UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
- - -
BRIEFING ON STATUS OF DRY CASK STORAGE ISSUES
- - -
PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

Thursday, May 30, 1996

The Commission met in open session, pursuant to notice, at 2:03 p.m., Shirley A. Jackson, Chairman, presiding.

COMMISSIONERS PRESENT:
SHIRLEY A. JACKSON, Chairman of the Commission
KENNETH C. ROGERS, Commissioner
GRETA J. DICUS, Commissioner

STAFF SEATED AT THE COMMISSION TABLE:
JOHN C. HOYLE, Secretary of the Commission
KAREN D. CYR, General Counsel
PRESENTERS:
JAMES TAYLOR, EDO
CARL PAPERIELLO, Director, NMSS
WILLIAM TRAVERS, Director, Spent Fuel Project Office, NMSS
CHARLES HAUGHNEY, Deputy Director, Spent Fuel Project Office, NMSS
WILLIAM RUSSELL, Director, NRR
ANDREW KUGLER, Lead Project Manager, Dry Cask Storage, NRR

P R O C E E D I N G S

CHAIRMAN JACKSON: Good afternoon, ladies and gentlemen. I am pleased to welcome members of the staff to brief the Commission on the status of dry cask storage issues.

In the year since the establishment of the Spent Fuel Project Office much has been asked of you. Some recent accomplishments include the publication of a draft standard review plan and the recent workshop on spent fuel storage issues. Nine nuclear power plants have authority for onsite storage of spent fuel under either a specific or general license. I understand that many other licensees are actively pursuing dry cask storage.

Today's briefing is a status report of the general accomplishments to date and the current status of planned activities. However, for the benefit of those in the audience today, I would first like to ask you to provide a brief summary of the events that occurred at the Point Beach Nuclear Power Plant over the past few days. The Commission has, of course, been watching this situation very carefully and would appreciate any updates that you may have at this time.

I understand that viewgraphs are available at the entrances to the room.

Commissioner Rogers, Commissioner Dicus, do you

have any comments to add?

COMMISSIONER ROGERS: Nothing, thank you.

COMMISSIONER DICUS: No, thank you.

CHAIRMAN JACKSON: You may proceed, Mr. Taylor.

MR. TAYLOR: Good afternoon. With me at the table are Carl Paperiello, Bill Travers and Charlie Haughney from the Office of NMSS, and Bill Russell and Andrew Kugler from the Office of Nuclear Reactor Regulation.

As you mentioned, Chairman, this is a status briefing. We will cover the activities of the Spent Fuel Project Office, how NMSS and NRR are working together on the dry cask storage licensing and inspection activities at the various locations, and the development and issuance of agency guidance in the area of dry cask storage and transportation.

In addition, Chairman, you touched on the event with the cask at Point Beach. That will be covered, and Carl Paperiello will begin with that subject.

Carl.

DR. PAPERIELLO: Thank you. I will talk about the Point Beach event and then give it to Bill Travers for the plan presentation.

On May 28 of this year, about 2:24 in the morning central time, the Point Beach plant initiated welding of the shield lid on a VSC-24 cask. Apparently a small pocket of

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combustible gas ignited, raising the shield lid slightly to a cocked position. The licensee had completed loading of the cask in the spent fuel pool during the morning of the previous day, May 27, and had installed the shield lid that afternoon.

The licensee transferred the cask from the spent fuel pool to the decontamination area at 4:10 p.m., about 11 hours before the event.

The transferred cask, in addition to spent fuel, was filled with pool water. About 30 gallons of water were removed from the cask vent prior to welding, creating a small pocket of air below the lid and the level of the weld.

Yesterday, May 29, early in the morning the shield lid was restored to a level position, and last night the cask was returned to the spent fuel pool. During these operations the cask was purged with nitrogen to eliminate the possibility of combustible gas.

Hydrogen gas at concentrations high enough to support combustion was detected in the atmosphere at the cask vent. Dissolved hydrogen was measured in the cask water at far higher concentrations than in the spent fuel pool. Currently, we believe hydrogen was the combustible gas.

Other than the displacement of a small amount of spent fuel water from the cask, there were no radiological

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releases detected. In particular, no noble gas which might be associated with a leaking fuel pin was detected, although monitoring was conducted. Radiation levels at the cask did not appear to change.

Currently, as of noon today 23 or 24 fuel bundles have been off-loaded from the cask and no damage observed.

There appears to be a white foam deposit on the lid from the burn.

After receiving the report of this event on May 28, the NRC initiated monitoring of the licensee's response to the event both onsite and in the NRC operations center. We have initiated an augmented inspection team which is currently at the site.

As an additional support to the team, I am sending inspectors to the vendor's office.

The NRC has notified current and near-term users of dry cask storage of the event.

The team's two basic functions are to determine the cause of the event, that is, the origin of the combustible gas, and the consequences of the event.

Currently two potential sources of hydrogen gas have been identified, although I do not want to prematurely restrict the search. These potential sources include radiolysis of the water in the cask and/or a chemical reaction between the spent fuel pool water, which routinely

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contains boric acid at PWRs, and zinc in a protective coating on the basket in the cask. The white foam material under atomic absorption analysis shows the presence of boron and zinc. Samples have been sent off site for further analysis by mass spectroscopy.

That is basically what we know coming into this meeting about the event.

CHAIRMAN JACKSON: What implications does this have for licensees who are planning to load such casks in

the near term?

DR. PAPERIELLO: What we need to do is pay attention to whether or not there could be hydrogen build up and be prepared to detect it. It is going to make a big difference on whether or not it was radiolysis, which is going to cut across all casks and be much harder to prevent, or whether or not it was a chemical reaction between this particular coating and the boric acid. This particular coating is only used on this model of cask, and I'm sure we can use different types of coatings that wouldn't have this property.

CHAIRMAN JACKSON: Are you planning to issue any requests or see a need to do so at this point relative to holding up the loading of any casks, and secondly, do you see a need to issue any interim guidance to those who may be planning to load casks?

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DR. PAPERIELLO: We are doing that orally right now by phone. Having checked around, there is nobody that is going to load a cask in the near future. If somebody was going to load a cask, what we would do is take a look and see how this event could bear on that particular action. It would depend upon the type of cask that was being loaded and the coatings involved.

CHAIRMAN JACKSON: Commissioner Rogers, any questions?

COMMISSIONER ROGERS: No question.

CHAIRMAN JACKSON: Commissioner Dicus.

COMMISSIONER DICUS: No.

DR. PAPERIELLO: Bill.

MR. TRAVERS: Thank you. I would like to begin with the plan presentation. For my part of that presentation I would like to cover a few things.

Number one, some aspects of the background of why dry storage came to be needed in the nuclear power industry.

I would like to follow with a description of NRC regulatory programs, including a description of our licensing process and some of the key technical criteria that are used in our evaluations.

I would like to follow that with the status of the current projects or anticipated projects that we have under review.

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Lastly, I would like to discuss some assessment of industry performance to date and touch on some of the dry cask storage issues that have been identified based on experience.

Following my presentation Andy Kugler from NRR is going to be describing some dry cask issues that are particularly relevant to in-plant activities. After Andy, Charlie Haughney, my deputy, is going to be discussing a number of initiatives that the staff has underway to further develop our guidance and aspects of our regulatory program, including inspection procedures.

