure we pay attention to the disabled veterans coming back because they really dedicated and put their lives on the line to serve our

country.

MR. HUNT: Excuse me. Part of the "Helmets to Hard Hat" we've got a new segment to that is doing the same thing with the injured and disabled veterans who still can perform and work on a construction job and that program has extended into that same vein there.

CHAIRMAN KLEIN: I think that's an area that we all need to really watch because they really have some really great work ethics and capabilities and we all need to just work and see how we can get them back into our workforce.

The other area I want to take advantage of since you talked about having these plants designed before you start construction. One of the things that we really need to do is make sure we design tours into these nuclear facilities so that the public can get back into these plants without having to go through an unburdensome suiting up, putting on disseminators.

I've seen some really good opportunities in Japan where they take tours through without being very complicated. So, every chance you get to look at those detailed designs before you start construction, just remind both the utilities and the vendors that we need to get the public back in there so we take the mystique out of nuclear so their unnecessary fears don't keep growing. Any further questions?

COMMISSIONER JACZKO: I just have one quick follow-up.

You mentioned that -- as you probably all know I'm not the hugest fan of our education grant program, but it is something we have so we should administer it well. I tended to think that in many ways the trade schools were probably the area that was most ill-suited to this agency administering grants because we really don't have any direct interaction in many ways with trade schools because we don't directly employ a lot of crafts people or other people who might directly be coming out of those institutions.

You mentioned a Department of Labor program as well and this year there was a simultaneous grant application, I guess, or program for them as well. I was just wondering if that program is eligible or that program has limitations on its ability to fund trade schools in this area or is it a general program? I don't know if you much about that in particular.

It might make more sense for to us think about expanding that pool to be able to deal with trade schools in this area rather than trying to add this piece to our existing program.

MS. BERRIGAN: I'm very familiar with the Department of Labor program. There are several at the Department of Labor. None of them are nuclear specific programs. The closest one to our industry is something that focuses on energy and construction, but the future of that program right now is, I think, dependent on the outcome of the election.

I think that the other programs that we've engaged with at the

Department of Labor are general capacity building programs for community colleges. I think one of the things you need to think about in looking at these types of program are the kinds of money and support that they provide for the schools. That's a very critical component.

Some of the programs provide curriculum development funding. That's important in some very targeted areas. Other programs provide capacity building for community colleges and trade schools. That's important on a local basis to be able to train instructors, equip laboratories, provide that kind of infrastructure.

Other programs provide funding to recruit students and do outreach in the high schools and middle schools to get students into the programs. So, I would encourage you to look at what your program provides and how that can be matched with other pools of funding that are available because each agency provides very different kinds of funding. All of it is important.

As far as the trade school goes, I think the intent of the program that you put out was trade schools and community colleges and I think the community college piece is very important. If you start looking at community college as a stepping stone for people to enter stem careers, science technology, engineering and math, so many students start at the community college, get an Associates Degree then continue on to a four-year degree.

So, I think there is a vested interest there as well as we look at that

as the pipeline of people who will eventually become four-year degree personnel.

COMMISSIONER JACZKO: Thank you. I appreciate your insights. I think that's certainly valuable information as we move forward.

I would just say if I can take a few seconds here just to comment on the prioritization. I think Commissioner Svinicki mentioned the Commission did go through and do a prioritization and a lot of the same concerns were raised at that point which was if we do prioritization are we picking winners and losers. We do that. It's not something we don't do.

I can give you specific examples right now where we have done that in the context of uranium enrichment facilities. We made a decision because of budget limitations that we would process one enrichment facility application prior to another.

So, I'm always a big fan if we're going to come up with prioritization schemes to have as a fall back in the event that we run into limited resources that we do it prior to having limited resources because that way we are able to do it more on the standpoint of looking at principals rather than looking at individuals because if in fact in three years or in two years we have significant budget reductions, we may be in a position where we'll have to make decisions about do we take those limited resources and do we apply it? Do we take all applications and delay all applications or do we rather devote resources to several applications and defer or delay

other applications? So, we do those things all the time.

I'm not sure that it's really that unique of something. So, I certainly to some extent think that -- I don't know right now. I don't know that we have a resource crunch, so it may not ever materialize but I certainly think its always important --

COMMISSIONER SVINICKI: I think if I could -- the contrast I was trying to draw is between prioritization I think is necessary. It's handicapping that is an area that moves me more into discomfort and I think the difference between the two is handicapping is a more constant reevaluation and you keep reshuffling the deck and saying, "Well, your credit rating went up or your state PUC didn't support X, Y and Z."

I think that would be very challenging for NRC to be in a constant handicapping of who's going to break ground first.

CHAIRMAN KLEIN: Commissioner Lyons?

COMMISSIONER LYONS: Maybe just one comment and one more question for Joseph. But to the comment I had meant to make before, I think there was a misstatement earlier which just from the standpoint of any press who are here, it might be worth correcting.

That was the statement that the waste treatment facility is NRC licensed. That is not correct. Unless some of my colleagues know something that I don't know. The Hanford facility is definitely not NRC licensed. We do have a role in commenting on or consulting on aspects of

that project, but it is definitely not NRC licensed.

Joseph, another quick question that I was particularly intrigued on in your comments. As you talked about the Nuclear Power Construction Labor Agreement one of your comments was that you would address shortages in one craft by borrowing from another craft. I had meant to ask a question on that before too because that implies to me a very interesting cross training approach that you must be incorporating into your training processes if you have that degree of flexibility.

I was just curious if you could expand a little bit more on the intent of that comment.

MR. HUNT: Well, this cross training or cross pollination started with a project form. I don't know if it was a Bechtel project that was out in the Northeast where they called it "Helping Hands". On any day when you've got 3,000 or 4,000 people on a job and you have a demand let's say for the electricians they need a little bit of help and the ironworkers are held up because they're waiting for the NRC to approve something so we can go ahead with the work, that you can utilize some of that workforce to fill in and to get over the hump with this other trade.

And on this project, and I can't think of the exact name of it, but it worked very well. They've tried the Helping Hands in Canada and it seems to work well. They have a better utilization of man power and workforce.

Now, when the iron worker or the electrician comes over, they're not going to be performing the critical application that needs to be done. It's more of a helping hands when you need some people that isn't -- they're not doing actually the critical portion of it. It's so you can have a better utilization of your workforce where you just don't have people standing here and you're going to call to try to fill in for a crew here that you can utilize the workforce back and forth to have a better flow on the project. And that's how it's supposed to work.

COMMISSIONER LYONS: Thanks. I appreciate that clarification and again I appreciate all the presentations today.

CHAIRMAN KLEIN: Commissioner Svinicki? Well, thank you very much for good presentations and this afternoon we will begin at 1:30 and we'll hear from our staff. Meeting is adjourned. Thank you.

(Whereupon, meeting was adjourned.)