I would like to skip to slide number three.

[Slide.]

MR. TRAVERS: The first issue I would like to address this afternoon is one that has to an extent caused some confusion. We, NRR and NMSS, have been asked by a number of organizations if we could clarify our respective roles relative to dry cask storage. It is particularly relevant since all of the dry cask storage projects today are ones which are located on power reactor sites.

Fundamentally and as a practical matter, there is quite a lot of coordination between NRR and NMSS on these activities, and that includes the regional implementation of our programs.

NRR, for example, has designated the lead project

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manager. Andy Kugler is that lead project manager. It has also designated a lead SES manager to interact with us on these issues.

To increase our efficiency and how we go about doing our job, we have agreed on certain lead activities that would be designated to either NMSS or NRR, and I would like to review just for a moment how we separate or divvy up the pie on those lead activities.

NMSS, for example, reviews and certifies storage and transportation cask systems. We issue Part 72 licenses for independent spent fuel storage installation. We maintain an inspection plan and support the regional inspections of ISFSIs on power reactor sites.

The regional role is an important one and we are

very often, together with NRR, supportive of inspections that are carried out on Part 50 sites.

NMSS maintains and implements the inspection program for cask vendors and fabricators. Out of the Spent Fuel Project Office we have a section of inspection experts who are fundamentally focused on metal fabrication and vendors.

We develop and maintain NRC guidance on independent spent fuel storage installations.

If I could have the next slide, please.

[Slide.]

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MR. TRAVERS: NRR in its lead role for Part 50 installations maintains the project management inspection program for power reactors. They are responsible principally for reviewing 50.59 evaluations, which evaluate the potential impact of independent spent fuel storage installation activities on the power plant itself.

NRR also supports regional inspections that are conducted relative to independent spent fuel storage activities jointly with NMSS.

NRR has retained the lead. We think this is an important aspect to ensure consistency in our public interaction. NRR maintains primary contact with both the media and the public for issues related to on-reactor site storage of dry spent fuel storage.

If we were dealing ultimately with an ISFSI that was not located on a power reactor site, NMSS would have the lead for essentially all of these activities.

CHAIRMAN JACKSON: Before you move ahead, I do have a question. How are the responsibilities divided in terms of who develops or oversees the procedures relative to the loading and unloading of the casks?

MR. TRAVERS: Are you referring to our inspection program procedures? Let me see if I can address at least those and move on if you have a further question.

We have taken the lead, NMSS Spent Fuel Project

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Office, for developing a set of procedures that speaks to inspection activities that range from the design through the actual operation of an ISFSI at the power reactor site. However, while we have the lead, it has been well coordinated with NRR and the regions. We have had a lot of comment on the draft procedures that were developed and finalized, and we have incorporated those with a lot of input from the inspectors who are out in the field as well as NRR interaction.

CHAIRMAN JACKSON: Where do those inspectors come from? Do they come from your shop?

MR. TRAVERS: Yes and no. They come from my shop, because we, as I mentioned, have a dedicated section of inspectors, but many of the inspectors who carry out day to day or week to month inspection activities at ISFSI sites come from the regions; they are region-based inspectors.

CHAIRMAN JACKSON: Are they the ones who observe the loading and unloading of the casks?

MR. TRAVERS: Yes. Typically we will be looking, at least in part, at preoperational activities to begin with. As an example, the team was recently sent to Arkansas Nuclear One, which we expect will be the next utility to implement a dry cask storage. The team consisted of regional inspectors. I believe it was led by a region-based inspector. It included NMSS personnel as well as NRR

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personnel.

CHAIRMAN JACKSON: Is it part of an inspection module for an inspector on some regularized basis to observe not preoperational but actual fuel transfer from the pool to the cask?

MR. TRAVERS: That is part of our inspection program procedures that give guidance to inspectors who not only for pre-op but periodically during operations will go out and observe the activities associated with continuing the loading of these.

CHAIRMAN JACKSON: For lack of better terminology, are these Part 50 inspectors or Part 72 inspectors?

MR. TRAVERS: They have to be both, in a sense.

CHAIRMAN JACKSON: That's what I'm trying to understand, how the responsibilities are divvied up, how it is decided who does what.

MR. RUSSELL: If it's a Part 50 reactor licensee conducting the activities of a general licensee under Part 72, then it is part of the reactor program oversight of

activities that are being conducted under the general license.

CHAIRMAN JACKSON: So they would be NRR inspectors.

MR. RUSSELL: They would be in the reactor program which is funded and carried out in the regions.

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The earlier question related to procedures and content of procedures and how that is done. NMSS in the original review and approval of the casks looks at the procedures generically, and there are functional guidelines that are contained in the standard review plan for those procedures.

Taking those from the generic procedure to the plant specific to interface with the weight handling systems in the facility, the particulars of a facility, other commitments that they may have with respect to control of heavy loads over safety-related equipment, et cetera, those are plant specific. That is done through the inspection activities because it is a general licensee. Then what we do is make sure that those activities are being conducted consistent with the licensing basis for that facility, where the crane is single failure proof, et cetera. That is the plant specific part, and NRR has responsibility for that.

In addition to the standard review plan we have issued draft inspection guidance that covers the scope of the inspection activities to be conducted for loading, off-loading, preoperational. That was also made publicly available at the time of the workshop.

CHAIRMAN JACKSON: Thank you.

MR. TRAVERS: Can I go to slide five, please.

[Slide.]

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MR. TRAVERS: As background for continuing the description of our regulatory program, I put together two slides that have a chronology that speaks somewhat to how we got to the point to where nuclear power plants need something other than the pools.

In 1977 the Administration deferred reprocessing as an option. Since nuclear power plant designs assumed reprocessing and government-sponsored disposal, the pools that are part of the Part 50 design typically are not sized for full life storage of the spent fuel that would be removed during operations.

For its part, in 1980 the NRC issued 10 CFR Part 72. That regulation anticipated both wet, away from reactor storage as well as dry cask storage. The regulations, which are performance based, speak both to the possibility of cool storage off of reactor site or separate from the normal spent fuel pool and dry cask storage as well.

In 1982 the Nuclear Waste Police Act mandated both NRC and DOE several activities relative to dry cask storage. For NRC the Act mandated that we develop streamlined licensing procedures. Up until that point the site-specific licensing option was the only one available under Part 72.

The same Act mandated that the Department of Energy carry out demonstrations of dry cask storage, and they did that.

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[Slide.]

MR. TRAVERS: The first independent spent fuel storage installation licenses were granted to Surry and Robinson for dry cask in 1986. These were done with support from the Department of Energy.

I should point out that in 1982, ironically enough, the first Part 72 license was issued to GE Morris, which is a wet storage facility in Illinois.

In 1990, in response to the Nuclear Waste Policy Act, the NRC added the general license provisions to Part 72. I'm going to be speaking in some considerable detail about just how that works in a few moments.

In 1993 Palisades became the first utility to implement the provisions of the general license and store fuel dry under those provisions. I know Chairman Jackson has visited that site. They use the VSC-24 system, the same one that Point Beach uses.

In 1996, I just wanted to point out that we, based on experience to date, are considering a number of changes to Part 72. As an example, we are thinking of clarifying requirements so that they are specific as to whether they are applicable to wet or dry storage or both. We have had some concern, and I think it is warranted, that the requirements today are a little cloudy in that regard.

We are thinking of clarifying requirements that
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specify whether or not requirements are applicable to either the general or the site-specific provisions. These are typically administrative provisions rather than technical ones.

We are looking at changes which would eliminate or modify requirements that up until today have required us to issue exemptions.

We are also looking at changes in response to a petition we received from Portland General Electric on a request that Part 72 regulations be expanded to allow for storage of greater than class C waste. Currently that is not provided for in the regulation.

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[Slide.]

MR. TRAVERS: Next I would like to describe the licensing processes that are available for licensing dry storage. As has already been mentioned, there are two, site-specific and general license.

Under the site-specific provisions, this is an option today for Part 50 licensees. However, site-specific provisions of Part 72 are required for any project which is considering dry storage off the reactor site.

Although there are significant administrative differences in how you go about implementing either the site-specific or general license, the technical
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considerations and the technical requirements that you have to meet are essentially the same.

Next slide, please.

[Slide.]

MR. TRAVERS: Under site-specific licensing an application is submitted to NRC, and the application typically consists of both the safety analysis report and an environmental report.

An opportunity for hearing is offered. NRC oversight encompasses both the review of the application received, preparation by NRC of a safety evaluation report, and either an environmental assessment or an environmental impact statement.

In addition, our normal inspection program acts to ensure compliance with the licensing basis.

I should note that for the six site-specific licensees to date we have not had a hearing develop. Largely, where there has been some initial interest in having a hearing, that has been mitigated by agreements that the staff has made to provide information in a timely way to principally states who were interested in the issue. So as of now we have yet to have our first full adjudicative hearing on dry cask storage.

Next slide, please.

[Slide.]

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MR. TRAVERS: Again, in response to the mandate of the Nuclear Waste Policy Act, the general license provisions of part 72 were established. They significantly streamline the administrative requirements for receiving a license.

Actually, the way to think of it is all Part 50 licensees by virtue of the change in the regulations were afforded a general license at the time Part 72 general license provisions were put into place. You have to be a power reactor licensee to make use of the provisions of the general license under Part 72.

The most significant difference that exists in that streamlined process that was mandated by the Act is the fact that there is no application required to be submitted for our review; there is license review; there is no SER; there is no EIS or EA prepared; there is no opportunity for hearing afforded. However, the requirements under the general license provision require the use of NRC certified casks. These storage system casks are certified by a rulemaking, which of course is a public process.

The general license really relies to a great extent on all of the considerations that were completed in connection with licensing Part 50 siting. Many of the programs for security and EP, and so on, were relied upon in our rulemaking to establish the general license approach.

Our NRC role, then, rather than having a direct
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application review component, is exclusively one of inspection. We have an opportunity to go out in the field and inspect how general licensees are implementing their

programs and to ensure that they are in fact in compliance with the requirements of Part 72.

It is important to point out that while no application is required, utilities who implement provisions of the general license must evaluate and document their compliance with the technical requirements of Part 72. So our inspection program can go out and review just how the utility is implementing the general license and just how they are complying with the Part 72 requirements.

COMMISSIONER ROGERS: You have an inspection manual prepared for that purpose?

MR. TRAVERS: We have inspection procedures, yes. We are developing an umbrella inspection manual that will act as the guidelines for those procedures, but we thought it most important to get those procedures out to the regional personnel as quickly as we could. We still have an action to complete the overall inspection manual that guides those procedures.

MR. RUSSELL: Some of the Part 50 licensee activities that are related to the cask, including the foundation the pad is placed on, the seismic adequacy of that, et cetera, is also addressed in the inspection

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guidance to be used in our review of the changes to the facility that are made under 50.59 to ensure that they are done consistently with the design basis for the site. For example, a site hazard and how you characterize the soils and what you do for the seismic input to the pad to make sure, as we had in the Palisades case where it was near slopes, that the slopes were considered so that you would not have the potential for the slopes failing and burying the casks, for example.

MR. TRAVERS: That's right. There are really two important components of the evaluation and documentation that these utilities have to do, and one has to do with their compliance with Part 72. The other, as Bill pointed out, has to do with their compliance with their Part 50 license.

CHAIRMAN JACKSON: I was going to wait and ask relative to your discussion about the safety review later on, but does this then actually apply to spent fuel movements? Are there technical requirements in Part 72 or others that relate to those movements from the pool to the cask?

MR. TRAVERS: There are performance requirements that relate to the design and what the design needs to be subject to in terms of the potential for accidents.

MR. RUSSELL: The specifics in the reactor for

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fuel handling is a part of the Part 50 license, and fuel handling accidents are evaluated in the evaluation of dropping a fuel bundle and the consequences of that and the radiological aspects, the ventilation systems associated with the fuel handling area, et cetera, which was one of the advantages of tying this to Part 50. Where those activities had already been done under the Part 50 license you didn't need to repeat them for the review. That was done through the generic rulemaking.

We need to make sure that they stay consistent with that licensing basis, that the ventilation systems are operable, that they are in fact consistent with their tech specs, because there are often technical specifications as well associated with load pads, heavy loads that they are handled, et cetera. That's how we got into the issue with the bulletin on Oyster Creek.

CHAIRMAN JACKSON: Those requirements are sufficiently broad that they do cover what would be required to load the casks?

MR. RUSSELL: That's correct. That is the plant specific aspects for handling the fuel to get it into the cask. Generally the loading and unloading as relates to the cask, the baskets, the shims, putting the lid on, the sampling, the functional requirements are done during a Part 72 review of the cask system. The procedures for physically

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grappling the bundle, moving it with the handling equipment in the fuel building has been done in the past, and those licensing basis requirements are in existence today.

We have augmented the inspection guidance, particularly as it relates to 50.59 type reviews, because there will be some changes to the facility that are required. That is, the location of the pad, et cetera. Those kinds of things have to be done under 50.59.

They have also got to look at the procedures to interface the specific procedures associated with the cask once the fuel is in the cask and the cask handling with the facility requirements for handling heavy loads, handling fuel, who is supervising the handling of fuel, et cetera.

CHAIRMAN JACKSON: I guess this question goes back to the other Bill. Where are the requirements codified having to do with the loading of the cask, sealing it, evacuating it, et cetera? That's what I'm interested in.

MR. TRAVERS: There is a requirement in Part 72 that general descriptions of procedures be included in an application, or if you are a general licensee, you have to develop them on your own. You don't have to submit them necessarily, but we in our inspection program can go out and ensure that that has in fact been done.

CHAIRMAN JACKSON: Thank you.

MR. TRAVERS: Next slide, please.

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[Slide.]

MR. TRAVERS: The next is very colorful, at least on the screen. It gives an indication of the existing sites that are currently using dry cask storage systems. As the Chairman pointed out earlier, there are nine of those. Three of the most recent facilities to begin dry cask storage activities are doing so under the general license, and those are Point Beach, Palisades and Davis Besse.

CHAIRMAN JACKSON: From your understanding, what drives a licensee to pick the site specific versus the general route?

MR. TRAVERS: I think there are a number of factors. Let me see if I can give you my own thinking on it.

CHAIRMAN JACKSON: I'm not going to ask you to read their mind, but what are the relative advantages or disadvantages or vulnerabilities or non-vulnerabilities for a licensee?

MR. TRAVERS: One obvious advantage to the general license process is that an application isn't needed to be submitted. There is no opportunity for hearing. A disadvantage, however, is if you're a plant -- let me give you an example -- like Trojan or Rancho Seco, and you are considering coming in and implementing dry cask storage activities, your interest is in decommissioning and perhaps

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getting rid of your Part 50 license and out from under a number of the requirements associated with retaining a Part 50 license.

If you do that and you have implemented dry storage under the general license provisions, you no longer hold a Part 50 license and are no longer, I believe, legally able to do so and continue that. So what you would need to do at that point is convert your license, and that would require the application submittal, the potential for hearing, and so on and so forth. I think that is the most obvious.

DR. PAPERIELLO: I think there may be a slight advantage up to now. There are more casks you could use, and as there are more and more dry casks certified for use under the general license, that might also be a consideration.

[Slide.]

MR. TRAVERS: The next slide follows through on the last one by giving you an indication of projects that we understand are potential near-term dry cask storage activities. There are number of those. I will point out a couple that are significant. Arkansas Nuclear One is the one we expect under the general license provisions will implement dry storage next. That could occur as early as next month.

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There are two projects on this map, the TMI-2 fuel at INEL and the Prairie Island off site, which may become the first application that we will receive for off-reactor site dry cask storage.

CHAIRMAN JACKSON: Is Arkansas Nuclear One planning to use the VSC-24?

MR. TRAVERS: They are, yes.

CHAIRMAN JACKSON: But you've been in contact with them relative to Point Beach?

MR. TRAVERS: We have.

The DOE is sponsoring the INEL TMI-2 fuel. We have had preliminary meetings with them. Their current plan is to get an application in in the summer or fall of this

year.

The same data or thereabouts applies to the Prairie Island off-site project. That project is driven by a requirement of state law that really necessitates the utility driving forward to identifying and licensing an off-reactor site if they are to continue to make use of their current dry cask storage facility, at least expanding it.

Next slide, please.

[Slide.]

MR. TRAVERS: The growing need for dry storage can be illustrated by an estimate of the projected loss of full

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core reserve. That is basically what this slide shows. Although core reserve or full core reserve is not a requirement, it is very much on the minds of the utilities who need to plan for the possibility of operation and maintenance and the need to have a full core reserve.

Based on the projections that have been made for the pools, another 50 pools or so may reach their capacity at least in terms of full core reserve in the next ten years or so. You can see by where we are on that slope it is a rapidly increasing potential for dry cask storage projects. My statements assume that there is no central storage facility proffered by the Department of Energy or that something else becomes available.

COMMISSIONER ROGERS: I'm a little puzzled here about what you mean by reserve. Isn't it a requirement that all operating reactors have to be able to do a full core off-load?

MR. RUSSELL: No, it's not a binding requirement in that context. We have expected that they could do that in order to perform inspections, but there may be a situation where they don't have a full core off-load capability. If a requirement to perform an inspection occurred or something else, they may have to shut down.

In most cases facilities have maintained a full core off-load capability. There have been periods of time

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when they have been expanding pools or others that maybe for a short period of time they did not have that, but generally the practice has been to have the capability to off-load the core to be able to perform inspections, but that is not an NRC requirement.

COMMISSIONER ROGERS: I see. I was under the impression that if there was some kind of a safety issue that required a full core off-load that it could be done.

CHAIRMAN JACKSON: Even if there were an emergency, we don't have a requirement that they be able to do that?

MR. RUSSELL: Our requirements are to ensure the capability to cool the fuel and maintain it long term in the vessel. If they had a requirement to perform an inspection and they were not able to perform that inspection, they would either have to get relief or shut down and not operate until such time as they could perform the inspections.

MR. TRAVERS: At this point we are going to try something a little different. We have prepared about a three minute video to give some perspective on dry cask storage. It happens to be the very plant that you visited, Chairman Jackson. Palisades prepared it.

CHAIRMAN JACKSON: I'm not in it, right?

[Laughter.]

MR. TRAVERS: Consumers Power provided it to us at

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our recent workshop. We thought it might provide the Commission perspective on the transfer of this material loading, and so forth. I understand it takes about six seconds for us to get it cued up.

[Video shown.]

NARRATOR: Casks were constructed on site at Palisades. The casks consist of two large containers, one placed inside the other. The inner container, or the multi-assembly sealed basket, can accommodate 24 spent fuel assemblies. They are designed to last more than 50 years in a harsh coastal marine environment.

The basket is placed in a transfer cask and lowered into the spent fuel pool. The spent fuel assemblies are then placed in the basket. At this point the first of two lids that will cover the assemblies is placed on the basket. This shield lid is made up of seven inches of steel encased concrete.

The basket is moved to a special area where it is

decontaminated and vacuum dried. Here the shield lid is welded in place. The second lid, a thick steel disk, is welded in place over the shield lid and forms the structural lid.

The double sealed inner container is then placed inside a larger steel and concrete container and another lid is bolted in place.

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The transfer of the first 48 fuel assemblies from the spent fuel pool into the dry cask system began May 7, 1993. We have seen how it was supposed to work. Now let's take a look at how it actually happened.

The basket was set into a transfer cask and lowered into the spent fuel pool. One by one plant operators located the pre-selected assemblies and placed them into the basket using a computer operated fuel handling machine which electronically locates the spent fuel assemblies.

Once filled with 24 assemblies, a shield lid was set in place.

The basket, still in the transfer cask, was then removed from the spent fuel pool and lifted to a decontamination area where it was cleaned and vacuum dried.

The seven inch steel and concrete shield lid was then welded into place. An automatic welding machine was used to secure the basket's steel structural lid.

The basket was then set in the steel and concrete cask. Another lid was bolted in place. The cask was ready to move to the storage facility.

The storage facility measures 195 feet by 30 feet and is located within the plant's fenced area. The concrete casks are 16-1/2 feet tall and 11 feet in diameter. They weigh 100 tons each when empty and 130 tons when loaded.

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The transfer was successful by a number of measures. There were no problems, and from a safety standpoint the casks are performing well, shielding radiation three times better than expected.

[End of video.]

MR. TRAVERS: Short, as promised. We are not going to show all the other designs that are out there, but we thought it might provide an interesting perspective, particularly in light of some of the events of this week. That is in fact the VSC-24 system that is used at Point Beach.

If I can turn to slide 13, I will continue by giving you a sense of the focus of our safety review for dry cask storage.

[Slide.]

MR. TRAVERS: Our review focuses on four principal technical areas with the overall objective of ensuring the fuel is confined and isolated from the public and the environment, protecting workers, ensuring subcriticality, and protecting the fuel itself against degradation to facilitate ultimately its removal and further processing.

The thermal evaluation, for example, focuses on maintaining the integrity of the fuel cladding for the 20-plus years of assumed storage service. One requirement in association with the thermal evaluation is a requirement

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that passive cooling be provided to keep the temperatures down over the lifetime of the project.

Criticality is assessed and subcriticality must be maintained both in normal and accident conditions.

The structural review is focused on the confinement function. As an example of a requirement, redundant sealing systems are required for dry casks. Hence the two lids that you saw used in the VSC-24 design.

Next slide, please.

[Slide.]

MR. TRAVERS: The safety review, in addition, requires that licensees, both site specific and general, review their programs in these areas to ensure that they cover or have been enhanced to cover the dry storage activities. Applicants must review and modify these programs in a host of areas presented to ensure that all of the dry cask storage activities are appropriately considered.

The extent of these changes can vary, depending on the programs that are involved. It really comes down to ultimately the operating procedures that the utility needs to modify that I think take up the most time. At our recent workshop we heard utility representatives describe the need

for very early planning to facilitate dry cask storage. In fact, as early as five years prior to the beginning of the
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first storage is not too soon to begin the kind of planning that is believed necessary to implement these kinds of activities.

Next slide, please.

[Slide.]

MR. TRAVERS: Accident conditions at the pad and in transit to the pad are also considered in the Part 72 assessment and our assessment of the adequacy of designs. The kinds of accidents that are postulated include fires and explosions, the potential for drops and tipovers, for example, based on real operational height limitations that are associated with the different systems. Fire and explosions and the potential for these kinds of accidents are based on an assessment or at least an assumed situation where combustible material or some outside force is available to impact the cask.

CHAIRMAN JACKSON: From the outside in?

MR. TRAVERS: Yes. For example, one of the accidents that is typically evaluated is the combustion of the diesel fuel in the transporter as it is being transported out to the site. The impact on the cask of a fire of that sort is evaluated against the performance requirements that casks must maintain.

Typically it is the protection of the fuel that is limiting in these evaluations rather than the potential for
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loss of confinement, given the robustness of these casks. The structural integrity is so vast and the margin so great that typically the limiting factors in the design deal with the potential for damaging or binding the fuel and limiting the ability to withdraw it very easily.

Another aspect of what the staff has done relatively recently is to assess the potential impact of a classified sabotage event and evaluate the vulnerabilities of the current cask storage systems that are out there. I understand that we are preparing a separate report for the Commission on this aspect of the results that have been determined to date.

I think I am going to skip the next slide and go on to slide 17 and simply point out that one other aspect of the regulations consider and our review considers is the impact of natural events like earthquakes and floods, high winds, wind missiles, and so forth. This is common to the kind of evaluations that are done for nuclear power plant systems as well.

[Slide.]

MR. TRAVERS: Slide 17 focuses on the principal dose evaluation criteria that are mandated within the requirements of Part 72. They are basically two, that during normal operations the annual dose equivalent to a real individual meet the EPA 40 CFR 190 limits of 25
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millirem whole body or 75 millirem to the thyroid.

The accident site dose evaluation criteria are that at the controlled area boundary you must not exceed 5 rem to the whole body or any organ.

Typically, when we assess accidents we don't reach values close at all to these limits. Even under extraordinary assumptions, where we assume confinement is lost and the fission gap from all of the fuel rods is released, we are only looking at about 100 millirem or less at the site exclusion boundary for these kinds of accidents.

Next slide, please.

[Slide.]

MR. TRAVERS: I wanted to touch on the current cases that we either have in review or expect. I mentioned already the site specific applications that are expected or in house. I want to mention that in addition to looking at site specific licenses or the implementation of the general license we also certify storage cask designs. This second listing includes designs from Vectra, Sierra Nuclear and HOLTEC.

These designs are dual purpose designs. Currently in the field all of the dry cask storage systems are single purpose designs. They are not today certified for transportation. Clearly the movement of the industry is in the direction of both storage and transportation. The
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regulations that apply to transportation are somewhat different. They are not contained in Part 72; they are

contained in Part 71. So we are looking at reviews that need to embody both the requirements in Part 71 and Part 72 and certifying for both purposes, transportation and storage, these new technologies.

CHAIRMAN JACKSON: How do you intend to approach that? Are you just going to draw from each, Part 71 and Part 72? How do you intend to do that?

MR. TRAVERS: While the requirements are different, they typically address similar technical issues, like criticality, for example. Where one regulation is bounding we are going to apply that requirement. I will give you an example if it's helpful.

For transportation purposes, there is an assumption that you can have an accident and that fresh water can leak into the package. For that purpose, the designer must demonstrate even with water and leakage that subcriticality is maintained. That requirement is bounding because it doesn't exist for Part 72. The package would have to demonstrate that they meet the requirements of both, but Part 71 in this case would be limiting.

CHAIRMAN JACKSON: You mentioned the TMI-2 core. Those reviews, is it similar for that fuel at INEL as for the other three that you have listed, or is this only for

the undamaged part of the core, or what?

MR. TRAVERS: Just about the entire core was damaged in that accident. The fuel that is currently being stored at INEL is in special canisters, which I happened to approve when I was at the site some years ago. I was involved in the technical and safety review of the transport and ultimate storage of that fuel. So it's in special cans now. The system that is being developed would take those canisters and place them in a different kind of egg crate, but basically a canister system for storage dry. Right now they are stored wet in a pool.

CHAIRMAN JACKSON: So in a certain sense the nature of the review is somewhat different.

MR. TRAVERS: It is going to be somewhat different. The technical aspects are fairly unique.

[Slide.]

MR. TRAVERS: Other technical reviews that we either have in house or have begun some discussion with the Department of Energy include the General Atomics legal weight truck cask. This is a transport cask that is expected to be used by plants which cannot accommodate the larger rail cask. So it is expected that this cask, if it were approved, would fill a gap for plants that today don't have the infrastructure, either the lifting capacity or the rail spur necessary to accommodate larger, 125 ton rail

casks. While it was initially being sponsored by the Department of Energy, today it is not being, and General Atomics is taking on the continued evaluation on its own.

The remaining four bullets have to do with projects that the Department of Energy is sponsoring.

The first has to do with an attempt by the Department of Energy to establish a methodology for obtaining credit for burnup. In all of our regulatory approvals today we do not assume any credit in assessing criticality potential for the burnup which the fuel is exposed to.

We have a meeting tomorrow, I believe, with the Department of Energy on this. We have an application in from them. They are approaching it in phases. In the first phase they would look for depletion of fission products and buildup of actinides as the first potential credit for burnup. It would ultimately allow programs like MPC to optimize the amount of fuel that could be put in one package. Without burnup credit you can't put nearly as much fuel in a package, and in the repository I believe you are more limited in how you could space the fuel if it were at Yucca, or wherever.

We have put MPC down here again. This is an on again, off again review. At one time MPC, sponsored by the Department of Energy, was expected to be in by now. Because

of funding cuts, it was taken off the plate. It appears to be back on now, at least in preliminary discussions with the Department of Energy, at least as it relates to a transportation version of the MPC.

The second to last bullet has to do with the Department of Energy sponsorship of a dry transfer system. This would allow transfer of bare fuel assemblies without

the need for a pool. If you were to take as an example Trojan and you decommissioned your spent fuel pool, you might, if the Department of Energy is successful, be able to bring a dry transfer system on if you needed to repackage your fuel assemblies.

CHAIRMAN JACKSON: This is like a portable hot cell.

MR. TRAVERS: That's correct.

Lastly, I wanted to make note of the fact that the Department of Energy has also indicated that even in the absence of legislation for a specific central interim storage site they intend to submit a topical report which would address essentially the same technical issues for an unidentified site for central interim storage. So they would attempt to bound site criteria in this report and attempt to receive topical approval from the Commission.

CHAIRMAN JACKSON: Would this be a generic environmental impact?

MR. TRAVERS: Yes. It's a generic attempt to see if they can't set up and reach agreement with us on the principal technical issues that need to be evaluated and resolved.

The last thing I would like to cover is to take a few minutes and touch on industry performance with dry cask storage and to identify some of the issues that need improvement.

Next slide, please.

[Slide.]

MR. TRAVERS: Surprisingly, industry performance with dry cask storage has been mixed. While some projects have proceeded with relatively few problems, a number of other projects have faced a considerable number of difficulties.

The problems are surprising since the technology of dry cask storage is relatively straightforward. This is particularly true compared to the technology of nuclear power plants.

While dry storage is relatively low tech, it does, however, require high quality in all aspects of design, fabrication and operation. It is this quality component which has been lacking in a number of dry storage projects to date.

Problems we have encountered include incomplete or

inadequate applications, inadequate QA programs, failures to adequately control fabrication of equipment, failures to control and document design changes, and failures to control procurement materials and services.

These kinds of issues have led in several instances to questions being raised about the fundamental adequacy of some components. Although each specific issue has been resolved and the equipment determined to be acceptable, these problems are troubling because they really are indicative of programmatic errors that could have resulted in more serious outcomes.

A number of the problems we have encountered involve vendors, and particularly the fabricators of cask equipment. Typically the cask fabricators are small organizations with little if any recent experience with nuclear applications and quality requirements. It is becoming clearer with experience that the nuclear utilities who are principally responsible need to take an extremely proactive role in ensuring that their contractors provide quality equipment which is well documented to demonstrate that they conform with the licensing basis.

In discussions with us utilities at the workshop and other meetings seem to be getting that message, and in fact the message that we are getting is they are setting aside significant resources and efforts to provide strict

oversight to their vendors.

For our part, we have determined that a number of actions, including development of additional regulatory guidance, should be implemented. Available guidance is relatively sparse, and in a few moments Charlie Haughney is going to discuss more about our dry cask storage initiatives, the ones that are underway and the ones that are planned.

Right now I would like to turn it over to Andy Kugler from NRR. Andy plans to speak to dry cask issues which are principally related to in-plant activities.

DR. PAPERIELLO: I would like to make one

observation. These issues are the same at either specifically licensed or generally licensed facilities. I don't see in the plants that we have been involved with in the last two years any difference in the types of problems between the two facilities. So the type of licensing doesn't seem to be the cause of the problem.

CHAIRMAN JACKSON: Okay.

MR. KUGLER: I am going to be discussing two issues that we are dealing with for in-plant heavy load control and loading and unloading procedures.

[Slide.]

MR. KUGLER: In the area of heavy load control, with the formulation of the action plan last year we formed

a working group and we started looking at issues related to heavy load control.

The group reviewed concerns that had been identified concerning the evaluation of heavy load control activities at one site. As a result of that review and the information we gathered, we developed Bulletin 96-02, which I will be speaking to in a little more detail in a moment.

Meanwhile, the group is still evaluating the need to revise the existing inspection procedures to include more information on heavy load control, particularly in light of what we have learned in recent months.

Next slide, please.

[Slide.]

MR. KUGLER: As I mentioned, we issued Bulletin 96-02 on April 11 of this year. The bulletin requests licensees to review their heavy load control programs versus the existing regulatory guidelines and their existing licensing basis.

I wanted to mention that the bulletin does not just cover cask issues. This is heavy load control for any type of heavy load.

The bulletin also requests licensees to review their technical specifications for the handling of heavy loads over spent fuel. In particular, issues such as the handling of the shield lids over the fuel that has been

moved into the cask during the loading process.

We have also, of course, required them to report back to us the results of their reviews.

The emphasis of the bulletin is on ensuring that the activities that are carried out for the handling of heavy loads at power have either previously been analyzed by the staff and approved or that they do receive approval prior to implementation.

Although the bulletin was developed as a result of concerns with heavy load control, it really speaks to the general issue of operating a plant within their licensing basis.

Next slide, please.

[Slide.]

COMMISSIONER ROGERS: Are there any organized standards in this area from ASTM or anything of that sort?

MR. KUGLER: There are standards for crane design and for testing the cranes and for the design of the lifting equipment.

COMMISSIONER ROGERS: But not procedural?

MR. KUGLER: No. The ANSI standard does speak to having procedures, but I don't think it goes into detail on what should be in the procedures.

MR. RUSSELL: The one other area that I would like to identify is an issue which may make it difficult for some

licensees to implement the general license, and that is part of the assumptions that go into a general license review are predicated upon having lifting equipment that meets single failure criteria such that you don't have to address the issue of dropping casks before they are fully assembled, that is, the lift heights and the other things that are part of the certificate of compliance.

During the period of time when you are loading and other activities are being done, the assumption is it is being done with a crane and rigging equipment, et cetera, that meets the requirements for single failure. Some facilities do not have such cranes. That's the type of situation we got into with Oyster Creek, and they were looking at how they would modify the crane, the weight handling equipment, et cetera.

Ensuring that the assumptions that are associated with licensing of the cask for a general license are in fact

consistent with the design of the facility is one of the issues of interface that we have to look at. That is how we got into the issues associated with heavy loads and whether they do or don't have cranes which meet redundant load paths, et cetera.

MR. KUGLER: In the area of cask loading and unloading we also formed a working group, a somewhat larger group, to look at issues in that area. We collected issues

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by reviewing documentation that existed from the sites that have been through the process and from interviews with staff both in the regions and here at headquarters, and then we evaluated those issues.

Based on our evaluations, we are recommending changes to the inspection procedures and to the draft standard review plan to ensure that the inspection and licensing reviews consider those issues.

We are also proposing an information notice to call selected issues to the attention of the licensees, and we are in the process of drafting that information notice right now.

Next slide, please.

[Slide.]

MR. KUGLER: In terms of the procedures themselves, the inspectors have found the loading procedures to be acceptable. There are a number of factors that simplify the preparation of loading procedures as compared to unloading procedures. During loading process you've characterized the fuel; you know what condition it is in as you put it into the cask. Also you can take advantage of lessons learned from other licensees and from the dry runs that the licensee performs on site.

For the unloading procedures, what we are finding is that they are more complex than the loading procedures.

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Unfortunately some of the older SARs fail to recognize this and tend to indicate that unloading is simply the reverse of loading, which is not true. For one thing, licensees need to consider the potential condition of the fuel when they go to unload it. Depending on the situation, the fuel may have been in the cask for decades, and they need to evaluate the condition of the fuel to the extent possible before they start unloading it.

We do put an inert environment into these casks to prevent oxidation of the fuel. Assuming that that environment has been maintained, the fuel should be in good condition when they go to unload it, but they need to evaluate.

There are also issues associated with the reflooding of the cask. During the unloading process we have to refill the cask with water. There are some issues associated with that such as cask pressurization due to steam generation as you put cold water onto the hot fuel. Also the consideration of any thermal shock to the fuel as you are reflooding it, and also radiological protection for the workers during that phase, because you will be venting the cask. Generally they are going to direct that venting either to the pool or to a ventilation system, but they need to consider that.

In addition, there is essentially no cask

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unloading experience for them to look back on for lessons learned. So they don't have that information available to them as compared to loading procedures.

In addition to the working group activities, the staff has been putting increased emphasis on our inspection activities in this area. The procedures for the recently built facilities have been inspected during the preoperational phase using the new inspection procedures that Bill Travers had mentioned. These inspections were a joint effort between the regions, NRR and NMSS. We basically pool our resources and our expertise to perform those inspections.

We plan to continue those inspections for all future facilities.

We are also taking a look back at some of the old facilities and looking at what inspections have been performed there to determine whether we feel that we have documented well enough that those procedures have been inspected. If we determine that these older facilities were not well documented, we are going back and take a look at them as well and do further inspections in those locations.

That is all I planned to say on loading and

unloading. If there are no questions, I will turn it over to Charlie to talk about NRR staff initiatives.

MR. HAUGHNEY: Good afternoon.

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[Slide.]

MR. HAUGHNEY: On slide 25 the top bullet talks about an action plan. This document, which was issued by Dr. Paperiello and Mr. Russell about ten months ago, was developed to address a number of interface issues such as some of those we were talking about today: who is in charge of a particular inspection and how often is it done.

It actually triggered the heavy loads task group and some other things. The action plan has a number of items that have been completed and a few that remain, including our activities jointly with industry on selected issues involving cask handling and vendor problems where the Nuclear Energy Institute has issued sort of a parallel working group of industry personnel to address these issues. We meet with them periodically.

Out of all that, which I think was kind of a natural outcome of the creation of the Spent Fuel Project Office about a year ago and getting our staff to the point where we could really work on these issues, we have begun to focus on improving some fuzzy spots in our regulatory base which I think were understandable in the fact that we haven't been in the dry storage field all that long.

Next slide, please.

[Slide.]

MR. HAUGHNEY: That first bullet just lists some

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of the more recent activities we have had on a broader scale with the industry. Actually, now I think we are more or less a permanent marquee player in Bill Russell's annual regulatory information conference. We had a session that was a couple of hours long in a 400 seat room, and it was pretty full, just last April. Our workshop here was overflowing. We actually packed the auditorium to the point we had to use this room on an overflow basis.

The last one talks about a series of meetings we haven't yet started, but these are looking to go to a utility at about the fuel loading minus 18 to 24 month range in which we will hold public meetings of a fairly extensive duration, probably a day and a half or two days, where we will talk about all these different implementation issues in terms of licensing basis both in Part 50 and Part 72 and how well they are either prepared or are preparing for fuel load.

Andy really covered the last one quite well in terms of what we are doing with inspection of loading and unloading procedures. I will just state that I view these as the centerpiece of our overall inspection program in terms of an operational standpoint.

Next slide.

[Slide.]

MR. HAUGHNEY: In February we issued five

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inspection procedures. They cover the subjects you see there, which would sort of take the project from the conceptual stage to actual fruition.

These were written by some seasoned inspectors who also had considerable knowledge of dry cask design. They were tested in the regions a number of times, thoroughly reviewed by NRR and all the pertinent regional staff and the comments incorporated before issuance this past February.

Nonetheless, we have had to change them twice already, at least one of the procedures, to add things that have occurred to us as we continue our regulatory examination of issues that have come forth.

I don't expect these things will remain static in the inspection manual. I think we will continue to change them periodically.

As you know, we issued a draft standard review plan. This particular document is out for public comment, and we are asking for an end to that comment period in mid-June. This particular plan is for the cask systems themselves, either concrete or steel, but doesn't cover ancillary equipment such as pads or cranes or things like that.

As we switch to the next slide, there are a couple things of note.

[Slide.]

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MR. HAUGHNEY: We have in progress a siting

standard review plan which would get into issues such as pad and pad placement and earthquake and tornado and all these other siting considerations that could affect principally off-reactor site but even potentially on-reactor site analyses.

Furthermore, we are committed to writing some transportation cask SRPs kind of in two families. One is for the large spent fuel storage casks and the second is for other radioactive materials for which we do transportation reviews. Examples of that would be radiography cameras, large stationary irradiator shield packages and things like that, the so-called type B transport packages certified under Part 71.

Switching back to the top bullet, Inspection Manual Chapter 2690 is a document in the NRR inspection manual that is kind of an umbrella description of how all the individual inspection procedures are to be implemented. It talks about scheduling prioritization.

There is a procedure in the manual now that is out of date. It needs to be redone in the light of these new procedures and the experience we have gained over the past couple years. We have got a person slated to join us from Region III who is a very experienced inspector and in fact helped us with the five procedures, and he will be here

right after the Fourth of July and hitting the word processor on Manual Chapter 2690.

DR. PAPERIELLO: And this will orchestrate who has the responsibility for which of these procedures. Almost every one of these procedures is actually executed by a multidisciplinary team from my office, from Bill's office, and from the regions. So there are multiple skills needed in these things.

It will also provide, as we talked earlier, the early meeting with utilities who are planning dry cask storage to try to communicate these problems and ensure that the work is being done so we don't come up to the last minute and have problems.

MR. HAUGHNEY: That concludes the staff's presentation.

CHAIRMAN JACKSON: I have a couple of quick questions for you.

As part of your action plan are you dealing with the issue of potentially overlapping responsibilities that might be confusing to licensees in terms of the guidance you are going to be putting out? For instance, perhaps the issue of monitoring and reporting requirements and to what extent they differ between the parts that are covered by the NRR folks and the activities related with that vice the folks who would be covered by either region-based people, et

cetera, or Part 72 folks.

I guess the question is, are you planning to address these kinds of issues in the action plan?

MR. HAUGHNEY: The answer is yes. One of the things that drove us to the action plan is we were stumbling all over ourselves, to be honest with you, on some of these issues like heavy loads. We knew we were both in charge to some degree or another, but who had the lead and how we were to support each other, that is really the reason the two office directors, I think in frustration, directed us to start the plan.

If you look through the action plan itself, there are a few issues that relate directly to internal communications like staff training just so we could talk to each other in Part 72 language, for instance. We have done a lot of that. There are others like heavy loads where we decided it's primarily an NRR issue but we would provide support for them.

I think it's in there. Whether it really covers all of the issues, the reporting issue you brought up, to me brings to mind Part 50.72 and Part 50 on reactor reporting requirements, and there is a corresponding requirement in Part 72 that is much simpler.

CHAIRMAN JACKSON: Right.

MR. HAUGHNEY: In fact this very week we have a

team that has that issue to consider at Point Beach.

This whole issue or coordination is one that although we have made progress on, I don't think we can declare victory.

CHAIRMAN JACKSON: I guess I'm not looking for you to declare victory yet since even you say there are any

number of issues you have yet to address, but ones that relate to our interface with the licensees relative to not having confusion about what the requirements are and how we are going to monitor to those requirements, and I guess I am looking for some comfort that that is high on your agenda relative to specifically working it in the action plan.

DR. PAPERIELLO: It is, and Manual Chapter 2690 should make it clear to people who read it, and we will provide it, of course, to the industry on who has the responsibility for what actions and how they are being coordinated.

CHAIRMAN JACKSON: I'm asking something else.

MR. RUSSELL: Let me step back to a higher level. We developed a memorandum between the two offices that identifies at the higher level who has responsibility for what activities. The project interface responsibilities remain with NRR until such time as there is no longer wet storage in a fuel pool. We have identified broadly what the interfaces are both in the dry fuel area, in the

decommissioning area, et cetera.

We have broad agreement between the two offices as to how those are carried out. What we have been talking about is the next level of detail under those as it relates to who has lead responsibility for various inspection procedures, how the details are implemented.

But the interface with the licensee, issues that are raised associated with activities on the site, Part 50 as compared to an away from a reactor site Part 72 separate license, would be through the project's organization in NRR. We would get issues from NMSS, but the actual correspondence would be issued, so we would maintain a focal point of contact. That was one of the issues we highlighted on the slide that would remain an NRR responsibility, for example.

CHAIRMAN JACKSON: I thought I heard, Charlie, you saying something slightly different, that there are some differences with respect to reporting requirements, and the question is, how do those get addressed?

MR. HAUGHNEY: This issue has just come up in the last day or so based on this event. Personally, as I read the regulations, the event is reportable under both 72 and 50.72. I think I can find people on the staff that on the first reading wouldn't necessarily agree with that. So that is one that we have to consider to begin to look at, whether there is an unnecessary overlap.

I think you were also asking about something else, and that is our communication with the industry and whether that is sufficient and clear and covering all these kinds of issues.

First of all, the action plan addresses that subject. Whether it is addressing it specifically and broadly enough for every example that would come up I'm not so sure.

CHAIRMAN JACKSON: But you do have a focus in the action plan.

MR. HAUGHNEY: That's right. It's an item. There are NEI people that we can call in an instant's notice and will understand what we are talking about. We can call meetings in any sort of reasonable forum to address these issues.

CHAIRMAN JACKSON: One other question, and it's on the other side of the fence, having to do with public understanding and public participation. I remember the first time I heard about the site specific versus the general licenses. I thought that was interesting. That is why I am happy to have had you discuss it today.

Given the very different requirements in terms of opportunities for hearings and what kinds of things are required, what are you doing to enhance public participation and understanding of the technology, what the actual risks

are or are not associated with this technology, as well as with the handling of the fuel and moving it from the pools to the casks? What are you doing on that front?

MR. HAUGHNEY: We are doing quite a bit, but I must tell you I think it's mostly reactive in response to particular requests to appear at county council meetings or perhaps the staff itself will decide the need for a particular public meeting and we'll do that. We have got an example of that coming up with two inspection activities in Region III. One is a reinspection of the unloading procedures, the revised ones for Palisades. When we hold

that exit meeting, that is going to be open to the public. And then this augmented inspection team at Point Beach by procedure will be open to the public.

I was just trying to recall today how many places I've been to in the past two or three years, in Grant County, North Dakota, testifying twice before the New Mexico Legislature. It is all kinds of things, but they aren't systematic. There is not something like a two-step process that we have. We just haven't really thought it through nor frankly had the time to develop something like that.

CHAIRMAN JACKSON: Is there an opportunity with the regional administrators in their quarterly press conferences, not necessarily all the time but in areas where there might be some potential loading, to just talk about it

and in the course of it discuss the difference between a general license and site specific and how it relates to particular facilities in that region so that there is not the confusion in the minds of the public? I just think that is kind of a regularized process that is not strictly reactive and not crisis oriented that allows us to educate the public.

MR. TRAVERS: As part of this informal process we do update in terms of the media information that is presented to the regions so that the regional administrators are aware.

CHAIRMAN JACKSON: That's what I am saying.

MR. TRAVERS: We have further avenues as well.

CHAIRMAN JACKSON: You can build off of that.

MR. RUSSELL: The one longer term item that was mentioned earlier is that we are planning on conducting on site or near site one to two day technical review meetings on the order of 18 to 24 months prior to use to address these issues, to get ahead of it before it becomes an emotional issue in a local area. That would be another opportunity to explain the differences between licensing and approach, to cover those kinds of issues. We have not gotten far enough ahead of the reactive mode to do that, but it is in the planning process to do that in the future.

CHAIRMAN JACKSON: Commissioner Rogers.

COMMISSIONER ROGERS: Do we have a clear process now for identifying costs of this kind of activity in a way that allows us to translate them in a meaningful way into our fee structure? It sounds to me like we have got a lot of different things going here and with overlapping beneficiaries of this activity, and who is going to pay for it?

CHAIRMAN JACKSON: That's the bottom line.

COMMISSIONER ROGERS: When it is all over with it may be difficult to sort it out. As you go along may be a good time to try to make sure that you understand where these things are going to channel into fees to some licensees.

MR. TAYLOR: Design reviews are charged to the vendors. Basically the inspection activities are charged to the sites.

MR. RUSSELL: Under a general license, since there is no licensing activity, it is all inspection, and plant inspection activity is charged to that licensee. Reactive inspection activity is not. That goes into the general activity. So if there is an event and we react to an event, that is not fee billable, but for planned activities they are. They would get on to the inspection planning process, get on to the schedules for coordination. Those hours are collected and they do pay for those activities.

COMMISSIONER ROGERS: If you feel very comfortable that you have got it all sorted out, fine.

MR. RUSSELL: That is generally the framework we have to stay within.

COMMISSIONER ROGERS: This is an evolving activity and there may be players that are going to derive benefits from some of these activities that are not really going to be carrying their load with fees. It is conceivable.

MR. TAYLOR: We can go over some of the cases and back check to see.

COMMISSIONER ROGERS: With regard to the accident scenarios that you consider, will this Point Beach incident give us reason to review those scenarios? Right now you have been talking about things that more or less are external events, but this is right in the plant now. It's a different kind of accident than some of the things that you

have got on your list here. With the exception of the fires and explosions, most of these are more or less external.

MR. TRAVERS: I think it very well could. The AIT team that is on site is going to delve into it and give us a sense of the root cause.

You're right. If this is a licensing issue that we had not understood, the mechanism for generation of hydrogen, for example, it may be one that deserves incorporation into our standard review plan regulations.

COMMISSIONER ROGERS: Thank you very much.

CHAIRMAN JACKSON: Commissioner Dicus.

COMMISSIONER DICUS: Do you have a time frame for your revisions to Part 72, and do you think you have identified pretty well all of the revisions or clarifications?

MR. TRAVERS: We are in the midst of working with the Office of Research in developing a rulemaking plan that would come to the Commission and which would include a schedule. We are not convinced that we have got our arms around everything we want to change yet or how we should do it. There are options, including breaking into several rulemakings. For example, the issues that have been identified. But we are looking to within the next several months develop and submit the rulemaking plan with a schedule to the Commission.

COMMISSIONER DICUS: Thank you.

CHAIRMAN JACKSON: Thank you very much. This has been very informative. In the past year I think the Commission believes that the staff has made significant progress in support of inspection and licensing of spent fuel storage installations. I commend you for that progress to date, but I encourage you to continue to work to improve the regulatory framework along the lines that you have been talking about of interim spent fuel storage that comes under

our purview.

It is also apparent, as we have just been discussing, based upon recent events, the Point Beach one in particular, that this will continue to be an area of intense scrutiny. Nonetheless, we look forward to the results of the AIT. We encourage you to be sure to incorporate any lessons learned into your action plan, whether it has to do with what specific sorts of accident scenario you treat, your inspection manuals and what they require. I think you are moving along the right track and we will wait to see what comes out of this specific evaluation.

If my fellow Commissioners have no further comments, the meeting is adjourned.

[Whereupon at 3:30 p.m. the meeting was adjourned.]